

# Catalog and Announcements 2018-19

Admissions Office  
1-800-4-ALFRED  
or 607-587-4215  
[www.alfredstate.edu](http://www.alfredstate.edu)  
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Nothing in this catalog is exempt from change. Tuition, fees, room rent, academic programs, scholarship information, etc. are all subject to modification.

The college's programs are registered by the New York State Education Department and have been approved by the NYS Education Department for the training of veterans. The State Education Department can be contacted by writing or calling: NYS Education Department, Office of Higher Education and the Professions, Cultural Education Center, Room 5B28, Albany, NY 12230; 518-474-5851. The college is accredited by the Middle States Commission on Higher Education, 3624 Market St., Philadelphia, PA 19104, 215-662-5606.

Alfred State<sup>®</sup> College of Technology  
State University of New York (SUNY)  
10 Upper College Drive  
Alfred, NY 14802

**CAMPUS TELEPHONE DIRECTORY**

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Physical & Life Sciences	607-587-3672 or 607-587-3680
Social & Behavioral Sciences	607-587-4282

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## General College Information

### THE COLLEGE

Located in Western New York, Alfred State College of Technology - State University of New York (SUNY) is in a vibrant community surrounded by scenic countryside. In the charming Village of Alfred, college students greatly outnumber permanent residents. This quintessential college town is 15 miles north of the Pennsylvania border, 70 miles south of Rochester, and 90 miles southeast of Buffalo.

Alfred State started as a state school of agriculture in 1908. Then in 1948 it was incorporated into the newly organized SUNY system. The college was authorized by SUNY to award the degree of Associate in Applied Science in 1951, the Associate in Arts and Associate in Science degrees in 1967, and the Associate in Occupational Studies in 1973. Bachelor's degrees were added in 1991.

The college enrolls more than 3,600 undergraduate students annually. There are approximately 400 teaching faculty and staff members supporting the college's 70+ programs in agriculture, allied health, applied technology, architecture, business, engineering technology, liberal arts, nursing, and sciences.

At Alfred State, we call ourselves pioneers, individuals who prove their fundamental drive, dogged determination, and ability to overcome obstacles. These admirable traits help pioneers put their skills to work to build a brighter future. The college is proud that 99 percent of our recent graduates have jobs or are continuing their education in their chosen field. Employers tell us that Alfred State students:

**Hit the ground *running*<sup>®</sup> ...**

### COLLEGE VISION

Alfred State will be THE premier regional college of technology, creating opportunity for our students to achieve successful careers and purposeful lives.

### COLLEGE MISSION

Alfred State delivers outstanding associate and baccalaureate degree programs through hands-on learning, preparing in-demand and involved students in a caring community.

### CORE VALUES

**Respect** - Showing that something is important, serious, etc., and should be treated appropriately.

**Integrity** - The quality of being honest, fair, and adhering to a code of moral values.

**Service** - Donating time, skills, and energy as a way to contribute to the welfare of others.

**Dedication** - A very strong feeling of support, loyalty, and devotion to someone or something.

### PRINCIPLES OF COMMUNITY

As members of Alfred State, we choose to be part of an academic community dedicated to those principles that foster personal and professional integrity, civility, and inclusion.

**We strive toward lives of personal integrity and academic excellence** – We will encourage in ourselves, and in one another, those responsible actions which lead to lives of productive work, personal enrichment, and useful citizenship in an increasingly interdependent world.

**We commit to treat one another with civility** – Recognizing that there will be differences of opinion, we will explore these differences in a courteous and forthright manner, always acknowledging individual rights to freedom of expression and association.

**We support inclusion** – We encourage those of all cultures, orientations, and backgrounds to understand and respect one another in a safe and supporting educational environment.

This set of principles set forth by the college is supported by policies including the Student Code of Conduct and the Policy on Academic Integrity.

## STATE UNIVERSITY OF NEW YORK (SUNY)

SUNY's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New York citizens and comprise the nation's largest, centrally managed system of public higher education.

Nearly 400,000 students are pursuing traditional study in classrooms or are working at home, at their own pace, utilizing distance education. SUNY is governed by a board of trustees, appointed by the governor, which directly determines the policies to be followed by the state-operated campuses.

## DEGREES AND ACCREDITATIONS

### I. Degrees Granted by New York State Department of Education.

Authorization is granted by the Division of Higher Education of the NYS Department of Education to confer the degree of Associate in Applied Science (AAS), Associate in Science (AS), and Associate in Arts (AA). Section 5 of the Commissioner of Education's Regulations, Paragraph 7, reads as follows:

"Courses of Study. The course of study shall cover two years of standard college work, and shall be so organized and conducted and shall be of such scope and content as to warrant acceptance with full credit upon advanced standing by degree-conferring institutions. Such terminal courses as it offers shall be distinctly of collegiate grade. All courses of study shall contain the subject matter implied by the announced objectives of the institution."

Authorization is also granted by the Division of Higher Education to confer the degree of Bachelor of Science (BS) in engineering technology, the degree of Bachelor of Technology (BTech), and the degree of Bachelor in Business Administration (BBA).

Authorization is also granted by the Division of Higher Education to confer the degree of Associate in Occupational Studies (AOS) under Section 52.2 of the Regulations of the Commissioner of Education (Chapter II of Title 8 of the Official Compilation of Codes, Rules, and Regulations of the State of New York).

State University criteria state that "a course of study leading to the AOS degree should be an organized postsecondary lower-division program leading to occupational competence. It should have a distinct identity, independent of established Associate in Applied Science degree or certificate offered by an institution. The program must require a minimum of 60 semester credit hours or the equivalent of completion and may consist solely of specialized course work and related subjects."

II. The college is regionally accredited by the Middle States Commission on Higher Education [3624 Market St., Philadelphia, PA 19104; 215-662-5606]. The Commission on Higher Education is an institutional accrediting agency recognized by the US Secretary of Education and the Commission on Recognition of Postsecondary Accreditation.

III. The following Associate in Applied Science degree programs in engineering technology are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>:

Computer Engineering Technology  
Construction Engineering Technology  
Electrical Engineering Technology

Mechanical Engineering Technology  
Surveying Engineering Technology

IV. The following Bachelor of Science degree programs in engineering technology are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>:

Computer Engineering Technology  
Electrical Engineering Technology

Mechanical Engineering Technology  
Surveying and Geomatics Engineering Technology

V. The court and realtime reporting program is approved by the National Court Reporters Association. This approval indicates that this program has met the general requirements and minimum standards established by the Board on Approved Reporter Training of the National Court Reporters Association [8224 Old Courthouse Rd., Vienna, VA 22182-3808; 800-272-6272].

VI. The nursing associate program is accredited by the Accreditation Commission for Education in Nursing (ACEN) [3343 Peachtree Rd., NE, Suite 850, Atlanta, GA 30326; 404-975-5000]. The ACEN is responsible for the specialized accreditation of all nursing education programs and schools, both postsecondary and higher degree. Alfred State's BSN program is fully accredited by the Commission on Collegiate Nursing Education (CCNE) [One Dupont Circle, NW Suite 530, Washington, DC 20036].

VII. The health information technology program is accredited by the Commission on the Accreditation for Health Informatics and Information Management (CAHIIM) [233 N. Michigan Ave., 21st Floor, Chicago, IL 60601-5800, 312-233-1100, [www.cahiim.org/](http://www.cahiim.org/)]. CAHIIM is an independent accrediting organization that enforces quality accreditation standards for health informatics and health information management (HIM) educational programs through accreditation. CAHIIM accredits associate and baccalaureate degree programs in health information management, and master's degree programs in the health informatics and health information management professions. CAHIIM is recognized by the Council for Higher Education and Accreditation (CHEA) [One Dupont Circle NW, Suite 510, Washington, DC 20036, 202-955-6126, [chea@chea.org](mailto:chea@chea.org)]. CHEA is a nationally recognized non-governmental higher education organization that undertakes recognition of accrediting bodies.

VIII. The following programs in applied technology are ASE Master Certified by the National Institute of Automotive Service Excellence (ASE) [13505 Dulles Technology Dr., Suite 2, Herndon, VA 20171-3421; 703-713-3800; [www.asecert.org/](http://www.asecert.org/)]:

Autobody Repair  
Automotive Service Technician

Heavy Equipment, Truck and Diesel Technician

IX. The following programs in applied technology are certified by the National Automotive Technicians Education Foundation (NATEF) [101 Blue Seal Dr., S.E. Suite 101, Leesburg, VA 20175; 703-669-6650, fax 703-669-6125; <http://www.natef.org/>]:

Autobody Repair

Automotive Service Technician

X. The automotive service technician program in applied technology is certified by the National Alternative Fuels Training Consortium (NAFTC) [West Virginia University, 1100 Frederick Lane, Morgantown, WV 26508; 304-293-7882, fax 304-293-6944; <http://www.naftc.wvu.edu/>].

XI. The heavy equipment: truck and diesel technician program is one of nine national Association of Diesel Specialists (ADS) TechSmart programs. The heavy equipment: truck and diesel technician program is the only program in New York and New England that is approved by the ADS [International Headquarters, 9140 Ward Parkway, Kansas City, MO 64114; 816-444-3500, fax 816-444-0330].

XII. The welding technology program in applied technology is certified by the American Welding Society (AWS) [8669 NW 36 St., #130, Miami, FL 33166-6672; 800-443-9353; <http://www.adda.org/>].

XIII. The veterinary technology program is accredited by the American Veterinary Medical Association's (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA) [1931 N. Meacham Rd., Suite 100, Schaumburg, IL 60173-4360; 800-248-2862]. The AVMA CVTEA is responsible for the specialized accreditation of all veterinary technician education programs in the United States. It has also extended its accreditation to Canadian veterinary technician education programs.

XIV. The construction management (BS) program is accredited by the American Council for Construction Education (ACCE), 1717 North Loop Road 1604 East, Suite 320, San Antonio, TX 78232.

XV. The BBA financial planning program is registered with the Certified Financial Planner Board of Standards, Inc. (CFP®).

XVI. In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit US professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Alfred State, School of Architecture, Management and Engineering Technology, Department of Architecture and Design offers the following NAAB accredited degree program: BArch (157 undergraduate credits).

### **Student Right-To-Know and Campus Security Act**

On July 1, 1992, the Student Right-to-Know and Campus Security Act went into effect, requiring institutions receiving federal student aid funds to make available to prospective students information regarding graduation, retention, and attrition rates beginning in July 1993. Successful outcomes of students' academic performance are measured by graduates, transfers, persisters, and those receiving a certificate.

Information is available for review on the Alfred State website: [www.alfredstate.edu/student-consumer-information](http://www.alfredstate.edu/student-consumer-information) or by contacting the Student Records and Financial Services Office. You may also view this information by visiting the College Navigator website: <http://nces.ed.gov/collegenavigator/>.

The most recent Campus Awareness and Safety Report includes Alfred State's summaries of the college's personal safety and security procedures in addition to the three-year summary for the Campus Crime Report which is excerpted on the following pages. The information is available in its entirety for review and/or duplication on the college's website at [www.alfredstate.edu](http://www.alfredstate.edu), on the University Police website at [www.alfredstate.edu/university-police](http://www.alfredstate.edu/university-police), on reserve in both the Hinkle and Applied Technology campus libraries, and from the following campus offices: Admissions, Student Life, University Police, and the Vice President for Student Affairs.

The Advisory Committee on Campus Safety will provide, upon request, all campus crime statistics as reported to the US Department of Education.

You may also visit the US Department of Education's website, which contains all campus crime statistics, at <http://ope.ed.gov/security/> to obtain more information.

### **Campus Crime Statistics**

The Advisory Committee on Campus Safety and/or the University Police department will provide, upon request, all campus crime statistics as reported to the US Department of Education. The US Department of Education maintains campus crime statistic information on its website at <http://www.ope.ed.gov/security>. You may also obtain the full annual security report, which includes all campus crime statistics, through the University Police Department at 607-587-3999 or access it through the college website at [www.alfredstate.edu/university-police/annual-security-and-fire-safety-report](http://www.alfredstate.edu/university-police/annual-security-and-fire-safety-report).

### **STUDENT RECORDS**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. FERPA gives parents certain rights with respect to their children's education records. These rights transfer to the student when he or she reaches the age of 18 or attends a school beyond the high school level. Parents or eligible students have:

1. The right to inspect and review the student's education records maintained by the school;
2. The right to request that a school correct records which they believe to be inaccurate or misleading;
3. The right to consent to disclosures of personally identifiable information contained within the student's education records, except to the extent that FERPA authorizes disclosure without consent. Schools may disclose records, without consent, to the following parties or under the following conditions:
  - A. School officials with a legitimate educational interest as defined in detail on the Records Office website within the "Student Records" information;
  - B. Other schools to which a student is transferring;
  - C. To comply with a judicial order or lawfully issued subpoena.

4. The right to file a complaint concerning alleged failure by Alfred State to comply with the requirements of FERPA. Written complaints may be addressed to the Family Policy Compliance Office, US Department of Education, 400 Maryland Ave. SW, Washington, DC 20202-8520.
5. The right to obtain a copy of Alfred State's student records policy. A complete copy of this policy and a complete copy of the FERPA Law are available at [my.alfredstate.edu](http://my.alfredstate.edu) under the link to "Records Office" and then "Student Records."

### Directory Information

Directory information (as defined by Alfred State) includes name, Alfred State email address, address and telephone number, dates of attendance, date and place of birth, college major, expected date of graduation, degrees and awards received, photographs, enrollment status, participation in officially recognized sports and activities, weights and heights of athletes, and most recent previous educational institution attended. The college can release this information without the student's written request. However, under the Family Educational Rights and Privacy Act (FERPA), students have the right to refuse to permit disclosure of any or all of those items without their prior written consent. Students who prefer not to have their directory information disclosed must sign a statement so attesting. This can be done in the Student Records and Financial Services Office before 11 a.m. of the census date and to continue in effect, must be done each and every semester of the student's attendance. Under FERPA, if the Student Records and Financial Services Office does not hear from a student by that time, the student's directory information may be released.

### Civil Rights Policy

The laws concerning civil rights include: Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Section 303 of the Age Discrimination Act of 1975, and the March 1979 "Guidelines" promulgated by the United States Office of Civil Rights.

Questions may be directed to the chief diversity officer/Title IX coordinator, or director of Human Resources, Alfred State, Alfred, NY 14802.

### Policy of Nondiscrimination

Alfred State, in recognition of its educational mission, its social concern, its responsibility for the personal development of individuals, and its concern for the rights of the individual, hereby expresses the following policy of nondiscrimination. In support of this policy, the college affirms its right to take appropriate action if it or another duly constituted authority should determine that applicable federal and state nondiscrimination law and regulations have been violated or that the effect and intent of this policy have been willfully or habitually abrogated. This policy is an affirmation of the college's commitment to making nondiscrimination a reality.

**All programs and services of the college are administered without discrimination on the basis of age, sex, marital or military status, race, color, creed, religion, national origin, disability, or sexual orientation. This policy of nondiscrimination extends to admission, financial aid, housing, counseling, educational programs, athletic activities, and placement, as well as to all aspects of employment.**

Complaints of noncompliance with the policy may be sent to the director of Human Resources at [hr@alfredstate.edu](mailto:hr@alfredstate.edu).

## Admission to Alfred State

Admission into one of Alfred State's more than 70 academic programs is based on the academic qualifications of the applicant without regard to age, sex, marital or military status, race, color, creed, religion, national origin, disability, or sexual orientation. Admission will be offered to qualified applicants whose academic preparation has prepared them for success in their chosen field.

### APPLICATION PROCESS

All applicants must complete an application that may be submitted online at:

[www.alfredstate.edu](http://www.alfredstate.edu)

[www.suny.edu](http://www.suny.edu)

[www.commonapp.org](http://www.commonapp.org)

Transfer students should apply at [www.suny.edu](http://www.suny.edu).

International students should complete the international student application packet available at [www.alfredstate.edu](http://www.alfredstate.edu).

Current high school students who are applying using the SUNY application must also complete the SUNY supplemental application. This form can be submitted through the SUNY website.

High school graduates who have not attended a postsecondary institution must submit an essay directly to the Alfred State Admissions Office.

A high school transcript must be supplied to the Alfred State Admissions Office. Students attending high school in one of the five boroughs of New York City may submit their transcript by entering their NYC DOE OSIS number on the SUNY application. This is a nine-digit number issued to all students who attend a New York City public school and can be found on the student ID card or transcript.

Applicants with previous college experience must submit an official college transcript from all institutions attended.

Additional information to explain special or extenuating circumstances is encouraged.

Applications for the next calendar year are available beginning Aug. 1. Fall semester application decisions are mailed starting mid-October and continue on a rolling basis according to space availability. Spring semester applications for those programs open for spring admission (contact the Alfred State Admissions Office) are also considered on a rolling basis according to availability of space.

The priority application deadline for the diagnostic medical sonography and radiologic technology majors is Dec. 1; it is Jan. 1 for spaces in the Nursing I clinical course. Applications received after these dates will be evaluated on a rolling basis.

Students with disabilities should contact the Admissions Office to inquire about special accommodations to assist them with the application process and paperwork.

Consistent with college policy, any deliberate falsification or omission of data on any admissions document may result in denial of admission, revocation of acceptance decision, or administrative dismissal from the college.

### INTERNATIONAL STUDENTS

Alfred State welcomes applications for admission from international students and is authorized under federal law to enroll nonimmigrant students.

International students must complete the International Student Application packet, which is available at [www.alfredstate.edu](http://www.alfredstate.edu). In addition to the admission application, international students must also submit official academic and financial records. For students whose native language is not English, evidence of English proficiency must be shown by taking the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS) exam, or the Pearson Test of English

Academic (PTE Academic) examination. Letter of academic reference or Scholastic Aptitude Test (SAT) scores (reading/writing and math) or national exam scores are required for entrance into the four-year, baccalaureate programs unless the student has successfully completed college-level course work following high school graduation. SAT scores are also required for students interested in intercollegiate athletics. All application materials must be submitted well in advance of the intended first semester at Alfred State.

Students who have completed college/university-level course work and would like to have their courses evaluated for possible transfer credit must submit to Alfred State an official college transcript and course descriptions (written in English) for courses to be evaluated. In addition, students must also provide a course-by-course credential evaluation completed by an approved credential evaluation service. The information available from Josef Silny & Associates, Inc., located at [www.jsilny.com](http://www.jsilny.com), provides information on the service we feel best meets the needs of the applicant and Alfred State. World Education Service (WES) [[www.wes.org](http://www.wes.org)] is also a good resource. However, we will accept a course-by-course credential evaluation from an approved member of the National Association of Credential Evaluation Services (NACES) [[www.naces.org](http://www.naces.org)]. Please note that course descriptions and the course-by-course evaluation are not necessary if an articulation agreement exists between your previous college/university and Alfred State.

## TRANSFER STUDENTS

Students who have attended other colleges following high school graduation, either full- or part-time, are classified as transfer students and may receive advanced standing. In addition to completing the SUNY application and providing an official high school transcript, transfer students must submit official transcripts from all institutions. These transcripts should be sent to the Alfred State Admissions Office at the time of application. It is recommended that students who have completed college-level course work during high school submit official transcripts so that appropriate transfer credit may be awarded.

Parallel and equivalent courses passed at a grade "C" or above will be given transfer credit on approval of the department chair in whose department the course is registered. Credit may be given for courses passed with a grade of "C-" if the overall index of the courses being transferred remains at "C" or higher. Only credit hours and honor points earned at this college will be considered when computing a student's index.

## HOME-SCHOOLED STUDENTS

Alfred State admits as matriculated students only persons who have a high school diploma or its recognized equivalent. Because of this requirement, Alfred State has established a specific admission policy with respect to home-schooled students. The purpose of the policy is to ensure that home-schooled students are treated fairly yet in accordance with the requirements set forth by the college. The policy deals exclusively with the criteria for *eligibility* to be considered as an applicant for admission. Once eligibility for consideration is established, the applicant must *also* meet both campus and curriculum-specific admissions requirements.

**Applicants 16 years of age or over** (i.e. beyond the age of compulsory attendance)

These home-schooled students will be eligible for further consideration as an applicant to matriculated status if they can provide one of the following: (1) a passing score on the general comprehensive examination for the state high school equivalency diploma (TASC/GED) and the diploma itself if the student is eligible to receive one; (2) a statement from the superintendent of the school district in which the student resides, attesting to the student's completion of a program of home instruction that is substantially equivalent to a four-year high school program meeting the requirements of Section 100.10 of the Regulations of the Commissioner of Education - **please note that this option cannot be used if the student completed an online high school program of instruction**; (3) official verification of successful completion (a grade of "C" or better) of 24 college credit hours in the distribution of 6 credits in English language arts, 3 credits in natural science, 3 credits in humanities, 3 credits in mathematics, 3 credits in social science, and 6 credits in approved general education courses - **please note that students admitted through this option are not eligible for federal financial aid unless the TASC/GED diploma has been earned**; (4) official verification of having earned a degree from an accredited college or university; (5) evidence of having passed with a grade of 65 or better the New York State

regents exams for English language arts, mathematics, U.S. history, a science, and global history - **please note that students admitted through this option are not eligible for state or federal financial aid.**

**Applicants under the age of compulsory attendance** (i.e. below 16 years of age)

These home-schooled students will be eligible for consideration as applicants for admission to a matriculated status *only* if the student can provide a statement from the superintendent of the school district in which the student resides, attesting to the student's completion of a program of home instruction that is substantially equivalent to a four-year high school program meeting the requirements of Section 100.10 of the Regulations of the Commissioner of Education - **please note that this option cannot be used if the student completed an online high school program of instruction.**

**TRANSFER AGREEMENTS**

Agreements have been established between Alfred State and two-year colleges, which permit a student to complete an associate degree at the two-year college and transfer to Alfred State to complete a baccalaureate degree. Transfer is guaranteed if the student successfully completes, in accordance with the specific articulation agreement, the prescribed schedule of courses. Any questions regarding transfer of courses should be directed to the transfer adviser within the Student Records and Financial Services Office at Alfred State. The student must provide an official transcript from the two-year college to Alfred State. Refer to [www.alfredstate.edu/transfer-students/articulation-agreements](http://www.alfredstate.edu/transfer-students/articulation-agreements) for a listing of articulation agreements.

**JOINT ADMISSIONS**

Alfred State has established Joint Admission Agreements from several of our associate degree programs into our baccalaureate degree programs as well as from our certificate programs into our own associate degree programs. Alfred State students interested in pursuing a sequential advanced degree should complete a SUNY Joint Admissions/Intent to Enroll form, available at the Alfred State Admissions Office. This form should be filed during the final semester of the student's associate degree or certificate program.

**ACCES-VR (FORMERLY VESID)**

Students who may be working through ACCES-VR should contact their ACCES-VR counselor prior to beginning the application process at Alfred State.

**CONCURRENT ADMISSIONS PROGRAM (CON AP)**

The Concurrent Admissions Program (CON AP) is conducted by colleges and universities that are members of the Service Members Opportunity Colleges (SOC). Concurrent with their enlistment in the Army, new soldiers are encouraged to express an interest in attending Alfred State following completion of their military obligation.

After completing a two-, three-, or four-year enlistment, the new veteran will be encouraged to enroll at Alfred State. This program also applies to soldiers enlisting in the Army Reserve.

Those interested in the CON AP program are encouraged to contact their military recruiter.

**READMISSION**

Students who have not yet graduated from the college and wish to apply for readmission must complete a readmission application available from the Alfred State website. The completed application, as well as official transcripts from any colleges attended since enrollment at Alfred State, must be submitted to the Admissions Office. Applicants who are or will be graduates of the college and wish to apply to return for a non-sequential major must complete the SUNY Application and process it through the SUNY Application Processing Center for a new program of study. The new program must be significantly different from the program from which the student graduated. Please contact the Admissions Office for further information on this requirement.

## DISCIPLINARY APPLICANTS

Individuals who have previously been dismissed from another institution for disciplinary reasons will have their application for admission reviewed under college policy established through the Admissions Office and the Office of Judicial Affairs. Copies of this policy are available from the Admissions Office. Individuals who have previously been dismissed from another institution for disciplinary reasons and who wish to apply should identify themselves as such.

## ADMISSION REQUIREMENTS

1. Applicants must possess a recognized high school diploma or its equivalent (please note that distance learning degrees/diplomas do not satisfy this requirement for New York State residents). Verification must be supplied to the Admissions Office. **Applicants with a CDOS credential or IEP certificate/diploma will not be accepted. These students are advised to take the GED or TASC exam. A score of 2700 or better on the TASC exam or a 2500 on the GED exam is needed for consideration.**
2. Individual program requirements must be satisfied as indicated.
3. To be considered for admission into programs taught on the Alfred campus, the overall high school average must be at least a 76. For programs taught in the School of Applied Technology (Wellsville campus), the overall average must be at least a 74 to be considered. Applicants with averages lower than these but greater than 72 may be considered with additional documentation. Applicants who do not meet specified program requirements but who show potential for success may be considered for admission through the Alfred State Opportunity Program (ASOP) or the Educational Opportunity Program (EOP). High school students with averages 72 or below will be denied admission.
4. Transfer applicants must possess a 2.0 cumulative grade point average, as well as a grade of "C" or better in each course taken during the most recent semester of attendance. Individuals with less than a 2.0 cumulative grade point average may be considered with additional documentation.
5. **Standardized test score (ACT or SAT) results are required for baccalaureate (bachelor's) degree programs, for some scholarship considerations, and for those students interested in intercollegiate athletics.** They are not required, but are strongly encouraged, for associate degree and certificate programs. If a student entering an associate degree or certificate program submits standardized test scores, they are used as a supplement to the educational background studied during the application review process. When multiple score reports are submitted, the highest composite score is used from either the old or new (beginning March 2016) exams; the SAT will not be superscored combining scores from both the old and new exams. (ACT scores are not superscored.) Standardized test scores are not required for applicants to the baccalaureate degree programs who have successfully completed college-level course work following high school graduation. (Transfer students interested in intercollegiate athletics should contact the Athletic Department to discuss standardized test score requirements.)
6. Financial need is not considered as part of the admission process.

## PROGRAMS OF STUDY

Applications are filed for admission into one of the following programs rather than a general freshman-year program. Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for student aid awards. Detailed program information is found in the catalog, alphabetically. References for items with notations may be found on the following page. In addition to course entrance requirements listed, students must meet overall high school average requirements (76 for Alfred campus programs and 74 for Wellsville campus programs) to be considered for admission. Transfer students must possess a 2.0 cumulative grade point average, as well as a grade of "C" or better in each course taken during the most recent semester of attendance. Students with averages lower than these may be considered with additional documentation.

Students graduating from any two-year associate degree program (AAS, AA, AS, and AOS) may enter directly into the corresponding baccalaureate degree program(s) or the technology management Bachelor of Business Administration degree program.

**Notes for the Programs of Study Chart:**

The Alfred State Athletic Department is an NCAA Division III member. With the move to the NCAA, incoming freshmen students who wish to participate in intercollegiate athletics must be admitted into a four-year program OR have a 78 or 2.4/4.0 high school average AND a 930 combined reading/writing and math SAT score or an 18 composite ACT to be immediately eligible their first semester. Incoming transfer students who wish to participate in intercollegiate athletics must have a 2.0 cumulative GPA for consideration.

\*SAT and/or ACT scores also required with a recommended 1080 combined reading/writing and math SAT score or a composite ACT score of 21. Portfolio is required to enter junior-year studio courses.

\*\*SAT and/or ACT scores also required with a recommended 1170 combined reading/writing and math SAT score or a composite ACT score of 24. Portfolio review is also required.

\*\*\* SAT and/or ACT scores also required with a recommended 980 combined reading/writing and math SAT score or a composite ACT score of 19.

^SAT and/or ACT scores also required with a recommended 1080 combined reading/writing and math SAT score or a composite ACT score of 21.

^^It is recommended that a student have an in-depth knowledge of basic math skills.

^^^Letters of recommendation, a personal essay, and a resume indicating related work experience and/or knowledge of field are required.

Program	Application Code No.	Required Courses	Recommended Courses	Degree	Hegis Code
Accounting	0630	Algebra	Geometry, Algebra 2	AAS	5002
Agricultural Business	0511		Algebra	AAS	5402
Agricultural Technology	0510	Algebra	Geometry, Algebra 2, AAS Biology, Chemistry		5402
Architectural Technology	0538	Algebra, Geometry, Algebra 2	Physics	AAS	5317
Architectural Technology	1452	Algebra, Geometry, Algebra 2*	Pre-calculus, Physics	BS	0925
Architecture	0135	Algebra, Geometry, Algebra 2, Pre-calculus, Portfolio review**	Physics	BArch	0202
Autobody Repair	0453		Algebra	AOS	5306
Automotive Service Technician	0451		Algebra	AOS	5306
Biological Science	1554	Algebra, Geometry, Algebra 2, Biology, Chemistry		AAS	5407
Building Trades: Building Construction	0420		Algebra	AOS	5317
Business Administration	0671	Algebra, Geometry	Algebra 2	AS	5004
Business Administration	0280	Algebra, Geometry***	Algebra 2	BBA	0506
Business Administration - 3 year	2602	Algebra, Geometry***	Algebra 2	BBA	0506
Coding & Reimbursement Specialist	1671	Biology	Keyboarding, Knowledge of Microsoft Office Professional	Cert.	5213
Computer Engineering Technology	1602	Algebra, Geometry, Algebra 2	Physics	AAS	5104
Computer Engineering Technology	1357	Algebra, Geometry, Algebra 2^	Physics	BS	0925
Computer Information Systems	0581	Algebra, Geometry	Algebra 2	AAS	5101
Computer Science	0532	Algebra, Geometry, Algebra 2	Pre-calculus, Physics	AS	5101
Construction Engineering Technology	0577	Algebra, Geometry, Algebra 2	Physics	AAS	5317
Construction Management	1761	Algebra, Geometry, Algebra 2 ^	Physics	BS	0925
Construction Supervision	2649	Associate degree in construction-related field		BTech	0925
Court and Realtime Reporting	0647		Algebra	AAS	5005
Court Reporting and Captioning	2152		Algebra	Cert.	5005
Criminal Justice	2279	Algebra	Geometry, Biology	AS	5505
Criminal Justice	0287	Algebra^	Geometry, Biology	BS	2105
Culinary Arts	0578		^^	AOS	5404
Culinary Arts: Baking, Production and Management	0423		^^	AOS	5404
Cyber Security	2085	Algebra, Geometry, Algebra 2^		BTech	0799
Diagnostic Medical Sonography	2560	Algebra, Geometry, Algebra 2, Biology	Chemistry and Physics	AAS	5207

Program	Application Code No.	Required Courses	Recommended Courses	Degree	Hegis Code
Digital Media and Animation	1212	Algebra, Geometry	Algebra 2	AAS	5606
Digital Media and Animation	2018	Algebra, Geometry^	Algebra 2	BS	0699
Electrical Construction and Maintenance Electrician	0498		Algebra	AOS	5310
Electrical Engineering Technology	0699	Algebra, Geometry, Algebra 2	Physics	AAS	5310
Electrical Engineering Technology	0216	Algebra, Geometry, Algebra 2^	Physics	BS	0925
Engineering Science	0530	Algebra, Geometry, Algebra 2; Pre-calculus; Physics or Chemistry	Both Physics and Chemistry	AS	5609
Environmental Technology	2193	Algebra, Geometry, Algebra 2, Biology, Chemistry		AAS	5407
Financial Planning	1938	Algebra, Geometry, Algebra 2***		BBA	0599
Forensic Science Technology	2023	Algebra, Geometry, Algebra 2, Biology, Chemistry^	Physics	BS	1999
Graphic and Media Design	2557	Algebra, Geometry	Algebra 2	AS	5012
Graphic and Media Design	2534	Algebra, Geometry^	Algebra 2	BS	5012
Healthcare Management	2647	Associate degree in health-related field		BTech	1202
Health Information Technology	1969	Biology	Keyboarding, Knowledge of Microsoft Office Professional	AAS	5213
Health Sciences	2564	Algebra, Geometry, Algebra 2, Biology, Chemistry^	Physics	BS	1201
Heating, Ventilation, and Air Conditioning	0464		Algebra	AOS	5317
Heavy Equipment Operations	1908	^^^	Algebra	AOS	5317
Heavy Equipment, Truck and Diesel Technician	0452		Algebra	AOS	5306
Human Services	1175	Algebra	Geometry, Biology	AS	5501
Human Services Management	2153	Algebra^	Geometry, Biology	BS	2101
Human Services Management - 3 year	2603	Algebra^	Geometry, Biology	BS	2101
Individual Studies	0688	Algebra	Geometry, Biology	AS	5699
Information Technology: Applications Software Development	1502	Algebra, Geometry, Algebra 2^		BTech	0799
Information Technology: Network Administration	1505	Algebra, Geometry, Algebra 2^		BTech	0799
Information Technology: Web Development	1506	Algebra, Geometry, Algebra 2^		BTech	0799

Program	Application Code No.	Required Courses	Recommended Courses	Degree	Hegis Code
Interdisciplinary Studies	0377	Algebra, Second Year of Advanced Math, Two Units of Science***		BTech	4904
Interior Design	0656	Algebra, Geometry	Algebra 2	AAS	5012
Liberal Arts and Sciences: Adolescent Education (Teacher Education Transfer)	1804	History/Social Studies & English concentrations: Algebra; Biology & Chemistry concentrations: Algebra, Geometry, Algebra 2, Biology, Chemistry; Math & Physics concentrations: Algebra, Geometry, Algebra 2, Biology, Chemistry or Physics		AA	5649
Liberal Arts and Sciences: Humanities	0201	Algebra	Geometry, Biology	AA	5649
Liberal Arts and Sciences: Math & Science	0645	Algebra, Geometry, Algebra 2; Biology; Chemistry or Physics	Both Chemistry and Physics	AA	5649
Liberal Arts and Sciences: Social Science	0212	Algebra	Geometry, Biology	AA	5622
Machine Tool Technology	0551		Algebra	AOS	5312
Marketing	0633	Algebra	Geometry, Algebra 2	AAS	5004
Masonry	0401		Algebra	AOS	5317
Mechanical Engineering Technology	0493	Algebra, Geometry, Algebra 2	Physics	AAS	5315
Mechanical Engineering Technology	0235	Algebra, Geometry, Algebra 2^	Physics	BS	0925
Mechatronics Technology (Starting fall 2019 semester)	2729	Algebra, Geometry, Algebra 2	Physics	AAS	5311
Motorcycle and Power Sports Technology	2590		Algebra	AOS	5306
Motorsports Technology	1619		Algebra	AOS	5306
Nursing	0622	Algebra, Biology, Chemistry	980 combined reading/writing and math SAT score or 19 ACT composite score	AAS	5208
Nursing (Part Time)	2608	Algebra, Biology, Chemistry	980 combined reading/writing and math SAT score or 19 ACT composite score	AAS	5208
Nursing (Dual Degree)	2373	Algebra, Biology, Chemistry^		AAS/BS	5208/1203
Nursing	0291	Graduation from an approved associate degree nursing or certified diploma program		BS	1203
Nursing (Part Time)	2609	Graduation from an approved associate		BS	1203

Program	Application Code No.	Required Courses	Recommended Courses	Degree	Hegis Code
		degree nursing or certified diploma program			
Pre-Environmental Science and Forestry (option within Liberal Arts & Sciences: Math & Science program)	0645 (Indicate P-ESF on Special Campus Project line)	Algebra, Geometry, Algebra 2; Biology; Chemistry or Physics	Both Chemistry and Physics	AA	5649
Radiologic Technology	0628	Algebra, Geometry, Algebra 2, Biology	Chemistry and Physics	AAS	5207
Sport Management	1396	Algebra, Geometry	Algebra 2	AS	5099
Sport Management	0182	Algebra, Geometry***	Algebra 2	BBA	0599
Surveying Engineering Technology	1039	Algebra, Geometry, Algebra 2	Physics	AAS	5309
Surveying & Geomatics Engineering Technology	1046	Algebra, Geometry, Algebra 2 <sup>^</sup>	Physics	BS	0925
Technology Management	1318	Successful completion of an associate degree		BBA	0599
Undeclared Major	0000	Algebra	Biology	N/A	N/A
Veterinary Technology	0521	Algebra, Geometry, Algebra 2, Biology, Chemistry	Physics	AAS	5402
Welding Technology	0666		<sup>^^</sup>	AOS	5308

### Educational Opportunity Program (EOP)

The Educational Opportunity Program (EOP) offers higher education opportunities to high school graduates or to holders of high school equivalency diplomas who do not meet normally applied admission criteria but who have the potential for college success. Students must also meet family income guidelines printed in the SUNY Viewbook and must complete the EOP financial information form, which is available on the Alfred State website.

EOP is typically an extended program with course work paced to enhance student success. Students study full time, enrolling in at least 12 credit hours per semester. The first-year schedule will include courses in English; math; college skills and/or reading; social, physical, or life science; and/or program course(s). To comply with program requirements, EOP students may be required to repeat courses in which they have earned a grade of "D" or "D+."

Students are required to participate in regular tutoring and academic advising sessions.

Essential to EOP is direct financial aid. For each student, a financial aid package is planned, which may include grants from EOP, Pell, and Tuition Assistance Program (TAP). All EOP students must submit the Free Application for Federal Student Aid (FAFSA).

### Advanced Standing

#### Previous Credit

A student who has taken college-level courses after high school is considered a transfer student (See Transfer Students section).

Students who are taking college courses while in high school must submit official transcript(s) in order to receive transfer credit.

## Course Challenges

Any student wishing to challenge a course is responsible for furnishing material, approved by faculty administering the exam, to be used in the challenge examination. The challenge exam fee includes a \$15 recording fee and \$10 per contact hour compensation fee. A student must be matriculated and cannot challenge a course he/she is currently registered for after the registration deadline.

## Credit From U.S. Armed Forces

The college may grant credit, upon the recommendation of a department chair, for courses of study satisfactorily completed under this program in those cases where such courses have application to a student's program. Credit is treated as transfer credit.

## Alfred State Opportunity Program (ASOP)

The Alfred State Opportunity Program (ASOP) is a special admissions program that offers higher education to high school graduates or holders of high school equivalency diplomas who do not meet traditional admission criteria, but who possess the potential for college success. Unlike the Educational Opportunity Program (EOP), students are not required to meet financial need criteria. The program is designed to help prepare students in meeting chosen program prerequisites and offers academic success coaching, tutoring, supplemental instruction, and subject and skills development courses.

Course work is paced to enhance student success. The first semester schedule is comprised of 12 to 15 credit hours, which might include courses in English; math; reading and/or college skills; social, physical, or life science; and/or program course(s). Assistance is available for tutoring, counseling, and academic advising. To comply with program requirements, ASOP students may be required to repeat courses in which they have earned a grade of "D" or "D+."

## Registration Process

In order to finalize enrollment at Alfred State, students should refer to the following information:

### Orientation

Orientation programs are designed to assist new students in adapting to the college and heightening their level of success. Positive relationships among students and faculty/staff are nurtured through numerous opportunities. Orientation is a college-wide initiative, inclusive of academics, student services, and support services of the college.

### Student Health Form/Immunizations

Prior to registration, students must provide the required information to Alfred State Health and Wellness Services as stated on the Student Health Form. Accepted students receive directions for accessing this form in their acceptance materials.

### Academic Advisement

Each student is assigned a faculty adviser within his/her program of study. The adviser helps students plan their program of course work, reviews interim grades with students, and answers questions about personal academic goals, requirements, and academic regulations.

### Class Schedule/Course Registration

A tentative schedule, based on the students' math/English placement recommendations, will be prepared during orientation. Final class schedules will be available for new, transfer, and readmitted students on final registration day.

Continuing students will meet with their academic adviser during a designated time each semester to discuss course selection for the next semester and to receive their Registration Authorization Code. Before meeting with their adviser, they will print their Course Selection Form found in BannerWeb under "Student Forms" within the Student Services and Financial Aid link, and begin choosing classes for the

upcoming semester. Registration is done online in BannerWeb. Available classes can be accessed by going to BannerWeb and clicking on "Class Schedule" prior to entering the secure area.

Continuing students will print their own schedules from BannerWeb and adjustments to this schedule may be made during Add/Drop.

New, transfer, and readmitted students will meet with their academic faculty advisers on registration day to pick up and discuss their final schedules. These final schedules will indicate if students need to process their bills with the Student Records and Financial Services Office. Students are not considered registered until they have picked up their final schedule and paid/processed their bill. Completed student health forms must also be returned to Health and Wellness Services at this time.

Note: Courses are dropped for students who do not process their bills by the due date.

### **The Honors Program at Alfred State**

The Honors Program at Alfred State was created to encourage motivated, curious, academically superior students to explore some aspect of their program in greater depth and to broaden and deepen their awareness of themselves as responsible, contributing members of a larger community. Honors Program participants complete a series of seminars, as well as a substantial honors project and 10 hours of volunteer community service. The permanent college transcript of students completing program requirements will read "Honors Program Graduate."

#### **Application**

The Honors Program coordinator reviews academic records of current and incoming freshmen and invites students with a record of strong academic achievement to apply for Honors Program status. The coordinator makes the final decision based on the application, including the required student essay, letters of recommendation from two educators, and meeting with the student. Any current Alfred State student with a GPA of 3.5 (of a possible 4.0) or better and at least one year remaining at the college is welcome to apply to the program. Students accepted into the Honors Program remain in the program of their choice for degree purposes.

#### **Program Requirements**

Honors Program participants are required to

- earn an overall 3.25 GPA by graduation, with no more than one semester's GPA falling below 3.0;
- enroll in honors courses offered by various departments, schedules permitting;
- work with a faculty or staff member to complete an honors project, usually a technical or research project related to the student's personal or career plans;
- participate in at least two honors seminars per semester - short, informal opportunities to interact with some of the college's most respected teachers;
- attend and participate in the college's speakers series, especially those sponsored by the Honors Program;
- complete 10 hours of volunteer, unpaid service of genuine benefit to the community or individuals in the community.

#### **Program Benefits**

The Honors Program coordinator will

- offer interesting, challenging, credit-bearing honors courses, informal honors seminars, and speakers of interest from the professional world;
- facilitate arrangements for the honors project and community service requirements, if requested;
- negotiate special Honors Program privileges: one-week laptop loans, "faculty" library borrowing privileges, and first-day course registration privileges;
- write letters to transfer colleges explaining the Alfred State Honors Program and recommending students to the honors program at those colleges;
- indicate "Honors Program Graduate" on the students' permanent college transcripts.

Interested students should contact:

Assistant Professor Janice Stafford, Honors Program Coordinator  
607-587-4799 [staffojl@alfredstate.edu](mailto:staffojl@alfredstate.edu)

**Credit by Advanced Placement Examination (AP) and College Level Examination Program (CLEP)**

Students who successfully complete either Advanced Placement (AP) or College Level Examination Program (CLEP) examinations shall be granted transfer credit, as predetermined by the respective department chairs. Students must request that an official transcript of their grades (a copy of a grade report is not acceptable) be sent to this college. Students contemplating taking an AP or CLEP examination should be aware that Alfred State requires the student to take the "Subject" examination and, if applicable, the optional essay section. Alfred State is a testing center for CLEP. For further information regarding the testing center, please contact the Center for Community Education & Training.

## Community Education & Training (CCET)

Email - [ccet@alfredstate.edu](mailto:ccet@alfredstate.edu)  
607-587-4015

### CONTINUING EDUCATION/PART-TIME STUDENTS

Credit courses are open to all who might benefit from study and are qualified by previous education or work experience. High school graduation is not required. Financial aid is not available.

The college's refund policy is followed for all credit courses.

Students may enroll in regular day and evening courses, online, summer school, winter session, or a combination of all. Advising and referral services are available.

### SUMMER SCHOOL/WINTER SESSION

Summer sessions provide students with the opportunity to take courses in preparation for entering their freshman semester, getting ahead in their program, or lightening their semester load. Courses are conducted on an accelerated schedule, allowing the student to take multiple courses.

Summer housing is available for those students from out of the area who are attending on-campus summer sessions.

Winter session provides students with the opportunity to take online courses to get ahead in their program or to lighten their semester load. Courses are conducted on an accelerated schedule.

### COOPERATIVE COLLEGE-LEVEL PROGRAM FOR HIGH SCHOOL STUDENTS

This program offers high school juniors and seniors the opportunity to take college-level courses on the Alfred campus with college students. This is a collaborative program and is open only to participating high schools. Financial aid is not available.

Course availability is based on classroom seat availability.

### NONCREDIT ON/OFF CAMPUS COURSES

CCET coordinates and oversees all noncredit academic, personal development, and contract programs offered by the college. These programs are open to all with no requirements of previous education or work experience.

### ONLINE NONCREDIT COURSES

CCET offers noncredit online courses in RHIT/coding exam prep, essentials of anatomy and physiology, computer, writing, personal enrichment, test preparation, small business, paralegal, health care professional, large business/management, project management, and more through a Web-based delivery system. Internet access, email address, and Web browser are needed.

### CLEP

CCET administers College Level Examination Program (CLEP) examinations, which allow students to receive transfer credit for specific courses upon attaining the required scores.

### BUSINESS/INDUSTRY PROGRAMS

The CCET provides training and consulting services to support economic and personal development throughout the Southern Tier. CCET contracts with small to large business, industry, and government agencies to provide pre-employment skills training, job skills upgrade, and programs to increase competitiveness and retain employees.

The New York State Department of Transportation (NYSDOT) and the Quality Control/Quality Assurance (QC/QA) Task Force of New York Construction Materials Association collaborate with the college through

CCET to conduct the QC/QA Technician Certification Program for Hot Mix Asphalt in New York State. This program is held every spring on the Alfred State campus.

Alfred State and the Associated General Contractors of America collaborate through the CCET to conduct the New York State Hot Mix Asphalt (NYS HMA) Density Inspector Certification program. This program is scheduled multiple times per year around New York State.

Alfred State and the NYSDOT collaborate through the CCET to conduct the NYSDOT welding certification program. This program is scheduled multiple times per year in Wellsville, NY; other sessions are also scheduled around Western New York.

The college, through CCET, is a training provider for the NYS Office of Alcoholism and Substance Abuse Services. The program provides training for those who wish to maintain or begin a career in the field of alcohol and chemical dependency counseling, including the Credentialed Alcoholism and Substance Abuse Counselor (CASAC), the Credentialed Prevention Professional (CPP), and Credentialed Prevention Specialist (CPS) designations. For more information on CASAC, visit <http://oasas.ny.gov/>.

## Financial Information

### COLLEGE COSTS

Alfred State strives to keep tuition and fees at reasonable rates. Charges may vary due to different room and meal choices, program costs, and fees selected. The following chart is designed to give you an idea of the average student's charges and expenses.

\*Costs are based on information at the time of printing, and are subject to change.

#### 2018-19 BILLED CHARGES\*

##### NEW YORK STATE RESIDENT

###### On Campus

###### Full-time

Tuition Costs	\$6,870
Comprehensive Fees	\$1,700
Full-time, new students (excluding online)	
Housing (Standard Double)	\$7,650
other housing options available	
Meal Plan (14 meal plan)	\$4,920
other meal plan options available	
<b>Total On Campus Costs</b>	<b>\$21,140</b>

###### Part-time

Tuition Cost Per Credit Hour	\$286
Comprehensive Fees - pro-rated per credit hour	

###### Online

###### Full-time

Tuition Costs	\$6,870
Comprehensive Fees	\$456
<b>Total Online Costs</b>	<b>\$7,326</b>

###### Part-time

Tuition Cost Per Credit Hour	\$286
Comprehensive Fees - pro-rated per credit hour	

LATE REGISTRATION FEE***	\$50
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\*\*\*Students who registered or paid their bill after the initial due date are subject to this fee per term.

**New York State Residency:** The Student Records and Financial Services Office will determine New York State residency per SUNY guidelines. If NYS residency status is in question, the student will be charged out-of-state tuition until the student provides proof of NYS residency. Forms are available in the Student Records and Financial Services Office and online.

Certain nonresident students may be eligible for the resident tuition rate if they meet the following requirements:

1. Are not non-immigrant aliens within the meaning of 8 USC §1101(a)(15) (See Other Related Information below), and
2. Attended an approved New York State high school for two or more years, graduated from an approved New York State high school and applied for admission to the university within five years of receiving a New York State high school diploma; or
3. Attended an approved New York State program for a General Equivalency Diploma (GED) exam preparation, received a GED and applied for admission to the university within five years of receiving the GED; and

4. If the student is without lawful immigration status, the student submits to the campus a notarized affidavit stating that the student has filed an application to legalize his or her immigration status, or will file such an application as soon as he or she is eligible to do so (See NYS Education Law §355(h) (8)).
5. Effective July 1, 2014, veterans who meet eligibility requirements for educational assistance under federal GI bills, even if not actually receiving or using such benefits, are eligible for in-state tuition. Additionally, spouses and dependents who are eligible for educational assistance under federal GI bills are also eligible for in-state tuition effective July 1, 2015. In both cases, a Certificate of Eligibility from the US Department of Defense or the Veterans Administration is required to document eligibility.

**2018-19 BILLED CHARGES\***

**NON-NEW YORK STATE RESIDENT**

<b>On Campus</b>	<b>Associate</b>	<b>Baccalaureate</b>
<b>Full-time</b>		
Tuition Costs	\$10,740	\$16,650
Comprehensive Fees	\$1,700	\$1,700
Housing (Standard Double)	\$7,650	\$7,650
other housing options available		
Meal Plan (14 meal plan)	\$4,920	\$4,920
other meal plan options available		
<b>Total On Campus Costs</b>	<b>\$25,010</b>	<b>\$30,920</b>

**Part-time**

Tuition Cost Per Credit Hour	\$448	\$694
Comprehensive Fees - prorated per credit hour		

**Online**

	<b>Associate</b>	<b>Baccalaureate</b>
<b>Full-time</b>		
Tuition Costs	\$8,240	\$8,240
Mandatory Fees	\$456	\$456
<b>Total Online Costs</b>	<b>\$8,696</b>	<b>\$8,696</b>

**Part-time**

Tuition Cost Per Credit Hour	\$286	\$343
Comprehensive Fees - prorated per credit hour		

LATE REGISTRATION FEE\*\*\* \$50

\*\*\*Students who registered or paid their bill after the initial due date are subject to this fee per term.

**COURSE-SPECIFIC FEES: Vary based on curriculum and requirements.**

**POSSIBLE ADDITIONAL EXPENSES (Not included in college's billed costs):**

Any Personal Expenses	Books and Supplies	Computer Hardware and Software
Telephone	Transportation	Uniforms and Tools, if needed

\*Costs are based on information at the time of printing, and are subject to change.

**PART-TIME STUDENTS**

NYS residents enrolled in day or evening programs carrying fewer than 12 credit hours are charged \$278 per credit hour. Tuition for nonresidents is \$406 per credit hour for associate degree programs or \$680 per credit hour for bachelor degree programs. Part-time students are also charged mandatory fees (prorated per credit hour).

\*Costs are based on information at the time of printing, and are subject to change.

## EXPLANATION OF FEES & PAYMENT OPTIONS

**Student Comprehensive Fee** - This fee is paid by all students in order to provide quality services to everyone. The services are available to students whether or not the student chooses to take advantage of them. The fee comprises:

- **Activities Fee** - Established by students through their incorporated student government. The fee covers student activities such as student organizations, social activities, cultural events, films, and recreational programs.
- **Athletic Fee** - Supports the college's 19 intercollegiate sports teams and entitles students to free admission to all campus sporting events.
- **College Fee** - Established by the SUNY Board of Trustees.
- **Fitness Center Fee** - Enables use of the fitness centers (located on the ground floor of Orvis and the second floor of Pioneer Center). They offer top-of-the-line selectorized weight machines, computerized fitness and aerobic equipment, and an expanded free-weight area.
- **Health Fee** - Allows students to receive medications, physician consultations, and all available health services for no additional fee.
- **Technology Fee** - Supports computer technology operations, upgrades, and improvements.
- **Transcript Fee** - Guarantees students unlimited copies of their transcripts.
- **Transportation Fee** - Supports student transportation services.

**Orientation Fee** - A \$110 mandatory one-time orientation fee is billed to all full- and part-time new and transfer students to cover the cost of programs, food, and registration requirements. Internet and readmission students are not required to attend and will not be charged the orientation fee.

### Optional Fees:

**Graduation Fee** - Commencement Policy - All students must pay a non-refundable fee in order to participate in the commencement ceremony. This fee will be imposed per ceremony attended. The commencement ceremony is held in May of each year. Students receiving more than one degree may also be charged for additional accoutrements at the campus store. All students graduating from a bachelor's degree program must pay an additional cost for the bachelor hoods. Students must attend the ceremony to receive diploma cover and/or honor cord. Please note: bachelor's degree graduates will be required to pay \$30 at the campus store for their bachelor hoods when they pick up their regalia. No fee is assessed for those who applied to receive their diplomas without attending the ceremony.

**Vehicle Registration Fee** - Mandatory on all vehicles parked on campus. Vehicles must be registered at the Parking Registration Office (located in the Theta Gamma House) where vehicle hang tags are issued.

**Foreign Medical Insurance** - Enrolls student in an accident and health insurance program. If you have questions about this plan, you may call the Student Records and Financial Services Office at 607-587-4253. Enrolling in the Foreign Insurance Program is mandatory.

**Meal Plans** - Students living on campus MUST have a meal plan. Meal plans are also available for commuters. Carefully review your plan choice and change the amount if necessary. If you have specific meal plan questions, you may call the ACES Office at 607-587-4064.

## PAYMENT OPTIONS

Fall semester bills are available online July 1 (or the first business day if the 1st falls on a weekend); spring bills are available online in November. Both are given a due date well before classes begin. Payment is due on this date for the students to be preregistered and to avoid a \$50 late registration fee and cancellation of their course registrations.

**Bills not processed before the due date will be assessed a \$50 late registration fee.** Bills processed after the due date must include the \$50 late fee to be processed and must be received by Final Registration Day only if not registered for classes.

Temporary deferment of payment may be granted at bill-processing time for students who have proof of financial aid or scholarships that will cover the billed amounts. Balances can be paid by cash, check, MasterCard, VISA, Discover, or wire transfer. As financial payments are received by the college, they will be first applied to any outstanding balance. Refunds will be issued only when the bill is paid in full. In a continuing effort to assist our customers, Alfred State also offers monthly payment plan options. Information regarding the plan is available online.

**Students Receiving Title IV aid need to know:** Students need to authorize the use of Title IV financial aid (federal grants and loans) to pay noninstitutional charges (optional fees and vehicle registration). If you choose not to provide this authorization, you will be responsible for paying your optional fees even if you have a credit balance from Title IV financial aid. You will be asked your preference for this authorization during bill processing.

## STUDENT CONSUMER INFORMATION

### BILL PAYMENT

The college may receive funds for a student from various sources. All monies are applied to the student's account as received until the bill is satisfied. If the college receives funds that result in a refund for the student, the refund will be available for pickup in the Student Records and Financial Services Office for one week. Any remaining refund checks not picked up after one week will be mailed to the student's home address. Go to Banner Web, click on "Student Services and Financial Aid," click on "Student Accounts," then on "Display Refund Detail" to see if a refund has been generated.

**Importance of Proper Registration** - Students must properly register and pay by the appropriate deadlines for all courses for which they expect to receive credit. Students are cautioned that simply attending classes and completing course requirements does not entitle anyone to register after the deadlines have passed or to claim credit for a course in which he/she has participated as an unregistered or a deregistered student. Students must resolve all problems regarding registrations with the Student Records and Financial Services Office. Questions about payments are handled in the Student Records and Financial Services Office.

Late registrants are students who are registered or have processed their bill after the initial billing due date each term. Late registrants will be subject to a late registration fee of \$50. This fee is nonrefundable.

**De-registration/Blocking** - Students who do not comply with published tuition payment deadlines or who have other major obligations to the college may be de-registered, or automatically dropped, from the courses for which they have registered prior to the new academic period. They may also be blocked from receiving college services such as official transcripts and placement records.

**Deadlines** - Courses may be added and dropped according to academic regulations. Please refer to [www.alfredstate.edu/academics/academic-regulations](http://www.alfredstate.edu/academics/academic-regulations). Full semester courses dropped after the first week of class will incur a liability, according to the liability policy which follows. For courses less than a full semester in length, please contact the Student Records and Financial Services Office for the appropriate liability schedule.

### LIABILITY POLICY

All tuition and fee liabilities are calculated based on the date of separation as recorded in the Student Records and Financial Services Office. Students who will be separating from the college must file the appropriate paperwork with the Student Records and Financial Services Office. Following is a liability schedule based upon the "official" withdrawal date or date the class is dropped. Students begin incurring charges the first day of the semester, not the day they complete the registration process.

A student who is dismissed from Alfred State for academic or disciplinary reasons prior to the end of the academic term shall be liable for all costs for that term and shall not be eligible for a reduction of charges or a refund of payment made.

**TUITION, STUDENT ACTIVITY FEE, ATHLETICS FEE, TECHNOLOGY FEE, HEALTH FEE, TRANSPORTATION FEE, FITNESS CENTER FEE, COURSE FEES:**

*1st week	0 percent liability
2nd week	30 percent liability
3rd week	50 percent liability
4th week	70 percent liability
5th week	100 percent liability

\*For liability purposes, the first day of class session shall be considered the first day as reported on the academic calendar. The end of the first week shall be figured as of the close (at 4 p.m.) of five business days.

**Orientation Fee and College Fee:** Nonrefundable

**Late Registration Fee and Transcript Fee:** Nonrefundable after the first week.

**Graduation Fee and Vehicle Registration Fee:** Charges are removed only if the student withdraws during the first four weeks of classes. The vehicle hang tag must be returned. After the fourth week, all charges will remain on the student's bill.

**ROOM RENT:**

1st Week	0 percent liability
2nd - 8th week	50 percent liability
After 8th week	100 percent liability

**Meal Plan; Campus Spending Account:** *Unused portions are refunded by the ACES Office or credited to the student's bill.*

**RETURN OF TITLE IV FUNDS**

If a student withdraws, is dismissed, or takes a leave of absence prior to the 60 percent point of the semester, Title IV funds must be returned to the source based on federal regulations. For the purpose of the return of Title IV funds, Federal Title IV aid is PELL, SEOG, subsidized and unsubsidized Stafford Loans, and PLUS loans. Students who do not complete at least 60 percent of the semester and are receiving Title IV aid may owe a bill after funds are returned to the source. A student will be reviewed to determine if he or she is an unofficial withdrawal at the end of the semester due to receiving failing grades in all of their course work. If no last date of attendance can be determined through our attendance monitoring process, the period midpoint will be used. The student must repay funds credited to his or her account as determined by the Federal Return of Title IV Aid Calculation.

**ADJUSTMENTS TO BILL**

Removal of charges from a student's bill must be made before or at the time of processing. Any student not requesting a correction to the bill prior to the end of the first week of classes will be liable for those charges.

Any appeal of a fee must be in writing, with justification, and submitted to the director of the appropriate department by the end of the first week of the semester.

**Late Registration Fee:** Any students who have not registered for classes, paid their bill, or **processed their bill** by the bill due date, will be assessed a \$50 late registration fee. This fee is nonrefundable.

**Penalties for Nonpayment:** Nonpayment of charges will result in current semester registration being dropped, late fees assessed, the holding of transcripts, and possible denial of future registration. Unpaid accounts will be forwarded to a collection agency or to the Attorney General's Office.

**Late Payment Fee:** A monthly late payment fee of up to \$50 is assessed to any account with an outstanding balance. This fee will be added to any account turned over for collection purposes.

**Returned Checks:** A fee of \$20 will be charged for checks returned for insufficient funds.

**Disbursement of Loans, Grants, Scholarships:** The college may receive funds for a student from various sources. All monies are applied to the student's account as received until the bill is satisfied. If the college receives funds that result in a refund for the student, the refund will be available for pickup in the Student Records and Financial Services Office for one week. Any remaining refund checks not picked up after one week will be mailed to the student's home address.

## FINANCIAL AID

Financial aid comes from a variety of sources. Students must file a Free Application for Federal Student Aid (FAFSA) as soon after Oct. 1 as possible for each academic year in which they want to receive federal Title IV financial aid. The FAFSA can be completed online at [www.fafsa.gov](http://www.fafsa.gov). Once the form is submitted, students can print a confirmation page as receipt of the application. While on the FAFSA confirmation page, New York State residents who plan to enroll full time can apply for "TAP on the Web." TAP can also be applied for online at [www.tapweb.org](http://www.tapweb.org). Eligible New York State residents can apply for the Excelsior Scholarship online at [www.hesc.ny.gov](http://www.hesc.ny.gov). Alfred State's school codes for financial aid are: 002854 for the FAFSA  
3005 for TAP associate degree programs  
6005 for TAP baccalaureate degree programs

## STUDENT LOAN COUNSELING

**Entrance counseling** – First-time borrowers under the Federal Stafford Loan Program are required to complete an online loan counseling session before loan funds can be disbursed. The session is designed to inform student borrowers of their rights and responsibilities under the Federal Stafford Loan program. Entrance counseling for new borrowers under the Federal Perkins Loan is done at the time students sign their electronic Federal Perkins Loan Master Promissory Note (MPN). Nursing Student Loan borrowers must also complete online student loan counseling.

**Exit counseling** – Students separating from the college due to graduation, withdrawal, leave of absence, dismissal, or less-than-half-time enrollment are required to complete an online loan exit counseling session. The session is designed to help students avoid the pitfalls of default by informing them of their repayment obligations as well as their deferment and forbearance rights under the loan programs from which they borrowed.

## METHODS OF NOTIFICATION

Accepted students with paid deposits are provided with an active Alfred State email account. Award letters, requests for information, and changes to a financial aid package are sent to students' Alfred State email accounts. It is the students' responsibility to regularly check their campus email for such updates and requests. Students should also be aware that they can view the status of their financial aid and requests for information anytime using the college's BannerWeb student information system.

## INCOME VERIFICATION AND OTHER REQUESTS FOR INFORMATION

Under US Department of Education guidelines, some students who apply for federal Title IV aid will be selected for verification. This may include household size and income. Title IV aid will not be processed until all requested documents have been received and reviewed by the Student Records and Financial Services Office.

## YOUR FINANCIAL AID AWARD

All students are considered for all types of aid, and financial aid packages are made according to a student's eligibility in each program as determined by federal and state regulations. Awards are determined by financial need based on data provided by the student on the FAFSA. The offer of financial aid is conditional based upon continuation of legislative authority and availability of appropriated funds.

Financial need is calculated using the following formula: **Cost of Attendance** (tuition, room, meals, fees, books, transportation) - **Expected Family Contribution** (EFC determined by FAFSA) = **Financial Need**.

Electronic financial aid award letters are sent to accepted students with paid deposits via their Alfred State email account beginning in November for those with a valid FAFSA on file with the college. Detailed

instructions are provided to students on how to accept and apply for their aid. Generally, financial aid can be categorized into three types:

1. **Scholarship and grant aid are considered gifts and do not need to be repaid.** These include the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), NYS Tuition Assistance Program (TAP) for NYS residents enrolled full-time, Aid for Part-time Study (APTS) and part-time TAP for NYS residents enrolled part-time, and the Educational Opportunity Program (EOP) for NYS residents who meet established academic and economic guidelines. Students should contact the NYS Higher Education Services Corp. for information on scholarships for Excelsior, STEM, volunteer firefighters, victims of the World Trade Center disaster, and certain types of military and public service. The phone number is 888-697-4372. Information can also be found on the Web at [www.hesc.com](http://www.hesc.com).
  - o Students receiving veterans' educational benefits through the Department of Veterans' Affairs must provide a copy of their Certificate of Release or Discharge from Active Duty (DD214) or their certificate of eligibility for benefits to the veterans' certifying official in the Student Records and Financial Services Office. Here students will receive required forms and enrollment certification for the completion of their application for veterans' educational benefits. Alfred State is a participating member of the Yellow Ribbon Program.
  - o Campus scholarships are primarily given out by the Admissions Office. Scholarship opportunities and requirements can be viewed on the Web at [www.alfredstate.edu/financial-aid/scholarships](http://www.alfredstate.edu/financial-aid/scholarships). Links to outside scholarship searches are also provided. Students are encouraged to seek scholarships and grants through their local high schools, civic organizations, and employers.
2. **Loans do need to be repaid** and should be considered as serious commitments. These include the Federal Subsidized and Unsubsidized Stafford Loans, and Federal Nursing Loan. These loans are in the student's name and eligibility is determined by financial need based on results of the FAFSA. Students are directed by the college to complete an electronic Master Promissory Note (MPN). Under an MPN, students can receive subsequent loan disbursements at the same school for up to 10 years without having to complete another promissory note. Interest rates and terms are set by the federal government, and students must be enrolled a minimum of six credit hours per semester in a matriculated degree-granting program. These loans have a grace period before repayment begins once the student is no longer enrolled or drops below half-time enrollment.
  - o The Federal Parent PLUS Loan is taken out in the parent's name on behalf of the student. Repayment begins 60 days after the loan is fully disbursed. Options for deferment are also available. This loan is also applied for using an electronic Master Promissory Note (MPN). Interest rates and terms are set by the federal government and students must be enrolled a minimum of six credit hours per semester in a matriculated degree-granting program.
  - o Private Alternative Loans are nonfederal loans made by commercial lenders and should be considered loans of last resort. Alternative Loans have higher fees and interest rates. Terms can vary by lender and loan product. Students must be at least 18 years old to apply in their own name and usually require a credit-worthy cosigner.
3. **Employment and Federal College Work-Study** is a way for students to earn money through a part-time job in order to contribute toward their college costs. Work-study awards are offered to students with demonstrated financial need based on FAFSA results. Students are paid at an hourly rate every two weeks for the hours worked. Work Grant is a limited funding source that is not based on financial need; however, specific skills may be required for some jobs.

## OVERAWARD POLICY

Overawards occur when students receive financial aid resources in excess of the college's cost of attendance. In this instance, the Student Records and Financial Services Office is required under federal student aid regulations to reduce or cancel any resources affected by the overaward.

Students receive written notification by the Student Records and Financial Services Office when an overaward is identified and are advised which funds need to be adjusted. In some cases, this could leave a student owing a balance on the semester bill. Students are encouraged to notify the Student Records

and Financial Services Office in writing immediately if they receive additional funds that were not included in their original financial aid package.

**ACADEMIC CRITERIA FOR FINANCIAL AID**

Alfred State is required to monitor the academic progress of students receiving federal and state financial aid. Students who are not maintaining satisfactory academic progress (SAP) and pursuit of program (POP) according to established guidelines are not eligible for federal Title IV and/or state financial aid. In addition, students cannot receive federal and/or state financial aid for courses not applicable to the major in which they are matriculated.

**New York State Criteria/Requirements for Tuition Assistance Program (TAP)** (full-time enrollment):  
Reviewed at end of each semester.

Category	Minimum for initial enrollment payment	After 1 TAP payment	After 2 TAP payments	After 3 TAP payments	After 4 TAP payments	After 5 TAP payments	After 6 TAP payments	After 7 TAP payments	After 8 TAP payments	After 9 TAP payments	After 10 TAP payments	
TAP - POP (Pursuit of Program)	Enroll full-time	6 hours taken	6 hours taken	9 hours taken	9 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	
TAP - SAP (Satisfactory Academic Progress)	AAS, AA, AS, AOS	Earn 6 hours 1.30 cum.	Earn 15 hours 1.50 cum.	Earn 27 hours 1.80 cum.	Earn 39 hours 2.00 cum.	Earn 51 hours 2.00 cum.	Earn 66 hours 2.00 cum.					
Bachelor		Earn 6 hours 1.50 cum.	Earn 15 hours 1.80 cum.	Earn 27 hours 1.80 cum.	Earn 39 hours 2.00 cum.	Earn 51 hours 2.00 cum.	Earn 66 hours 2.00 cum.	Earn 81 hours 2.00 cum.	Earn 96 hours 2.00 cum.	Earn 111 hours 2.00 cum.	2.00 cum.	

**Students Receiving TAP Need to Know That:**

**TAP Aggregate** – Students enrolled in associate degree programs can receive up to six semesters of TAP (six payment points per semester) for a total of 36 payment points. Bachelor's degree students can receive up to eight semesters of TAP or 48 payment points. Students who qualify under the Educational Opportunity Program (EOP) can receive up to 10 semesters or 60 payment points. TAP payments received at other schools are still counted in the aggregate when students transfer schools.

**Repeating Courses** – Students must enroll in a minimum of 12 new credit hours each semester to qualify for TAP. Under many academic programs, repeating a course that previously received a passing grade cannot be included as part of the required credit hours for that semester when determining TAP eligibility. However, the following exceptions apply: (1) when a failed course is repeated; (2) when a grade received is passing at the institution, but is unacceptable in a particular program as stated in the college catalog by the academic department; and (3) when a course may be repeated and credit is earned each time. The Student Records and Financial Services Office determines if students are out of SAP-POP compliance as part of the TAP certification process. Students are notified of their ineligibility by the Student Records and Financial Services Office.

**Withdrawal or Leave of Absence** – Students who received TAP for a semester from which they withdrew or took a leave of absence and did not earn any academic credit are not considered to be

fulfilling the pursuit of program requirements and would be made ineligible for TAP for the next enrollment period.

**2.0 GPA** – Students having received four semesters of TAP (24 payment points) must have a 2.0 cumulative GPA (out of a possible 4.0) to continue receiving TAP. This includes students who may have received TAP payments at another college prior to enrolling at Alfred State.

**Sit-Out** – Students who become ineligible to receive state financial aid for a semester due to poor academic performance or failure to meet pursuit of program requirements may sit out for one year. Students would then be eligible to receive the state financial aid for which they qualify upon their return. Sit-out does not apply to the TAP 2.0 requirement.

**Aid to Part-Time Students (APTS)** – Although part-time students are not eligible for TAP, APTS is deducted from a student's available TAP payments. Two APTS payments (three points each) equal one TAP payment (six points).

**Part-Time TAP** – Similar to APTS, part-time TAP is also deducted from a student's total available TAP payments. However, instead of using three points for each semester of part-time enrollment, points are used according to the actual number of part-time credit hours taken against the percentage of a full TAP award.

**Federal Criteria/Requirements: Reviewed at the end of each semester.**

Credit Hours Attempted	Completion of Credit	Minimum GPA
0 - 19	67 percent	1.30
20 - 36	67 percent	1.75
37 - 50	67 percent	1.90
over 50	67 percent	2.00

**Students Receiving Federal Title IV Aid Need to Know:**

**Degree Completion** – Students must complete their degrees or certificates within 150 percent of the normal credits required for completion. Students who change programs and are in good academic standing are considered to be at the semester level based on the number of transfer credits accepted by the new program. For any subsequent program changes or program changes due to poor academic standing all attempted hours will be considered. Example: If an AAS student needs 60 credit hours to complete a degree, he/she cannot receive aid after 90 credit hours have been attempted.

**Federal Warning** – Students found to be below the academic standards for federal aid eligibility will be placed on federal aid warning for one semester. Students who have not regained eligibility by the end of the warning semester will be ineligible for federal aid.

**Waiver Procedures**

Students who experienced extenuating circumstances that affected their academic progress resulting in the loss of their financial aid eligibility may file a waiver to appeal the SAP-POP and/or Title IV requirements. Students interested in filing for a waiver are encouraged to contact the Student Records and Financial Services Office for instructions. Waiver procedures are also provided to students in writing when they receive their notice of ineligibility.

**Remedial Courses**

Alfred State offers credit and noncredit remedial courses which will be counted toward the number of credit hours attempted and taken for the purpose of financial aid. However, if a passing grade is not received remedial course work will not be counted in the number of credit hours earned.

**Incomplete Course Work, Withdrawals, and Repeated Course Work**

Course work that has not had a grade issued will not count in credit hours earned and may impact financial aid eligibility. Withdrawal from courses that will have a grade of withdrew passing/failing will be

counted in hours attempted and/or earned. Courses repeated due to a failing grade will have the highest earned grade count in hours attempted and/or earned.

### Questions

Questions in regard to any of the above information can be directed to: Alfred State Student Records and Financial Services Office, 10 Upper College Drive, Alfred, NY 14802; phone 1-800-4-ALFRED; or email [sfs@alfredstate.edu](mailto:sfs@alfredstate.edu).

### SELECTIVE SERVICE REGISTRATION

Prior to receiving Title IV funds, the Higher Education Act mandates that males between the ages of 18-25 register with the Selective Service System. Registration can be completed on the FAFSA or at [www.sss.gov](http://www.sss.gov). Male students who fail to register will be ineligible for Title IV financial aid.

### CONSORTIUM AGREEMENTS

Alfred State will process financial aid for its matriculated students who are also attempting course work as a 'visiting' student at another college or university. Prior approval is required by the student's academic department to ensure that the course work will transfer into Alfred State and meet the student's graduation requirements. Complete procedures and consortium agreement forms are available by contacting the Student Records and Financial Services Office.

### SCHOLARSHIPS AVAILABLE AT ALFRED STATE

Alfred State is proud of its commitment to recognize outstanding students by offering numerous scholarships. Since it is the desire of Alfred State to award scholarships to as many students as possible, students do not receive more than one scholarship. Enrollment deposits must be paid by the due date in order to maintain any scholarship awards.

When multiple SAT score reports are submitted for scholarships requiring standardized test scores as a criteria, the highest composite score is used from either the old or new (beginning March 2016) exams; the SAT will not be superscored combining scores from both the old and new exams. ACT exams are not superscored.

The Alfred State Athletic Department is a NCAA Division III member. Therefore, no consideration of athletic ability or athletic accomplishments will be considered in determining students' scholarship eligibility or financial aid packages.

The following scholarships are available, while funding exists, to incoming students who have been accepted for the fall semester into a regular program for full-time study, Please note that students studying online are not eligible for scholarships.

**Academic Distinction Scholarship<sup>1</sup>** - \$4,000 (total value) [\$2,000 if enrolled in associate-degree program] awarded to first-time freshman students who possess an 87 or better cumulative high school average through their junior year; at least an 1140 combined reading/writing and math SAT or 23 composite ACT score is required; applied to non-tuition expenses; multiple scholarships available to qualified students who are accepted and provide official documentation of meeting the necessary criteria by March 1; students must maintain required GPA to receive funding in subsequent semesters.

**Douglas & Carol Shay Acomb Endowed Scholarship<sup>2</sup>** - Awarded to an academically talented incoming student; applied to non-tuition expenses.

**Agricultural Endowed Scholarship<sup>2</sup>** - Awarded to student enrolling in an agriculture program.

**Alfred State Distinguished Scholars Program** - Please note that the Distinguished Scholars Program Scholarships are for first-time freshman students only. Students must live on campus and be U.S. citizens or permanent residents to receive these three scholarships. Scholarships are guaranteed to qualified students who are accepted and provide official documentation for necessary criteria by March 1.

**Excellence in Education Scholarship<sup>1</sup>** - Free tuition (equivalent to NYS tuition rate), room (standard room, double occupancy), and board (14-meal plan plus); multiple scholarships available; students must possess a 94 or better cumulative high school average through their junior year; at least a 1310 combined reading/writing and math SAT or 28 composite ACT score is required, and students must apply for financial aid with any tuition specific awards (TAP, Excelsior Scholarship) applied toward the cost of tuition; must maintain required GPA to receive funding in subsequent semesters. Total value of scholarship--\$77,760 if enrolled in baccalaureate degree program; \$38,880 if enrolled in associate degree program.

**Presidential Scholarship<sup>1</sup>** - Free room (standard room, double occupancy); multiple scholarships available; students must possess a 91 or better cumulative high school average through their junior year; at least a 1270 combined reading/writing and math SAT or 26 composite ACT score is required; must maintain required GPA to continue to receive funding in subsequent semesters. Total value of scholarship--\$30,600 if enrolled in baccalaureate degree program; \$15,300 if enrolled in associate degree program.

**All-American Scholarship<sup>1</sup>** - Free board (14-meal plan plus); multiple scholarships available; students must possess an 89 or better cumulative high school average through their junior year; at least a 1220 combined reading/writing and math SAT or 24 composite ACT score is required; must maintain required GPA to continue to receive funding in subsequent semesters. Total value of scholarship--\$19,680 if enrolled in baccalaureate degree program; \$9,840 if enrolled in associate degree program.

**Allegany County Counselors' Association Annual Scholarship<sup>3</sup>** - Awarded to a student attending high school in Allegany County who will be enrolling in a vocational or technical program; preference given to student who attended BOCES while in high school; applications available in high school guidance offices in early spring.

**Allegany County School Food Service Association Scholarship<sup>2</sup>** - \$200 awarded to a student with a financial need from an Allegany County school district who is entering the culinary arts program.

**Alumni Scholarship<sup>4</sup>** - \$2,000 (total value) [\$1,000 if enrolled in associate degree program] awarded to first-time freshman students who are the children or grandchildren of an Alfred State alumnus; applied to non-tuition expenses; multiple scholarships available; student must have at least an 83 high school average (through end of junior year); a letter must be sent to Admissions Office indicating student's name as well as the alumnus' name at the time of graduation, the year graduated from Alfred State, and the student's relationship to the alumnus.

**Alumnus 1939 Endowed Scholarship<sup>2</sup>** - Awarded to academically talented incoming students.

**Anderson Family Endowed Scholarship<sup>2</sup>** - Awarded to academically talented incoming student.

**Baking & Culinary Arts Scholarship<sup>3</sup>** - \$1,000 awarded to incoming students enrolling in culinary arts or culinary arts: baking, production and management program; scholarship application available on the Alfred State website.

**Evelyn C. and Rumsey C. Billings Memorial Endowed Scholarship<sup>2</sup>** - Awarded to academically talented incoming students from Steuben and Otsego counties.

**Lee Brasted Engineering Science Endowed Scholarship<sup>2</sup>** - Awarded to a student enrolling in the engineering science program.

**Anthony C. Cappadonia Endowed Scholarship<sup>5</sup>** - Awarded to an incoming student with a musical background who was in high school choir; must have an 80 or better high school average through the end of the junior year; letter of interest should be sent to Admissions by March 1.

**Cross Connection Control Foundations of the Niagara Frontier, Inc., Annual Scholarship<sup>2</sup>** - Awarded to a student enrolling in the heating, ventilation, and air conditioning program.

**Culinary Academic Scholarship<sup>3</sup>** - \$1,200 awarded to an incoming student enrolling in culinary arts or culinary arts: baking, production and management program; must have an 80 or better high school average through the end of their junior year and be in the top 50 percent of class; scholarship application available on the Alfred State website.

**Dresser-Rand Endowed Scholarship<sup>2</sup>** - Awarded to an academically talented incoming student who resides in Allegany, Cattaraugus, Chautauqua, or Steuben counties in New York or from McKean, Potter, or Tioga counties in Pennsylvania.

**Daniel DiFrancesco Memorial Endowed Scholarship<sup>5</sup>** - Awarded to an incoming student enrolling in an agriculture program who exhibits service to school and/or the community, exhibits a strong sense of responsibility to self and dedication to family, and possesses a love of the outdoors and demonstrates an appreciation of nature; letter of interest should be sent to the Admissions Office by March 1.

**East High School Partnership Scholarship<sup>2</sup>** - \$500 awarded to graduates of East High School, Rochester, who are accepted to Alfred State by May 1 of their senior year; maximum of five awards each year; scholarship award begins second year of enrollment at Alfred State.

**Max & Marian Farash Annual Scholarship<sup>2</sup>** - Awarded to student enrolling in mechanical engineering technology or the heating, ventilation, and air conditioning program.

**Friendship Designated Scholarship<sup>2</sup>** - \$500 awarded to graduates of Friendship Central School accepted into a regular program at Alfred State.

**Genesee Valley Balloon Association Endowed Scholarship<sup>2</sup>** - Awarded to student from Western New York enrolling in an agriculture program.

**Vernon Gleasman SAE Endowed Scholarship<sup>2</sup>** - Awarded to academically talented incoming student enrolling in mechanical engineering technology.

**Michael K. Gowdy Memorial Endowed Scholarship<sup>2</sup>** - Awarded to academically talented students from Wellsville High School.

**W.R. Grace & Company Endowed Scholarship<sup>2</sup>** - Awarded to a student enrolling in the biological science or forensic science technology program.

**M.A. and C.A. Graham Nursing Memorial Endowed Scholarship<sup>2</sup>** - Awarded to incoming nursing students; preference given to students from LeRoy Central or Warsaw Central School districts, then to students from Wyoming County, then to students from the rest of New York State.

**International Excellence Scholarship<sup>1</sup>** - Awards up to \$7,000 to international students who meet two of the following four criteria: 213 TOEFL exam score (79-80 on Internet-based exam, 550 on paper exam), 3.25 college cumulative grade point average (a 90 overall high school average may be substituted), 1270 combined reading/writing and math SAT, and/or are a current member of Phi Theta Kappa in good standing.

**International Merit Scholarship<sup>1</sup>** - Awards up to \$3,000 to international students who meet two of the following four criteria: 195 TOEFL exam score (71 on Internet-based exam, 525 on paper exam), 3.0 college cumulative grade point average (an 88 overall high school average may be substituted), 1170 combined reading/writing and math SAT, and/or are a member of Phi Theta Kappa in good standing.

**Eugene Jacobs Memorial Educational Foundation Endowed Scholarship<sup>2</sup>** - \$1,000 awarded to student enrolling in a baccalaureate degree program; student must have at least an 85 overall high school average through the junior year or a 3.0 cumulative grade point average to be considered.

**Barbara & John Larsen Annual Scholarship for Excellence in Theater<sup>5</sup>** - Awarded to an incoming student who has an interest or has participated in theater or drama while in high school and will participate in the Drama Club while attending Alfred State; must have an 80 or better high school average through the end of the junior year; letter of interest should be sent to the Admissions Office by March 1.

**Suzanne Malachesky Memorial Endowed Scholarship<sup>2</sup>** - Awarded to a commuter student enrolling in the nursing program.

**Rudolf "Rudy" Mazourek Memorial Annual Scholarship<sup>2</sup>** - Awarded to incoming student enrolling in the autobody repair program; preference given to students from Newfield High School or another high school in Tompkins County.

**Lawrence "Bud" McCarthy Educational Foundation Endowed Scholarship<sup>2</sup>** - \$1,000 awarded to incoming student with demonstrated skills in a related technology area; students must have at least an 80 high school average through the end of their junior year to be considered.

**Miller-Neverett Memorial Endowed Scholarship<sup>5</sup>** - Awarded to an academically talented student who demonstrates potential for campus service as evidenced by previous involvement in organizations and activities; letter of interest should be sent to the Admissions Office by March 1.

**Ortho-Clinical Diagnostics Endowed Scholarship<sup>2</sup>** - Awarded to an academically talented student entering the forensic science technology program.

**Out-of-State Scholarship<sup>1</sup>** - \$8,000 (total value) [\$4,000 if enrolled in associate degree program] awarded to first-time freshmen who reside and attend high school outside of New York State and will be studying on campus; students must possess an 85 or better cumulative high school average through the end of the junior year; multiple scholarships available to qualified students who are accepted and provide official documentation for the necessary criteria by March 1.

**Phi Theta Kappa External Transfer Scholarship<sup>4</sup>** - \$4,000 (total value) applied to non-tuition expenses; awarded to transfer students who are members in good standing of Phi Theta Kappa and are entering a baccalaureate degree program; must provide proof of membership in Phi Theta Kappa; students who have or will earn a baccalaureate degree prior to enrolling at Alfred State are not eligible; must be accepted and provide official documentation of meeting the necessary criteria by May 1.

**John Plail Work Ethic Endowed Scholarship<sup>4</sup>** - Awarded to student enrolling in a business program; student must have an 80 or better high school average through the end of their junior year and exhibit achievements in high school; letter of interest as well as a written document identifying student's goals for pursuing business as a career and the importance of having a strong work ethic should be submitted to the Admissions Office by April 1.

**Regional Annual and Endowed Scholarships<sup>2</sup>** - Awarded to academically talented incoming freshmen who reside in school districts defined as the residences of Alfred State faculty and staff.

**Floyd and Eleanor Rose Endowed Scholarship<sup>2</sup>** - Awarded to academically talented students from Western New York and Northern Pennsylvania enrolling in either the agricultural technology or building trades: building construction programs; students must have an 85 or better high school average through their junior year to be considered.

**Russo Family Endowed Scholarship<sup>2</sup>** - Awarded to academically talented incoming students.

**Shaw Family Endowed Scholarship<sup>2</sup>** - Awarded to an incoming freshman in an agriculture program.

**Steuben Trust Company Annual Scholarship<sup>2</sup>** - Awarded to academically talented students from Allegany or Steuben counties enrolling in the accounting or business administration programs.

**Richard D. Stillman Memorial Endowed Scholarship<sup>5</sup>** - Awarded to an incoming student who was a member of his/her high school band or choir; must have an 80 or better high school average through the end of junior year; letter of interest should be sent to the Admissions Office by March 1.

**Albert and Judith Styracula Endowed Scholarship<sup>2</sup>** - Awarded to academically talented students from Dundee High School or Yates County.

**Robert A. Sweeney Memorial Endowed Scholarship<sup>2</sup>** - Awarded to a student from Steuben County enrolling in a business program.

**Transfer Scholarship<sup>1</sup>** - \$2,000 (total value) applied to non-tuition expenses; awarded to transfer students entering a baccalaureate degree program; students must have completed at least three semesters with a 3.25 cumulative GPA and demonstrate continuous full-time college attendance since high school graduation; students who have or will earn a baccalaureate degree prior to enrolling at Alfred State are not eligible; must be accepted and provide official documentation of meeting the necessary criteria by May 1.

**Evelyn Turner Culinary Arts Annual Scholarship<sup>2</sup>** (in memory of Henry "Hank" Turner) - \$2,000 awarded to an incoming student enrolling in the culinary arts and culinary arts: baking, production and management programs; applied to non-tuition expenses.

**Vocational Excellence Scholarship<sup>4</sup>** - \$2,000 (total value) awarded to first-time freshman students entering a program taught at the School of Applied Technology on the Wellsville campus; applied to non-tuition expenses; multiple scholarships available on a selective basis; to be considered, students must have at least an 83 high school average through the end of their junior year and demonstrate vocational excellence through a combination of education, employment/internships, competition, C-CAP participation, military experience, and other verifiable activities; students should submit a letter to the Admissions Office indicating how they have excelled in the vocational area, as well as two letters of recommendation from qualified individuals verifying skill level; students must maintain at least a 2.5 GPA to continue funding.

**Bea L. Williams Memorial Endowed Scholarship<sup>3</sup>** - Awarded to students attending high school in Western Steuben County; applications available in high school guidance offices in early spring; academics as well as school and community activities will be considered in the evaluation process; applied to non-tuition expenses.

<sup>1</sup> *No scholarship application necessary.*

<sup>2</sup> *No scholarship application necessary. Awarded by specific criteria. Students must have minimum high school average of 80 through end of junior year unless otherwise noted. Scholarships awarded in March.*

<sup>3</sup> *Scholarship application necessary.*

<sup>4</sup> *Send letter of interest and any other information as indicated to the Admissions Office. Decisions ongoing while funding exists unless otherwise indicated.*

<sup>5</sup> *Send letter of interest to specified individual and/or department.*

The following scholarships are awarded by the appropriate academic department to continuing Alfred State students based on performance while at Alfred State:

Allegany County School Food Service Assoc. Annual Scholarship  
 American Institute of Architects Southern New York Chapter Annual Scholarship  
 Will Arlow Memorial Motorsports Annual Scholarship  
 Dr. Khalid Ashraf Memorial Endowed Scholarship  
 Automotive Service Excellence (ASE) Endowed Scholarship  
 BP Electrical Trades Endowed Scholarship  
 Balfour Annual Scholarship  
 Doug Barber Construction Management Annual Scholarship  
 Kathy Barnes Honorary Guardian of Nursing Annual Award  
 Bethesda Foundation Annual Scholarship  
 Thomas H. Brawdy Memorial Masonry Annual Scholarship  
 Bright Future Wealth Management Financial Planning Annual Scholarship  
 E.J. Brown Memorial Annual Scholarship  
 Paul L. Buckman Memorial Annual Award  
 Matthew Burzycki Memorial Endowed Scholarship  
 Anthony Carino Memorial Endowed Scholarship  
 James Comstock Memorial Annual Scholarship  
 Paul Constantine, Jr. Memorial Endowed Scholarship  
 Robert Course Annual Scholarship  
 Culinary Honors Club Academic Annual Scholarship  
 Culinary Honors Club Alumni Annual Scholarship  
 Culinary Honors Club Annual Scholarship  
 Culinary Honors Club Continuing Education Award  
 Culinary Honors Club Performance Award  
 Dalrymple Companies Annual Scholarship  
 Norman A. Diedrich Memorial Endowed Scholarship  
 Distinguished Professors' Annual Award for Veteran's Academic Achievement  
 English & Humanities Prose Writing Annual Award  
 Harry L. Fox Annual Scholarship  
 Joel French Memorial Endowed Scholarship  
 Henry and Rosa Gabriel Endowed Award  
 Donald Gadley Memorial Annual Scholarship  
 Gamma Theta Gamma Fraternity Annual Scholarship  
 Professor Brian Gillespie Memorial Endowed Scholarship  
 Eleanor Graves Memorial Endowed Scholarship  
 Ralph B. Harmon Memorial Endowed Scholarship  
 Shirley Hellwig Memorial Annual Scholarship  
 Donald B. Holzer Endowed Scholarship  
 Hunter Family Memorial Endowed Scholarship  
 Phyllis S. Jones Memorial Annual Award  
 Kappa Sigma Epsilon Annual Student Leadership Achievement Award

Kappa Sigma Epsilon Endowed Scholarship  
 Marilyn Lusk Annual Award for Clinical Excellence in Nursing  
 Wallace "Pete" and Kathleen MacDonald Annual Scholarship  
 Suzanne Malachesky Memorial Endowed Scholarship  
 Harold & Jane Mapes Memorial Annual Award  
 Brian Maraschiello Memorial Annual Scholarship  
 Anna & Merrill McCormick Memorial Endowed Scholarship  
 Dale Meisenheimer Creative Writing Annual Award  
 Michael Miller Memorial Annual Scholarship  
 Milton/CAT Annual Scholarship  
 Deborah (Wallace) and Timothy Moore Nursing Annual Scholarship  
 New York Propane Gas Association Ganey Memorial Annual Scholarship  
 Frank Oppedisano '60 Memorial Endowed Scholarship  
 Outstanding Student Annual Award - English & Humanities  
 Pay It Forward Nursing Annual Award  
 RPM Foundation Annual Scholarship  
 Dorothy & Lester Reynolds Memorial Endowed Scholarship  
 Joseph and Carmella Saccone Memorial Endowed Scholarship  
 Senior Annual Award for Academic Distinction – English & Humanities  
 Harold A. & Tim '71 Shay Memorial Annual Scholarship  
 Sigma Tau Epsilon Endowed Scholarship - Wellsville Campus  
 Donald Simons Annual Scholarship  
 Bob Pahl Sorrento Sketchbook Annual Award  
 Sorrento Italy Study Abroad Business Faculty Led Annual Award  
 Southern Tier Builders Association Annual Scholarship  
 Stephens Mills Grange Endowed Scholarship  
 Study in the South Annual Award  
 Evelyn Turner Culinary Arts Annual Scholarship  
 (in memory of Henry "Hank" Turner)  
 Evelyn Turner Excellence in Culinary Arts Annual Scholarship  
 Western NY Veterinary Medical Association Annual Scholarship  
 Julia O. Wells Memorial Ed Foundation Annual Scholarship  
 Wild Brute Winery Annual Scholarship  
 Robert Wood Freshman English & Humanities Annual Scholarship

The following scholarships are awarded by the Student Records and Financial Services Office based on financial need. There is no application process other than completing the FAFSA.

Alfred State Retirees Annual Scholarship  
 Alpha Sigma Sorority Annual Scholarship  
 Alumni Association Advancement Endowed Scholarship  
 Auxiliary Campus Enterprise Services, Inc., 65th Anniversary Endowed Scholarship  
 Delta Chi Omega Sorority Annual Scholarship  
 Educational Foundation of Alfred, Inc. Endowed Fund  
 James G. and Marilyn A. Ferry Endowed Scholarship  
 Roland D. Hale Need-Based Endowed Scholarship  
 Hornell Association Endowed Scholarship

Hal Howard Electrical Engineering Technology  
 Gamma Theta Gamma Endowed Scholarship  
 Dr. David H. Huntington Memorial Endowed Scholarship  
 Dr. James Koller Student Service Endowed Scholarship  
 William H. MacKenzie Memorial Endowed Scholarship  
 Northern Lights Endowed Scholarship  
 Charles A. Orlando Memorial Endowed Scholarship  
 Paul B. Orvis Annual Scholarship  
 Radia Khouri Rezak Family Endowed Scholarship  
 Mike Taylor Memorial Endowed Scholarship  
 George Whitney Memorial Endowed Scholarship  
 Robert E. Wood Jr. Memorial Endowed Scholarship

Scholarships are made possible by the generosity of the Alfred State Development Fund, Inc., the Educational Foundation of Alfred, Inc., the Alumni Council, private donors, and Alfred State faculty and staff.

## Student Affairs

Student experiences at Alfred State are a mix of challenging academic course work and involvement in a spectrum of diverse social, recreational, and cultural activities. Alfred State recognizes that learning and growth occurs at all hours and in many places. We recognize the importance of life inside and outside of the classroom and encourage all students to attend activities and participate in the clubs and organizations that interest them. An array of activities and opportunities are available, including 19 men's and women's intercollegiate athletic programs, leadership positions in the college's residence halls, intramural sports, and employment opportunities.

At Alfred State students enjoy 100+ clubs and organizations, movies, music and comedy concerts, cultural events, a student radio station, newspaper, band, vocal music, drama, fitness centers, swimming pool, residence hall activities, and sports - intercollegiate and intramural. There's always something to do! In fact, there are so many options, the difficulty may be deciding what to do first!

### CAREER DEVELOPMENT

Career Development offers a wide variety of services for students and alumni. These services include assistance with developing career plans and goals, resume development and critique, job/internships, interview preparation, mock interviewing, and a variety of classroom workshops. Career Development provides and maintains four major online branded services: JobLink (job postings for on-campus jobs, work study, internships and FT career jobs; on-campus recruitment; career fairs), OptimalResume (online resume, portfolio and website builder, interview prep), CareerBeam (a 24/7 virtual career office), and CandidCareer (thousands of videos to help learn about different career paths and also videos to prepare for a successful job search and career). In addition to maintaining hundreds of job postings for full-time, part-time, and summer employment, Career Development also organizes and facilitates four to five career fairs each year.

### STUDENT DISABILITY SERVICES

Academic and nonacademic assistance is provided to students with self-identified disabilities (permanent or temporary) who have provided appropriate documentation to the Office of Student Disabilities Services (Hunter Student Development Center, Alfred campus; Pioneer Student Union, Wellsville campus).

Academic services may include faculty conferencing, tutoring referrals, assistive technology, note takers, and testing accommodations. Non-academic services may include residence hall accommodations and agency referrals. Attendant care and personal assistive devices are not provided. Accommodations are decided by the counselors from Student Disabilities Services after reviewing the appropriate documentation and talking with the individual student. Please remember that self-advocacy is essential to receiving assistance.

### CENTER FOR EQUITY, INCLUSION AND TITLE IX

The Center for Equity, Inclusion and Title IX strives to provide an open-minded, welcoming, and safe environment for all of our Alfred State students. Through educational workshops/programs, professional trainings, advocacy and outreach, the Center for Equity, Inclusion and Title IX facilitates students' self-awareness, learning, and growth regarding different cultures, viewpoints, and experiences. The office supports students in matters of academic, social, cultural, and personal well-being, and promotes all students' understanding and appreciation of differences as well as similarities.

The Center for Equity, Inclusion and Title IX is committed to creating opportunities for Alfred State students to empower and educate themselves, their peers, and the community in which they live. We support and promote under-represented student organizations, including, but not limited to LGBTQ+, students of color, women, veterans and military service, international students, and faith-based groups. We are also deeply invested in the prevention, awareness, and eradication of sexual assault on college campuses and proactively provide programs, workshops, and campaigns that aim at keeping Alfred State safe from sexual violence. The Center for Equity, Inclusion and Title IX works closely with academic departments and Student Affairs offices on campus to create an empowering and enriching college experience here at Alfred State.

## HEALTH AND WELLNESS SERVICES

Health and Wellness Centers are located on each campus. At the center, treatment of student illness, accidents, and counseling needs are provided by a doctor, mental health counselor, or registered nurse. The Mind Spa is also located at the Health and Wellness Center on the Alfred campus. A mandatory fee allows the student to obtain medicines and medical supplies provided by Health and Wellness Services without further cost. The Health and Wellness Services records are kept strictly confidential. Appointments can be made in person or by calling 607-587-4200. More information at: [www.alfredstate.edu/student-life/health-and-wellness-services](http://www.alfredstate.edu/student-life/health-and-wellness-services).

## THE MIND SPA

This unique oasis is a quiet place for students to experience and explore on their own. Students are able to indulge in their senses, clear their minds, or simply relax and unwind while using the Mind Spa. The Mind Spa offers use of a full body massage chair, tea, aromatherapy, bio-feedback software, multi-spectrum light, and self-help audio library as well as many other relaxation and stress reduction aids. More information at: [www.alfredstate.edu/student-life/health-and-wellness-services/mindspa](http://www.alfredstate.edu/student-life/health-and-wellness-services/mindspa).

## CAMPUS SHUTTLE SERVICE

The college provides a bus service that circles the main campus continuously throughout each class day 10 minutes to the hour from 8 a.m. - 5 p.m. including traveling to the farm and Vet Tech building. The college also provides a shuttle service back and forth each day to the Wellsville campus. These buses have various morning departure times from the Alfred campus and afternoon departures from the Wellsville campus. A daily shuttle schedule is posted online for quick and easy access.

## STUDENT/VISITOR MOTOR VEHICLES

All licensed motor vehicles, including automobiles, trucks, motorbikes, motorcycles, and other motor vehicles to be operated or parked on college property, must be registered at the University Police Department in the Theta Gamma house on the Alfred campus. If you are on the Wellsville campus, you must register at Student Services. Visitors must register their vehicles immediately to avoid enforcement violations. Information and assistance regarding vehicle registration can be found 24 hours a day, seven days a week at the University Police Department.

## UNIVERSITY POLICE

The University Police Office is located on Lower College Drive in the Theta Gamma House on the Alfred campus. University Police is open 24 hours a day, seven days a week. University Police maintains an office in the "H" building on the Wellsville campus. The Wellsville office is staffed during the academic year Monday - Friday, 8 a.m.- 4 p.m.

Alfred State's University Police Department is a fully sworn and accredited, community oriented and service-based police department that provides law enforcement and emergency services to all members of the Alfred State community. The University Police Department is responsible for enforcing all federal, state, and local laws on both the Alfred and Wellsville campuses.

The department prides itself on a level of professionalism, courtesy, and respect that meets the specialized needs of a college setting. With a 24-hour dispatch center, University Police serves as the primary point of contact for off-hours services such as electrical, plumbing, or other facility-based issues. In keeping with the educational mission of our setting, the department also encourages its members to continue their development through additional education and training.

University Police can be contacted at 607-587-3999 or simply 3999 from any campus phone. In an emergency dial 911 or use any of the emergency blue light phones located throughout campus.

## ALUMNI COUNCIL

The Alumni Council exists to enhance the engagement of the college's alumni for their enjoyment through programs and services which build relationships and to support the institution's efforts in student recruitment, career placement, and friend/fund-raising.

The major objectives of the Alumni Council are to:

1. Promote and increase fellowship of students and alumni of Alfred State.
2. Serve as a liaison among Alfred State, its alumni, and students in order to foster and maintain close and mutually beneficial ties.
3. Maintain and promote loyalty of the alumni of Alfred State.
4. Assist and promote the interest of Alfred State, its students, and alumni.
5. Develop programs that support the goals and objectives of the campus, including campus fundraising, in conjunction with the Office of Institutional Advancement.

The Alumni Council provides a variety of programs and services to both alumni and students. Some of these include:

- Bi-annual alumni newsletter - *Transitions*
- Alumni records update service
- Annual alumni reunion – Homecoming
- Assistance with program-specific events
- Regional alumni events
- Scholarship program
- Career development assistance - posting job openings, seeking position, etc.

The Office of Alumni Relations is located on the Alfred campus in the Huntington Building. For additional information related to the above programs, please stop in, call 607-587-3931, or forward an email message to [alumni@alfredstate.edu](mailto:alumni@alfredstate.edu).

## **LIBRARIES**

The libraries on the Alfred and Wellsville campuses are strongly committed to serving the information and research needs of students and faculty. The collections on both campuses encompass materials in a variety of formats - electronic, print, and visual media. To access the libraries' holdings, visit the library website at [www.alfredstate.edu/hinkle-library](http://www.alfredstate.edu/hinkle-library). Materials not available locally may be requested through the interlibrary loan service.

The Walter C. Hinkle Memorial Library on the Alfred campus houses a collection of approximately 52,200 book volumes and 3,300 video titles and has print subscriptions to 12 newspapers and some 140 journals and magazines. The Wellsville campus library holds about 3,000 volumes, 30 current journal titles, and four daily newspapers. The library contains an extensive collection of automotive manuals in print and microfiche, as well as materials in a variety of audiovisual formats. Students and faculty on both campuses have access to more than 73,200 electronic journals and magazines available from 110 online databases. A good number of these are provided through *SUNYConnect*, an initiative to share library collections and services across most of the 64 SUNY campuses.

Also located in the Hinkle Library is the Jean B. Lang Western New York Historical Collection, a unique repository of historical and genealogical materials that focuses on Alfred, Allegany County, and western New York State. Both the Alfred and Wellsville campus libraries provide public access computers and printers. Laptop users in Alfred may take advantage of the wireless connectivity in the library, using their own laptops or those available for loan. Both the Alfred and Wellsville campus libraries are accessible to those with disabilities, and are open to the general public at no charge.

## **ATHLETICS, INTRAMURALS, RECREATION, AND PHYSICAL EDUCATION**

Alfred State Athletics offers intercollegiate sports and intramurals and has great facilities for exercise or a quick game of pick-up. Whether you want to compete or just stay in shape, Alfred State has something for all Pioneers.

The Athletic Department sponsors 19 intercollegiate varsity sports (18 NCAA Division III and 1 IHSA):

**Women's sports:** Basketball, Cross Country, Soccer, Softball, Swimming, Track & Field (Indoor/Outdoor), and Volleyball

**Men's sports:** Baseball, Basketball, Cross Country, Football, Lacrosse, Soccer, Swimming, Track & Field (Indoor & Outdoor), and Wrestling

**Co-ed sport:** Western Equestrian

The Athletic Department is a NCAA Division III member. Therefore, no consideration of athletic ability or athletic accomplishments will be considered in determining students' scholarship eligibility or financial aid packages. Incoming freshmen students who wish to compete in intercollegiate athletics must be admitted into a four-year program **OR** have a 78 or 2.4/4.0 high school average **AND** a 930 "new" SAT or a 18 composite ACT to be immediately eligible their first semester. Incoming transfer students who wish to compete in intercollegiate athletics must be admitted into a four-year program **OR** have a 2.0 cumulative GPA for consideration. Continuing students must achieve good standing and progress toward a degree to continue competition.

For more casual athletes, our intramural sports program encourages fun, exercise, and social interaction. No matter the student's athletic ability, there's a position and a place for them to participate. The intramural program runs during the fall and spring semesters and offers a variety of sports including soccer, basketball, flag football, obstacle courses, and corn hole.

Alfred State has two options for students of the college, faculty/staff, and members of the community to reach their fitness goals. The Pioneer Fitness Center located in the Pioneer Center houses cardiovascular equipment, resistive weight equipment, and a free weight area while the Orvis Strength and Conditioning Room houses free weights and power racks. Managed by a full-time certified director, the centers are staffed at all times to ensure a safe and effective workout for all participants regardless of fitness level.

The Orvis Activities Center is also home to the swimming pool. Open swimming hours are also available daily for student or community use.

Physical education classes are also offered by the Athletic Department. Each semester, a variety of physical fitness, sport classes, and health and wellness classes are taught.

### **AUXILIARY CAMPUS ENTERPRISES AND SERVICES**

Auxiliary Campus Enterprises and Services (ACES) is a not-for-profit corporation responsible for many services on campus. A board of directors consisting of faculty, students, and administrators governs activities of the corporation. ACES manages campus food service, special events and catering, snack bars, campus stores, food/beverage and laundry vending services, Lake Lodge, cable TV services, transportation services, and accounting and bookkeeping services.

### **DINING SERVICES**

Students living in residence halls are required to participate in a dining program. All dining programs are controlled by an access-computer access system using encoded Campus ID cards. Individuals may elect a program based on their specific needs from a variety of meal plan options as described in promotional material appearing on college websites and the student billing. Participants are allowed considerable flexibility, as they may eat at the dining hall, food truck, and other food locations by using a meal swipe, dining dollars, or campus spending account funds.

### **CIVIC ENGAGEMENT & STUDENT LEADERSHIP PROGRAMS**

Students at Alfred State bring their learning to life through community involvement, both in the classroom and through clubs/organizations. Whatever your interest and passion, there are opportunities to get involved through volunteering, advocacy, political involvement, and community outreach. There is no lack of opportunities to impact your community in a positive way.

The Center for Civic Engagement is a resource center for anyone wishing to invest in your community and make a positive difference. It is located within the Student Leadership Center - a building dedicated to promoting civic engagement/leadership opportunities and inspiring involvement. Immediately

adjacent to the center are Leadership Suites - spaces that house the most community minded student organizations promoting an incredible diversity of opportunities to plug into volunteer and civic activities. The commitment to civic engagement is deeply embedded in our unique approach to education through project-based learning experiences. By combining real-world learning situations with civic engagement opportunities, Alfred State students make significant contributions to communities near and far and frequently are among the first to lend their skills and knowledge to those in need, including communities in Texas devastated by Hurricane Harvey, and Puerto Rican communities impacted by Hurricane Maria. Last year, Alfred State students contributed about 80,000 hours of service, civic leadership, and workforce-ready knowledge to communities in need. Join others in being part of the solution to community challenges both locally and around the world.

## **LEADERSHIP**

Students at Alfred State have the opportunity to become part of our Student Leadership Development Institute by participating in formalized leadership trainings. The Student Leadership Development Institute helps students understand that solving problems is more than a technical function, it is a function of leadership-demanding teamwork, critical thinking, and communication skills. The Student Leadership Development Institute houses all leadership-centered programs on campus. Leadership-centered programs offered include:

- Leadership Minor
- Alfred State Leadership Program
- The Civic-Leadership Living Learning Community
- Leadership Suites/Organizational Suites
- Leadership Assistant Positions/Leadership Internships
- Presidential Aspiring Leaders (PAL) program

For more information about the Student Leadership Institute programs and offerings, please contact [leadership@alfredstate.edu](mailto:leadership@alfredstate.edu).

## **OFFICE OF STUDENT ENGAGEMENT**

The Office of Student Engagement cultivates well-rounded students by preparing them to stand apart in a competitive workforce upon graduation. Consistent with the college's mission of preparing involved students in a caring community, the Office of Student Engagement supports, encourages, and challenges students by providing opportunities for hands-on growth through activities in the following areas:

- Student leadership
- A diverse offering of students clubs and organizations
- Recreation
- Programming and event support
- Maintenance of a vibrant Student Leadership Center

Through these opportunities, the Office of Student Engagement enhances the student experience, while contributing to enrollment, student retention, and student success.

## **NEW STUDENT ORIENTATION**

New Student Orientation is an important part of each incoming student's experience here at Alfred State. Orientation consists of interactive, engaging presentations and activities intended to help acclimate all incoming students to their new campus community. Our programs are offered as a way to help all new students transition and prepare for success as members of the Alfred State family. New students and their families will hear from campus departments such as Admissions, Academics, Health & Wellness, Student Life, Athletics, and more. Students will also register for their first semester classes during the afternoon of each Orientation session.

## PERFORMING ARTS

Performing Arts at Alfred State has a long and successful history. Students have the opportunity to engage their talents in drama, instrumental music, and vocal music organizations. Each student brings unique experiences and ideas to the club, building an exciting and ever-evolving creative atmosphere. As student-run organizations, there are many opportunities to contribute to each group and to experience first-hand the rewards of your involvement and contributions.

Within each group you can find multiple ways to participate in college and community events. Members of Drama Club may participate as actors, actresses, stage managers, and technical theatre designers and operators, to name a few. Vocalists have the opportunity to participate in a large choral group setting or in a smaller individual setting, as well as in a capella ensemble. Instrumental music allows instrumentalists to perform in concert, jazz, brass, woodwind, percussion, pep, and rock ensembles.

## RESIDENTIAL LIFE

Residential Life believes that a student's residence hall experience should be as individually suited to the student's needs and interests as possible. On this basis, Alfred State offers a lifestyle approach to residence hall living. Within the limits of college policy, various lifestyle areas are offered, and students may choose the area which best suits them. The following styles are located in designated areas of certain residence halls:

**No Smoking** – All of our residential facilities are smoke-free.

**21 and Over Lifestyle** – A student must be 21 or older at the beginning of the academic year. This lifestyle option is available in select areas.

**24 and Over Lifestyle** – This lifestyle option was created to address the special needs of nontraditional students, e.g., self-governed quiet hours and the ability to stay in the residence hall during breaks. Available in select areas within Main Gate B only.

**Affinity Housing** – Members of recognized clubs/organizations and athletic teams will be provided preference during returning student housing sign-ups to live together in the suite-style housing within the Townhouses, MacKenzie Complex, Main Gate A, and Main Gate B.

**Baccalaureate Lifestyle** – Available in Peet Hall only. This lifestyle option provides an opportunity for students in the baccalaureate programs to reside together.

**First-Year Housing** – First-year students can live in any building other than the MacKenzie Commons Apartments and The Townhouses. Braddon Hall and Burdick Hall house only first-year students.

**Gender Inclusive Housing** – This option allows individuals who are not the same gender, who may identify outside the gender binary (male or female), who may be questioning aspects of their sexuality/gender, or who may be in the process of (or completed) a gender transition, to live in an environment that is safe and supportive. This living space, open to the entire campus community, is requested through an application process (password required), and selected on a yearly basis by a committee dedicated to the oversight of that community.

**Substance-free Lifestyle** – This lifestyle is designed for the student interested in living within a tobacco-free and alcohol-free area. All guests and visitors are also required to abide by the substance-free lifestyle while visiting the area. Each student signs a contract pledging to remain substance free while living in this area. If you are not committed to the restrictions, this lifestyle is not for you.

**Quiet Study** – Members of this lifestyle all agree to uphold mandatory 24-hour quiet hours. Television and music are allowed in this area, but must be kept at a minimal and respectful volume. This lifestyle is available in certain suite-style and corridor-style residence halls.

**Townhouse Style Living** – Apartment-style living for sophomores, juniors, and seniors. Services available in the residence halls include laundry and vending machines, kitchenette, study areas, and computer labs.

**Our five Living Learning Communities:**

**Architectural Living and Learning Community (ALLC)** – Baccalaureate architecture students can study, live, work, and engage with their faculty, all in their own residence hall (Peet Hall). The ALLC provides access to architecture work labs, study space, and a gallery.

**Creative House, LLC (DLLC)** – Designed specifically for students in the digital media & animation or graphic & media design programs, this Living Learning Community (LLC) features studio workspaces for its residents. Students live and learn with like-minded colleagues in a space made for productive and creative collaboration. With large screen monitors, a production studio, a space to screen work, and other extras, students who live in the Creative House LLC are prepared to hit the ground running on their creative projects.

**Leadership Living and Learning Community (LLC)** – An option for returning students in Main Gate A, this LLC will help students learn more about their strengths and leadership, develop mentoring skills, and connect with professionals from the campus and community while taking part in the Leadership Minor.

**Nursing Living Learning Community (NLLC)** – First-year nursing students have the opportunity to become part of a community within Burdick Hall dedicated to helping new students transition into the nursing curriculum. In addition to participating in a cohort seminar led by nursing faculty within their residence hall, the NLLC provides an atmosphere with enhanced opportunities to learn from and connect with their faculty.

**Summer Prep Academy Living and Learning Community (SPA)** – Students accepted into the EOP program will attend Summer Prep Academy four weeks throughout July and August. These first-year students will have the option of remaining in their summer housing building without the stress of relocating to another residence hall for the fall semester. The SPA Living Learning Community will allow SPA students to continue to live with their EOP cohort and maintain regular contact with their summer SPA mentors throughout the academic year.

**Pioneer Cup:** The Pioneer Cup is a friendly (but fierce!) competition between the college's residence halls for leadership in civic engagement, sustainability, and wellness. You can help your residence hall earn points and win prizes at the same time by participating in activities, programs, and events related to the competition themes.

**ON-CAMPUS HOUSING REQUIREMENTS/CAMPUS WAIVER PROCEDURES**

Be advised that a prior felony conviction may impede a student's ability to reside in campus-administrated housing. Felony conviction will be considered on an individual basis. Students may be required to submit court records and other information as required by SUNY Board of Trustees Policy to be used in assessing their eligibility for on-campus housing.

**SUNY – Board of Trustees' Policy**

Every student in full-time attendance at a state-operated unit of the university, other than married students or students residing with a parent(s), shall be required to live in a residence hall maintained and operated by such a unit or to have the permission under such provisions as may be made therefore by the chief administrative officer of such unit to live off campus.

**Local Campus Policies****I. WAIVERS**

Any full-time student who wishes to live off campus must request a waiver of the Board of Trustees' Policy. This waiver form is available from the Office of Residential Services and/or online. All waiver requests will be considered in accordance with the SUNY policy and the Board of Trustees' intent to maximize the educational process. Certain conditions, if met, assure an individual of permission to live off campus. These specific exceptions are as follows:

**General Eligibility:**

- Married students
- Students providing direct care for a legal dependent
- Students 23 years of age or older
- Students already possessing a baccalaureate degree (reviewed for verification)
- A student residing with a parent, grandparent, or court-appointed legal guardian at that person's permanent home address who is commuting fewer than 60 miles one way (notarized statement and supplemental statement required).
- **Honorably Discharged Veterans of the U.S. Armed Forces:** DD-214 must be provided as documentation.

**Academic Eligibility:** Fourth-year students in baccalaureate programs are eligible for off-campus status subject to the following minimum requirements: good academic standing with at least 90 credits and minimum cumulative grade point average of 3.0 and no current disciplinary status through the time of off-campus occupancy. Or, fifth-year students in a five-year program must be in good academic standing with at least 120 credits.

**Greek Organization Eligibility:** Information relative to organization eligibility is available from Residential Services and Student Engagement. Individual members of eligible Greek organizations may apply for a housing waiver if all criteria are met:

- Individual members must possess a 2.50 cumulative grade point average and a 2.50 semester grade point average (prior semester) at the time a housing waiver is requested.
- Individual members may not be on any disciplinary sanction and must have completed any special conditions as a result of a past sanction (i.e., alcohol assessment, signals, community restitution projects, etc.) at the time a housing waiver is requested.
- The organization in which they are a member maintains continuing authorization for off-campus, communal residency.  
All other reasons will be reviewed according to the Reasons for Waiver stated on the form and will be considered according to uniformity and intent of the Board of Trustees' policy. Submission of false or intentionally misleading statements may result in waiver revocation, campus disciplinary sanctions, and other penalties. All waivers are granted for the academic year or the remaining portion thereof. Each student must resubmit a waiver application each year he or she is in attendance.

## II. DETERMINATION OF FULL-TIME STUDENT STATUS

- A full-time student is an individual enrolled for 12 or more credit hours (including credit hours added after registration day).
- Students initially registered in a part-time status who add sufficient courses to attain full-time status are subject to campus housing policies unless a waiver is approved.

## III. WAIVER PROCEDURE

- Waiver processing will begin April 1 or as soon as predictable thereafter for fall semester consideration. Waiver processing will begin November 1 or as soon as predictable thereafter for spring semester consideration.
- The License for Residence is a full academic year agreement and takes precedence over any waiver application. Interim requests for release are processed according to current campus policy.
- At the time a housing waiver application is submitted and approved, any predetermined housing assignment is released.
- **Initial Request:** Any individual who wishes to live off campus must submit his/her request in writing to the Office of Residential Services. The request should note the basis for requesting a waiver. If the reason is not one of the three general exceptions, a detailed explanation of the reason(s) must be included.
- Decisions based upon health or psychological grounds will be reviewed through Accommodative Housing. Any student who is requesting off-campus housing based on these grounds should provide

corroborating documentation through either Health & Wellness Services or email documents to [accommodativehousing@alfredstate.edu](mailto:accommodativehousing@alfredstate.edu) for review.

- **Review:** The Assistant Director of College Housing or his/her designee will review all requests and, with the intent of the Policy of the Board of Trustees and the stated purpose of the college policy, render a decision. This decision will be given within five (5) business days, when possible. Note: Missing documentation will delay processing.
- **Appeal:** A denied waiver may be appealed to the Senior Director of Residential Services. The appeal must be in writing and address the reason(s) given for the denial of the initial request. The appeal must be sent within five (5) business days of receipt of the initial decision.
- **Appeal Decision:** All appeals will be reviewed in accordance with the intent of the Policy of the Board of Trustees and the stated purpose of the college policy. A written decision will be given within five (5) business days, when possible. **There is no appeal of the Senior Director's decision.**

## STUDENT LEADERSHIP CENTER

The Student Leadership Center serves as a comprehensive, centralized connection point for students, staff, and faculty to access leadership opportunities on campus and in the greater Alfred community. The Student Leadership Center, located in the center of campus, is the premier place for students to gather throughout the day in a "one-of-a-kind" designed space. The Student Leadership Center places every student who enters the facility in the middle of a hub of activity that allows students from different majors, ages, and different levels of community involvement to be in direct contact with each other; an "in your face" flavor of student engagement. The Alfred State leadership experience is an interactive process that develops students who are committed to lifelong learning, community engagement, and having a positive impact on the Alfred State campus and in the greater community and beyond. We believe that every student has the potential and the capacity to serve their community through civic engagement.

## WEEK OF WELCOME

Each August, new students arrive on campus up to a week before classes begin. Here at Alfred State, we can't wait to welcome them to campus with a week just for them! WOW is a week designed with new students in mind; we want this time to be fun and engaging, and more than anything, we want to help students feel at home. For more information on New Student Orientation, please visit [www.alfredstate.edu/new-student-orientation](http://www.alfredstate.edu/new-student-orientation).

## PIONEER STUDENT UNION - WELLSVILLE

The Pioneer Student Union (PSU) is a space that allows for recreation, socialization, and an opportunity for students to benefit from professional resources located within the building. Activity options available to students include: billiards, ping pong, shuffleboard, foosball, free-play arcade games, horseshoes, and many other games. There are also opportunities to improve physical and mental well-being, as the building houses a full gymnasium with six basketball hoops, a racquetball court, and weight room.

The MindSpa in PSU is a space solely dedicated to stress reduction. The spa allows for quiet relaxation in a room equipped with massage chairs and other calming amenities. Also at the PSU, students may seek out medical attention or be connected with counseling services, as the Health & Wellness Services office is housed within the building. Students may also use the PSU as a quiet study space, as there is an upgraded computer lab with network-connected computer stations.

The Pioneer Student Union is utilized by students across all majors on the Wellsville campus and serves as a space dedicated to providing experiences guided by Alfred State Student Affairs initiatives.

## Academic Information

Alfred State offers more than 70 majors in programs based in the arts and sciences, applied technology, and management and engineering technology.

Administratively, the college is broken down into three schools:

- School of Arts & Sciences
- School of Architecture, Management & Engineering Technology
- School of Applied Technology

Faculty and staff focus on programs within their areas of expertise. Depending on the major, each student will find most courses taught within a particular area of study. However, most students will also be required to take some courses within other disciplines.

### INTERNSHIPS AND CAREER DEVELOPMENT

The time to begin thinking about your career is in your freshman year! Career development assistance begins with the identification of career goals and the development of a plan to meet those goals. Plans frequently include résumé assistance, identification of available experiential education opportunities, individual employment/career counseling, interview preparation, and workshops.

Students have the opportunity to meet with employers at fall and spring career fairs, information sessions, and on-campus interviews.

Job opportunities are posted daily for current students and alumni on the Career Development web page.

### ACADEMIC MINORS

An academic minor at Alfred State is an optional program of study available to matriculated baccalaureate students. A minor may be used to complement the major course of study, broaden and enhance career opportunities, gain expertise in an area of interdisciplinary studies, or provide an in-depth study in a subject of special interest.

A minor is described as a thematically related set of academic courses, consisting of no fewer than 15 credit hours. A minor will be officially recorded on the transcript when a student has satisfied all requirements for the major baccalaureate program and the minor, and has attained a 2.50 grade point average in the courses approved for the minor.

General Considerations: Minors will likely require courses taken in sequence, and may necessitate student planning within their first year. Financial Aid Considerations: The State of New York does not allow students to use courses that only apply to a minor to meet the 12 credit financial aid eligibility requirement. If a course applies both to the minor and meets a degree requirement (such as an elective), financial aid can be used. Minor courses can fill General Education, LAS and elective requirements within a degree program.

Alfred State has three types of minors including Field of Study, Interdisciplinary, and Program Specific.

#### Field of Study Minors

Field of Study minors allow students to complete a course of study in an additional content area of specialization. The course of study is primarily within a single department but may include closely related courses from another department.

Field of Study minors include:

**Animation, applications software development, business administration, computer technology, construction management, GIS (geographic information systems), graphic design, history, information security, information technology, interactive design, logistics and supply chain**

**management, media production, network administration, psychology, surveying, and web development.**

### **Interdisciplinary Minors**

These minors are developed to focus on contemporary areas of interest that will enhance students' understanding of the world and their effectiveness in their future professional lives. These minors are usually designed by a committee of interested faculty and are often multi/interdisciplinary in scope combining courses from multiple departments. The courses in these minors may be General Education and LAS courses. Interdisciplinary minors include **global studies and leadership**.

### **Program Specific Minors**

These minors are limited to students within a specific degree program due to pre-requisite requirements for courses within the minor. The course of study can be within a single department or split between departments with the intention of allowing students within a program to demonstrate specialization in an area that enhances their degree. These minors often overlap one or more courses with a student's core curriculum. The program specific minors include **interior design**.

Students wishing to pursue minors should first discuss options with their advisers and meet with the department chair where the minor resides to determine specific course requirements. Students must apply for minors on degree application forms.

## **EMPLOYMENT AND CONTINUING EDUCATION**

The Career Development Office surveyed the 967 members of the May 2017 graduating class. A 75 percent college-wide response was realized from the survey. Alfred State Technology Services generated the statistical information utilized in the preparation of this report in May 2018:

- 71 percent employed after graduation
- 93 percent employed in their field of study
- 28 percent continued their education
- Combined employment and continuing education rate of 99 percent

## **CROSS-REGISTRATION**

Under the SUNY policy on cross-registration and agreements with Rochester Area Colleges and Western New York Consortium, matriculated and full-time (12 credit or more) Alfred State students may take up to six credits a semester at a member institution. Students interested in cross-registration must seek the approval of their academic adviser before entering the program. Registration begins on the opening day of the term at the host institution and is on a space-available basis. Cross-registration forms are available in the Student Records and Financial Services Office.

## **COURSE CANCELLATION POLICY**

Alfred State reserves the right to cancel any course without prior notice due to insufficient enrollment or unforeseen circumstances.

## **STUDENTS UNABLE TO ATTEND CLASSES**

1. No person shall be expelled from or be refused admission as a student for the reason that he or she is unable, because of religious beliefs, to attend classes or to participate in any examination, study or work requirements on a particular day or days.
2. Any student who is unable, because of religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.
3. It shall be the responsibility of the faculty and of the administrative officials to make available to each student who is absent from school, because of religious beliefs, an equivalent opportunity to make up any examination, study or work requirements which may have been missed because of such absence on any particular day or days. No fees of any kind shall be charged for making available to the said student such equivalent opportunity.

4. If classes, examinations, study, or work requirements are held on Friday after 4 p.m. or on Saturday, similar or makeup classes, examinations, study or work requirements shall be made available on other days, where it is possible and practicable to do so. No special fees shall be charged to the student for these classes, examinations, study, or work requirements held on other days.
5. In enforcing the provisions of this section, it shall be the duty of the faculty and administration to exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to any students who avail themselves of the provisions of this section.
6. Any student who is aggrieved by the alleged failure of any faculty or administrative officials to comply in good faith with the provisions of this section shall be entitled to maintain an action or proceeding in the county Supreme Court.

### **LEAVE OF ABSENCE POLICIES**

Students who need to interrupt their studies during a semester already in progress or for a future semester can protect their matriculated status by applying for a leave of absence for up to one year. Leaving without officially withdrawing from college will result in the student's receiving a grade of "F" for all his/her course work and will show on the official Status Report of the college as an academic dismissal. Complete information on applying for a leave of absence can be found at [my.alfredstate.edu](http://my.alfredstate.edu), then go to "Services" on the Records Office web pages.

### **WITHDRAWALS**

Students who need to withdraw from the college before the end of an academic term must officially withdraw from classes. Leaving without officially withdrawing from college will result in the student's receiving a grade of "F" for all his/her course work and will show on the official Status Report of the college as an academic dismissal. Complete information on applying for a withdrawal can be found at [my.alfredstate.edu](http://my.alfredstate.edu), then go to "Services" on the Records Office web pages.

### **CURRICULUM CHANGES**

Continuing students will use a Degree Program Change Form to switch from one program to another or to include or exclude previously earned credits into a new program. Once the decision has been made to change programs, students must notify both their present department chair and the department chair of the new program. Both department chairs will sign the request and the new department chair will specify which classes to exclude from the new program. Only courses not required in the new program may be excluded. General education courses cannot be excluded. The form must be received and processed by the Student Records and Financial Services Office. Students may not process a curriculum change after the fourth week of classes for the current semester. New students who wish to change their program after applying for admission but prior to enrollment must do so in writing to the Admissions Office.

### **COURSE AUDITING**

Course auditors must secure permission to take a class from the instructor of the class. Approval forms are available from the Student Records and Financial Services Office or can be printed from our website under "Forms" at [my.alfredstate.edu/enrollment-management/records-office-forms](http://my.alfredstate.edu/enrollment-management/records-office-forms). Return the approved form to the Student Records and Financial Services Office before the last day to register.

Course auditors will be permitted to audit courses on a space-available basis. Enrolled students receiving credit will be given priority. Auditors will not be enrolled or listed in the registrar's rosters, will attend without credit or grade, will attend without formal recognitions, and will not be required to meet the course requirements. Audited courses are not eligible for financial aid. Auditors are responsible for all associated costs of the course. A student may retake such a course for credit in a subsequent semester.

Course auditors who are currently enrolled at the college will not be charged tuition. A nonrefundable \$50 registration fee will be charged to auditors who are not enrolled at the college. Special auditors, individuals over the age of 60, are invited to audit classes with no registration fees. Texts and/or class materials are at the expense of the auditor. Contact the Student Records and Financial Services Office for more information.

**ADD/DROP**

Students wishing to add or drop a course after the start of classes must submit the appropriate Course Change Notice form with the required signatures to the Student Records and Financial Services Office. Courses will not be dropped by simply not attending classes. Additional information may be found on the Course Change Notice form available from the student's adviser or department chair. If classes are not added or dropped appropriately, a grade of "F" will be received for the course. Dropping below full-time enrollment may affect current or future financial aid eligibility. Contact the Student Records and Financial Services Office for details.

**BANNERWEB**

Alfred State student software is BannerWeb for students. Students will use this to view and update information, as well as perform a number of functions. You can obtain instructions by going to <http://web.alfredstate.edu/banweb/>. Functions and information available on BannerWeb include:

- Register for classes and add or drop courses
- View/print student schedules
- Apply to graduate
- Check to see if you have registration holds
- View interim and final grades and academic standing
- View your unofficial academic transcript
- Learn the status of your financial aid award package
- Check your personal information and learn how to change it
- View bill processing information.

**DEVELOPMENTAL/REMEDIAL COURSES**

SUNY policy states, "Courses designated developmental/remedial shall not be awarded academic credit (noncredit) and thus cannot be applied as credit toward a college degree."

Developmental/remedial courses and grades in such courses are designated with an asterisk (\*).

**STUDENT DEMOGRAPHIC INFORMATION**

Students must update their personal/demographic information electronically via BannerWeb for Students. This can be done by logging into the Secure Area of BannerWeb for Students and selecting the "Personal Information" menu. If the data reflected in the Personal Information on BannerWeb is accurate, updates need not be submitted. Only inaccurate information should be updated. Information that students should check includes mailing address, telephone number, emergency contact information, and marital status. Students who wish to change their name or correct their social security number must present legal documentation to the Student Records and Financial Services Office.

**GRADUATION REQUIREMENTS**

Individual programs are listed in the college catalog and these listings include both the general and technical components necessary for completion of degree requirements. All programs must meet the Middle State Commission on Higher Education (MSCHE) General Education requirements and all, except the AOS, have Alfred State College minimum requirements that must be met in the Liberal Arts and Sciences. Furthermore, with the exception of AOS and AAS degree programs, all programs have specific SUNY General Education requirements. The Alfred State General Education program allows students to develop the competence and skills necessary to become civic minded, globally aware, ethical and productive employees and citizens in today's world. The program focuses on the MSCHE general education expectations, SUNY General Education requirements, the ASC mission/ core values/principles of community, and Institutional Student Learning Outcomes embedded within each degree program. For more information regarding the specific graduation requirements for your program, contact your adviser or department chair. Further information regarding SUNY/ASC General Education requirements as well as the list of courses approved for General Education and a list of courses approved for Liberal Arts and Sciences can be found online.

In addition, all students who plan to graduate must apply for graduation online through BannerWeb or must submit a Degree Application Form to the Student Records and Financial Services Office. Online access and forms are available to all students during restricted times throughout the semester in which they expect to graduate.

Students are expected to meet regularly with their academic advisers who will assist with academic problems and monitor progress toward satisfaction of graduation requirements for the degree. Degree evaluations can be viewed within the secure area of BannerWeb for students.

It is important for students to know the current graduation requirements for their program. Per Academic Regulation 102, "Each individual student has ultimate responsibility for understanding and adhering to each of these regulations and for meeting the requirements for graduation as stated herein." Please see Academic Regulation 200 Graduation Requirements for complete information. Further, students who readmit must comply with degree requirements at the time of readmission. Students should direct specific questions to their advisers/department chairs.

The graduation eligibility of expected graduates is checked and finalized by academic departments. Final graduation lists are submitted to the registrar by academic departments per the published End of the Semester Timetable.

### **ACADEMIC TRANSCRIPTS**

Students planning to attend another college after leaving Alfred State must submit a signed transcript request to the Student Records and Financial Services Office. See: [www.alfredstate.edu/sites/default/files/downloads/Academic\\_Transcript\\_Request\\_Form.pdf](http://www.alfredstate.edu/sites/default/files/downloads/Academic_Transcript_Request_Form.pdf). Transcripts cannot be sent without the student's written permission each time one is requested. Transcripts can be faxed upon request but are usually considered unofficial and a second one may have to be sent. Transcripts cannot be sent for students who have financial holds. See section on holds for further information.

Alfred State cannot release copies of a student's transcript from other institutions. These must be requested from the schools previously attended.

### **VETERANS INFORMATION**

If you are a veteran and are eligible for the GI Bill, you should apply for your benefits online through the VA website. If you do not have Web access, you should contact the Student Records and Financial Services Office for a paper form. You will need to supply a copy of your DD214 or certificate of eligibility to the Student Records and Financial Services Office. Staff will then supply the Veterans' Administration with the enrollment certification that indicates you are a student so you can receive your monthly benefits.

The following procedures to monitor attendance have been approved by the State Education Department Bureau of Veterans' Education:

- Veterans are required to attend classes in order to receive educational benefits.
- Veterans receiving benefits must complete the VA School Certification form each semester they wish to be certified for benefits. Furthermore, veterans must contact the certifying official in the Student Records and Financial Services Office to ensure paperwork is properly completed whenever they add or drop a course, change their major, withdraw from the college, and/or are enrolled in courses that have nonpunitive grades ("S" or "U").

### **RECORDS OFFICE WEBSITE**

The Student Records and Financial Services Office Intranet website includes:

- Academic calendar
- Schedule of classes
- Courses approved for completing general education degree requirements
- Courses approved for completing liberal arts & science degree requirements
- Final exam schedule matrix

[my.alfredstate.edu/enrollment-management/records-office](http://my.alfredstate.edu/enrollment-management/records-office)

**Tutoring Services**

Alfred State offers free peer tutoring services for most courses. Peer tutors are students who have earned a grade of "A" or "B" in a course and have received special training.

**Professional Writing Tutor**

Professional tutoring is available in writing and grammar for any course offered at Alfred State.

**Math Lab**

Many student proctors and members of the Math and Physics Department volunteer in the math lab.

**Professional ESL Tutor**

A professional ESL tutor is available on a part-time basis.

**ARTICULATION AGREEMENTS**

The following is a listing of agreements which exist between Alfred State and other institutions.

**Note:** Alfred State graduates from any two-year associate degree program (AAS, AA, AS, and AOS) may enter directly into the corresponding baccalaureate degree program or the technology management BBA degree program.

**Agreements into Alfred State:**

**BOCES: Albany-Schoharie-Schenectady-Saratoga**

AOS-Automotive Trades	AOS-Machine Tool, Welding
AOS-Building Trades	AOS-Electrical Construction and Maintenance Electrician
AOS-Culinary Arts	

**BOCES: Bergen County Tech School**

AOS-Building Trades	AOS-Electrical Construction and Maintenance Electrician
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**BOCES: Broome-Tioga**

AOS-Building Trades	AOS-Electrical Construction & Maintenance Electrician
AOS-Culinary Arts	AAS-Veterinary Technology
AOS- Machine Tool, Welding	

**BOCES: Cattaraugus-Allegany**

AAS-Agricultural Technology	AAS-Veterinary Technology
AOS-Automotive Trades	
AOS-Building Trades	
AOS-Culinary Arts	

**BOCES: Cayuga-Onondaga**

AOS-Automotive Trades	AOS-Building Trades
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**BOCES: Delaware-Chenango-Madison-Otsego**

AOS-Automotive Trades	AOS-Machine Tool, Welding
AOS-Culinary Arts	

**BOCES: Dutchess Career & Tech**

AOS-Building Trades	AOS-Culinary Arts
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**BOCES: Eastern Suffolk**

AOS-Automotive Trades	AOS-Culinary Arts
AOS-Building Trades	AOS-Machine Tool, Welding

**BOCES: Erie I**

AOS-Automotive Trades	AOS-Machine Tool, Welding
AOS-Building Trades	AOS-Electrical Construction and Maintenance Electrician
AOS-Culinary Arts	

**BOCES: Erie II**

AOS-Building Trades

**BOCES: Finger Lakes Tech**

AOS-Automotive Trades  
 AOS-Building Trades

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

**BOCES: Genesee Valley**

AOS-Culinary Arts

**BOCES: Greater Southern Tier**

AOS-Automotive Trades  
 AOS-Building Trades  
 AAS, AS, BT-Computer & Information Technology

AOS-Culinary Arts  
 AOS-Machine Tool, Welding  
 AAS-Veterinary Technology

**BOCES: Hamilton-Fulton-Montgomery**

AAS-Agricultural Technology  
 AOS-Building Trades

AAS-Veterinary Technology

**BOCES: Herkimer-Fulton-Hamilton-Otsego**

AOS-Automotive Trades  
 AOS-Building Trades

AOS-Culinary Arts  
 AOS-Machine Tool, Welding

**BOCES: Jefferson-Lewis**

AAS-Agricultural Technology  
 AOS-Machine Tool, Welding

AOS-Electrical Construction and Maintenance Electrician  
 AAS-Veterinary Technology

**BOCES: Madison-Oneida**

AAS-Agricultural Technology

AAS-Veterinary Technology

**BOCES: Monroe 1**

AOS-Automotive Trades  
 AOS-Building Trades  
 AOS-Culinary Arts

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

**BOCES: Monroe 2-Orleans**

AOS-Automotive Trades  
 AOS-Building Trades  
 AOS-Culinary Arts

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

**BOCES: Nassau**

AOS-Automotive Trades  
 AOS-Building Trades  
 AOS-Culinary Arts

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

**BOCES: Niagara Career & Tech**

AOS-Culinary Arts

**BOCES: Oneida-Herkimer-Madison**

AOS-Automotive Trades  
 AOS-Building Trades  
 AOS-Culinary Arts

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

**BOCES: Onondaga-Cortland-Madison**

AOS-Automotive Trades  
 AOS-Culinary Arts

AOS-Machine Tool, Welding

**BOCES: Orange-Ulster**

AOS-Automotive Trades  
 AOS-Building Trades  
 AOS-Culinary Arts

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

**BOCES: Orleans Career and Tech Center**

AOS-Machine Tool, Welding

**BOCES: Orleans Niagara**

AOS-Automotive Trades

**BOCES: Otsego Northern Catskills**

AOS-Automotive Trades  
 AOS-Building Trades

AOS-Culinary Arts

**BOCES: Putnam-Northern Westchester**

AOS-Building Trades  
 AOS-Machine Tool, Welding

**BOCES: Questar III**

AOS-Building Trades

**BOCES: Randolph Technical and Career Center**

AOS-Automotive Trades  
 AOS-Building Trades  
 AOS-Culinary Arts

**BOCES: Rockland CTEC**

AOS-Automotive Trades  
 AOS-Building Trades

**BOCES: Southern Westchester**

AOS-Automotive Trades  
 AOS-Building Trades

**BOCES: St. Lawrence-Lewis**

AOS-Automotive Trades  
 AOS-Building Trades

**BOCES: Sullivan County**

AOS-Automotive Trades  
 AOS-Culinary Arts

**BOCES: Susquehanna County**

AOS-Automotive Trades  
 AOS-Building Trades

**BOCES: Tompkins-Seneca-Tioga**

AOS-Automotive Trades

**BOCES: Ulster**

AOS-Automotive Trades  
 AOS-Culinary Arts

**BOCES: Warren County**

AOS-Culinary Arts

**BOCES: Washington, Saratoga, Warren, Hamilton, Essex**

AOS-Automotive Trades  
 AOS-Building Trades

**BOCES: Wayne-Finger Lakes**

AOS-Automotive Trades  
 AOS-Machine Tool, Welding  
 AOS-Building Trades

**BOCES: Wayne Tech Career Center**

AOS-Electrical Construction and Maintenance Electrician

**BOCES: Western Suffolk**

AAS-Agricultural Technology

**Broome Community College:**

BBA-Sport Management

**Corning Community College**

BS-Human Services Management

**Erie Community College**

BS-Mechanical Engineering Technology

**Genesee Community College**

BS-Human Services Management  
 BS-Nursing

**High School: Automotive HS**

AOS-Automotive Trades

AOS-Electrical Construction and Maintenance Electrician

AOS-Machine Tool, Welding

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

AOS-Culinary Arts  
 AOS-Electrical Construction and Maintenance Electrician

AOS-Culinary Arts

AOS-Machine Tool, Welding

AOS-Culinary Arts

AOS-Machine Tool, Welding

AOS-Machine Tool, Welding  
 AOS-Electrical Construction and Maintenance Electrician

AOS-Culinary Arts  
 AOS-Machine Tool, Welding

AOS-Culinary Arts  
 AOS-Electrical Construction and Maintenance Electrician

AAS-Veterinary Technology

BS-Electrical Engineering Technology

BBA-Technology Management

BBA-Technology Management

**High School: Burgard**

AOS-Automotive Trades

AOS-Machine Tool, Welding

**High School: Constr Trades, Eng & Arch**

AOS-Building Trades

AOS-Electrical Construction and Maintenance Electrician

AOS-Machine Tool, Welding

**High School: GW Carver**

AAS-Veterinary Technology

**High School: George Westinghouse**

AOS-Electrical Construction & Maintenance Electrician

**High School: Hutchinson CT & Olmstead HS**

AOS-Machine Tool, Welding

**High School: Levittown Public Schools**

AOS-Automotive Trades

AOS-Electrical Construction and Maintenance Electrician

AOS-Culinary Arts

**High School: McKee**

AOS-Automotive Trades

AOS-Building Trades

**High School: McKinley**

AOS-Building Trades

**High School: McKinley HS & Hutchinson CT**

AOS-Electrical Construction and Maintenance Electrician

**High School: Mt. Vernon**

AOS-Automotive Trades

**High School: Newburg Free Academy**

AOS-Building Trades

**High School: Penn Yan Academy**

AOS-Building Trades

**High School: Pioneer High School**

AOS-Building Trades

AOS-Electrical Construction and Maintenance Electrician

AOS-Machine Tool, Welding

AAS-Veterinary Technology

BS-Human Services Management

**High School: Rochester City Schools**

AOS-Automotive Trades

AOS-Electrical Construction and Maintenance Electrician

AOS-Building Trades

**High School: Saunders Trades & Tech**

AOS-Automotive Trades

AOS-Building Trades

**High School: Syracuse City School**

AOS-Electrical Construction and Maintenance Electrician

**High School: Tottenville**

AOS-Automotive Trades

**High School: University Prep Charter School**

AOS-Building Trades

AOS-Electrical Construction and Maintenance Electrician

AOS-Machine Tool, Welding

**High School: William E. Grady**

AOS-Culinary Arts

**Jamestown Community College**

BT-Computer and Information Technology

BS-Nursing

AAS-Court and Realtime Reporting

BBA-Technology Management

AAS-Health Information Technology

AAS-Veterinary Technology

BS-Health Science

**Long Island Business Institute**

BBA-Technology Management

**Mohawk Valley Community College**

BS-Human Services Management

**Onondaga Community College**

BS-Electrical Engineering Technology

BS-Mechanical Engineering Technology

**Westchester Community College**

BS-Information Security &amp; Assurance

**Agreements out of Alfred State:****Cedar Crest College**

BS-Forensic Science Technology

**Clarkson University**

BS-Engineering

**Cornell University**

AAS-Agriculture and Veterinary Technology

**Empire State Carpenters Apprenticeship**

AOS-Building Trades

**IBEW 41, 86, 139, 237 & 241**

AOS-Electrical Construction and Maintenance Electrician

**Regis University**

AAS-Health Information Technology

**Saint Joseph's College**

AAS-Health Information Technology

**SUNY Upstate Medical University**

Health Related

**University of Cincinnati**

AAS-Health Information Technology

**Villa Maria College**

AAS-Interior Design

**DEAN'S LIST**

To be named to the semester dean's list, a student must have taken a minimum of 12 credit hours of course work that count toward graduation requirements and have earned at least 3.5 semester index.

**HONOR SOCIETIES****PHI THETA KAPPA**

To qualify for membership in this international honor society, candidates must have earned at least 24 semester hours of credit at Alfred State maintaining a GPA of 3.5 or above, or a student must have earned at least 12 semester hours of credit at Alfred State maintaining a GPA of 3.75 or above.

The goal of Phi Theta Kappa is to recognize and encourage scholarship among associate degree students by providing opportunities for leadership, fellowship, and service.

Founded in 1918, Phi Theta Kappa currently numbers some 1,000 chapters worldwide. Alfred State's chapter was chartered in spring 1991.

**PSI BETA**

Since 1987, Alfred State has been a charter member of Psi Beta, the National Honor Society in Psychology for Community and Junior Colleges. Annually, the Alfred State Department of Social and Behavioral Sciences has inducted members into this society, which includes more than 130 chapters and 12,000 members nationwide.

To be eligible, candidates must possess both an interest in and have completed nine credit hours in psychology (taken at Alfred State). They must also possess a 3.0 GPA in these courses and a 3.0 GPA overall. In addition, they must also have the recommendation of a Social and Behavioral Sciences faculty

member. If the inductee is transferring to a four-year college that has a sister chapter of Psi Chi, the member is usually enrolled in that society with only a letter of introduction from the Psi Beta adviser.

### **SIGMA TAU EPSILON**

To qualify for membership in this scholastic honor society, a chapter of the National Vocational Technical Honor Society, a person must be a full-time student with a 3.5 cumulative index and be enrolled in an applied technology program. Students are elected by members of the society.

### **TAU ALPHA PI**

The Tau Alpha Pi National Honor Society was founded in 1953 and is now chartered at 133 colleges and universities. Its purpose is to recognize desirable personal and intellectual qualities of engineering technology students. Student nominees must have 30 credit hours with at least a 3.5 quality point average index in an Engineering Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ETAC/ABET) accredited program.

### **ROTC**

The US Army ROTC program at Alfred State is an affiliate of the Seneca Battalion program headquartered at nearby St. Bonaventure University.

### **REGULATIONS:**

- Transfer credit procedure shall be initiated in the Student Records and Financial Services Office.\*
- Evaluation of transfer credit from another institution shall be made by the course discipline department chair or designated appointee.
- Credit will be given for courses passed with a grade of "C" or better. In the evaluating of transfer credit, a grade of "S" or "P" will be considered equivalent to a grade of "C".
- Credit will be given for courses passed with a grade of "C-" or better if the overall index of the courses being transferred remains at 2.0 or higher.
- Credit hours granted will be equivalent to the corresponding course hours in this college. Partial credit may be granted with the approval of the department chair in whose department the course is offered.
- Transfer credits from other institutions will not be included in the calculations of indexes.
- Evaluation of transfer credit from one major to another within the college shall be made by the department chair or designated appointee(s) in the department to which the student transfers. Grades, including "Fs", for courses that have been taken and that are required in the new program, shall be transferred as earned.
- Transfer from one program to another requires consultation with the department chair or designee of the department in which the student is registered and approval of the department chair or designee of the department to which the student wishes to transfer.
- A student may satisfy degree requirements by taking courses at another college and transferring no more than 12 credit hours within a seven-year period after leaving this college. This transfer program shall have prior written approval by his/her department chair. Courses transferred in this manner may replace comparable courses already taken at this college, thereby removing such courses from the calculation of index.

**\* The preceding rules and regulations are listed under *ACADEMIC REGULATIONS-305* on the Alfred State website: [www.alfredstate.edu/academics/academic-regulations](http://www.alfredstate.edu/academics/academic-regulations).**

- To receive an associate degree, at least 30 lower-division credit hours (not including challenge credit) must be completed at this college.\*\*
- To receive a bachelor's degree, at least 30 upper-division credit hours (not including challenge credit) must be completed at this college.\*\*\*

**\*\* The preceding regulation is listed under *ACADEMIC REGULATIONS-201.7* on the Alfred State website: [www.alfredstate.edu/academics/academic-regulations](http://www.alfredstate.edu/academics/academic-regulations).**

### TRANSFER CREDIT MANUAL

- Courses will be transferred in per the college's Transfer Credit Manual. All courses in the manual have been evaluated by the course discipline department chair.
- Once a student's official transcript is received, a transfer credit evaluation is completed and students are notified through their Alfred State email account as courses are transferred in. Students can also review transfer credits on their unofficial transcript in BannerWeb for students.
- The transfer evaluation of a course within a specific discipline may be changed on an individual student basis if the discipline department chair is willing to do so.
- If the discipline department chair is not willing to change the transfer evaluation of a course on an individual student basis, that student may appeal per the transfer credit appeals process found on the website.

***\*\*\*The preceding regulation is listed under ACADEMIC REGULATIONS-202.4 on the Alfred State website: [www.alfredstate.edu/academics/academic-regulations](http://www.alfredstate.edu/academics/academic-regulations).***

## ACADEMIC DEPARTMENTS BY SCHOOL

### School of Arts & Sciences

- Agriculture & Veterinary Technology
- English & Humanities
- Mathematics & Physics
- Nursing
- Physical & Life Sciences
- Social & Behavioral Sciences

### School of Architecture, Management & Engineering Technology

- Architecture & Design
- Business
- Civil Engineering Technology
- Computer & Information Technology
- Digital Media & Animation
- Mechanical & Electrical Engineering Technology

### School of Applied Technology

- Automotive Trades
- Building Trades
- Computerized Design and Manufacturing
- Culinary Arts
- Electrical Trades

Feel free to contact the department chair, program coordinator, or the dean's office at any one of our three schools if you have additional questions regarding academic programs.

## Agriculture & Veterinary Technology

Dr. Philip Schroeder, Chair  
 Phone: 607-587-3983  
 Secretary Phone: 607-587-4714  
 Email: schroepd@alfredstate.edu

Agriculture students participate in hands-on experiences working with crops, plants, animals, facilities, and equipment. Graduates leave our programs with a true feel for the industry they plan to enter. Veterinary technology students are prepared to sit for the Veterinary Technology National Exam (VTNE) through intensive lecture and laboratory courses. Passage of this exam is required for licensure as a veterinary technician. Veterinary technology students are also required to complete a 240-hour preceptorship (work experience), which gives them real, practical experience between completing their first year and graduation. Students have many opportunities to help tell the story of agriculture at college-hosted events for elementary and high school students, educators, and the general public. Through the agricultural and veterinary technology clubs, students help organize dairy and livestock shows, consignment sales, judging competitions, agricultural skills contests, tours, and other educational events.

### MISSION

The Department of Agriculture & Veterinary Technology will facilitate learning and engage communities in the practices of sustainable food production and animal welfare. We will develop graduates who will sustainably and profitably manage animals and natural resources for a secure society.

### FACILITIES

- **Agriculture Science Building** – This facility contains laboratories specializing in soils, botany, and animal anatomy and physiology. A 5,300-square-foot greenhouse produces hydroponic vegetables, edible flowers, and herbs and contains a tropical room, desert room, and plant propagation areas.
- **800-acre college farm** – The farm serves as a field laboratory to provide practical instruction in production agriculture and to produce feed for the college's livestock. It is home to Holsteins, horses, alpacas, swine, poultry, and sheep used for instruction in animal care and management. The farm is also used for soils, botany, feeds and nutrition, and field and forage crops classes. Students have the opportunity to work on the farm as interns. Other facilities there focus on high tunnel vegetable production, row crop production, and agroforestry practices.
- **Center for Organic and Sustainable Agriculture (COSA)** – The center, located at the college farm, features both an organic dairy herd, with which students gain experience in management intensive grazing and a robotic milking system, and a conventional herd. Currently, Alfred State is the only institution of higher education in the United States with both conventional and organic dairy systems on the same farm. Additional facilities are being developed at the Groveland farm, a 270-acre crop farm near Sonyea, NY.
- **Veterinary Technology Center** – This state-of-the-art facility includes surgical and radiography laboratories, a classroom area for Introduction to veterinary technology, animal health care and laboratory animal management laboratories, and animal housing facilities.

### DEPARTMENT PROGRAMS

[Agricultural Business](#) (AAS)  
[Agricultural Technology](#) (AAS)  
[Veterinary Technology](#) (AAS)

## Allied Health

Kathy L. Young, Chair  
Phone: 607-587-3672  
Email: youngkl@alfredstate.edu

The Allied Health Department at Alfred State provides students with a strong education in a wide range of allied health disciplines through online and on-campus curricular offerings. Allied Health consists of a diverse range of specialized occupations that fall outside the traditional medical and healthcare professions like doctors, nurses, and dentists. Some careers involve direct care of patients, usually as a member of a multidisciplinary healthcare team, and others involve office work and administration. The faculty and staff bring a plethora of industry experience from laboratories and healthcare settings to their work with students. They share the common goal of effectively delivering the practical and theoretical foundations of disciplines through a rich blend of interactive lectures, informal discussion, meaningful laboratory inquiries, and professional practice or clinical experiences. The department offers students direct use of modern laboratory/clinical equipment in real-world or simulated settings and provides the highest-level virtual laboratory experiences.

### MISSION

Through rigorous coursework, exposure to state-of-the-art equipment, and professional practice and clinical experiences, the Allied Health Department prepares students for employment or continuing education in the technical areas of healthcare.

### FACILITIES

**Physical & Health Sciences Building** – The Allied Health Department is partially located in the recently renovated PHS Building. Four science-ready lecture rooms are on the first floor with eight laboratories found on the second and third floors. The laboratories are outfitted with state-of-the-art equipment and instrumentation, anatomic models, and the latest application software for teaching and learning.

**Agriculture Science Building** – There are two programs located in the Bethesda Foundation Imaging Suite on the third floor. The radiologic technology program laboratories are equipped with a nonenergized X-ray unit for students to learn proper patient positioning and a digital energized X-ray unit for students to acquire proper imaging skills and shielding with skeletons and pixies. The diagnostic medical sonography program's laboratory has three ultrasound units for students to obtain competency in effective scanning. Students also have access to ultrasound pathology simulation utilizing SonoSym.

The healthcare management, health information technology, and coding & reimbursement specialist curricula are completely online programs.

### DEPARTMENT PROGRAMS

[Coding and Reimbursement Specialist \(Certificate\)](#)  
[Diagnostic Medical Sonography \(AAS\)](#)  
[Health Information Technology \(AAS\)](#)  
[Healthcare Management \(BTech\)](#)  
[Radiologic Technology \(AAS\)](#)

## Architecture and Design

Alex Bitterman, PhD, Chair  
Phone: 607-587-4642  
Fax: 607-587-4620  
Secretary Phone: 607-587-4696  
Email: bittera@alfredstate.edu

The Architecture and Design Department offers a five-year professional Bachelor of Architecture degree, a Bachelor of Science degree in architectural technology, and an Associate in Applied Science degree in architectural technology. These degrees are designed to serve various needs within the profession of architecture. The Associate of Applied Science degree in interior design provides graduates with fundamental knowledge and skills for entry-level positions in interior design. The department emphasizes socially responsible design for social good. This mission is supported by the faculty and the students.

The primary focus of our faculty is teaching--personal instruction that makes meaningful life-long connection with students--and has a powerful professional impact. Instructors bring a diverse blend of advanced architectural education, theoretical inquiry, practical experience, and professional credentials into the studio, making them uniquely qualified to mentor students in design, thinking, development, and production.

All aspects of construction technology and sustainable building practices are integrated into the program design studio sequence through the use of Building Information Modeling software situated within the digital fabrication continuum. This allows students to create inspiring designs that are technically sound and grounded in the realities of professional practice, better preparing them for the demands of the workplace.

Recognizing that an architectural education at Alfred State is a powerful platform upon which to build a career, our students seek opportunities to learn through local and global civic engagement projects in each and every design studio, which is the cornerstone of the Alfred State experience. Students explore their social responsibility as emerging professionals--to make the world a better place through design and professional conduct--in real-world environments from rural communities in New York's Southern Tier, to the department's signature study abroad program in Sorrento, Italy, and all points in between.

### MISSION

A career-focused, project-based education integrating theory and practice with a strong multidisciplinary foundation that draws upon an institutional heritage of building and technology. Emphasizing core values of leadership, professional preparedness, and work ethic, experienced faculty offer personal instruction and guidance to students as they collaborate with real people to explore real challenges across the region and beyond.

### FEATURES & FACILITIES

Most departmental facilities, workshops, the maker space, and all design studios are accessible to students 24 hours a day by swipe card for student convenience. Each design studio is laptop-ready, and has customizable work stations. Studios also have networked printers, desktop scanners, white marker boards, floor-to-ceiling, wall-mounted pin-up/display panels, flat file storage, and ceiling-mounted digital projectors. Students also have access to the department's fabrication space, maker space, interior design product library, advanced computer lab, and architecture library, in addition to the plotter room; digital fabrication lab; soils, concrete, and material testing lab; and energy systems and HVAC&R labs, which are maintained by other departments in the school.

**Please note:** All students in both the architecture and interior design programs are required to purchase a laptop computer before the beginning of the second year.

### DEPARTMENT PROGRAMS

Architecture (BArch)

Architectural Technology (AAS)  
Architectural Technology (BS)  
Interior Design (AAS)

## Automotive Trades

Eric Wilmot, Chair  
 Phone: 607-587-3122  
 Secretary Phone: 607-587-3117  
 Email: wilmotej@alfredstate.edu

Today, more than ever, the highly skilled automotive service technician has an increasingly important role in the efficient operation of our society. The five automotive trades areas offered by the Automotive Trades Department—automotive service technician; heavy equipment, truck & diesel technician; autobody repair; motorsports technology; and motorcycle and power sports technology—prepare technicians for the ever-expanding and highly specialized trade industry.

All programs meet stringent national standards. The automotive service technician program is master certified by the National Automotive Training Educational Foundation (NATEF); the autobody repair program is Inter-Industry Conference on Automotive Collision Repair (ICAR) certified and accredited by the NATEF; and the heavy equipment, truck & diesel technician program is ADS affiliated, and we are a National Alternative Fuels Training Consortium training center. Automotive Service Excellence (ASE) certification and NYS inspection exams are offered on campus as well.

### MISSION

Provide instruction and practical, hands-on experience, to students interested in a variety of automotive trades, including automotive service, autobody repair, truck and diesel service, and motorsports. The education acquired will prepare the student for entry-level employment. Students will be provided opportunities to maximize their individual potential and achieve a level of competence adequate to enter the automotive field and maintain gainful employment. In addition to hands-on skills, attitudes will be developed that will help enforce sound judgment, good work habits, planning and foresight, ingenuity, efficiency, and safety as they apply to the duties and skills of the trade. We will nurture an appreciation of and a desire for craftsmanship and professionalism. We will strive to instill positive attitudes of community and leadership that will carry beyond the workplace and help our students to live productively and successfully in today's society.

### FACILITIES

- **Autobody facility** – This facility on the Wellsville campus contains down-draft bake-paint booths, paint mixing room, frame-straightening machines, computerized estimating, and computerized measuring systems.
- **Automotive service facilities** – These buildings, located on the Wellsville campus, contain the latest equipment, including computerized front-end aligners, brake equipment, computerized engine analyzers, automatic transmission dynamometer and computer specification and service information terminals in all shops.
- **Heavy equipment, truck & diesel facility** – This facility, located on the Wellsville campus, is equipped with: specialized fuel injection overhauling and test lab; engine rebuilding equipment; multispeed transmission and rear axle repair area; engine tune-up area containing computer-operated late model diesel engines; handheld diagnostic scanners; and computerized specifications and service information systems.
- **Motorsports facility** – Students perform extensive hands-on work in a newly remodeled, newly equipped facility located in the village of Alfred. First-year courses are taught at the School of Applied Technology campus in Wellsville.
- **Motorcycle and Power Sports Technology facility** – Located in the village of Alfred, this facility includes hands-on laboratories, where students work on all kinds of full-size functioning vehicles, from motorcycles to jet skis.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

## **TECHNICAL STANDARDS**

Applicants for all programs in the Automotive Trades Department must meet the following physical requirements:

1. Must be able to lift 50 pounds to eye level.
2. Must be able to effectively communicate with a person six (6) to ten (10) feet away.
3. Must be able to visually decipher small images on a monitor or digital display.
4. Must be able to distinguish sounds associated with mechanical failures.
5. Must be able to comprehend written information found in service repair manuals.
6. Must have a valid motor vehicle driver's license.

## **DEPARTMENT PROGRAMS**

Autobody Repair (AOS)

Automotive Service Technician (AOS)

Heavy Equipment, Truck & Diesel Technician (AOS)

Motorcycle and Power Sports Technology (AOS)

Motorsports Technology (AOS)

## **Building Trades**

R. Jack Jones, Chair  
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The Building Trades Department is composed of four programs: building construction; heavy equipment operations; masonry; and heating, ventilation, and air conditioning. Rewarding careers in the construction industry are open to students graduating from the building trades programs. With the continual development of new building methods and materials, the craftsperson finds it necessary to keep abreast of these developments. Construction, as in many other occupations, is becoming a field of specialists. Coupled with hands-on experience working at off-campus construction sites, the programs provide the necessary theory as well as instruction in blueprint reading, cost and materials, estimating, safety, and the use of newly developed equipment and materials.

### **MISSION**

Educate students, to meet the changing needs of the construction industry by using real-world projects and utilizing the most up-to-date equipment, systems, and materials. We strive to improve the lives of our graduates by incorporating work ethics, communication skills, and developing leadership as part of their training.

### **FACILITIES**

The 30,000-square-foot Workforce Development Center serves as a resource for each of the four programs within the Building Trades Department and was built specifically to support the construction industry demand for Alfred State's skilled trade graduates. Enhancing the facility are student learning projects and hands-on applications of student work that have been integrated as part of the facility. These projects serve as a showpiece and testimonial to the high level of education students receive. The program serves students with nearly every power and hand construction tool available to instruct students in every phase of the construction trade. All students participate in off-campus construction of full-scale homes and building renovations each year. This experience provides graduates with significant real-world training to apply concepts learned in the classroom.

### **TECHNICAL STANDARDS**

Applicants in the Building Trades Department programs must be able to meet the following physical requirements:

1. Must be able to lift 50 pounds to shoulder height.
2. Must be able to perform safely in the laboratory.
3. Must be able to communicate orally with a person 20 feet away.
4. Must be able to climb a ladder and/or able to climb, un-aided, onto and off equipment using three points of contact.
5. Must be able to stand for long periods of time.
6. Must be able to visually read from a blueprint or drawing.
7. Must be able to hear a backup warning alarm.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### **DEPARTMENT PROGRAMS**

[Building Trades: Building Construction](#) (AOS)  
[Heating, Ventilation, and Air Conditioning](#) (AOS)  
[Heavy Equipment Operations](#) (AOS)  
[Masonry](#) (AOS)

## Business

Lucinda Croston, Secretary  
Secretary Phone: 607-587-3413  
Email: [crostola@alfredstate.edu](mailto:crostola@alfredstate.edu)

The department offers 10 programs for students desiring immediate employment, wishing to pursue a four-year degree, or looking to continue on with graduate studies. Courses during the first year in virtually all business programs are almost identical. This core block of courses enables students, during freshman year, to easily transfer from one business program to another with no loss of academic credit. Students may enter the programs in either the fall or spring semesters.

Technical accounting knowledge, communication and interpersonal skills, and career-related computer literacy are stressed throughout the programs. Many associate degree graduates go on to pursue bachelor's degrees in business or business education, while graduates of the Bachelor of Business Administration (BBA) programs often go on to pursue master's degrees. Students completing virtually any Business Department two-year degree may easily transfer into one of our own bachelor's degree programs. Students in technology management, financial planning, or sport management (BBA) programs also have the advantage of participating in a semester-long, 12-credit internship during their last semester.

### MISSION

Our faculty employ their real-world experiences to lead, motivate, and empower students to succeed in all aspects of business and life, and to positively impact their communities, as well as their respective disciplines.

### FACILITIES

- **High-tech classrooms** – These settings are equipped with up-to-date electronic equipment. Computer technology has been integrated into course content.
- **Court and realtime reporting laboratory** – This lab is equipped with computer-aided translation equipment at every student workstation. All students receive hands-on instruction using computer-aided translation (CAT) equipment. This real-time translation skill enables the graduate to take advantage of closed-captioning employment opportunities.

### DEPARTMENT PROGRAMS

[Accounting \(AAS\)](#)

[Business Administration \(AS\)](#)

[Business Administration \(BBA\)](#)

[Court and Realtime Reporting \(AAS\)](#)

[Court Reporting and Captioning \(Certificate\)](#)

[Financial Planning \(BBA\)](#)

[Marketing \(AAS\)](#)

[Sport Management \(AS\)](#)

[Sport Management \(BBA\)](#)

[Technology Management \(BBA\)](#)

## Civil Engineering Technology

Erin Vitale, Chair  
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The Civil Engineering Technology Department offers a bachelor's degree program in construction management, a Bachelor of Technology degree program in construction supervision, as well as an associate degree program in construction engineering technology. Additionally, it offers an associate in surveying engineering technology and a bachelor's in surveying and geomatics engineering technology.

### MISSION

Provide graduates with the skills necessary to have a successful career in their chosen field, have a better understanding of the world we live in, and improve their own lives.

### FACILITIES

- **Construction management laboratory** – This lab is equipped with 20 computer work stations in conjunction with appropriate estimating software to digitize quantities from drawings and work up estimates electronically. Software commonly used for project scheduling and planning is also used to develop CPM charts. Construction project administration software is also used in this lab.
- **Soils, concrete, and material testing laboratory** – This lab provides a meaningful experience in laboratory and field testing of various construction materials and structural systems. The equipment enables students to learn procedures that meet recognized field testing procedures of the American Concrete Institute (ACI), the American Society for Testing and Materials (ASTM), and NYS Asphalt Testing Certification.
- **Surveying computations laboratory** – The surveying computations lab contains workstations, digitizers, and overhead projection systems. It is designed to support the 'field-to-finish' concept of surveying data collection, data reduction, and analysis, as well as computer-aided drafting and design. Students use this facility to work with land development and design software, geographic information system software, and the reduction of satellite data. This lab enables students to do word processing, spreadsheet analysis, programming, data analysis, networked computer-aided design and drafting, and advanced 3-D modeling.
- **Surveying laboratory and equipment room** – The surveying lab serves as the basic laboratory/lecture area for surveying field/design projects. Adjacent to this lab is the room housing a myriad of equipment, including electronic total stations, global positioning satellite equipment, theodolites, transits, and levels.

**Please note:** Students are required to have laptops. The laptops allow students wireless access to the college network from any location on campus.

### DEPARTMENT PROGRAMS

[Construction Engineering Technology \(AAS\)](#)

[Construction Management \(BS\)](#)

[Construction Supervision \(BTech\)](#)

[Surveying Engineering Technology \(AAS\)](#)

[Surveying and Geomatics Engineering Technology \(BS\)](#)

## Computer & Information Technology

Evan Enke, Chair  
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The Computer and Information Technology Department offers associate degrees in computer information systems and computer science. Students who earn the computer information systems degree may continue in any of the department's four Bachelor of Technology (BTech) degree programs. The computer science degree program is primarily designed to allow students to transfer into a college that offers a Bachelor of Science degree program in computer science; however, after completing their first year of study, computer science students have the opportunity to transfer into either our computer information systems AAS degree or into one of our four BTech degrees.

The department offers four Bachelor of Technology degree programs in network administration, applications software development, web development, and cyber security. Students may enter these programs as freshmen or transfer in as juniors from related associate degree programs. Articulation agreements have been developed with several community colleges to facilitate transfers. All of our degree programs provide our students with a solid foundation in the four core areas of information technology: application programming, web programming, network administration, and information security. At the end of their sophomore year, students are then allowed to select the BTech degree that best matches their academic interests. Our degrees incorporate the latest technology, including mobile application development, secure software development, life cycle processes, cloud computing, wireless networking, and neural programming. Our programs also stress the soft skills necessary in the working environment by requiring students to take courses in business management, technical writing, speech, business communications, project management, and business accounting.

### MISSION

Provide training and education in the use of computers and computational techniques for associate and bachelor's degree programs. Technical and professional education is provided with dynamic, up-to-date topics and hardware for the rapidly changing needs of an increasingly technological society.

### FACILITIES

- **Laboratories** - Students are allowed 24-hour access to labs equipped with state-of-the-art software and hardware. Our laboratories provide students with ample hands-on experience, giving them a considerable edge in the highly competitive computer and information technology job market. Our labs are constantly being updated to keep current with advancing technology.
- **Software, certifications, licenses, etc.** - The college has academic licenses for VMWare software products, all Microsoft software, a blade server with 128 gigabytes of RAM and a 12-terabyte storage array, a Cisco Certified Academy, three Cisco-certified instructors, Cisco Adaptive Security firewalls, Juniper application firewalls, Juniper routers, Juniper SSL VPN concentrators and an Oracle blade server, a certified Juniper academy and VMWare IT academy, an academic license with Oracle, Adobe Creative Suite 6.0, a dedicated systems lab used for microcomputer configuration, and a Pearson VUE, Prometric and Certified Internet Web Professional certification testing center.

**Please note:** All entering students are required to purchase a laptop computer. The laptop enables students to have access to program-specific software via the wireless network on campus.

### DEPARTMENT PROGRAMS

[Computer Information Systems \(AAS\)](#)

[Computer Science \(AS\)](#)

[Cyber Security \(BTech\)](#)

[Information Technology: Applications  
Software Development \(BTech\)](#)

[Information Technology: Network Administration \(BTech\)](#)

[Information Technology: Web Development \(BTech\)](#)

## Computerized Design and Manufacturing

Brad Thompson, Interim Department Chair

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Secretary Phone: 607-587-3115

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The Computerized Design & Manufacturing Department has two areas of study: machine tool technology and welding. Each program provides 1,800 hours of related course work, theory, and hands-on practice, providing graduates with the necessary skills and knowledge to be highly successful in these dynamic fields.

### MISSION

Strive to provide employers with entry-level technicians who are capable of functioning in and adapting to a rapidly changing environment.

### Technical Standards for Welding & Machine Tool

Applicants for the welding and machine tool programs in the Computerized Design and Manufacturing Department must meet the following physical requirements:

1. Must be able to perform safely in the shop.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person between six and 10 feet away in a shop environment.
4. Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
5. Must be able to diagnose mechanical failures that are distinguished audibly.
6. Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
7. Must be able to visually read an LCD display on welding equipment.
8. Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
9. Good eyesight is recommended.
10. Must be able to stand for long periods of time.

Industrial internships are available to all students of the Alfred State Computerized Design and Manufacturing Department. Upon successful completion, appropriate college credit is applied to the student's record as applies.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### FACILITIES

- **Machine tool labs** – This lab is equipped with lathes, mills, shapers, grinders, etc., and appropriate tools acquired from a \$1 million grant from the Gleason Foundation. The second-year machine tool technology program is located in an actual industrial setting, where students are instructed in the use of CNC machine tools, and may apply this knowledge in a shadowing experience in the host companies' facilities.
- **Sustainable Advanced Manufacturing Center** – This \$5 million, 16,000-square-foot facility houses freshman and senior welding students and senior machine tool technology students, who train for in-demand jobs, while learning state-of-the-art sustainable practices in advanced manufacturing through more efficient processes. The building includes classrooms, a computer lab, a welding booth shop, a welding fabrication shop, material handling and preparation space, a CNC machine shop, and metrology and inspection space.
- **Welding shop** – The shop, established using a \$300,000 federal Appalachian Regional Commission grant, houses 20 individual welding booths with adjustable exhaust pickups. It contains industrial grade welders—TIG, MIG, Oxy-fuel, and arc—along with oxy-fuel and plasma cutters and hydraulic

bend testers and grinders. In our senior welding lab, tools used in the fabrication industry will be used. This impressive facility is located adjacent to our machine tool center at a local industrial park.

### **DEPARTMENT PROGRAMS**

Machine Tool Technology (AOS)

Welding Technology (AOS)

## Culinary Arts

Deb Burch, Chair  
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 Secretary Phone: 607-587-3170  
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The culinary industry offers a wide range of career opportunities; the list is endless, from health care to management positions in large companies. The department includes two programs: culinary arts - focusing on food production and management; and baking, production and management - focusing on retail baking production. The department also offers a three-year dual degree program, along with an opportunity to obtain a baccalaureate degree in technology management in the following two years.

### MISSION

The Culinary Arts Department is focused on developing skills needed for competent culinary professionals for an evolving industry.

### TECHNICAL STANDARDS

Applicants to the Culinary Arts Department programs must be able to meet the following physical requirements:

1. Perform lab functions while standing on their feet for up to five hours daily.
2. Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
3. Lift 50 pounds from floor to eye level.
4. Visually identify degree of product doneness.
5. Handle kitchen equipment, including knives.

Please refer to the most current required uniform list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### FACILITIES

- **Production lab** – This lab gives students the opportunity to learn quantity food production and service through the preparation and service of 700 institutional meals for customers daily.
- **The Refinery Restaurant lab** – A well-equipped dining room and kitchen, this lab has virtually all the equipment used in commercial restaurants. Students prepare and serve meals to order for approximately 40 luncheon patrons daily.
- **Bakery lab** – This is reputed to be the best-equipped training facility of its kind in the state. The student has access to many types of baking equipment used commercially to produce baked goods for the Wellsville campus student dining hall and The Refinery Restaurant. Students produce baked goods in freshman and senior labs, which are sold and served to many. In addition, the preparation and presentation of elaborate creations, common in upscale restaurants, offers students the opportunity to develop their talents.

### DEPARTMENT PROGRAMS

Culinary Arts (AOS)

Culinary Arts: Baking, Production & Management (AOS)

## Digital Media & Animation

Tammy R. Brackett, Chair  
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The Digital Media and Animation Department offers Associate of Applied Science and Bachelor of Science degrees in digital media and animation and an Associate of Science and Bachelor of Science in graphic and media design.

### MISSION

Prepares graduates for immediate employment or continued educational opportunities in a range of design and technology-related disciplines. The department provides quality technical education that integrates theory and practice with a foundation in the arts and sciences.

### FACILITIES

- **Studios** – Students in DMA programs have access to a large traditional studio space for foundations in traditional materials, figure drawing, and 2-D and 3-D design. They also have access to a highly sophisticated computer lab that provides industry-standard capability in 2-D graphics, Web design, interactive media, motion graphics, 2-D and 3-D animation, screen printing, large format printing and 3-D printing. Students enrolled in a DMA degree program have 24-hour access to these studios.
- **Video and sound production studio** – This studio contains industry-standard hardware and software.
- **Virtual reality and 3-D sculpting studio** – This studio utilizes the latest virtual reality technology for interactive design and 3-D modeling.
- **Other equipment and software** – Digital cameras, digital audio recorders, HD video cameras, and other pieces of high-end equipment are available for students to sign out.

**Please note:** All entering students in the Digital Media and Animation Department programs are required to purchase a laptop computer.

### DEPARTMENT PROGRAMS

[Digital Media and Animation](#) (AAS)

[Digital Media and Animation](#) (BS)

[Graphic and Media Design](#) (AS)

[Graphic and Media Design](#) (BS)

## **Electrical Trades**

Bradley Thompson, Chair  
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Electricity, and the electricians who install and maintain these systems, play a critical role in the function of the nation's and the world's complex industrial technology, as well as an individual's personal environment. Nearly all aspects of an individual's life are affected by some component of this diverse field. Without competent personnel to support today's complex electrical systems, our lives and the economy would be seriously impacted. The faculty and staff of the Electrical Trades Department provide the skills and occupational competence necessary for entry in the field of electrical technologies. The opportunity for real-life work experience is also integrated into the program. The hands-on electrical training provided in the freshman year consists of actual wiring projects off campus, as well as residential wiring projects in our laboratories. Our senior electrical students receive real-life experience working with the campus maintenance department, troubleshooting campus equipment, rewiring existing facilities, and designing and installing the electrical systems in new facilities. Seniors also will design and install photovoltaic systems and wind turbine systems. They will work in the laboratories designing and installing automated projects (incorporating relay logic), PLCs, pneumatics, hydraulics, process control systems, three-phase transformer systems, industrial distribution, and motor theory and repair. All of the freshmen and senior students will utilize the National Electric Code.

### **MISSION**

Educate and instill in our students within a two-year time frame all of the information necessary to be successful in the electrical trades. This includes interpreting and understanding the National Electrical Code, electrical theory, mathematics, electrical nomenclature, wiring methods, and troubleshooting as it applies to residential, commercial, industrial wiring, and sustainable electrical systems. This also includes the necessity to work safely, be responsible, be dependable, and take pride in their craftsmanship.

### **FACILITIES**

Our electrical trades laboratories are well equipped with the latest in electrical test equipment. Students will facilitate learning by direct hands-on applications of the theory, knowledge, and skills presented in lecture. In this program, approximately 50 percent or more of each day is spent working hands-on in the laboratory or at a job site. Computer technology has been integrated into all of the courses. The facilities for the Electrical Trades Department have full wireless network capability.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### **TECHNICAL STANDARDS FOR THE ELECTRICAL CONSTRUCTION & MAINTENANCE ELECTRICIAN PROGRAM**

Math sequence I & II recommended for all programs, plus the following requirements:

1. Must be able to visually translate information on analog or digital meters and other test equipment.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person six to 10 feet away.
4. Must be able to read and decipher information found in technical manuals.
5. Must be able to adhere to and perform all safety requirements.

### **DEPARTMENT PROGRAMS**

[Electrical Construction and Maintenance Electrician \(AOS\)](#)

## **English & Humanities**

Calista McBride, Chair  
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The English and Humanities Department offers courses in composition, foreign language, fine art, speech, philosophy, and literature for the entire college. Colleges, universities, and large corporations have been increasingly emphasizing the significance of a liberal arts and sciences education in providing a solid foundation upon which careers are built. The liberal arts and sciences: humanities program prepares students for life by stressing the importance of reading, writing, and thinking, while developing in them an appreciation of the arts and of the wisdom of great minds.

### **MISSION**

Instruct students in written and oral communication and impart an appreciation and understanding of the humanities and their role in the life of human beings living in a diverse world.

### **FACILITIES**

The department is housed in the Hunter Student Development Center, where mathematics, computer, and study skills labs, as well as classrooms are equipped with the most recent technological teaching aids.

### **DEPARTMENT PROGRAMS**

Liberal Arts & Sciences: Humanities (AA)

## Mathematics & Physics

Dr. Earl Packard, Chair  
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The Mathematics & Physics Department offers a variety of courses, including pre-algebra, algebra, trigonometry, statistics, calculus, differential equations, astronomy, physics, and physical science. Students are recommended for placement in mathematics on the basis of their high school preparation and their placement test score. The department faculty serve as advisers for students majoring in the areas of mathematics and/or science and for those in the pre-environmental science and forestry programs. They also serve as advisers for undeclared majors. Physics and physical science courses develop within the student an understanding of basic physical principles and an appreciation of the natural environment. Technical programs require a firm foundation in fundamental physics. To that end, courses also encourage and develop the student's competence in the use of logical procedures in problem solving. Math courses are taught to develop students' abilities in logical reasoning, problem solving, and critical thinking, as well as to build algebraic reasoning and calculus skills.

### MISSION

Provides mathematics and physics foundation courses for engineering and engineering technology students. The department also provides general education mathematics and natural science courses for all students.

### FACILITIES

- **Physics labs** – These labs are well equipped with apparatus to facilitate learning by direct experience and to provide students with an opportunity to discover many principles on their own. The laboratory instructor is a member of the regular teaching staff and, in most cases, is the same instructor the student has for the physics lecture session. Facilities include a linear air track, lasers, air table, X-ray recorders, gamma spectrometers, oscilloscopes, precision electrical measuring devices, strobe lights, precision timers, and an 8-inch Cassegrain telescope, as well as a large collection of traditional physics apparatus, many of which are used directly by the students in their laboratory work.

### DEPARTMENT PROGRAMS

Liberal Arts & Sciences: Math & Science (AA)  
Pre-Environmental Science & Forestry (AA)  
Undeclared Major

## Mechanical & Electrical Engineering Technology

Dr. Matt Lawrence, Chair  
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The Mechanical and Electrical Engineering Technology Department has several programs that prepare graduates to join the workforce as successful technical and management professionals in a variety of industries, including electrical engineering technology, mechanical engineering technology, engineering science and computer engineering technology. Because the department maintains active contact with related industries and professional societies and works closely with them to assist graduates in exploring their profession and creating contacts for employment, graduate placement is excellent. Educational opportunities also occur through projects, competitions, and field trips in addition to memberships in several active professional society student chapters.

### MISSION

To prepare graduates for immediate employment and continued educational opportunities through a quality technical and experience-based education.

### FACILITIES

- **Advanced Electronics Laboratory** – (SET 456) Each workstation in this laboratory has a computer that controls automated test equipment stations with a waveform generator, digitizing oscilloscope, multi-meter, and power supplies. Students can capture the oscilloscope display, run automatic frequency response, or measure device characteristics and insert these results into their laboratory reports. The workstations have programs for data analysis and circuit simulation such as Excel, MATLAB, LabVIEW, Multisim and Ultiboard. Internet connections allow quick reference to manufacturer's data sheets. In addition to the general-purpose and automated test equipment, the laboratory also contains radio frequency (RF) test equipment such as a spectrum analyzer and data communications test equipment to investigate modulation and transmission.
- **Automated Manufacturing Laboratory** – (SET 369) provides direct experience with computer numerical control (CNC) machines, robotics, and the integration of robotic concepts to automated manufacturing. This includes a 3-axis HAAS mini mill, HAAS mini CNC lathe and an Emco 155 vertical mill. Part design and programs for operation of the CNC systems are prepared and executed. This lab is also equipped with a 3-axis coordinate measuring machine (CMM) for parts inspection and reverse engineering.
- **Computer-Aided, Mechanism, and Mechanical Design Laboratory** – (SET 396) provides a true design environment that is supported by the latest software for drafting, solid modeling, product design, mechanism & system design, calculations, presentations, and analysis. Labs consist of either "stand alone" desktop computers or student laptops. The laboratory is also equipped as a standard industrial research and development laboratory in the area of mechanical systems dynamics. This facility enables students to analyze rotational equipment, industrial power transmission devices, and various mechanical linkage designs. Using a "learn-by-doing" approach, students are able to apply the theoretical concepts conveyed during lecture to complete rigorous laboratory assignments.
- **Data Acquisition Laboratory** – (SET 449B) Here students are introduced to general characteristics of electromechanical sensors and transducers, electrical measurement systems, electronic signal conditioning, data acquisition systems, and response characteristics of instruments. Industrial equipment, such as a punch press, drill press, and metal lathe are equipped with sensors that are configured to measure physical quantities such as force, strain, displacement, velocity and acceleration. Computers in the laboratory running LabVIEW software perform data acquisition, calculation and report generation with a graphical user interface. Utilizing renewable energy sources requires environmental monitoring. Laboratory activities could include using transducers to measure wind speed and direction, solar radiation, and temperature along with voltage, current and power measurement.
- **Electronic Fabrication Laboratory** – (SET 462A) This is a freshman "skills" laboratory covering a wide range of basic electronic fabrication techniques. It introduces the student to layout and

design software tools for sheet metal chassis and printed circuit boards (PCBs) designs, electronic component identification, the proper use of soldering/de-soldering tools, wire-wrapping, schematic layout, and PCB design and fabrication techniques, as well as familiarization with a wide range of hand and power tools and proper safety practices. The laboratory is equipped with a kick-shear, punch press, bending brake, drill presses, Pace solder stations, and CNC rapid prototype machine. The laboratory contains a safety chemical vapor hood used for chemical etching of PCBs. The soldering workstations also feature individual ventilation fans. Once students learn the foundational techniques, students are allowed to use the fabrication resources for later class projects.

- **Embedded Controller Laboratory** – (SET 449A) This laboratory provides an integrated engineering systems approach toward understanding automation principles with emphasis on embedded microcontrollers. Exposure to electrical, mechanical, and process control areas is integrated into this laboratory allowing for evaluation of embedded controller applications using motion control and peripheral devices such as dc and stepper motors, pushbuttons, switches, seven segment and liquid crystal displays (LCD), matrix keypads, analog to digital converters, speakers and radio frequency (RF) and infrared (IR) interface links.
- **Energy Storage and Conversion Laboratory** – (SET 246) provides hands-on experience in the areas of fluid mechanics, heat transfer, and thermodynamics. Classroom theory is reinforced through the application to HVAC systems, wind turbines, solar-thermal, fuel cells, batteries, and other thermal-fluids process equipment. The characteristics of the laboratory systems are investigated, tested, and evaluated for component and overall efficiencies. Students gain experience in the operation of data acquisition, process control, temperature, pressure, fluid flow control, combustion, and system-level test equipment.
- **Fluid Power Laboratory** – (SET 252) This lab is used for both lower- and upper-division fluid power courses. Lab facilities include fully functional pneumatic and hydraulic system components. Students design and fabricate working fluid power circuits to reinforce topics covered in the classroom setting. Upper-division students use the hydraulic laboratory facilities to prepare for an optional industry certification offered at the end of the semester.
- **General Purpose Laboratories** – (EJ 414, EJ 415, EJ 417) General purpose laboratories are equipped with Web, office, and programming software. They are used for a variety of courses such as programming, Web, database, and microcomputer applications.
- **Industrial Controls Laboratory** – (SET 454) This laboratory contains multiuse work areas. When used as an introductory electrical circuits and a digital electronics laboratory, students bring in their breadboard notebook constructed in the fabrication lab and use it to build and test simple circuits to develop an understanding of the fundamentals of circuit theory and digital electronics. Other test equipment such as oscilloscopes, meters, power supplies, and signal generators are on each workstation. This laboratory is also equipped with eight matched sets of AC and DC fractional horsepower machines and the test equipment necessary to analyze their performance. Stepper motors, servo motors, programmable logic controllers (PLC), transformers, rectifiers, synchronous machines, loading devices, variable frequency drives, and a simulated transmission line relay demonstrator are available and used for laboratory experiments.
- **Machine Tool/Manufacturing Laboratory** – (SET 380) is equipped with 20 manual tool room style engine lathes, vertical and universal milling machines, drill presses, and radial drill presses. Traditional machining operations are introduced and reinforced in this laboratory with the goal of giving the students "hands-on" exposure to various methods and techniques applied to production so as to give a better understanding of the related design concepts.
- **Materials Testing Laboratory** – (SET 384) includes a 160,000-pound universal testing machine and other test equipment to examine impact, torsion, hardness, and fatigue. Metallographic preparation and computer-aided image processing are used to examine material structure. Heat treating furnaces are also used to investigate the effects of thermal processing.
- **Metrology & Measurements Laboratory** – (SET 379) serves as a state-of-the-art "quality assurance" center and is anchored by new equipment recently donated by area companies. Facilities include a manual coordinate measurement machine donated by Helmel Engineering and a digital Starrett optical comparator and direct computer controlled coordinate measurement machine, both acquired through a grant from the Gleason Foundation.
- **Microelectronics laboratory** – (SET 462B) This laboratory gives the student a realistic experience in semiconductor manufacturing processes. In industry, the nature of the integrated circuit (IC) fabrication process is highly complex and absolutely intolerant of mistakes. Complex ICs have a

multitude of transistors, capacitors, and resistors. Fabrication of these devices is rather simple in theory - deposit, pattern, etch, and repeat. However, the actual fabrication process is unbelievably detailed at every step. For very complex ICs, there can be 500 or more individual process steps! The slightest mistake at any of these steps can render the entire device useless. Through a recent grant opportunity, this laboratory was equipped with Modu-Lab semiconductor device manufacturing equipment and a clean-room facility. Oxidation/diffusion, photolithography (spin/bake/expose/develop), etch, and vapor deposition stations allow the student the opportunity to design, build, and test their own simple solid-state devices, while gaining experience in clean room operations.

- **Microfabrication and Semiconductor Manufacturing Facility** – (SET 468) This classroom includes a clean room for advanced miniature device and circuit development. The facility provides state-of-the-art instruments for designing, fabricating, characterizing and testing of complex micro-scale structures and devices in MicroElectroMechanical Systems (MEMS) and Microelectronics. The recent upgrade allows fabrication of very small MEMS devices such as sensors, actuators and microfluidic systems, and more advanced microelectronic components such as integrated circuits (ICs), transistors, capacitors, inductors, resistors, and diodes.
- **Networking Laboratories** – (SET 440 and SET 446) Two fully equipped networking laboratories are used to give students hands-on experience so critical to the competitive computer and information technology job market. The college has an academic license for VMWare software products so students, using the latest version of VMWare Workstation, can run multiple guest operating system virtual machines on our powerful lab computers creating complex layered virtual networks that can be directly connected to any of our lab network equipment. The labs are equipped with a blade server with 48 gigabytes of RAM and 12 terabyte storage array upon which VMWare enterprise software is used to create a private cloud infrastructure where students can create and access virtual appliances. The college has an academic license for all Microsoft software which allows students to acquire experience using the latest enterprise network operating systems.
- **Student Project Laboratory** – (SET 460) Space in this laboratory provides support for course projects and particularly the senior capstone design experience. This facility provides secure storage for projects and the necessary tools and support equipment. The laboratory houses a model house room layout for testing of competitive autonomous robots. The active campus Robotics Club makes use of the room for building, maintaining, and evaluating student built robots.
- **Systems Laboratory** – (EJ 411) This lab is used for teaching microcomputer hardware and operating systems installation, upgrading, troubleshooting, and maintenance.
- **Thermodynamics Laboratory** – (SET 344) provides students hands-on experience with diesel and multi-fuel spark ignition engines. Real-time equipment performance data is used for simulation, modeling, and economic analysis. Areas of the energy systems laboratory are also allocated for senior projects and the SAE Baja student club.
- **Thermofluid Mechanics Laboratory** – (SET 245) is equipped with systems which provide experience with the principles of fluid mechanics and thermodynamics. Fluid flows through venture tubes, orifices, nozzles, pipes, ducts, and open channels together with system components such as pumps, fans, and piping systems are used to provide a broad range of experimentation to support basic principles.

### DEPARTMENT PROGRAMS

[Computer Engineering Technology \(AAS\)](#)

[Computer Engineering Technology \(BS\)](#)

[Electrical Engineering Technology \(AAS\)](#)

[Electrical Engineering Technology \(BS\)](#)

[Engineering Science \(AS\)](#)

[Mechanical Engineering Technology \(AAS\)](#)

[Mechanical Engineering Technology \(BS\)](#)

## Nursing

Linda Panter, Chair

Phone: 607-587-3680

Secretary Phone: 607-587-3672 or 3680

Email: panterlk@alfredstate.edu

The impending shortage of practitioners and current critical shortage of educators is leading to multiple options for those interested in the nursing profession. Jobs are available nationwide in a wide range of settings, usually with excellent salaries and opportunities for growth. At Alfred State, we are preparing students to be designers, coordinators, and managers of health care. Our students graduate as leaders contributing to the advancement of health care and the profession itself. The Nursing Department offers an associate degree nursing program accredited by the Accreditation Commission for Education in Nursing (ACEN).

The associate degree is designed to prepare individuals to become registered nurses (RNs). Students of this program become eligible to take the NCLEX-RN licensing exam and receive excellent clinical preparation in a variety of settings.

Alfred State nursing AAS graduates may enter directly into the Alfred State bachelor's degree program in nursing. This program can be completed full-time in two years or part-time as the student desires. The upper-level nursing courses are offered in an online format and include nursing, science, and liberal arts courses, primarily.

The baccalaureate degree program in nursing at The State University of New York College of Technology at Alfred is accredited by the Commission on Collegiate Nursing Education, 655 K Street, NW, Suite 750, Washington, DC 20001, 202-887-6791.

### MISSION

Foster the development and growth of professional nurses in a rural environment. Nursing practice exhibits compassion, caring, and lifelong learning.

### FACILITIES

- **Physical & Health Sciences Building** – This beautiful showcase facility, which opened in 2012 following an \$18.5 million renovation project, houses the Nursing Department.
- **Nursing skills lab** – The lab utilizes state-of-the-art equipment including VitalSim™, Simnewbaby™, and a PROMPT Birthing Simulator to complement and reinforce the learning that takes place in clinical experiences at area hospitals. This lab simulates a hospital floor setting with six stations and six VitalSim™ manikins. Each station is fully equipped for the student to learn and practice clinical skills in an acute care setting.
- **High-fidelity simulation labs** – These two high-fidelity simulation labs each house a SimMan 3G® manikin. The simulation observation room is equipped with computers and monitors to record simulation activities.
- **Practice lab** – Students have access to two stations that simulate a hospital floor setting, four examination stations, and two VitalSim™ manikins within this lab.
- **Community apartment** – In addition to the above skills labs, there is a community apartment consisting of a kitchen, living/dining room, bedroom, and bathroom for practice in a community health environment.

### DEPARTMENT PROGRAMS

[Nursing \(AAS\)](#)

[Nursing \(BS in Nursing\)](#)

[Nursing Dual Degree \(AAS to BS in Nursing\)](#)

## Physical & Life Sciences

Wayne Bensley, Chair  
Phone: 607-587-4558  
Secretary Phone: 607-587-3672 or 3680  
Email: benslewd@alfredstate.edu

The Physical and Life Sciences Department at Alfred State provides students with a strong education in a wide range of scientific and technical disciplines through online and on-campus curricular offerings. Faculty specializations span a spectrum of molecular and cell biology, genetics/genomics, nutrition science, forensic science, chemical instrumentation, microbiology, and physical chemistry. While diverse, the faculty and staff share the common goal of effectively delivering the practical and theoretical foundations of disciplines through a rich blend of interactive lectures, informal discussion, meaningful laboratory inquiries, and internships. In addition to discipline-related course work, each program is complemented by a broad array of general education courses aimed at equipping students with insights and background that will help fulfill their roles in greater society. Emphasis is also placed on lifelong learning, as reflected by the many articulation agreements assuring seamless transition to other programs within Alfred State and to other institutions of higher learning.

The department offers students direct use of modern laboratory/clinical equipment in real-world or simulated settings. Practical, hands-on competencies, critical reasoning skills, and, where pertinent, team-based problem solving, are emphasized. If a student expresses an interest outside of a discipline's normal scope, independent study options may also be developed.

In some programs there are physical ability requirements based on individualized assessment rooted in current medical evidence or the best objective evidence. See each program for specific physical requirements. If a student's physical ability compromises or threatens his/her success in a program, or the health and safety of others, he/she may be denied enrollment or continuation in the program.

### MISSION

To be recognized for employing a comprehensive plan for recruiting and admitting, orienting and advising, retaining, graduating, and placing students of its degree programs.

### FACILITIES

**Physical & Health Sciences Building** – The Physical and Life Sciences Department is located in a recently renovated facility. Four science-ready lecture rooms are on the first floor with eight laboratories found on the second and third floors for the biological science, environmental technology, health science, and the forensic science technology programs. The laboratories are outfitted with state-of-the-art equipment and instrumentation, anatomic models, and the latest application software for teaching and learning as well as for independent study and research.

### DEPARTMENT PROGRAMS

[Biological Science](#) (AAS)

[Environmental Technology](#) (AAS)

[Forensic Science Technology](#) (BS)

[Health Sciences](#) (BS)

## Social & Behavioral Sciences

Jill Priest Amati, Chair  
Phone: 607-587-4280  
Secretary Phone: 607-587-4282  
Email: amatijp@alfredstate.edu

The Social and Behavioral Sciences Department offers courses in anthropology, criminal justice, education, history, human services, political science, psychology, and sociology. It coordinates six curricula: criminal justice (AS and BS), human services management, human services, liberal arts and sciences: social science, and liberal arts and sciences: adolescent education (teacher education transfer).

The criminal justice associate degree program provides graduates a solid foundation in the field of criminal justice and its basic components. The program offers practical knowledge that is integrated across core criminal justice courses and that is then combined with other relevant course work. The program emphasizes the development, structure, and function of the criminal justice system within the US, as well as ethical law enforcement practices and community relations. In addition, the program's professional course work includes a management component that helps prepare graduates for administrative and leadership positions within the criminal justice system.

The criminal justice bachelor's degree program provides graduates a solid foundation in the field of criminal justice, both its essential components and emerging areas, with a focus on leadership and applied learning. With strong preparation in conceptual knowledge, students gain practical experience in criminal justice, including the opportunity to complete either an internship or a lab-based criminal investigation course in their final semester. In order to prepare graduates for a wide variety of careers, the program emphasizes several areas within criminal justice: ethical law enforcement practices, decision-making, community relations, working with diverse populations, public safety, and criminal justice leadership and administration.

The human services management bachelor's degree program prepares graduates for mid-level positions in human services and social services agencies requiring skills in both direct service to clients and in management. It also prepares them for transfer into graduate-level programs in such areas as human services, public administration, and social work administration.

The human services associate-level program prepares students for entry-level career positions in a variety of human service occupations or to continue their education in baccalaureate programs. Students who pursue careers upon graduation often work with the elderly or in early childhood, chemical dependency, or mental retardation programs. Students who transfer often select baccalaureate majors in human services management, social work, criminal justice, education, human services, psychology, and sociology.

The liberal arts and sciences: social science associate degree program is a transfer program that provides flexibility to students in their choice of future major. Students take considerable course work in psychology, sociology, and history, and additional courses in mathematics, English, the humanities, and the natural sciences. When transferring, students often select baccalaureate majors in psychology, anthropology, sociology, political science, history, gerontology, communications, early childhood/childhood education, adolescent education, and criminal justice.

The liberal arts and sciences: adolescent education (teacher education transfer) associate-level program prepares graduates to transfer to a four-year adolescent education program at a public or private college or university. Students may select one of six concentrations: history/social studies, English, math, physics, biology, or chemistry.

### MISSION

Develop and offer excellent academic programs in criminal justice, human services, social sciences, and education, and to develop and offer high-quality courses in the social and behavioral sciences that meet the program needs of the students of Alfred State.

## **FACILITIES**

The department is housed in the Hunter Student Development Center, where mathematics, computer, and study skills labs, as well as classrooms, are equipped with the most recent technological teaching aids.

## **DEPARTMENT PROGRAMS**

Criminal Justice (AS)

Criminal Justice (BS)

Human Services (AS)

Human Services Management (BS)

Liberal Arts & Sciences: Adolescent Education - Teacher Education Transfer (AA)

Liberal Arts & Sciences: Social Science (AA)

**ACCOUNTING****AAS DEGREE – CODE #0630**

Thomas Stolberg, Program Coordinator  
 Email address: [stolbete@alfredstate.edu](mailto:stolbete@alfredstate.edu)

The accounting program is one of our most established and respected within the business discipline. It is a computer-based program in which the latest accounting theory and real-world practice receive equal emphasis as applied to both financial and managerial accounting issues. If you're looking to enter the job market upon graduation or if you're considering an advanced degree, this major is tailor made for you.

**ADVANTAGES**

- Required course work covers areas critical to success in today's business workplace: technical accounting knowledge, communication and interpersonal skills, career-related computer literacy.
- High-tech classrooms with computer technology integrated into course content.

A laptop computer is recommended, but not required, for students entering the accounting program.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Recognize the primary theories within the principle functional areas of business.
- Demonstrate professional business communication.
- Illustrate critical thinking and effective decision-making within the principle functional areas of accounting.
- Identify ethical issues within accounting.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State accounting graduates may enter directly into either the business administration BBA, financial planning BBA, the interdisciplinary studies BTEch, or technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

Students may transfer directly into one of our own BBA degree programs or to another college. Students are encouraged to make their intentions known to their academic adviser during their freshman year. Through the careful use of elective courses, students can realize excellent transfer credit.

The Business Department has established many formal articulation agreements with local four-year institutions, although graduates may transfer to colleges virtually anywhere. Historically, accounting graduates have done very well after leaving Alfred State, whether they enter the workforce or transfer to an advanced program.

**OCCUPATIONAL OPPORTUNITIES**

- Banking
- Manufacturing
- Retail
- Government and other not-for-profit entities
- Tax agencies
- Financial services

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 20 percent are employed; 80 percent continued their education.

**RELATED PROGRAMS**

[Agricultural Business](#)  
[Business Administration](#)  
[Computer Information Systems](#)  
[Financial Planning](#)  
[Marketing](#)  
[Technology Management](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra

Recommended: Geometry and Algebra 2

**ACCOUNTING - AAS DEGREE**

## TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	1103	Info Technology Management	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Math Elective	3
			16

<b>Second</b>			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communication	3
BUAD	4203	Intro Personal Financial Plan	3
	xxx3	Humanities Gen. Ed. Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Gen. Education Elective	3
			19

<b>Third</b>			
ACCT	3423	Intermediate Accounting I	3
ECON	1013	Principles of Macroeconomics	3
ACCT	3453	Tax Accounting I	3
BUAD	3043	Business Law I	3
			12

<b>Fourth</b>			
ACCT	4523	Intermediate Accounting II	3
BUAD	3153	Fundamentals of Management	3
BUAD	4053	Business Law II	3
ECON	2023	Principles of Microeconomics	3
ACCT	4663	Actng Sys & Computer Appl	3
			15

**GRADUATION REQUIREMENTS**

62 semester hours, including 20 hours in major field with a 2.0 cumulative index in such courses, as well as six hours of math.

## AGRICULTURAL BUSINESS

### AAS DEGREE - CODE #0511

Dr. Dorothea Fitzsimmons, Program Coordinator  
 Email address: [fitsidd@alfredstate.edu](mailto:fitsidd@alfredstate.edu)

It's an exciting time to be an agricultural business student. In fact, one out of every six jobs in the American economy is related to agriculture and food businesses. So we've designed our agricultural business curriculum to provide you with the technical and business skills necessary to be successful in this dynamic field. Career opportunities in agribusiness range from managing a farm to working in the timber, banking, or publishing industries.

### ADVANTAGE

- Our graduates have the technical knowledge of agricultural production practices, land and water resources, management, and agricultural markets necessary to enter nearly any facet of the agribusiness field.

### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate essential technical knowledge of animal husbandry methods.
- Demonstrate essential technical knowledge of crops, soils, and growing conditions.
- Demonstrate the ability to analyze information, and compare and contrast agricultural business management systems.
- Demonstrate the ability to find and use information related to agricultural business management.
- Demonstrate written and oral communication skills appropriate for agricultural business.
- Apply critical thinking and reasoning to agricultural business management.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS

Alfred State agricultural business graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

### RELATED CLUBS AND ACTIVITIES

Students have the opportunity to participate in the Collegiate Agricultural Leaders (CAL) Club, Collegiate FFA, Equestrian Club, Dairy Judging Team, Agricultural Skills Day, Spring Fling Consignment Sale, Community-Supported Agriculture projects, local foods projects, showmanship contests, and Sustainability Club.

### CONTINUING EDUCATION OPPORTUNITIES

Many schools, including Cornell University, grant full credit to students wishing to transfer to four-year programs.

A formal articulation agreement exists between Alfred State and Cornell University for transfer options.

### OCCUPATIONAL OPPORTUNITIES

- Management or ownership of commercial farms
- Agricultural credit officers for banks, government, loan agencies, and farm cooperative loan agencies
- Feed, seed, and fertilizer sales technicians
- Writers of technical publications, radio and TV scripts, news items for magazines and newspapers, education and public relations materials
- Manager/assistant managers of farm supply stores
- Warehouse managers for farm chemicals, feed, seed, and fertilizers
- Chain store and retail food management
- Agricultural consulting services

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 75 percent are employed; 25 percent continued their education.

### RELATED PROGRAMS

[Accounting](#)  
[Agricultural Technology](#)  
[Marketing](#)

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

**AGRICULTURAL BUSINESS - AAS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

**First**

ANSC	1204	Introduction to Animal Science	4
AGRI	1001	Farm Practicum I	1
BIOL	1304	Botany	4
COMP	1503	Freshman Composition	3
XXXX	xxx3	Gen. Education Elective	3
			15

**Second**

ANSC	3203	Dairy Cattle Production I	3
AGRI	2013	Organic & Sustainable Ag Tech	3
CISY	1003	Intro to Microcomputer Appl OR	3
CISY	1103	Info Technology Management	3
ACCT	1124	Financial Accounting	4
XXXX	xxx3	Gen. Education Elective	3
AGRI	2001	Farm Practicum II	1
			17

**Third**

ACCT	2224	Managerial Accounting	4
ANSC	3243	Dairy Management Analysis	3
AGEC	3213	Farm & Rural Business Mgmt I	3
XXXX	xxx3	Gen. Ed. OR Technical Elective	3
XXXX	xxx3	Ag. Elective	3
AGRI	3001	Farm Practicum III	1
			17

**Fourth**

AGEC	4303	Farm & Rural Business Mgmt II	3
XXXX	xxx3	Bus. or Marketing Elective	3

AGRI	4002	Senior Seminar/ Capstone Proj	2
XXXX	xxx3	Gen. Education Elective	3
XXXX	xxx3	Ag. Elective	3
AGRI	4001	Farm Practicum IV	1
			15

**Agriculture Electives:**

ANSC	2114	Dom Animal Anat & Phys	4
ANSC	3003	Feeds and Nutrition	3
ANSC	3103	Livestock Mgmt & Production	3
ANSC	3202	Dairy Management Analysis	2
ANSC	3204	Dairy Cattle Production III	4
ANSC	2102	Dairy Cattle Reprod & A.I Tech	2
AGPS	2113	Field & Forage Crops	3
AGPS	5003	Integrated Pest Management	3
AGPS	5103	Sustainable Vegetb Prodtn Tech	3
AGRI	3351	Live Animal Evaluation	1

**Business Electives:**

BUAD	3043	Business Law I	3
MKTG	3153	Web Design & Marketing	3
BUAD	4203	Intro Personal Financial Plan	3
CISY	3023	Advanced Microcmpr Spreadshts	3
BUAD	3153	Fundamentals of Management	3

**GRADUATION REQUIREMENTS**

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum index of 2.0 in their core courses
- achieve a minimum index of 2.0 overall
- be recommended by the department faculty

## AGRICULTURAL TECHNOLOGY

### AAS DEGREE - CODE #0510

Dr. Philip Schroeder, Department Chair and Program Coordinator  
 Email: [schroepd@alfredstate.edu](mailto:schroepd@alfredstate.edu)

Careers related to agriculture are diverse and constantly changing. Today's students need the flexibility to tailor a degree to suit their needs. That's why our agricultural technology curriculum has been designed to let you select the elective courses that fit your career goals. You can choose concentrations of courses in animal science, enhancing your knowledge of animal agriculture and/or dairy science, or enhance your knowledge of crops and plant sciences, including fruit and vegetable production.

### ADVANTAGES

- Opportunities for hands-on experience with organic farming.
- Animal science concentration is a progressive practical program emphasizing dairy cattle management and provides both a science and a business background.
- Plant science concentration focuses on the management of soil to increase production of both human and animal food crops and the science and business behind it. It includes an emphasis on sustainability.

### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate essential technical knowledge of animal husbandry methods.
- Demonstrate essential technical knowledge of crops, soils, and growing conditions.
- Demonstrate the ability to analyze information, and compare and contrast agricultural management systems.
- Demonstrate the ability to find and use information related to agricultural production systems.
- Demonstrate written and oral communication skills appropriate for agricultural production systems.
- Apply critical thinking and reasoning to agricultural business management.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS

Alfred State agricultural technology graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

## ANIMAL/DAIRY SCIENCE CONCENTRATION

The animal science concentration is a progressive practical program emphasizing dairy cattle management. The program offers both managerial and hands-on experiences. This concentration's courses provide a science and business background. A strong emphasis is placed on application of these principles with our two dairy herds: a tie-stall housed conventional herd of registered Holsteins milked in a parlor with integrated dairy cattle management software, and a free-stall housed organic herd milked by a robot. The conventional herd produces more than 28,000 pounds of milk, more than 1,100 pounds of fat with a B.A.A. of more than 108.7 percent. The Alfred State cows have the highest B.A.A. of any publicly owned herd in the nation. Alternative species, including horses, pigs, alpacas, poultry, and sheep are also housed at the College Farm for instructional purposes.

## PLANT/CROPS/FRUIT/VEGETABLE CONCENTRATION

This curriculum emphasizes management of the soil to increase production of food crops for both human and livestock consumption. Students are usually interested in crop farming or market gardening careers. Students are taught conventional, natural, and organic food production systems. This concentration's courses provide a science and business background. A strong emphasis is placed on application of sustainability principles on our farm, research plots, gardens, hydroponic systems, greenhouses, and high tunnels.

## SHOWMANSHIP DAY

All students enrolled in agriculture classes truly enjoy participating in the annual showmanship activities each spring. Students can select a species of animal (cattle, horses, swine, alpacas, or sheep) to train, groom, and show in this annual competition. Family, friends, and alumni are invited to enjoy the competition and the awards barbecue following the showmanship contest.

## RELATED CLUBS AND ACTIVITIES

Students have the opportunity to participate in the Collegiate Agricultural Leaders (CAL) Club, Collegiate FFA, Equestrian Club, Dairy Judging Team, Agricultural Skills Day, Spring Fling Consignment Sale, Community Supported Agriculture projects, local foods projects, showmanship contests, and Sustainability Club.

### **CONTINUING EDUCATION OPPORTUNITIES**

Many schools, including Cornell University, grant full credit to students wishing to transfer to four-year programs. A formal articulation agreement exists between Alfred State and Cornell University for transfer options.

### **OCCUPATIONAL OPPORTUNITIES**

- Owners, operators, managers, and herdsmen for dairy cattle and meat animal farms
- Fruit, vegetable, and field crop production
- Food industry
- Salespeople and consultants for feed, fertilizer, agricultural, and veterinary supply companies
- Agricultural banking and lending
- Inspectors of agricultural products
- Laboratory and field technicians for artificial insemination and veterinary supply companies
- Dairy farm inspectors

### **EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 63 percent are employed; 37 percent continued their education.

### **ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra

Recommended: Geometry, Algebra 2, Biology, Chemistry

**AGRICULTURAL TECHNOLOGY - AAS DEGREE**

**ANIMAL SCIENCE CONCENTRATION TYPICAL FOUR-SEMESTER PROGRAM**

**First**

ANSC	1204	Introduction to Animal Science	4
AGRI	1001	Farm Practicum I	1
BIOL	1304	Botany	4
COMP	1503	Freshman Composition	3
XXXX	xxx3	Gen. Education Elective (Math Recommended)	3
			15

**Second**

ANSC	3203	Dairy Cattle Production I	3
AGPS	1104	Soils	4
ANSC	2114	Dom Animal Anat & Phys	4
AGRI	2001	Farm Practicum II	1
XXXX	xxx3	General Education Elective	3
XXXX	xxx3	Agricultural Elective	3
			18

**Third**

AGPS	2113	Field & Forage Crops	3
ANSC	3013	Animal Disease Control	3
AGEC	3213	Farm & Rural Business Mgmt I	3
AGRI	3001	Farm Practicum III	1
XXXX	xxx3	Agriculture Elective	3
XXXX	xxx3	General Education Elective	3
			16

**Fourth**

AGEC	4303	Farm & Rural Business Mgmt II	3
AGRI	4002	Senior Seminar/ Capstone Proj	2
AGRI	2013	Organic & Sustainable Ag Tech	3
AGRI	4001	Farm Practicum IV	1

XXXX	xxx3	Ag or Transfer-related Elective	3
XXXX	xxx3	General Education Elective	3
			15

If full-time student, may cross register at AU for equestrian classes.

**Suggested Agriculture or Transfer-related Electives:**

AGPS	3004	Soil Fertility	4
ANSC	3202	Dairy Management Analysis	2
ANSC	3003	Feeds and Nutrition	3
ANSC	3223	Dairy Calf Management	3
ANSC	3103	Livestock Mgmt & Production	3
ANSC	3204	Dairy Cattle Production III	4
AGPS	5103	Sustainable Vegetb Prodn Tech	3
AGPS	5003	Integrated Pest Management	3
AGRI	2013	Organic & Sustainable Ag Tech	3
AGRI	6103	Precision Agriculture	3
BIOL	2803	Environmental Science	3
BIOL	2801	Environmental Sciences Lab	1
BIOL	4254	General Microbiology	4
BIOL	6534	Genetics	4
CHEM	1114	General Chemistry I	4
MATH	xxxx		

PLANT SCIENCE CONCENTRATION TYPICAL  
FOUR-SEMESTER PROGRAM

**First**

ANSC	1204	Introduction to Animal Science	4
AGRI	1001	Farm Practicum I	1
BIOL	1304	Botany	4
COMP	1503	Freshman Composition	3
XXXX	xxx3	Gen. Ed. Elective (Math Recommended)	3
			15

**Second**

AGPS	1104	Soils	4
AGRI	2013	Organic & Sustainable Ag Tech	3
AGRI	2001	Farm Practicum II	1
XXXX	xxx3	Ag. Electives	6
XXXX	xxx3	Gen. Ed. Elective	3
			17

**Third**

AGPS	2113	Field & Forage Crops	3
AGEC	3213	Farm & Rural Business Mgmt I	3
AGPS	5103	Sustainable Vegetb Prodtn Tech	3
AGRI	3001	Farm Practicum III	1
XXXX	xxx3	Ag. Elective	3
XXXX	xxx3	Gen. Ed. Elective	3
			16

**Fourth**

AGEC	4303	Farm & Rural Business Mgmt II	3
AGRI	4002	Senior Seminar/ Capstone Proj	2
AGPS	5003	Integrated Pest Management	3
AGRI	4001	Farm Practicum IV	1
XXXX	xxx3	Ag. Elective	3
XXXX	xxx3	Gen. Ed. Elective	3
			15

If full-time student, may cross register at AU for equestrian classes.

**Suggested Agriculture or Transfer-related Electives:**

AGPS	5003	Integrated Pest Management	3
AGRI	6103	Precision Agriculture	3
ANSC	2102	Dairy Cattle Reprod & A.I Tech	2
ANSC	2114	Dom Animal Anat & Phys	4
ANSC	3003	Feeds and Nutrition	3
ANSC	3202	Dairy Management Analysis	2
ANSC	3204	Dairy Cattle Production III	4
ANSC	3223	Dairy Calf Management	3
BIOL	2803	Environmental Science	3
BIOL	2801	Environmental Sciences Lab	1
BIOL	4254	General Microbiology	4
BIOL	6534	Genetics	4
CHEM	1114	General Chemistry I	4
MATH	xxxx		

**GRADUATION REQUIREMENTS**

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum index of 2.0 in core courses
- achieve a minimum index of 2.0 overall
- be recommended by the department faculty

**ARCHITECTURAL TECHNOLOGY**

**BS DEGREE - CODE #1452**

David I. Carli, Program Coordinator  
 Email Address: [CarliDI@alfredstate.edu](mailto:CarliDI@alfredstate.edu)

Our architectural technology programs are designed to provide you with a comprehensive architectural education. The AAS degree offers a broad range of skills and the BS furthers this by combining a philosophic and artistic perspective of building design with an applied technical knowledge of construction systems and materials acquired in a four-year studio structure.

All architecture degree programs have shared course work in the first two years, while the BS and BArch have some shared course work in the third and fourth years. Because of this alignment, the AAS and BS in architectural technology are required to meet the same NAAB "Student Performance Criteria" that apply to the BArch program (which was awarded initial candidacy as of Jan. 1, 2014).

**ADVANTAGES**

- Broad exposure gives students the ability to be conversant with and/or seek employment with all related professions within the architectural field.
- The degree may be accepted for credit toward professional licensure in New York State.
- Alfred State has an agreement with Sorrento Lingue International Language Institute (Sant'Anna Institute) in Sorrento, Italy, to offer an optional semester abroad to its students. To learn more, see [www.alfredstate.edu/study-abroad/italy](http://www.alfredstate.edu/study-abroad/italy).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Comprehend architecture as being accountable to humanity's need for safe, affordable shelter, for dignified ways of living and for offering corresponding symbolic meaning - and the ability to produce designs infused by this understanding.
- Demonstrate knowledge of the evolution of architectural ideas (and associated principles, strategies and devices) throughout history and of how these were marshaled by architects in the service of certain intended purposes, as well as the ability to apply such ideas in the student's own designs.
- Demonstrate knowledge of strategies for infusing design generally, and structural expression particularly, with poetic dimensions that help to transform

environments - that would otherwise be merely good functionally and of sound construction - into inspiring and uplifting places.

- Demonstrate knowledge of sustainability, construction technology, and integrated project delivery.
- Demonstrate the ability to take on/participate constructively in urban renewal/social innovation projects that seek to serve the common good.
- Info management (computer and research skills appropriate to degree level and type).
- Written and oral communication (appropriate to degree level and type).
- Critical thinking (problem solving, reasoning skills appropriate to degree level and type).

**CONTINUING EDUCATION OPPORTUNITIES**

Graduates wishing to continue their education may choose to apply to master's programs in architecture or related disciplines. The lengths of such programs vary and depend on institutional requirements.

**OCCUPATIONAL OPPORTUNITIES**

- Architect (after successfully meeting state requirements)
- Construction manager
- Building inspector
- 3-D modeler/animater
- Computer illustrator
- Detailer
- Specification writer
- Estimator
- Model builder

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 88 percent are employed; 12 percent continued their education.

**RELATED PROGRAMS**

[Construction Management](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Pre-calculus, Physics

## TRANSFER STUDENTS

Prior to studio placement within the architectural technology BS program, each applicant must submit a digital portfolio for review that will be taken into consideration along with his/her overall grade point average and studio course grades.

Through the portfolio, the department hopes to get a sense of the applicant as a creative individual. We understand that the portfolio will not demonstrate mastery of architecture, but instead present a student's potential through explorations and representation of the built environment, which may be presented as art work such as drawings, sketches, models, sculpture, or photographs. The portfolio should focus mainly on the representation of space, but may also include a small representation of creative work such as woodworking, crafts, graphic design, and/or other creative endeavors (e.g., high school, college course) or from personal pursuits (e.g., employment, hobbies). Each portfolio should be a balanced representation of both two- and three-dimensional works.

The overall portfolio should include ten (10) to twenty (20) examples of the applicant's very best creative work and creative process. All images should be clear (not blurry or pixelated) and include a short description of the work. The description should include: when the work was completed, the medium (materials) used to create the work, the dimensions of the original work, and whether the work was completed as a personal project or as an academic project. If the work presented was part of a group effort, the description should clearly identify any other group members and state your specific role and contribution.

The Admissions committee strongly suggests using an online portfolio site such as AllYou, Behance, Portfoliobox, or similar site. All of these services offer a free option and are straightforward to set up. The department cannot answer questions about sign-in or set-up for these services. Questions about sign-in and set-up should be directed to the appropriate company.

The portfolio should be submitted by email to [admissions@alfredstate.edu](mailto:admissions@alfredstate.edu). Alfred State accepts students on a rolling admissions system, which means students are accepted on a first-come, first-served basis. However, early application and portfolio submission may be important for certain scholarship consideration.

## GRADUATION REQUIREMENTS

Successfully complete all courses in the prescribed eight-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

As part of the graduation requirements for the Bachelor of Science degree in architectural technology, students must complete a portfolio according to the following guidelines:

- The portfolio must contain a minimum of six (6) examples of creative academic work. These examples should demonstrate achievements as a designer. A minimum of two (2) examples must be from studio class projects in the last two years of the program. A maximum of two (2) examples may be of non-graphic work (example: written work).
- Each example will be accompanied by a short description of the project and solution, and include the name of the class for which the project was produced. If the item is part of a group effort, the specific role of the student should be included.
- Completed portfolios must be submitted digitally in Portable Document Format (PDF) on a CD or as directed by the department chair.
- Portfolios will be evaluated to determine whether they should be graded as "High Pass," "Pass," or "Fail." This assessment will appear on the student's permanent Alfred State transcript.
- The completed portfolio must be submitted to the Department of Architecture and Design Office by April 1. This is an absolute deadline; no portfolios will be accepted after the April 1 deadline. Evaluation will be done on a yearly basis by faculty reviewers. All decisions are final.

## EVALUATION CRITERIA

Work in student portfolios should demonstrate:

- Understanding of the philosophy of building design and problem-solving skills through original and thorough design thinking.
- Ability to legibly communicate design ideas in graphic and written form.
- A working knowledge of a variety of construction systems and materials and how they affect building design.
- Competence in the use of graphic tools and techniques including freehand drawing, computer-aided drafting, physical models, and computer imaging.

**SEMESTER ABROAD OPTION**

Alfred State has an agreement with International Language Institute (Sant'Anna Institute) in Sorrento, Italy, to offer an optional study abroad to its students. Learn more at [www.alfredstate.edu/study-abroad](http://www.alfredstate.edu/study-abroad).

**GENERAL NOTES:**

A typical day consists of two, one-hour lectures and a two-hour studio in the freshman and sophomore years. At the junior and senior levels, three-hour studios are required.

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through Technical Calculus I must be completed. Students who start at a higher level of math must meet SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

Minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) or comparable courses at another institution to guarantee admission into ARCH 5306 - Design Studio 3. A portfolio review is required of all continuing or transfer students not meeting this requirement.

If entry-level math requirement is met, take LAS elective to complete degree requirements of 3 or 4 credits, otherwise take free elective.

Students must complete at least one course from seven of the 10 SUNY General Education Silos.

Minimum grade of "C" is required for ARCH 5306, ARCH 6306, ARCH 7306 and ARCH 8306.

**ARCHITECTURAL TECHNOLOGY - BS DEGREE**

**TYPICAL EIGHT-SEMESTER PROGRAM**

<b>First</b>			
ARCH	1184	Design Fundamentals 1	4
FNAT	2333	Survey of Design	3
FNAT	1303	Architectural History I	3
MATH	1034	College Algebra of Functions	4
COMP	1503	Freshman Composition	3
			17

<b>Second</b>			
ARCH	2394	Design Fundamentals 2	4
ARCH	2014	Computer Visualization	4
	xxx3	Gen Ed/LAS Elective (Hist of West Civ)	3
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
			18

<b>Third</b>			
ARCH	3104	Design Studio 1	4
ARCH	3014	Construction Technology 1	4
ARCH	3003	Environmental Controls 1	3
	xxx3	Gen Ed/LAS Elective (Social Science)	3
MATH	1063	Technical Calculus I	3
			17

<b>Fourth</b>			
ARCH	4304	Design Studio 2	4
ARCH	4014	Construction Technology 2	4
CIVL	4103	Structures I	3
ARCH	4013	Municipal Codes & Regulations	3
SPCH	1083	Effective Speaking	3
			17

<b>Fifth</b>			
ARCH	5306	Design Studio 3	6
	xxx3	Gen Ed/ LAS Elective (Foreign Language)	3
FNAT	5303	Architectural History II	3
	xxx3	Gen Ed/LAS Elective - Upper Level	3
			15

<b>Sixth</b>			
ARCH	6306	Design Studio 4	6
	xxx4	Gen Ed/LAS Elective	4
	xxx3	Gen Ed/ LAS Elective (Humanities)	3
CIVL	5213	Foundations and Concrete	3
			16

<b>Seventh</b>			
ARCH	7306	Design Studio 5	6
ARCH	7003	Environmental Controls 2	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/LAS Elective - Upper Level	3
	xxx3	Gen Ed/LAS Elective - Upper Level	3
			18

<b>Eighth</b>			
ARCH	8306	Design Studio 6	6
ARCH	8003	Professional Practice	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/LAS Elective (Am. Hist. or Other World Civ)	3
			15

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and/or to receive licensure.

## ARCHITECTURAL TECHNOLOGY (AAS)

### AAS DEGREE - CODE #0538

Juan Burke, Program Coordinator

Email Address: [BurkeJL@alfredstate.edu](mailto:BurkeJL@alfredstate.edu)

Our architectural technology programs are designed to provide you with a comprehensive architectural education. The AAS degree offers a broad range of skills and basic data—architectural design, graphic communication, and construction technology—relevant to the building process.

All architecture degree programs have shared course work in the first two years. Because of this alignment, the AAS and BS in architectural technology programs are required to meet the same NAAB "Student Performance Criteria" that apply to the BArch program (which was awarded initial candidacy as of Jan. 1, 2014).

### ADVANTAGES

- Broad exposure gives students the ability to be conversant with and/or seek employment with all related professions within the architectural field.
- The degree may be accepted for credit toward professional licensure in New York State.

### PROGRAM STUDENT LEARNING OUTCOMES

- Comprehend architecture as being accountable to humanity's need for safe, affordable shelter, for dignified ways of living, and for offering corresponding symbolic meaning - and the ability to produce designs infused by this understanding.
- Demonstrate knowledge of the evolution of architectural ideas (and associated principles, strategies and devices) throughout history and of how these were marshaled by architects in the service of certain intended purposes, as well as the ability to apply such ideas in the student's own designs.
- Demonstrate knowledge of strategies for infusing design generally, and structural expression particularly, with poetic dimensions that help to transform environments - that would otherwise be merely good functionally and of sound construction - into inspiring and uplifting places.
- Demonstrate knowledge of sustainability, construction technology, and integrated project delivery.
- Demonstrate the ability to take on/participate constructively in urban renewal/social

innovation projects that seek to serve the common good.

- Info management (computer and research skills appropriate to degree level and type).
- Written and oral communication (appropriate to degree level and type)
- Critical thinking (problem-solving, reasoning skills appropriate to degree level and type).

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS

Alfred State architectural technology AAS graduates may enter directly into either the architectural technology BS or the architecture BArch programs (portfolio review required). AAS students wishing to move on to either the BS or BArch programs need to have completed either MATH 2043 (College Trigonometry) or MATH 1054 (Precalculus). Please note that a minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) to guarantee admission into ARCH 5306 - Design Studio 3. A portfolio review is required of all continuing students not meeting this requirement. The architectural technology AAS graduates may also enter directly into the construction supervision BTech, the interdisciplinary studies BTech, or the technology management BBA degree program.

### CONTINUING EDUCATION OPPORTUNITIES

Graduates may go directly into the workforce, or may continue in Alfred State's architectural technology BS or BArch programs. Graduates may also transfer to professional or pre-professional degree programs at other institutions. Transfer is contingent on program and institution.

### OCCUPATIONAL OPPORTUNITIES

- Architect (after successfully meeting state requirements)
- Computer modelers
- Computer animators
- Detailers
- Specification writers
- Estimators
- Building inspectors
- Interior designers
- Sales representatives
- Draftsperson

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 50 percent are employed; 50 percent continued their education.

**RELATED PROGRAMS**

[Construction Engineering Technology Interior Design](#)

**CERTIFICATION OR LICENSURE**

The degree may be accepted for credit toward professional licensure in New York State.

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2

Recommended: Physics

**TYPICAL PROGRAM**

A typical day might be one or two one-hour lectures and a two-hour studio for freshmen. In the second year, some courses use three-hour studios.

**GENERAL NOTES:**

Students must complete at least one course from each of five SUNY General Education Silos.

Entry level of student into math and composition/ literature sequences is a function of student’s high school preparation and mathematics and English placement examinations.

Math through Technical Calculus I must be completed. Students who start at a higher level in math must meet all SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

Minimum grade of “C” is required for ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304.

If entry-level math requirement is met, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

For Sociology elective, students may take SOCI 1163 or substitute HIST 1113, HIST 1143, HIST 2153, or PLSC 1043. Students planning to continue in the architectural technology BS program should consult with their adviser regarding Gen. Ed./LAS requirements.

**ARCHITECTURAL TECHNOLOGY - AAS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
ARCH	1184	Design Fundamentals 1	4
FNAT	2333	Survey of Design	3
FNAT	1303	Architectural History I	3
MATH	1034	College Algebra of Functions	4
COMP	1503	Freshman Composition	3
			17

<b>Second</b>			
ARCH	2394	Design Fundamentals 2	4
ARCH	2014	Computer Visualization	4
	xxx3	Gen Ed Elective/Hist. of West. Civ.	3
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
			18

<b>Third</b>			
ARCH	3104	Design Studio 1	4
ARCH	3014	Construction Technology 1	4
ARCH	3003	Environmental Controls 1	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen Ed Elective/ Sociology	3
			17

<b>Fourth</b>			
ARCH	4304	Design Studio 2	4
ARCH	4014	Construction Technology 2	4
CIVL	4103	Structures I	3
ARCH	4013	Municipal Codes & Regulations	3
SPCH	1083	Effective Speaking	3
			17

**ARCHITECTURE**

**BARCH DEGREE – CODE #0135**

Sue Akiyama, Program Coordinator  
 Email Address: [AkiyamSA@alfredstate.edu](mailto:AkiyamSA@alfredstate.edu)

You are considering studying architecture? You have found the right place! The Bachelor of Architecture (BArch) program prepares students to be well-rounded, creative, and socially responsible architects who shape our world through the design of meaningful and inspirational spaces and places. The BArch is a professional program, which endeavors to prepare students for licensure shortly after graduation, reducing the need for further graduate education or an advanced degree.

**ADVANTAGES**

- Students are required to supplement studies with elective concentrations related to architectural practice, such as business, construction management, information technology, visual communication, or interior design. Elective courses may be taken in other departments at Alfred State and students may also cross-register for courses at Alfred University.
- Upon successful completion of the BArch degree, graduates may begin an internship and the other professional steps leading to licensure as a registered, practicing architect. Students may participate in the Architectural Experience Program (AXP) while enrolled at Alfred State.
- The BArch program provides a career-focused, project-based education integrating theory and practice with a strong multidisciplinary foundation that draws upon an institutional heritage of building and technology.
- Alfred State has an agreement with Sorrento Lingue International Language Institute (Sant’Anna Institute) in Sorrento, Italy, to offer an optional study abroad opportunity to its students. To learn more, see [www.alfredstate.edu/study-abroad/italy](http://www.alfredstate.edu/study-abroad/italy).

**NAAB ACCREDITATION INFORMATION**

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit US professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture,

the Master of Architecture, and the Doctor of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited within six years of achieving candidacy, if its plan is properly implemented. In order to meet the education requirement set forth by the National Council of Architectural Registration Boards, an applicant for an NCARB Certificate must hold a professional degree in architecture from a program accredited by the NAAB; the degree must have been awarded not more than two years prior to initial accreditation. However, meeting the education requirement for the NCARB Certificate may not be equivalent to meeting the education requirement for registration in a specific jurisdiction. Please contact NCARB for more information.

The Alfred State Bachelor of Architecture program was granted Initial Candidacy status Jan. 1, 2014 and Continuation of Candidacy status in fall 2016.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Comprehend architecture as being accountable to humanity's need for safe, affordable shelter, for dignified ways of living, and for offering corresponding symbolic meaning - and the ability to produce designs infused by this understanding.
- Demonstrate knowledge of the evolution of architectural ideas (and associated principles, strategies and devices) throughout history and of how these were marshaled by architects in the service of certain intended purposes, as well as the ability to apply such ideas in the student's own designs.
- Demonstrate knowledge of strategies for infusing design generally, and structural expression particularly, with poetic dimensions that help to transform environments - that would otherwise be merely good functionally and of sound

construction - into inspiring and uplifting places.

- Demonstrate knowledge of sustainability, construction technology, and integrated project delivery.
- Demonstrate the ability to take on/participate constructively in urban renewal/social innovation projects that seek to serve the common good.
- Info management (computer and research skills appropriate to degree level and type).
- Written and oral communication (appropriate to degree level and type).
- Critical thinking (problem solving, reasoning skills appropriate to degree level and type).

### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2 with an 86 or above average plus high school pre-calculus. Students must submit a standardized test score (SAT and/or ACT) with a recommended combined reading/writing and math SAT score of 1170 or a composite ACT score of 24. Physics is strongly recommended.

### PORTFOLIO REQUIREMENTS

Prior to acceptance into the Bachelor of Architecture program, each applicant must submit a digital portfolio for review and consideration of her/his acceptance.

Through the portfolio, the department hopes to get a sense of the applicant as a creative individual. We understand that the portfolio will not demonstrate mastery of architecture, but instead present a student's potential through explorations and representation of the built environment, which may be presented as art work such as drawings, sketches, models, sculpture, or photographs. The portfolio should focus mainly on the representation of space, but may also include a small representation of creative work such as woodworking, crafts, graphic design, and/or other creative endeavors (e.g., high school, college course) or from personal pursuits (e.g., employment, hobbies). Each portfolio should be a balanced representation of both two- and three-dimensional works.

The overall portfolio should include ten (10) to twenty (20) examples of the applicant's very best creative work and creative process. All images should be clear (not blurry or pixilated) and include a short description of the work. The description should include: when the work was completed, the medium (materials) used to create the work,

the dimensions of the original work, and whether the work was completed as a personal project or as an academic project. If the work presented was part of a group effort, the description should clearly identify any other group members and state your specific role and contribution.

The Admissions Committee strongly suggests using an online portfolio site such as AllYou, Behance, Portfoliobox, or similar site. All of these services offer a free option and are straightforward to set up. The department cannot answer questions about sign-in or set-up for these services. Questions about sign-in and set-up should be directed to the appropriate service provider.

The portfolio should be submitted by email to [admissions@alfredstate.edu](mailto:admissions@alfredstate.edu). Alfred State accepts students on a rolling admissions system, which means students are accepted on a first-come, first-served basis. However, early application and portfolio submission may be important for certain scholarship consideration.

### GRADUATION REQUIREMENTS

Successfully complete all courses in the prescribed 10-semester program at a minimum cumulative index of 2.5, which is equivalent to a "C+" average.

As part of the graduation requirements for the Bachelor of Architecture, students must complete a portfolio as part of their professional practice course work.

### CAREER OPPORTUNITIES

A wide range of activities are open to graduates of this accredited degree: intern architect, practicing architect (after successfully meeting state registration requirements), or practitioner in related sub-fields that include: sustainable architecture, urban design, interior architecture, adaptive reuse and historic preservation, building construction management, hospitality design, lighting design, acoustical design, religious building design, and others.

### POST-GRADUATE STUDIES

BArch graduates who wish to continue academic study may choose to apply at another institution to master's or doctoral programs in architecture or related disciplines.

### TYPICAL PROGRAM

In the first and second years, a typical day consists of two one-hour lectures and a two-

hour studio. At the junior, senior, and fifth-year levels, the studio meeting times are three hours.

Students can expect to spend additional time working on projects and course work out of studio.

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through Technical Calculus I must be completed. Students who start at a higher level of math must meet all SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

**GENERAL NOTES:**

Students must complete at least one course from seven of the 10 SUNY General Education silos.

Minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) or comparable courses at another institution to guarantee admission into ARCH 5306-Studio 3. A portfolio review is required of all continuing or transfer students not meeting this requirement.

Minimum of "C" is required for ARCH 1184, ARCH 2394, ARCH 3104, ARCH 4304, ARCH 5306, ARCH 6306, ARCH 7306, ARCH 8306, ARCH 8716, and ARCH 8776.

**ARCHITECTURE - BARCH DEGREE**

TYPICAL TEN-SEMESTER PROGRAM

<b>First</b>			
ARCH	1184	Design Fundamentals 1	4
FNAT	2333	Survey of Design	3
FNAT	1303	Architectural History I	3
COMP	1503	Freshman Composition	3
MATH	1054	Precalculus	4
			17
<b>Second</b>			
ARCH	2394	Design Fundamentals 2	4
ARCH	2014	Computer Visualization	4
MATH	1063	Technical Calculus I	3
HIST	1113	Hist of West Civil Since 1648	3
PHYS	1024	General Physics I	4
			18
<b>Third</b>			
ARCH	3104	Design Studio 1	4
ARCH	3014	Construction Technology 1	4
ARCH	3003	Environmental Controls 1	3
	xxx3	Foreign Lang.	3
SOCI	1163	General Sociology	3
			17
<b>Fourth</b>			
ARCH	4304	Design Studio 2	4
ARCH	4014	Construction Technology 2	4
ARCH	4013	Municipal Codes & Regulations	3
CIVL	4103	Structures I	3
SPCH	1083	Effective Speaking	3
			17
<b>Fifth</b>			
ARCH	5306	Design Studio 3	6
FNAT	5303	Architectural History II	3
	xxx3	Concentration	3
	xxx3	Elective/LAS	3

15			
<b>Sixth</b>			
ARCH	6306	Design Studio 4	6
CIVL	5213	Foundations and Concrete	3
	xxx3	Concentration Elective/LAS	3
	xxx3	Gen Ed Elective/Humanities	3
			15
<b>Seventh</b>			
ARCH	7306	Design Studio 5	6
ARCH	7003	Environmental Controls 2	3
	xxx3	Concentration Elective	3
COMP	5703	Technical Writing II	3
			15
<b>Eighth</b>			
ARCH	8306	Design Studio 6	6
ARCH	8003	Professional Practice	3
	xxx3	Concentration Elective	3
	xxx4	Gen Ed Elective	4
			16
<b>Ninth</b>			
ARCH	8716	Design Studio 7-Thesis Defn'tn	6
ARCH	8733	Modern Architectural Theory	3
ARCH	8753	Advanced Structural Concepts	3
	xxx3	Concentration Elective	3
			15
<b>Tenth</b>			
ARCH	8776	Design Studio 8-Thesis Develop	6
ARCH	8793	Professional Development	3
	xxx3	Concentration Elective	3
			12

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and/or receive licensure.

**AUTOBODY REPAIR**

**AOS DEGREE – CODE #0453**

Eric Wilmot, Department Chair and Program Coordinator

Email address: [wilmotej@alfredstate.edu](mailto:wilmotej@alfredstate.edu)

This specialization will prepare you with 1,800 hours of practical experience and classroom training applicable to the dynamic autobody repair field. Your laboratory experience will range from spot repair, total wreck repair, and specialized paint jobs to estimating, rust repair, and frame straightening.

**ADVANTAGES**

- Inter-Industry Conference on Automotive Collision Repair (ICAR) certified and accredited by the National Automotive Training Educational Foundation (NATEF).
- Graduates may take Automotive Service Excellence (ASE) certification exams. Graduates are also eligible for New York State inspection certification. Students may take the ASE exam for certification in refrigerant recycling and recovery during their senior year.
- Students successfully completing autobody repair may wish to remain at Alfred State in the automotive service technician; heavy equipment, truck & diesel technician; or motorsports programs for another one-and-one-half years to receive a second degree upon successful completion of course. This requires department chair’s approval.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate a focused, coherent, organized written report.
- Perform mathematic calculations required for entry-level automotive employment.
- Demonstrate a functional ability to read and retain/apply written instructions and specifications relevant to their work environment.
- Demonstrate critical thinking and program-solving skills to work with sheet metal repair.
- Demonstrate ability to identify different types of frame damage.
- Demonstrate painting skills for B/C and single stage painting.
- Demonstrate the ability to repair frame and structure collision damage.
- Demonstrate the ability to identify, evaluate, remove, and replace various mechanical components.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State autobody repair graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two additional years; others may complete the BBA program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Autobody repair specialist
- Automotive refinisher
- Body shop owner
- Frame straightening specialist
- Shop foreman
- Service manager
- Wheel alignment specialist

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 86 percent are employed; 14 percent continued their education.

**RELATED PROGRAMS**

[Automotive Service Technician](#)  
[Heavy Equipment, Truck & Diesel Technician](#)  
[Mechanical Engineering Technology](#)  
[Motorsports Technology](#)  
[Welding Technology](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the autobody repair program must meet the following physical requirements:

- Must be able to lift 50 pounds to eye level.
- Must be able to effectively communicate with a person 6 to 10 feet away.
- Must be able to visually decipher small images on a monitor or digital display.
- Must be able to distinguish sounds associated with mechanical failures.
- Must be able to comprehend written information found in service repair manuals.
- Must have a valid motor vehicle driver’s license.

**CERTIFICATION OR LICENSURE**

Graduates may take Automotive Service Excellence (ASE) certification exams. Graduates

are also eligible for New York State inspection certification. Students may take the ASE exam for certification in refrigerant recycling and recovery during their senior year.

**AUTOBODY REPAIR - AOS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
AUTO	1326	Body Welding	6
AUTO	1313	Wrecker Operation & Estimating	3
AUTO	1306	Rust Repair	6
AUTO	1343	Refinishing Basics	3
			18
<b>Second</b>			
AUTO	2309	Brakes, Susp & Structrl Anlys	9
AUTO	1344	Recondtnng & MechancI Compons	4
AUTO	2365	Chassis Electrical	5
			18
<b>Third</b>			
AUTO	3819	Auto Body Skls/ Comptrzed Est	9
AUTO	3809	Inspec, Gen Alignment & AC	9
			18
<b>Fourth</b>			
AUTO	4639	Major Collision Repair	9
AUTO	4629	Major Refinishing	9
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**AUTOMOTIVE SERVICE TECHNICIAN****AOS DEGREE – CODE #0451**

Eric Wilmot, Department Chair and Program Coordinator

Email address: [wilmotej@alfredstate.edu](mailto:wilmotej@alfredstate.edu)

This specialization includes 1,800 hours of practical and classroom training in general automotive repair geared to automotive dealership and independent garage practice. You will receive hands-on experience with all types of automobiles, including domestic, imported, gasoline, diesel, and alternative fuels with labs taught by experts in the field. All systems of the automobile are covered in the instruction, including the latest gasoline fuel injection, electronic controls, emission controls, and automatic transmission overhaul.

**ADVANTAGES**

- Graduates may take Automotive Service Excellence (ASE) certification exams. Students are eligible for New York State inspection certification upon successful completion of their freshman year.
- Master certified by the National Automotive Technicians Educational Foundation, Inc. (NATEF).
- National Alternative Fuels Training Consortium (NAFTC).
- NYS Licensed Inspection Station.
- Students successfully completing the general automotive service technician program may return for a third year (senior year) in heavy equipment, truck & diesel technician or motorsports technology and earn a second associate degree. They may be admitted to autobody repair with the department chair's approval.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate a focused, coherent, organized written report.
- Perform mathematical calculations required for entry-level automotive employment.
- Demonstrate a functional ability to read and retain/apply written instructions and specifications relevant to their work environment.
- Demonstrate the ability to understand operation and diagnostic procedures of modern vehicle electrical and electronic systems.
- Demonstrate the ability to describe operation, diagnose, and repair automotive drive train systems.

- Demonstrate the ability to describe operation, diagnose, and repair modern engines.
- Demonstrate the ability to describe operation, diagnose, and repair modern automotive steering, brakes, and suspension systems.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State automotive service technician graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two additional years; others may complete the BBA program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Automatic transmission technician
- Automotive technician specialist
- Automotive diagnostic specialist
- Brake specialist
- Drivability specialist
- Fuel system specialist
- Independent repair shop owner
- Manufacturer's service representative
- Marine engine service specialist
- Service manager
- Service salesperson
- Shop foreman
- Wheel alignment specialist

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 85 percent are employed; 15 percent continued their education.

**RELATED PROGRAMS**

[Autobody Repair](#)  
[Heavy Equipment, Truck & Diesel Technician](#)  
[Mechanical Engineering Technology](#)  
[Motorsports Technology](#)  
[Welding](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the automotive service technician program must meet the following physical requirements:

- Must be able to lift 50 pounds to eye level.

- Must be able to effectively communicate with a person 6 to 10 feet away.
- Must be able to visually decipher small images on a monitor or digital display.
- Must be able to distinguish sounds associated with mechanical failures.
- Must be able to comprehend written information found in service repair manuals.
- Must have a valid motor vehicle driver's license.

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**CERTIFICATION OR LICENSURE**

Graduates may take Automotive Service Excellence (ASE) certification exams. Students are eligible for New York State inspection certification upon successful completion of their freshman year.

**AUTOMOTIVE SERVICE TECHNICIAN - AOS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
AUTO	1109	Brakes, Steering & Susp Sys	9
AUTO	1124	Automotive Welding	4
AUTO	1135	Bsc Elctrn & Compnt Overhaul	5
			18
<b>Second</b>			
AUTO	1169	Auto Electric, Fuel & Emission	9
AUTO	1149	Inspec, Main, AC Htng & Clng	9
			18
<b>Third</b>			
AUTO	3409	Engine Service	9
AUTO	4449	Drive Train Service	9
			18
<b>Fourth</b>			
AUTO	3429	Adv Elctrn & Engine Perfmnc	9
AUTO	4439	Shop Management & Enhanced Sys	9
			18

**BIOLOGICAL SCIENCE****AAS DEGREE - CODE #1554**

Dr. Ashley Shaloo, Program Coordinator  
 Email address: [shalooac@alfredstate.edu](mailto:shalooac@alfredstate.edu)

The biological science degree is a hands-on program designed to prepare you to excel in various scientific laboratories or to continue your education in a number of science or pre-professional fields. The program provides a foundation in biology, chemistry, and mathematics as well as a common core of general education courses.

**ADVANTAGES**

Biological science is a flexible program that can be tailored to fit the educational requirements of a variety of laboratory-related occupations and transfer opportunities.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Explain and apply the scientific method in order to document, interpret, and present results of an experiment.
- Evaluate scientific literature to summarize current thinking on a significant topic.
- Display effective interpersonal communication and work skills in the lecture and laboratory setting.
- Choose and employ proper safety practices in the laboratory.
- Demonstrate the calibration and operation of scientific instrumentation.
- Utilize gravimetric and volumetric methods to determine the physical and chemical properties of matter.
- Make both organic and inorganic compounds according to prescribed multi-step syntheses.
- Use microbiological techniques to isolate organisms in pure culture.
- Describe the association of structure and function of plants and animals.
- Classify groups of organisms according to taxonomic criteria and evolutionary relationships.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State biological science graduates may enter directly into the health sciences BS, forensic science technology BS, the interdisciplinary studies BTech, or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

The program also enables graduates to transfer to four-year programs in biology and chemistry as well as programs such as sports medicine, medical technology, ultrasound technology, and pre-professional programs (medicine, veterinary, dentistry, and pharmacy).

**OCCUPATIONAL OPPORTUNITIES**

- Environmental monitoring
- Pharmaceutical testing
- Wastewater treatment
- Laboratory technician

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent continued their education.

**RELATED PROGRAMS**

[Environmental Technology \(AAS\)](#)  
[Forensic Science Technology \(BS\)](#)  
[Health Sciences \(BS\)](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, Biology, Chemistry

**TECHNICAL STANDARDS:**

Students must possess fine motor skills that allow them to focus a microscope with fine adjustment and use forceps.

**GRADUATION REQUIREMENTS**

A minimum of 63 credit hours is required for graduation, with an overall cumulative index of 2.0. A grade of "C" or better is required in the core science courses (those which have BIOL or CHEM prefixes).

**BIOLOGICAL SCIENCE - AAS DEGREE**  
**TYPICAL FOUR-SEMESTER PROGRAM**

MATH courses must be at the level of MATH 1033 college algebra or above.

<b>First</b>			
BIOL	1101	Topics in General Biology	1
BIOL	1104	General Biology I	4
CHEM	1984	Chemical Principles I	4
COMP	1503	Freshman Composition	3
MATH	xxxx	Math Elective (MATH 1033 or greater)	3-4
			15-16

<b>Second</b>			
BIOL	2204	General Biology II	4
LITR	2603	Introduction to Literature	3
CHEM	2984	Chemical Principles II	4
XXXX	xxxx	Technical Elective	2-4
XXXX	xxx3	Gen Ed Elective	3
			16-18

<b>Third</b>			
BIOL	5254	Principles of Microbiology	4
CHEM	3514	Organic Chemistry I	4
SPCH	1083	Effective Speaking	3
MATH	xxxx	Math Elective	3-4
XXXX	xxx3	Technical Elective	3
			17-18

<b>Fourth</b>			
BIOL	6534	Genetics	4
CHEM	4524	Organic Chemistry II	4
BIOL	2111	Biological Sciences Seminar	1
XXXX	xxx3	Technical Elective	3-4
XXXX	xxx3	Open Elective	3-4
			15-17

<b>Technical Electives:</b>			
AGPS	1103	Soils	3
AGPS	5003	Integrated Pest Management	3
ANTH	5333	Medical Anthropology	3
BIOL	1223	Introduction to Forestry	3
BIOL	1304	Botany	4
BIOL	1404	Anatomy & Physiology I	4
BIOL	2504	Anatomy & Physiology II	4
BIOL	2803	Environmental Science	3
BIOL	2801	Environmental Sciences Lab	1
BIOL	4403	Pathophysiology	3
BIOL	5003	Genomics	3
BIOL	5013	Biotechniques	3
BIOL	5223	Ecology	3
BIOL	5900	Directed Study	1
BIOL	6003	Molecular and Cell Biology	3
CHEM	5414	Analytical Principles	4
CHEM	7784	Biochemistry	4
COMP	5703	Technical Writing II	3
ENVR	4424	Environmntl Chem & Microbiology	4
FRSC	3113	Forensic Pathology	3
HLTH	1013	Essentials of Exercise Physiol	3
HLTH	1113	Biology of Human Sexuality	3
HLTH	1313	Nutrition	3
HLTH	5113	Complementary & Altv Medicine	3
HLTH	5233	The Culture of Healthcare	3
MATH	1084	Calculus I	4
MATH	2124	Statistical Methods & Analysis	4
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
PHYS	1044	College Physics I	4
PHYS	2044	College Physics II	4

**BUILDING TRADES: BUILDING CONSTRUCTION****AOS DEGREE – CODE #0420**

R. Jack Jones, Department Chair and Program Coordinator

Email address: [jonesrj@alfredstate.edu](mailto:jonesrj@alfredstate.edu)

The building construction program will provide you with instruction in the basic skills required of the carpenter and the mason in the construction of residential or other light-frame and masonry buildings. You will also gain extensive experience in building layout, foundations, framing, sheathing, exterior and interior trim, block work, brick, and concrete construction.

**ADVANTAGES**

- Coupled with practical experience, the program provides the necessary theory connected with carpentry and masonry operations, as well as blueprint reading, cost and materials estimating, surveying for building layout and control, and safety on the job.
- A large part of the program is actual on-the-job training under the supervision of qualified instructors. Frequently, concrete and lumber companies instruct students in the uses of their products.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Measure, layout, and cut materials accurately and build various construction systems.
- Safely set up and operate construction tools and equipment.
- Accurately estimate materials for a project and explain how to manage materials and supervise people.
- Read and interpret construction prints.
- Demonstrate essential problem-solving skills generally employed in the construction industry.
- Demonstrate effective written construction communication.
- Demonstrate effective oral communication.
- Perform common mathematical construction calculations.
- Demonstrate the proper selection and installation of materials used to build various construction projects.
- Perform computer-based research and communication.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State building trades: building construction graduates may enter directly into the construction supervision BTech or technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the baccalaureate program in two additional years; others may complete the program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Manufacturers
- Cabinetmaker
- Sales
- Shop foreman
- Installer (cabinets, etc.)
- Dealers
- Maintenance supervisor
- Carpenter
- Contractor
- Self-employment
- Expediter
- Construction superintendent
- Construction foreman
- Mason
- Estimator

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 60 percent are employed; 40 percent continued their education.

**RELATED PROGRAMS**

[Heating, Ventilation, and Air Conditioning Architectural Technology](#)  
[Construction Engineering Technology](#)  
[Electrical Construction and Maintenance Electrician](#)  
[Masonry](#)  
[Surveying Engineering Technology](#)

**BUILDING TRADES: BUILDING CONSTRUCTION - AOS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

**First**

BLCT	1124	Construction Essentials I	4
BLCT	1034	Workplace Environment & Safety	4
BLCT	1022	Wood Fabrication Technology I	2
BLCT	1132	Estimating I	2
BLCT	1142	Masonry I	2
BLCT	1024	Construction Essentials II	4
			18

**Second**

BLCT	2044	Construction Essentials III	4
BLCT	2054	Construction Essentials IV	4
BLCT	2064	Structural Components	4
BLCT	2032	Wood Fabrication Technology II	2
BLCT	2132	Estimating II	2
BLCT	2142	Masonry II	2
			18

**Third**

BLCT	3223	Home Remodeling	3
BLCT	3033	Cabinet & Counter Top Const	3
BLCT	3123	Constructn Drawings & Specifct	3
BLCT	3213	Exterior Construction Details	3
BLCT	3323	Interior Trim	3
BLCT	3233	Advanced Framing	3
			18

**Fourth**

BLCT	3203	Estimating III	3
BLCT	4212	Construction Safety	2
BLCT	4303	Interior Surfaces	3
BLCT	4312	Intro to Resid Jobsite Manage	2
BLCT	4042	Construct Business Operation	2
BLCT	4023	Form Building	3

OR

BLCT	4033	Historic Framing Techniques	3
BLCT	3313	Basic CAD for Resid Drawings	3
			18

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the building trades: building construction program must be able to meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder and/or able to climb, un-aided, onto and off of equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**BUSINESS ADMINISTRATION****AS DEGREE – CODE #0671**

Dianne Clark, Program Coordinator  
Email address: [clarkdc@alfredstate.edu](mailto:clarkdc@alfredstate.edu)

Whether you're interested in the management, administrative, or technical side of modern business, our degree programs will prepare you with the hands-on courses and real-world skills necessary to succeed in this ever-evolving field. Our business administration AS (transfer) program is designed primarily to provide you with the foundation needed to continue your formal education in the business field in a four-year program.

**ADVANTAGES**

- Prepares graduates for the rapid pace of technological advancement and an increasingly global society by emphasizing managerial and technical skills and the ability to stay abreast in the dynamic field of business in today's economy.
- Students gain a thorough foundation in written and oral communication, presentation, and decision-making skills, as well as experience working as part of a team.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Recognize the primary theories within the principle functional areas of business.
- Demonstrate professional business communication.
- Illustrate critical thinking and effective decision-making within the principle functional areas of business.
- Identify ethical issues within business.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State business administration graduates may enter directly into either the business administration BBA, the financial planning BBA, the interdisciplinary studies BTech, or the technology management BBA degree program at Alfred State.

**CONTINUING EDUCATION OPPORTUNITIES**

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include: Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY

at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Cornell University, Canisius College, Niagara University, and Hilbert College.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 4 percent are employed; 96 percent continued their education.

**RELATED PROGRAMS**

[Accounting](#)  
[Business Administration](#)  
[Financial Planning](#)  
[Marketing](#)  
[Sport Management](#)  
[Technology Management](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry

Recommended: Algebra 2

**BUSINESS ADMINISTRATION - AS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	xxx3	Intro to Computers/ Info Mgmt Elective	3
MATH	xxx3	Stats I Prerequisite OR Statistics I	3
MKTG	2073	Principles of Marketing	3
			16

\* Calculus I is essential to achieving junior status in business programs at the following SUNY campuses: the University at Buffalo, Binghamton University, and the University at Albany. Therefore, Calculus I is recommended if you are continuing your education at any one of those universities.

**GRADUATION REQUIREMENTS**

62 semester hours with a 2.0 cumulative index.

**Second**

ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Stats I, Stats II or Calculus 1*	3
	xxx3	LAS/Gen. Education Elective	3
			16

**Third**

BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
BUAD	4203	Intro Personal Financial Plan	3
ECON	1013	Principles of Macroeconomics	3
	xxx3	LAS/Gen. Education Elective	3
			15

**Fourth**

ECON	2023	Principles of Microeconomics	3
BUAD	4053	Business Law II	3
	xxx3	LAS/Gen. Education Elective	3
	xxx3	Business or Computer Elective	3
	xxx3	LAS/Gen. Education Elective	3
			15

**BUSINESS ADMINISTRATION (BBA)****BBA DEGREE – CODE #0280****BBA DEGREE - ACCELERATED - 3 YEAR - CODE #2602**

Francine Staba, Program Coordinator  
Email address: [stabafm@alfredstate.edu](mailto:stabafm@alfredstate.edu)

Whether you're interested in the management, administrative, or technical side of modern business, our degree programs will prepare you with the hands-on courses and real-world skills necessary to succeed in this ever-evolving field. Our business administration BBA offers you preparation for positions of leadership and responsibility in business and industry, governmental and not-for-profit organizations, and graduate study. Students develop important analytical and critical thinking skills necessary for success in today's business environment.

**ADVANTAGES**

- Prepares graduates for the rapid pace of technological advancement and an increasingly global society by emphasizing managerial and technical skills and the ability to stay abreast in the dynamic field of business in today's economy.
- The BBA degree in business administration is designed to allow students to enter as freshmen or to transfer in after earning their AAS or AS business degree.
- An accelerated three-year option exists for highly motivated and academically talented students.

A laptop computer is required for students entering this degree program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate technical competence in domestic and global environments within the principle functional areas of business.
- Analyze business problems and devise solutions using critical thinking, decision-making processes, and decision-support tools.
- Formulate a strategic plan using effective teamwork while integrating the major functional areas of business and innovation.
- Evaluate software, technology, and information systems in regards to business operations.

- Examine comprehensive business issues and communicate findings and solutions.
- Examine the strategic management environment in relation to the current financial, legal, economic, and social environments.
- Analyze the role of ethics, government regulations, and legalities in management processes.
- Compare and contrast organizations in a global and diverse community.

**OCCUPATIONAL OPPORTUNITIES**

- Administrative services manager
- Business managers of artists/athletes
- Business operations specialist
- Financial analysts/managers/specialists
- General and operations managers
- Human resource specialist
- Loan counselors/officers
- Management analysts
- Marketing managers
- Sales managers

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 90 percent – 70 percent are employed; 20 percent continued their education.

**RELATED PROGRAMS**

[Accounting](#)  
[Business Administration](#)  
[Financial Planning](#)  
[Marketing](#)  
[Sport Management](#)  
[Technology Management](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 980 or a composite ACT score of 19.

Recommended: Algebra 2

**BUSINESS ADMINISTRATION - BBA DEGREE**

15

**TYPICAL EIGHT-SEMESTER PROGRAM**

**First**

ACCT	1124	Financial Accounting	4
CISY	xxx3	Computer Elective	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Math Elective	3
COMP	1503	Freshman Composition	3
			16

**Second**

ACCT	2224	Managerial Accounting	4
ECON	1013	Principles of Macroeconomics	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Stats I or Stats Methods	3
	xxx3	Free Elective	3
			16

**Third**

BUAD	3153	Fundamentals of Management	3
ECON	2023	Principles of Microeconomics	3
SPCH	1083	Effective Speaking	3
	xxx3	General Education Elective	3
	xxx3	Free Elective	3
			15

**Fourth**

BUAD	2033	Business Communication	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	Business Elective	3
	xxx3	Open Elective	3
			15

**Fifth**

BUAD	3043	Business Law I	3
BUAD	5003	Management Communications	3
BUAD	6003	Managerial Finance	3
	xxx3	Gen. Ed. or Business Elective	3
	xxx3	Business Elective	3

**Sixth**

BUAD	7273	Organizational Behavior	3
BUAD	5013	Principles of Leadership	3
BUAD	6113	Strategic & Creative Prob Solv	3
BUAD	5023	Human Resource Management	3
	xxx3	Business Elective	3
			15

**Seventh**

BUAD	7023	Legal Environment of Business	3
		OR	
	xxx3	Business Elective - Upper	3
BUAD	7033	Operations Management	3
	xxx3	Business Elective - Upper	3
	xxx3	Business Elective - Upper	3
	xxx3	Gen. Ed. or Business Elective	3
			15

**Eighth**

BUAD	8003	Management Info Systems - MIS	3
BUAD	8013	International Business	3
BUAD	5043	Business Ethics	3
BUAD	8023	Strategic Management Capstone	3
BUAD	xxx3	Business Elective - Upper	3
			15

**GRADUATION REQUIREMENTS**

- 122 credit hours.
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State.
- Cumulative overall index of at least 2.0

**BUSINESS ADMINISTRATION ACCELERATED  
(3-YEAR) PROGRAM**

**TYPICAL THREE-YEAR PROGRAM  
STRUCTURE**

**Year 1 - Semester 1 - Fall**

ACCT	1124	Financial Accounting	4
CISY	xxx3	Computer Elective	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Math Elective	3
COMP	1503	Freshman Composition	3
			16

**Year 1 - Winter Session**

BUAD	3153	Fundamentals of Management	3
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**Year 1 - Semester 2 - Spring**

ACCT	2224	Managerial Accounting	4
ECON	1013	Principles of Macroeconomics	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Statistics I or Statistical Methods	3
SPCH	1083	Effective Speaking	3
			16

**Year 1 - Summer Session**

xxx3	Free Elective	3
xxx3	Gen Ed Elective	3
		6

**Year 2 - Semester 3 - Fall**

ECON	2023	Principles of Microeconomics	3
	xxx3	Business Elective	3
BUAD	2033	Business Communication	3
BUAD	3043	Business Law I	3
BUAD	5003	Management Communications	3
XXXX	xxx3	Open Elective	3
			18

**Year 2 - Winter Session**

xxx3	Gen Ed Elective	3
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**Year 2 - Semester 4 - Spring**

BUAD	7273	Organizational Behavior	3
BUAD	5013	Principles of Leadership	3

BUAD	6113	Strategic & Creative Prob Solv	3
BUAD	5023	Human Resource Management	3
XXXX	xxx3	Gen Ed or Business Elective	3
XXXX	xxx3	Business Elective	3
			18

**Year 2 - Summer Session**

xxx3	Gen Ed Elective	3
xxx3	Free Elective	3
		6

**Year 3 - Semester 5 - Fall**

BUAD	7023	Legal Environment of Business	3
	xxx3	Business Elective (Upper)	3
BUAD	7033	Operations Management	3
BUAD	6003	Managerial Finance	3
	xxx3	Business Elective	3
			15

**Year 3 - Winter Session**

xxx3	Gen Ed or Business Elective	3
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**Year 3 - Semester 6 - Spring**

BUAD	8003	Management Info Systems - MIS	3
BUAD	8013	International Business	3
BUAD	5043	Business Ethics	3
BUAD	8023	Strategic Management Capstone	3
	xxx3	Business Elective (Upper)	3
	xxx3	Business Elective (Upper)	3
			18

**GRADUATION REQUIREMENTS**

- 122 credit hours.
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State.
- Cumulative overall index of at least 2.0

**CODING & REIMBURSEMENT SPECIALIST  
CERTIFICATE – CODE #1671**

Erica Matteson, RHIA, Program Coordinator  
Email address: [matteses@alfredstate.edu](mailto:matteses@alfredstate.edu)

Securing accurate and appropriate payment for health care services is a challenge for health care providers, insurance companies, and patients. Today's complex health care insurance and governmental payment systems depend on medical coding to determine proper payment. The coding and reimbursement specialist program incorporates the knowledge and skills you will need to assign the correct code for prompt and accurate reimbursement. As a C&RS professional, you will analyze patient records, assign ICD (ICD-10-CM/ICD-10-PCS), CPT, and HCPCS codes to diagnoses, procedures, and services provided to patients for timely and accurate health care billing, reimbursement, and medical necessity.

Online instruction is organized under the health information technology program (HIT program). This means if you initially select the C&RS program, you can transfer courses into the HIT program and earn your Associate in Applied Science (AAS) degree.

**ADVANTAGES**

- Alfred State's comprehensive coding certificate program offers individuals the opportunity to pursue a business-related career essential to the health care industry.
- Alfred State's C&RS program is entirely internet-based education, with the exception of the 80 hours of Professional Practice Experience.
- Teaching faculty in C&RS curriculum have real-world Health Information Management (HIM) industry experience.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply biomedical knowledge (including medical terminology, anatomy & physiology, pathophysiology, and pharmacology) to apply diagnosis/procedure codes (ICD-10-CM, ICD-10-PCS, CPT, and HCPCS level II) according to current nomenclature.
- Use established federal guidelines, accreditation standards, and APC and DRG calculator/grouper software to comply with health care documentation (review), reimbursement, and reporting requirements.
- Apply HIM knowledge as defined by organizational policy and external regulations

(e.g., Medicare, Medicaid, and managed care) and standards to maintain the accuracy and completeness of the patient record.

- Apply HIM knowledge of policies and procedures for confidentiality and security measures regarding the access and disclosure of protected health information (PHI) to authorized users.
- Apply HIM knowledge in the collection, maintenance, and reporting of data for clinical indices/databases/registries to meet specific organizational and regulatory needs for the purposes of medical research and education.
- Apply HIM knowledge of legal, ethical, accreditation, and certification standards as appropriate for the management of health information.
- Apply basic methods when calculating descriptive, institutional, and health care vital statistics.
- Apply the use of common software applications (e.g., spreadsheets, databases, word processing, graphics, presentation, email, and so on) and HIM-related software applications (e.g., release of information, electronic health record, patient record abstracting, and so on).
- Apply HIM knowledge to promote ethical standards of practice to health information management and coding.
- Demonstrate critical thinking to problem-solving and reasoning skills to health information management and coding practices.

**PROFESSIONAL PRACTICE EXPERIENCE**

Students complete non-paid professional practice experiences (PPEs) in the health information (coding) department of a health care facility (80 hours) in their last semester of study. Students are not a substitute for paid staff during PPEs, which means they are expected to receive appropriate supervision and mentoring during completion of all tasks.

The Joint Commission "Hospital Accreditation Standards Manual" requires hospitals to implement "a process to ensure that a person's qualifications are consistent with his/her job responsibilities." This standard "applies to staff, students, and volunteers," and it further states that the hospital is responsible for verifying "the following according to law, regulation, or hospital policy: information on criminal background." As such, Alfred State students who complete PPEs in the C&RS program may be required to undergo a criminal background check prior to

placement at the facility. In addition, the facility may require students to undergo a physical examination (on-site at the facility or by the student's primary care provider) prior to beginning the PPE. The physical examination includes drug screening, a TB test, and/or DTB, hepatitis B, and/or MMRV immunization or status. Students may be required to incur costs associated with the criminal background check and/or physical examination.

Students may be required to attend an on-site orientation at the professional practice facility, which could be several days in length beyond the 80 PPE hours. Students must make appropriate arrangements with their current employer to complete the 80 hours at the PPE host site.

### **C&RS ENTRANCE REQUIREMENTS & RECOMMENDATIONS**

Required:

- High school biology or equivalent
- Must be able to visually read computer monitor
- Must be able to use keyboard and mouse
- Must be able to attend Professional Practice Experience (PPE) course, including 80 hours at a health care facility within reasonable driving/travel distance to home.
- Keyboarding, MS Office Professional

Working in the health information management (HIM) profession requires long periods of standing and/or sitting. Job duties typically include handling paper documents and use of computer screens. Near-vision reading of paper records or computer screens, including the use of multiple computer applications, is required 95 percent of the time. Documents are handwritten on paper, and other documents and information used are on computer screens, including scanned documents and images. The computer screen fonts may be small. HIM professionals spend the greater portion of the work day reading and analyzing both handwritten and computerized documents, and use multiple software applications such as the electronic health record. The extensive use of a computer keyboard and mouse is required. Individuals should assess their personal limitations and abilities within these working environments, as HIM candidates will be assessed in all of these skill sets during the hiring process.

### **CONTINUING EDUCATION OPPORTUNITIES**

Graduates are eligible to continue their education by completing the health information technology (HIT) program. The HIT program is also Internet-based.

### **OCCUPATIONAL OPPORTUNITIES**

- Hospitals and other health care facilities
- Clinics and physicians' offices
- Insurance companies
- State and federal agencies
- Legal firms
- Software companies
- Consulting firms

### **EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 50 percent are employed; 50 percent continued their education.

### **CERTIFICATION**

Graduates are eligible to take national certification examinations offered by the American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC). AHIMA offers Certified Coding Specialist (CCS) exams, and the AAPC offers Certified Professional Coder (CPC) exams. It is recommended students work for a minimum of one year full-time in a coding position before taking the CCS and CPC exams.

### **RELATED PROGRAMS**

[Health Information Technology](#)

### **CODING & REIMBURSEMENT SPECIALIST - CERTIFICATE**

Current Gainful Employment Data can be accessed online at: [catalog.alfredstate.edu/current/programs/coding-reimbursement-specialist/](http://catalog.alfredstate.edu/current/programs/coding-reimbursement-specialist/)

More information on jobs related to this program can be found at: [www.online.onetcenter.org/link/summary/29-2071.00](http://www.online.onetcenter.org/link/summary/29-2071.00)

TYPICAL FOUR-SEMESTER PROGRAM - Full-time

This program is offered as an Internet-based program only.

equivalent courses on-campus at Alfred State or at another college, and transfer the credit back to Alfred State after having obtained pre-approval of the course for transfer credit and earning a grade of "C" or better.

<b>First</b>			
BIOL	1114	Human Anat & Physiology I	4
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
MEDR	1114	Intro to Health Info Managemnt	4
			13

<b>Second</b>			
BIOL	2214	Human Anat & Physiology II	4
BIOL	4403	Pathophysiology	3
MEDR	1234	ICD-10-CM & ICD-10-PCS Coding	4
MEDR	3114	Electronic Health Record Mgmt	4
			15

<b>Third</b>			
MEDR	1244	CPT & HCPCS Level II Coding	4
MEDR	4214	Insurance&Reimbursm# Processng	4
			8

<b>Fourth</b>			
MEDR	2614	Advanced Coding & Reimbursemnt	4
MEDR	4322	Coding PPE	2
			6

Be advised that a prior felony conviction may impede a student's ability to participate in a required professional practice experience.

**GRADUATION REQUIREMENTS**

C&RS students are required to earn a grade of a least a "C" or better in each BIOL and MEDR prefix course prior to placement in the PPEs. Students must also earn a grade of at "C" in the MEDR courses to graduate from the C&RS program.

Should a student fail MEDR or BIOL courses a second time: They may re-take MEDR and/or BIOL courses as a continuing education student. Then, upon successful completion with a "C" or better, apply for readmission to the C&RS program. Or, students may retake the BIOL/MEDR

**SUNY College of Technology at Alfred****Undergraduate certificate in Coding and Reimbursement Specialist**

Program Length - 2 years

**Students graduating on time****50%** of Title IV students complete the program within 2 years<sup>1</sup>**Program Costs\*****\$17,140** for in-state tuition and fees**\$24,880** for out-of-state tuition and fees**\$3,412** for books and supplies

## Other Costs

Housing, \$15,300

Meal Plan, \$9,840

Vehicle Registration fee, \$95

Graduation fee, \$60

Orientation fee, \$110

Visit website for more program cost information: <http://www.AlfredState.edu/financial-aid/tuition>

\*The amounts shown above include costs for the entire program, assuming normal time to completion. Note that this information is subject to change.

**Students Borrowing Money****The typical graduate leaves with****N/A\*** in debt<sup>2</sup>

\*Fewer than 10 students completed this program. This number has been withheld to preserve the confidentiality of the students.

**The typical monthly loan payment****N/A\*** per month in student loans with **N/A\*** interest rate<sup>3</sup>

\*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

**Graduate who got jobs****N/A\*** of program graduates got jobs

\*We are not currently required to calculate a job placement rate for program completers.

**Program graduates are employed in the following fields:**Medical Records and Health Information Technicians: <http://onetonline.org/link/summary/29-2071.00>**Licensure Requirements<sup>4</sup>**

\*Program has no licensure requirements in NY state.

**Additional Information:** While not required to complete employment and transfer rates, Alfred State does provide this information. Details regarding employment and transfer rates can be found on our Career Development site: <http://www.AlfredState.edu/career-development>.

## Footnotes:

<sup>1</sup> The share of students who completed the program within 100% of normal time (2 years).<sup>2</sup> The median debt of borrowers who completed this program. This debt includes federal, private, and institutional loans.<sup>3</sup> The median monthly loan payment for students who completed this program if it were repaid over ten years at a NA\* interest rate.<sup>4</sup> Some states require students to graduate from a state-approved program in order to obtain a license to practice a profession in those states.

**COMPUTER ENGINEERING TECHNOLOGY****AAS DEGREE – CODE #1602**

Dr. Maryam Nasri, Program Coordinator  
Email address: [NasriM@alfredstate.edu](mailto:NasriM@alfredstate.edu)

The computer engineering technology program will provide you with the cutting-edge industry knowledge and hands-on skills necessary to secure a career as an applied engineer capable of installing, designing, supporting, and maintaining computer systems and networks. This is an active, technically oriented program with a focus on computer system hardware and network infrastructure, as well as software development and operating systems. We've designed these degrees to prepare you for professional examinations leading to certifications such as the CompTIA A+ and Network+, Microsoft Certified System Administrator (MCSA), Microsoft Certified System Engineer (MCSE), and Cisco Certified Network Associate (CCNA).

**ADVANTAGES**

- Both AAS and BS programs are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.
- In the first year of the program, students gain a foundation of knowledge in digital and electronic circuits followed by the development of skills in computer hardware, operating systems, and networking.

A laptop computer is required for students in the computer engineering technology program. The college will provide a list of appropriate laptops and wireless modem cards to all accepted students. Some courses may require specialized tools and/or electronic components.

**PROGRAM STUDENT LEARNING OUTCOMES - AAS DEGREE**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- An ability to function effectively as a member of a technical team.

- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A commitment to quality, timeliness, and continuous improvement.
- The application of electric circuits, computer programming, associated software applications, analog and digital electronics, microcomputers, operating systems, and local area networks to the building, testing, operation, and maintenance of computer systems and associated software systems.
- The application of natural sciences and mathematics at or above the level of algebra and trigonometry to the building, testing, operation, and maintenance of computer systems and associated software systems.

**PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The AAS in the computer engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve computer engineering problems.
- Function professionally with effective communication and with ethical responsibility as an individual and on a multidisciplinary team.
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of computer engineering technology solutions on industry and the general public.
- Use current techniques, skills, and tools necessary to support computer engineering practice.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State computer engineering technology AAS graduates may enter directly into either the computer engineering technology BS, the interdisciplinary studies BTech, or technology management BBA program.

**CONTINUING EDUCATION OPPORTUNITIES**

Graduates from the AAS computer engineering technology program are eligible to continue their education by enrolling in a baccalaureate program in computer engineering technology at Alfred State or elsewhere. Our computer engineering technology AAS two-year degree program is the same as the first two years of the computer engineering technology BS four-year program.

**OCCUPATIONAL OPPORTUNITIES**

- Computer network technician
- Computer network systems integrator
- Computer network support specialist
- Computer network administrator
- Computer network engineering technician
- Computer systems engineering technician

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent continued their education.

**ENROLLMENT AND GRADUATION DATA**

	Enrollment (based on fall census)
2017	9
2016	9
2015	16
	Degrees Awarded
2016-2017	2
2015-2016	6
2014-2015	6

**RELATED PROGRAMS**

- [Computer Information Systems](#)
- [Computer Science](#)
- [Cyber Security](#)
- [Electrical Engineering Technology](#)
- [Information Technology: Network Administration](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS (AAS)**

Required: Algebra, Geometry, Algebra 2

Recommended: Physics

**COMPUTER ENGINEERING TECHNOLOGY - AAS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

CISY	1113	Computer Programming I	3
ELET	1202	Intro to Electrical Eng Tech	2
ELET	1133	Digital Logic	3
ELET	1111	Digital Logic Laboratory	1
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
			15

**Second**

CISY	2143	Microcomputer Systems I	3
ELET	1142	Electronic Fabrication	2
ELET	1103	Circuit Theory I	3
ELET	1151	Circuit Theory Laboratory	1
MATH	2043	College Trigonometry	3
LITR	xxx3	Gen. Ed. - Literature Elective	3
			15

**Third**

CISY	5123	Scientific Programming	3
ELET	2103	Electronics Theory I	3
ELET	2151	Electronics Laboratory I	1
ELET	2143	Embedded Controller Fundmntls	3
CISY	4033	Networking I	3
PHYS	1024	General Physics I	4
			17

**Fourth**

CISY	3193	Computer Architecture & Organi	3
		OR	
XXXX	xxx3	Other approved Major Elective	3
CISY	4053	Linux/Unix Admin and Scripting	3
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3

SOCI	1193	Marriage & Family Acrs Wrlid Clt	3
		OR	
PLSC	1043	American Government	3
			15

If not required to take MATH 1033 and MATH 2043, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

**GRADUATION REQUIREMENTS - ASSOCIATE OF APPLIED SCIENCE (AAS) DEGREE**

- 62 semester credit hours in program as listed above
- 25 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- 2.0 or above cumulative grade point average, and 2.0 or above grade point average in major courses (ELET, CISY)
- Approval of department faculty

**COMPUTER ENGINEERING TECHNOLOGY****BS DEGREE - CODE #1357**

Dr. Maryam Nasri, Program Coordinator  
Email address: [NasriM@alfredstate.edu](mailto:NasriM@alfredstate.edu)

The computer engineering technology program will provide you with the cutting-edge industry knowledge and hands-on skills necessary to secure a career as an applied engineer capable of installing, designing, supporting, and maintaining computer systems and networks. This is an active, technically oriented program with a focus on computer system hardware and network infrastructure, as well as software development and operating systems. We've designed these degrees to prepare you for professional examinations leading to certifications such as the CompTIA A+ and Network+, Microsoft Certified System Administrator (MCSA), Microsoft Certified System Engineer (MCSE), and Cisco Certified Network Associate (CCNA).

**ADVANTAGE**

- Both AAS and BS programs are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

A laptop computer is required for students entering the computer engineering technology program. The college will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State. Some courses may require specialized tools and/or electronic components.

**PROGRAM STUDENT LEARNING OUTCOMES - BS DEGREE**

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly defined engineering technology activities.
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.
- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
- An ability to design systems, components, or processes for broadly defined engineering technology problems appropriate to program educational objectives.

- An ability to function effectively as a member or leader on a technical team.
- An ability to identify, analyze, and solve broadly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A knowledge of the impact of engineering technology solutions in a societal and global context.
- A commitment to quality, timeliness, and continuous improvement.
- The application of electric circuits, computer programming, associated software applications, analog and digital electronics, microcomputers, operating systems, and local area networks to the building, testing, operation, and maintenance of computer systems and associated software systems.
- The application of natural sciences and mathematics at or above the level of algebra and trigonometry to the building, testing, operation, and maintenance of computer systems and associated software systems.
- The ability to analyze, design, and implement hardware and software computer systems.
- The ability to apply project management techniques to computer systems.
- The ability to utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of computer systems and networks.

**PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The BS in computer engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve computer engineering problems.
- Function professionally with effective communication and with ethical responsibility

as an individual and on a multidisciplinary team.

- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of computer engineering technology solutions on industry and the public.
- Use current techniques, skills, and tools necessary to support computer engineering practice.
- Design computer engineering systems, components or processes to meet industry needs.
- Design computer engineering experiments, as well as analyze and interpret data to support the problem-solving process and project design.

combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

### OCCUPATIONAL OPPORTUNITIES

- Computer network technician
- Computer network systems integrator
- Computer network support specialist
- Computer network administrator
- Computer network engineering technician
- Computer systems engineering technician

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 75 percent – 75 percent are employed.

### ENROLLMENT AND GRADUATION DATA

	Enrollment (based on fall census)
2017	45
2016	40
2015	33
	Degrees Awarded
2016-2017	7
2015-2016	3
2014-2015	3

### RELATED PROGRAMS

[Computer Information Systems](#)

[Computer Science](#)

[Cyber Security](#)

[Electrical Engineering Technology](#)

[Information Technology: Network Administration](#)

### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS (BS)

Required: Algebra, Geometry, Algebra 2,  
SAT and/or ACT scores with a recommended

**COMPUTER ENGINEERING TECHNOLOGY -  
BS DEGREE**

TYPICAL EIGHT-SEMESTER PROGRAM

**First**

CISY	1113	Computer Programming I	3
ELET	1202	Intro to Electrical Eng Tech	2
ELET	1133	Digital Logic	3
ELET	1111	Digital Logic Laboratory	1
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
			15

**Second**

CISY	2143	Microcomputer Systems I	3
ELET	1142	Electronic Fabrication	2
ELET	1103	Circuit Theory I	3
ELET	1151	Circuit Theory Laboratory	1
MATH	2043	College Trigonometry	3
LITR	xxx3	Gen. Ed. - Literature Elective	3
			15

**Third**

ELET	2103	Electronics Theory I	3
ELET	2151	Electronics Laboratory I	1
ELET	2143	Embedded Controller Fundmntls	3
CISY	4033	Networking I	3
PHYS	1024	General Physics I	4
CISY	5123	Scientific Programming	3
			17

**Fourth**

CISY	4053	Linux/Unix Admin and Scripting	3
CISY	3193	Computer Architecture & Organi	3
XXXX	xxx3	OR Other approved Major Elective	3
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3

**COMPUTER ENGINEERING TECHNOLOGY**

SOCI	1193	Marriage & Family Acrs Wrld Clt OR	3
PLSC	1043	American Government	3
			15

**Fifth**

ELET	5113	Electronic Communications	3
COMP	5703	Technical Writing II	3
MATH	2074	Technical Calculus II	4
SPCH	1083	Effective Speaking	3
CISY	3283	Internetworking I	3
XXXX	xxx3	OR Other approved Major Elective	16

**Sixth**

ELET	7404	Embedded & Real Time Systems	4
MATH	xxx4	Upper Division Math Elective	4
CISY	4283	Internetworking II	3
XXX	xxx3	OR Other approved Major Elective	
CISY	5203	Network Administration	3
XXXX	xxx3	OR Other approved Major Elective - Upper	
CISY	7013	Network & Host Security	3
XXXX	xxx3	OR Other approved Major Elective - Upper	17

**Seventh**

BSET	7001	Senior Seminar & Project Des	1
MATH	7113	Economic Analy for Engr Tech	3
MATH	7123	Statistics for Engr Tech & Sci	3
PHYS	8013	Modern Physics	3

CHEM	5013	Applied Chemical Principles	3
CISY	7033	Security Tools	3
XXXX	xxx3	OR Other approved Major Elective - Upper	16

**Eighth**

BSET	8003	Senior Technical Project	3
CISY	7003	Project Management	3
XXXX	xxx3	OR Other approved Major Elective - Upper	
XXXX	xxx3	General Education Elective	3
XXXX	xxx3	General Education Elective	3
XXXX	xxx3	General Education Elective	3
			15

NOTE: See elective sheet for four-year majors for Gen. Ed. and other types of electives.

**RECOMMENDED MAJOR ELECTIVES:**

ELET	2124	Upper Major Electives (Continued)	
ELET	2163	CISY	5133
ELET	3103	CISY	5203
ELET	4154	CISY	5233
ELET	4224	CISY	5303
CISY	3193	CISY	5403
CISY	3223	CISY	5613
CISY	3283	CISY	6103
CISY	4003	CISY	6503
CISY	4063	CISY	6703
CISY	4283	CISY	7003
CISY	4423	CISY	7013
CISY	4723	CISY	7023
		CISY	7033
		Upper Major Electives	
ELET	6004	CISY	7203
ELET	6143	CISY	8303
ELET	7104	CISY	8403
		CISY	8503
		ELET/CISY - Directed Study	

Be advised that a prior felony conviction may impede a student's ability to receive licensure.

### **GRADUATION REQUIREMENTS**

- 126 semester credit hours in eight-semester program
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major
- Minimum of 30 hours upper division in residence
- 2.0 or above cumulative grade point average, and 2.0 or above grade point average in major courses (BSET, CISO, ELET)
- Approval of department faculty

### **CERTIFICATION OR LICENSURE**

The Bachelor of Science in computer engineering technology is recognized as a "professional degree" that qualifies for experience/education credit toward Professional Engineering (PE) licensure. Graduates from Alfred State's program are allowed six years of the required 12 years of education/experience credit, and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

**COMPUTER INFORMATION SYSTEMS****AAS DEGREE – CODE #0581**

David Law, Program Coordinator

Email address: [LawDL@alfredstate.edu](mailto:LawDL@alfredstate.edu)

As more organizations install and employ computer networks, a need has developed for the “resident expert” to administer the system, install software, establish security, and train others. As a graduate of the computer information systems (CIS) program, you will be well positioned to serve that need with a foundation in programming, databases, and networking.

**ADVANTAGES**

- Students can complete the Cisco Certified Network Association curriculum and have a strong foundation to pursue professional certifications for CompTIA A+, Network+, and CCNA. The college has a Pearson Vue testing center.
- Our laboratories provide students with ample hands-on experience, giving them a considerable edge in the highly competitive computer and information technology job market.

A laptop computer is required for students entering the computer information systems program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Communicate effectively and efficiently, both orally and in writing.
- Employ critical thinking and problem-solving skills in developing solutions to problems.
- Create and modify functional, clear, concise software design and implementation with current programming languages.
- Create functional Web pages using Web scripting languages.
- Install, configure, troubleshoot, and administer a simple network.
- Demonstrate proficiency either in two or more operating systems or two or more database systems.
- Demonstrate proficiency in basic office automation software.
- Solve problems in a team setting as a team member.
- Identify issues of professional ethics, including copyright laws, plagiarism, and professional etiquette.
- Solve applied mathematical problems.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State computer information systems graduates may enter directly into either the cyber security BTech, information technology: applications software development BTech, information technology: network administration BTech, information technology: web development BTech, the interdisciplinary studies BTech, or technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

To facilitate the transfer of graduates choosing to continue their education at the baccalaureate level, students are encouraged to make their intentions known to their academic adviser during their freshman year. Through the careful use of elective courses, students can realize excellent transfer credit.

Transfer into the information technology programs: network administration, Web development, and applications software development will place them at junior status.

**OCCUPATIONAL OPPORTUNITIES**

- Network management
- Systems administration
- Computer technology
- Computer support
- Computer programming
- Web development
- Network administrators

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent continued their education.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)

[Computer Science](#)

[Cyber Security](#)

[Information Technology: Applications Software Development](#)

[Information Technology: Network Administration](#)

[Information Technology: Web Development](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry\*

Recommended: Algebra 2

\* Students who place into intermediate algebra will be required to take one additional mathematics course.

**COMPUTER INFORMATION SYSTEMS - AAS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

**First**

CISY	1023	Intro to Information Tech	3
CISY	1123	Intro to Programming for IT	3
		OR	
CISY	1113	Computer Programming I	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. Elective - Social Science	3
	xxx3	Gen. Ed. Elective - Other	3
			15

**Second**

CISY	2133	Computer Programming II	3
CISY	2143	Microcomputer Systems I	3
CISY	2153	Database Appl and Programng I	3
MATH	xxx3	College Algebra or Higher*	3
LITR	xxx3	Literature Elective	3
			15

**Third**

CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	1123	Statistics I	3
		OR	
MATH	2124	Statistical Methods & Analysis	4
ACCT	1124	Financial Accounting	4
	xxx3	Professional Elective	3
			16-17

**Fourth**

CISY	4053	Linux/Unix Admin and Scripting	3
		OR	
CISY	5403	Database Concepts	3
SPCH	1083	Effective Speaking	3

xxx3	Gen. Ed. Elective - Other	3
xxx3	Professional Elective	3
xxx3	Professional Elective	3
		15

\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

Adviser-approved mathematics courses do not include MATH 1004, MATH 1104, MATH 1014, or MATH 1143.

Professional electives may include CISY, business, and selected courses from math or engineering as approved by the adviser.

**GRADUATION REQUIREMENTS**

Must complete a minimum of 24 credit hours of required CISY courses and nine credit hours of professional electives approved by adviser with a minimum 2.0 cumulative index. Twenty credit hours of liberal arts courses, a minimum overall cumulative index of 2.0, along with other requirements as stated in the College Academic Regulations, must be met by candidates of the AAS degree. Must successfully complete a minimum of 61 credit hours of course work.

**COMPUTER SCIENCE****AS DEGREE – CODE #0532**

Alec Berenbaum, Program Coordinator  
 Email address: [BerenbAO@alfredstate.edu](mailto:BerenbAO@alfredstate.edu)

The computer science program at Alfred State was one of the originally established programs in the SUNY system. It is a comprehensive program, which will prepare you for this fast-moving field with courses in the underlying theories of computing, as well as the specific applications of information manipulation and problem solving.

**ADVANTAGES**

Students develop strong written and oral communication, critical thinking, and problem-solving skills.

A laptop computer is required for students entering the computer science program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Communicate effectively and efficiently, both orally and in writing.
- Employ critical thinking and problem-solving skills in developing solutions to problems.
- Create and modify functional, clear, concise software design and implementation with current programming languages.
- Create functional Web pages using Web scripting languages.
- Demonstrate the scientific method in one area of natural science.
- Assess and implement appropriate data structures within a programming project.
- Demonstrate proficiency in basic office automation software.
- Solve problems in a team setting as a team member.
- Identify issues of professional ethics, including copyright laws, plagiarism, and professional etiquette.
- Demonstrate proficiency with mathematical principles through the level of calculus or discrete mathematics.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State computer science graduates may enter directly into either the interdisciplinary studies BTech or technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

The primary focus of the computer science program is transfer. The AS degree granted is specifically designed to maximize transfer credit to four-year programs. Transfer into the information technology programs: network administration, web development, and applications software development is possible with junior status with careful selection of courses for electives.

**OCCUPATIONAL OPPORTUNITIES**

- Network management
- Systems administration
- Computer engineering technology
- Computer support
- Computer programming
- Database administration
- Web development

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent continued their education.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)  
[Computer Information Systems](#)  
[Cyber Security](#)  
[Information Technology: Applications Software Development](#)  
[Information Technology: Network Administration](#)  
[Information Technology: Web Development](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2

Recommended: Pre-calculus, Physics

**COMPUTER SCIENCE - AS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
CISY	1023	Intro to Information Tech	3
CISY	1113	Computer Programming I	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Pre-Calculus 1054 or above	3
XXXX	xxx3	Gen Ed Elective	3
			15

<b>Second</b>			
CISY	2133	Computer Programming II	3
MATH	1084	Calculus I	4
CISY	2153	Database Appl and Programng I	3
LITR	xxx3	Literature Elective	3
XXXX	xxx3	Gen Ed Elective	3
			16

<b>Third</b>			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	2163	Discrete Mathematics	3
	xxx4	Gen Ed - Natural Science w/Lab	4
CISY	3193	Comp Arch and Org	3
			16

<b>Fourth</b>			
CISY	4053	Linux/Unix Admin and Scripting	3
		OR	
CISY	5403	Database Concepts	3
CISY	4003	Comp Prgmming III/ Data Strctu	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen Ed Elective	3
	xxx3	Open Elective	3
			15

**GRADUATION REQUIREMENTS**

Must complete a minimum of 24 credit hours of required CISY courses and one professional elective approved by adviser with a 2.0 cumulative index. A minimum cumulative index of 2.0, along with other requirements as stated in the College Academic Regulations, must be met by candidates for the AS degree. A minimum of 62 credit hours of course work with 30 credit hours in liberal arts is required.

Professional elective may include CISY, business, and selected courses from math or engineering as approved by the adviser.

**CONSTRUCTION ENGINEERING TECHNOLOGY**

**AAS DEGREE – CODE #0577**

Timothy Piotrowski, Program Coordinator  
 Email address: [piotrotj@alfredstate.edu](mailto:piotrotj@alfredstate.edu)

The program in construction engineering technology includes a well-designed balance of theoretical and laboratory studies, providing students with a broad knowledge of civil engineering technology and the construction fields. This field is expanding rapidly, and our technical curricula will give you a broad-based education, as well as the hands-on skills and experience needed for leadership in today's construction business.

**ADVANTAGES**

- The college sponsors an intern program with the NYS Construction Materials Association, which enables qualified students to work within this segment of the industry during the summer after the first year.
- Students develop the ability to function effectively as a member of a technical team, as well as the ability to apply written, oral, and graphical communication in both technical and nontechnical environments.
- This program is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

A laptop computer is required for students entering the construction engineering technology program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

A student who completes the AAS degree can complete the bachelor's degree in two additional years.

**PROGRAM STUDENT LEARNING OUTCOMES**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- An ability to function effectively as a member of a technical team.

- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A commitment to quality, timeliness, and continuous improvement.

**PROGRAM EDUCATIONAL OBJECTIVES**

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The construction engineering technology program produces graduates who:

- Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession.
- Understand and are able to complete various activities related to construction such as interpret construction documents, draw plans using computer-aided drafting, complete an estimate, manage project activities, and be able to technically review construction materials used on the project.
- Recognize the need for and have an ability to engage in continued formal education as well as lifelong learning.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State construction engineering technology graduates may enter directly into either the construction management BS, the construction supervision BTech, the interdisciplinary studies BTech, or the technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

Building inspector	Codes enforcement officer
Construction inspector	Construction superintendent
Engineering technician	Estimator
Installation supervisor	Materials tester
Project coordinator	Quality control technician
Sales representative	Structural detailer
Supt. of public works	

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 33 percent are employed; 67 percent continued their education.

**ENROLLMENT AND GRADUATION DATA**

	Enrollment (based on fall census)
2017	16
2016	21
2015	27
	Degrees Awarded
2016-2017	18
2015-2016	14
2014-2015	14

**RELATED PROGRAMS**

- [Construction Management](#)
- [Construction Supervision](#)
- [Surveying Engineering Technology](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2  
 Recommended: Physics

**TECHNICAL STANDARDS**

Students in the construction engineering technology program must meet the following requirements:

- Students must have the ability to use industry standard software and computers.
- Students must have the ability to traverse varying types of construction sites.

**CONSTRUCTION ENGINEERING TECHNOLOGY - AAS DEGREE**  
 TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Concrete	3
CIVL	1182	Civil Technology Graphics	2
MATH	1033	College Algebra	3
			16
<b>Second</b>			
CIVL	2154	Quality Control of Const Matl	4
	xxx3	Technical Elective	3
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	xxx3	Literature Elective	3
			17
<b>Third</b>			
CIVL	3553	Comm Bldg Const Methods & Prac	3
CIVL	4103	Structures I	3
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen. Ed./LAS Elective	3
			15
<b>Fourth</b>			
CIVL	4143	Contracts, Specs, & Estimating	3
CIVL	4043	Construction Management	3
CIVL	xxx3	Technical Elective	3
	xxx3	Open Elective	3
	xxx3	General Education Elective	3
			15

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Students receiving credit for math classes shown in the typical four-semester program may require additional LAS electives to complete degree requirements.

Students must complete two Technical Electives and two General Education Electives.

**Suggested Technical Electives:**

- CIVL 2204 Surveying II
- CIVL 6113 Environmental Technical Concepts
- CIVL 7103 Land Development and Design
- ARCH 4013 Municipal Codes & Regulations
- Other technical electives by department approval.

**GRADUATION REQUIREMENTS**

2.0 cumulative grade point average, and department requirement of 2.0 grade point average in major courses (CIVL).

**CONSTRUCTION MANAGEMENT****BS DEGREE – CODE #1761**

Erin Vitale, Department Chair and Program Coordinator

Email address: [vitaleem@alfredstate.edu](mailto:vitaleem@alfredstate.edu)

Do you dream of a leadership role in the construction industry? Then this program is for you. Our expert faculty have designed a series of courses that will familiarize you with all aspects of construction management. Technical course work is combined with specific construction management courses as well as several business courses, giving you a broad-based education.

**ADVANTAGES**

- Alfred State students compete annually in the Associated Schools of Construction Northeast Region student competition.
- Students can compete for scholarships given by the Associated General Contractors of New York.
- Seniors in the BS program are required to take the Associate Constructor Level I exam prior to graduation.
- This program is accredited by the American Council for Construction Education (ACCE), [1717 North Loop Road 1604 East, Suite 320, San Antonio, TX 78232].
- Students typically gain work experience through summer employment with construction companies.

A laptop computer is required for students entering the construction management program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES (ACCE ACCREDITATION)**

- Create written communications appropriate to the construction discipline.
- Create oral presentations appropriate to the construction discipline.
- Create a construction project safety plan.
- Create construction project cost estimates.
- Create construction project schedules.
- Analyze professional decisions based on ethical principles.
- Analyze construction documents for planning and management of construction processes.
- Analyze methods, materials, and equipment used to construct projects.
- Apply construction management skills as a member of a multi-disciplinary team.

- Apply electronic-based technology to manage the construction process.
- Apply basic surveying techniques for construction layout and control.
- Understand different methods of project delivery and the roles and responsibility of all constituencies involved in the design and construction process.
- Understand construction risk management.
- Understand construction accounting and cost control.
- Understand construction quality assurance and control.
- Understand construction project control processes.
- Understand the legal implications of contract, common, and regulatory law to manage a construction project.
- Understand the basic principles of sustainable construction.
- Understand the basic principles of structural behavior.
- Understand the basic principles of mechanical, electrical, and piping systems.

**PROGRAM EDUCATIONAL OBJECTIVES**

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The construction management program produces graduates who:

- Understand technical components and techniques of construction.
- Write, read, and orally present information standard to the construction industry.
- Understand methods and tools to manage both a construction project and construction company.
- Understand safety and risk management.
- Understand industry ethics and statutory requirements.

**OCCUPATIONAL OPPORTUNITIES**

- Project manager
- Project engineer
- Estimator
- Project scheduler
- Planner
- Construction supervisor
- Plant manager
- Construction equipment sales
- Materials sales
- Facilities management

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

- [Architectural Technology](#)
- [Building Trades: Building Construction](#)
- [Construction Engineering Technology](#)
- [Construction Supervision](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

**TECHNICAL STANDARDS**

Students in the construction management program must meet the following requirements:

- Students must have the ability to use industry standard software and computers.
- Students must have the ability to traverse varying types of construction sites.

**CONSTRUCTION MANAGEMENT - BS DEGREE**

**TYPICAL EIGHT-SEMESTER PROGRAM**

<b>First</b>			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Concrete	3
CIVL	1182	Civil Technology Graphics	2
MATH	1033	College Algebra	3
			16
<b>Second</b>			
CIVL	2154	Quality Control of Const Matl	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	xxx3	Literature Elective	3
			14
<b>Third</b>			
CIVL	3553	Comm Bldg Const Methods & Prac	3
CIVL	4103	Structures I	3
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen Ed Elective	3
			15
<b>Fourth</b>			
CIVL	4143	Contracts, Specs, & Estimating	3
CIVL	4043	Construction Management	3
CIVL	xxx3	Tech Elective - Upper	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen Ed Elective	3
			15

<b>Fifth</b>			
CIVL	xxx3	Tech Elective	3
ECON	1013	Principles of Macroeconomics	3
COMP	5703	Technical Writing II	3
CIVL	7213	Construction Systems	3
	xxx3	Gen Ed Elective	3
			15

<b>Sixth</b>			
CHEM	5013	Applied Chemical Principles	3
CIVL	6214	Advanced Estimating	4
CIVL	6212	Construction Safety	2
ACCT	5043	Accounting Perspectives	3
	xxx3	Gen Ed Elective	3
CIVL	6123	Mechanical Systems	3
			18

<b>Seventh</b>			
MATH	1123	Statistics I	3
CIVL	7223	Construction Project Planning	3
MATH	7113	Economic Analy for Engr Tech	3
TMGT	7153	Principles of Management	3
	xxx3	Gen Ed Elective	3
			15

<b>Eighth</b>			
BUAD	xxx3	Bus. Elective - Upper	3
CIVL	5213	Foundations and Concrete	3
CIVL	8123	Construction Project Admin	3
BUAD	3043	Business Law I	3
	xxx3	Gen Ed Elective - Upper	3
ECON	2023	Principles of Microeconomics	3
			18

Must meet seven of the 10 General Education areas.

**SUGGESTED TECHNICAL ELECTIVES:**

- CIVL 6113 Environmental Tech Concepts
- CIVL 7103 Land Development and Design
- Other tech electives by department approval

**GRADUATION REQUIREMENTS**

2.0 cumulative grade point average, and department requirement of 2.0 grade point average in major courses (CIVL).

**GENERAL NOTES:**

Students receiving credit for math classes shown in the typical eight-semester program may require additional LAS electives to compete degree requirements.

**CONSTRUCTION SUPERVISION****BTECH DEGREE – CODE #635**

Erin Vitale, Department Chair and Program Coordinator

Email address: [vitaleem@alfredstate.edu](mailto:vitaleem@alfredstate.edu)

The Bachelor of Technology (BTech) in construction supervision is a completion degree that will add valuable construction business skills to a technical background. Students with carpentry, heavy equipment, electrical, mechanical, and architecture skills, to name a few, will be able to see how their skills are utilized to build the environment in which they live. The BTech in construction supervision will give graduates a working knowledge of construction estimating, scheduling, and contract law. These skills along with their technical competency will make graduates a prized asset to companies that are involved in the construction industry. The program includes a full-semester internship.

The program is set up as a completion degree, meaning students entering must have an associate degree or 60 credits in a related curriculum. A true 2+2 can be achieved with 21 credits of liberal arts and sciences, including five silos of SUNY General Education completed before entering the program.

**ADVANTAGES**

- Students take their distinct technical background and apply it in the construction industry through project-based learning.
- With a cohort of students from many different fields of prior study, students will gain an interdisciplinary appreciation of the construction industry.
- Students will gain a strong background in construction contractual requirements.
- Students will expand their understanding of construction job site cost control.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Create written communication appropriate to the construction discipline.
- Create oral presentation appropriate to the construction discipline.
- Create a construction project safety plan.
- Create construction project cost estimates.
- Create construction project schedules.
- Analyze professional decisions based on ethical principles.
- Analyze construction documents for planning and management of construction processes.

- Apply construction management skills as a member of a multi-disciplinary team.
- Apply electronic-based technology to manage construction processes.
- Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
- Understand construction accounting and cost control.
- Understand construction quality assurance and control.
- Understand the legal implications of contract, common, and regulatory law to manage a construction project.

**OCCUPATIONAL OPPORTUNITIES**

- Assistant superintendent
- Equipment and material sales
- Project manager for specialty trade contractors
- Superintendent

**EMPLOYMENT STATISTICS**

New program -- no data available

**ARTICULATION**

Alfred State accepts students from other two-year institutions as juniors into the construction supervision BTech program with appropriate course work and grade point average.

**GRADUATION REQUIREMENTS**

2.0 cumulative GPA and 2.0 in major courses (CIVL)

**RELATED PROGRAMS**

- Architectural Technology
- Building Trades: Building Construction
- Construction Management
- Electrical Engineering Technology
- Heavy Equipment Operations
- Mechanical Engineering Technology

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

- Students must either possess an associate degree in a related curriculum or have amassed at least 60 credit hours with a minimum cumulative GPA of 2.0, including courses that fulfill five different general education fields.

- Recommended minimum of five SUNY General Education categories covered (BC and MA included).
- Recommended minimum of 21 credits in liberal arts and sciences.
- A laptop computer will be required of all students. See laptop specifications at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).
- Students entering from an AOS degree will need to work out a general education completion plan with the department chair or curriculum coordinator.

**TECHNICAL STANDARDS**

Students in the construction supervision program must meet the following requirements:

- Students must have the ability to use industry-standard software and computers.
- Students must have the ability to traverse varying types of construction sites.

**CONSTRUCTION SUPERVISION – BTECH**

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

<b>Fifth</b>			
SPCH	1083	Effective Speaking	3
ECON	1013	Principles of Macroeconomics	3
TMGT	7153	Principles of Management	3
BUAD	xxx3	Business Elective	
		OR	
CIVL	3553	Comm Bldg Const Methods & Prac	3
CIVL	7503	Construction Business and Law	3
			15
<b>Sixth</b>			
ACCT	5043	Accounting Perspectives	3
BUAD	3043	Business Law I	3
XXXX	xxxx3	Gen Ed Elective	3
BUAD	xxx3	Business Elective (Upper)	3
CIVL	7523	Construction Scheduling	3
			15
<b>Seventh</b>			
CIVL	6212	Construction Safety	2
CIVL	8123	Construction Project Admin	3
COMP	5703	Technical Writing II	3
CIVIL	6154	Supervisory Estimating	4
BUAD	xxx3	Business Elective (Upper)	3
CIVL	xxx3	Technical or Business Elective	3
			18
<b>Eighth</b>			
CIVL	8512	Construction Mgmt Internship	12
BUAD	xxx3	Business Elective (Upper)	3
			15

Be advised that a prior felony conviction may impede a student's ability to participate in an internship.

## COURT AND REALTIME REPORTING

### AAS DEGREE – CODE #0647

Melissa Blake, Program Coordinator  
Email address: [blakemj@alfredstate.edu](mailto:blakemj@alfredstate.edu)

This program, certified by the National Court Reporters Association, will prepare you for a career in various court reporting fields—from official to freelance to realtime and closed captioning for the hearing impaired.

### ATTRIBUTES

- Independence
- Great Lifestyle
- Prestige
- Flexibility
- Mobility
- Exciting Work Environments

### ADVANTAGES

- Development of high-speed recording skills to 225-plus words per minute through the use of realtime translation machine shorthand and computer aided transcription (CAT).
- In the first year, students learn realtime shorthand theory and develop computer skills that will enhance their overall employability.
- Development of skills in recording and transcribing specialized court reporting matter starts in the summer term and continues through the second year.
- The college offers court reporting courses online, making it possible for students who transfer in credit or attend other colleges to earn their degree from Alfred State in court and realtime reporting. This approach is perfect for working professionals, adult and returning students, and anyone who needs high flexibility in their academic schedule.

### PROGRAM STUDENT LEARNING OUTCOMES

- Develop a shorthand recording speed on five minutes of unfamiliar dictation with at least 95 percent accuracy in each of the following areas: literary at 180 wpm, jury charge at 200 wpm, and two-voice at 225 wpm.
- Write a dictated list with 95 percent accuracy using advanced shorthand theory, special abbreviations, and phrasing principles applicable to legal and reporting work.
- Perform readback and analysis of shorthand notes.
- Perform proper transcription and various other functions using the computer.

- Translate two-voice and multi-voice testimony, including medical and technical material, literary, jury charge dictation, and dictation containing current events at various speeds.
- Analyze and describe various aspects of the technology of court reporting and captioning.
- Apply the rules of grammar, spelling, and punctuation, and capitalization of transcripts.
- Demonstrate an understanding and application of law, legal testimony, medical terminology, and/or anatomy.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State court and realtime reporting AAS graduates may enter directly into either the interdisciplinary studies BTech or technology management BBA degree program at Alfred State.

### OCCUPATIONAL OPPORTUNITIES

- Official court and hearing reporters
- General freelance reporters
- Realtime and closed-captioning reporters
- Legal office administration and scoping

### PROFESSIONAL OUTLOOK

- According to the Bureau of Labor Statistics Occupational Outlook Handbook, the national median salary was \$49,500 in 2015.
- The US Department of Labor projects that court reporting job opportunities will grow fastest in the careers that help the deaf or the hard of hearing, such as realtime captioning and communication access realtime translation (CART).

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 100 percent are employed

### RELATED PROGRAMS

[Technology Management \(BBA\)](#)

### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS

Recommended: Algebra

**COURT AND REALTIME REPORTING - AAS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM (on campus and online)

**First**

CTRP	1174	Realtime Writing Theory I	4
BUAD	1543	Grammar for Court Reporters	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. Elective	3
			13

**Second**

CTRP	2274	Realtime Writing Theory II	4
CTRP	3373	Computer Aided Transcription	3
	xxx3	Humanities Gen. Ed. Elective	3
	xxx3	Gen. Ed. Elective	3
			13

**Summer Session (required)**

CTRP	3163	Speedbldg I for Report & Capt	3
CTRP	3363	Tech for Reporting/ Captioning	3
			6

**Third**

CTRP	4264	Spd Bldg II for Reprtr & Captn	4
CTRP	2603	Persnl Dictionary Prod & Maint	3
	xxx3	Business Law I OR Medical Term.	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen. Ed. Elective	3
			16

**Fourth**

CTRP	4364	Spd Bldg III for Reprtr & Captn	4
CTRP	4602	Int & Prac for Reporter & Capt	2
CTRP	4634	Proc for Reporters & Captioner	4

xxx3	Business Law I OR Medical Term.	3
xxx3	Gen. Ed. Elective	3
		16

Total Credit Hours: 64

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

- Students may select one of these general education requirements (math, science, psychology, sociology) for each semester.
- Students may select BUAD 3043 - Business Law I or MEDR 1133 - Medical Terminology in either semester.

**ADDITIONAL PROGRAM INFORMATION**

- The internship course (CTRP 4602) is completed off campus.
- All students are required to take CTRP 3163 in the summer.

**GRADUATION REQUIREMENTS**

- A cumulative overall index of at least 2.0 is required in order to graduate.
- All CTRP skill writing classes must be taken and passed at Alfred State with a passing grade of "C" or better.
- Court reporting students must also meet all the NCRA requirements as stated in the course objectives, including the passing of three, five-minute tests on unfamiliar matter with 95 percent accuracy on two-voice material at 225 wpm, jury charge material at 200 wpm, and literary material at 180 wpm; the completion of 40 verified hours of internship experience, including the production of a 40-page transcript; the transcription of a simulated RPR skills test at RPR speed levels in three hours; and the production of accurate transcripts using computer-aided technology as stated in the course outlines.

## COURT REPORTING & CAPTIONING

### CERTIFICATE – CODE #2152

Melissa Blake, Program Coordinator  
Email address: [blakemj@alfredstate.edu](mailto:blakemj@alfredstate.edu)

This program, certified by the National Court Reporters Association, will prepare you for a career in various court reporting fields—from official to freelance to realtime and closed captioning for the hearing impaired.

### ADVANTAGES

- Development of high-speed recording skills to 225-plus words per minute through the use of realtime translation machine shorthand and computer aided transcription (CAT).
- In the first year, students learn realtime shorthand theory and develop computer skills that will enhance their overall employability.
- Development of skills in recording and transcribing specialized court reporting matter starts in the summer term and continues through the second year.
- The college offers court reporting courses online, making it possible for students who transfer in credit or attend other colleges to earn their certificate from Alfred State in court and realtime reporting. The online approach still requires two years of course work and does not change any of the standards reflected in graduation requirements for all students. This approach is perfect for working professionals, adult and returning students, and anyone who needs high flexibility in their academic schedule.

### PROGRAM STUDENT LEARNING OUTCOMES

- Develop a shorthand recording speed on five minutes of unfamiliar dictation with at least 95 percent accuracy in each of the following areas: literary at 180 wpm, jury charge at 200 wpm, and two-voice at 225 wpm.
- Write a dictated list with 95 percent accuracy using advanced shorthand theory, special abbreviations, and phrasing principles applicable to legal and reporting work.
- Perform readback and analysis of shorthand notes.
- Perform proper transcription and various other functions using the computer.
- Translate two-voice and multi-voice testimony, including medical and technical material, literary, jury charge dictation, and dictation containing current events at various speeds.
- Analyze and describe various aspects of the technology of court reporting and captioning.

- Apply the rules of grammar, spelling, and punctuation, and capitalization of transcripts.
- Apply proper legal, medical, and anatomical terminology in transcription.

### OCCUPATIONAL OPPORTUNITIES

- Official court and hearing reporters
- General freelance reporters
- Realtime and closed-captioning reporters
- Legal office administration and scoping

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 100 percent are employed.

### RELATED PROGRAMS

[Court and Realtime Reporting \(AAS\)](#)  
[Technology Management \(BBA\)](#)

### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS

Recommended: Algebra

**COURT REPORTING AND CAPTIONING - CERTIFICATE**

TYPICAL FOUR-SEMESTER PROGRAM (on campus and online)

**First**

CTRP	1174	Realtime Writing Theory I	4
BUAD	1543	Grammar for Court Reporters	3
			7

**Second**

CTRP	2274	Realtime Writing Theory II	4
CTRP	3373	Computer Aided Transcription	3
MEDR	1133	Medical Terminology	3
			10

**Summer Session (required)**

CTRP	3163	Speedbldg I for Report & Capt	3
CTRP	3363	Tech for Reporting/ Captioning	3
			6

**Third**

CTRP	4264	Spd Bldg II for Reprtr & Captn	4
CTRP	2603	Persnl Dictionary Prod & Maint	3
			7

**Fourth**

CTRP	4602	Int & Prac for Reporter & Capt	2
CTRP	4634	Proc for Reporters & Captioner	4
CTRP	4364	Spd Bldg III for Reprtr & Captn	4
			10

Total Credit Hours: 40

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

- A cumulative overall index of at least 2.0 is required in order to graduate.
- All CTRP skill writing classes must be taken and passed at Alfred State with a passing grade of "C" or better.

- Court reporting students must also meet all the NCRA requirements as stated in the course objectives, including the passing of three, five-minute tests on unfamiliar matter with 95 percent accuracy on two-voice material at 225 wpm, jury charge material at 200 wpm, and literary material at 180 wpm; the completion of 40 verified hours of internship experience, including the production of a 40-page transcript; the transcription of a simulated RPR skills test at RPR speed levels in three hours; and the production of accurate transcripts using computer-aided technology as stated in the course outlines.

**ADDITIONAL PROGRAM INFORMATION**

- The internship course (CTRP 4602) is completed off campus.

Current Gainful Employment Data can be accessed online at: [catalog.alfredstate.edu/current/programs/court-reporting-captioning/](http://catalog.alfredstate.edu/current/programs/court-reporting-captioning/)

More information on jobs related to this program can be found at: [www.onetonline.org/link/summary/23-2091.00](http://www.onetonline.org/link/summary/23-2091.00)

**SUNY College of Technology at Alfred****Undergraduate certificate in Court Reporting and Captioning**

Program Length - 2 years

**Students graduating on time****N/A\*** of Title IV students complete the program within 2 years<sup>1</sup>

\*Fewer than 10 students enrolled in this program. This number has been withheld to preserve the confidentiality of the students.

**Program Costs\*****\$17,140** for in-state tuition and fees**\$24,880** for out-of-state tuition and fees**\$4,778** for books and supplies

## Other Costs

Housing, \$15,300

Meal Plan, \$9,840

Vehicle Registration fee, \$95

Graduation fee, \$60

Orientation fee, \$110

Visit website for more program cost information: <http://www.AlfredState.edu/financial-aid/tuition>

\*The amounts shown above include costs for the entire program, assuming normal time to completion. Note that this information is subject to change.

**Students Borrowing Money****The typical graduate leaves with****N/A\*** in debt<sup>2</sup>

\*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

**The typical monthly loan payment****N/A\*** per month in student loans with **N/A\*** interest rate<sup>3</sup>

\*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

**Graduate who got jobs****N/A\*** of program graduates got jobs

\*We are not currently required to calculate a job placement rate for program completers.

**Program graduates are employed in the following fields:**Court Reporters: <http://onetonline.org/link/summary/23-2091.00>**Licensure Requirements<sup>4</sup>**

\*Program has no licensure requirements in NY state.

**Additional Information:** While not required to complete employment and transfer rates, Alfred State does provide this information. Details regarding employment and transfer rates can be found on our Career Development site: <http://www.AlfredState.edu/career-development>.

## Footnotes:

<sup>1</sup> The share of students who completed the program within 100% of normal time (2 years).<sup>2</sup> The median debt of borrowers who completed this program. This debt includes federal, private, and institutional loans.<sup>3</sup> The median monthly loan payment for students who completed this program if it were repaid over ten years at a NA\* interest rate.<sup>4</sup> Some states require students to graduate from a state-approved program in order to obtain a license to practice a profession in those states.

**CRIMINAL JUSTICE****AS DEGREE – CODE #2279**

Jill Priest Amati, Program Coordinator  
Email address: [amatiJP@alfredstate.edu](mailto:amatiJP@alfredstate.edu)

The Associate in Science (AS) degree in criminal justice provides graduates a solid foundation in the field of criminal justice and its basic components. The program offers practical knowledge that is integrated across core criminal justice courses and that is then combined with other relevant course work. The program emphasizes the development, structure, and function of the criminal justice system within the US, as well as ethical law enforcement practices and community relations. In addition, the program's professional course work includes a management component that helps prepare graduates for administrative and leadership positions within the criminal justice system.

**ADVANTAGES**

AS program – students can attend the Police Academy and receive up to 6 credits toward their degrees for CJUS 1003, Intro to Criminal Justice, and CJUS 2003, Introduction to Law.

Police Academy - <http://www.alfredstate.edu/police-academy>

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply critical thinking skills in the context of professional practice.
- Perform the basic operations of personal computer use, as well as employ basic research techniques to locate, evaluate, and synthesize information from a variety of sources.
- Communicate effectively and appropriately in oral and written forms.
- Explain the importance of ethical behavior by criminal justice professionals as part of the social contract between a diverse citizenry and the criminal justice system.
- Apply basic management practices to the topical issues facing the police, court, and correction systems.
- Demonstrate basic knowledge of the New York State Penal Code and of Criminal Law Procedure.
- Demonstrate knowledge of the causes and consequences of crime.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State criminal justice graduates may enter directly into the criminal justice BS, interdisciplinary studies BTech, or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

Graduates are well prepared to enter a police academy or to seamlessly transfer into Alfred State's criminal justice program at the baccalaureate level.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent continued their education.

**RELATED PROGRAMS**

[Criminal Justice \(BS\)](#)  
[Forensic Science Technology](#)  
[Human Services](#)  
[Individual Studies](#)  
[Interdisciplinary Studies](#)  
[Liberal Arts & Sciences: Social Science](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra

Recommended: Geometry and Biology

**CRIMINAL JUSTICE - AS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

COMP	1503	Freshman Composition	3
MATH	1123	Statistics I	3
MATH	2124	OR Statistical Methods & Analysis	4
MATH	1113	OR Statistical Concepts	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
CJUS	1003	Intro to Criminal Justice	3
		Minimum of "C" required.	15/16

**Second**

XXXX	xxx3	Gen Ed Humanities Elective	3
PSYC	2093	Abnormal Psychology	3
PLSC	1043	American Government	3
CJUS	2003	Introduction to Law	3
SPCH	1083	Effective Speaking	3
			15

**Third**

SOCI	1183	Contemporary Social Problems	3
XXXX	xxx3	Gen Ed Natural Science Elective	3
XXXX	xxx3	Gen Ed Other World Civilization Elective	3
BUAD	3153	Fundamentals of Management	3
SOCI	1243	Criminology	3
			15

**Fourth**

CJUS	4003	Corrections Process in the U.S	3
CJUS	47X3	OR Information Security for Criminal Justice	3

CJUS	4103	Policing in a Free Society	3
SOCI	1223	Power, Privilege, & Difference	3
XXXX	xxx3	Open Elective	3
XXXX	xxx3	Open Elective	3
			15

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

Notes: Minimum number of hours required for graduation is 60. Elective courses must be from approved list of courses. Some elective courses have prerequisites, so make sure you have met them before registering for them. You can find them in the college catalog.

**GRADUATION REQUIREMENTS**

- Good academic standing (2.0 cumulative GPA) or higher
- Successful completion of all courses in the prescribed four-semester plan
- Submission of the college's degree application form

**CRIMINAL JUSTICE**

**BS DEGREE – CODE #850**

Mark Whitman, Program Coordinator  
 Email address: [whitmam@alfredstate.edu](mailto:whitmam@alfredstate.edu)

The Bachelor of Science (BS) degree in criminal justice provides graduates a solid foundation in the field of criminal justice, both its essential components and emerging areas, with a focus on leadership and applied learning. With strong preparation in conceptual knowledge, students gain practical experience in criminal justice, including the opportunity to complete either an internship or a lab-based criminal investigation course in their final semester. In order to prepare graduates for a wide variety of careers, the program emphasizes several areas within criminal justice:

- ethical law enforcement practices
- decision-making
- community relations
- working with diverse populations
- public safety
- criminal justice leadership and administration

**ADVANTAGES**

BS program students can attend the Police Academy and receive up to 12 credits toward their degrees for CJUS 1003, Intro to Criminal Justice, and CJUS 2003, Introduction to Law, and two three-credit professional electives.

Police Academy: <http://www.alfredstate.edu/police-academy>

**PROGRAM STUDENT LEARNING OUTCOMES**

- Communicate effectively and appropriately in written and oral form.
- Apply critical thinking to modern criminal justice practices, procedures, and policies, as well as other disciplines.
- Perform the basic operations of personal computer use and employ basic research techniques to locate, evaluate, and synthesize information from a variety of sources.
- Describe the development of the US criminal justice system, its structures, laws, and functions, and how the system fits within the US democratic system.
- Explain the importance of ethical behavior by criminal justice professionals as part of the social contract between a diverse citizenry and the criminal justice system.

- Apply contemporary management and leadership concepts and theories.
- Show how theories of crime, crime prevention, treatment, and punishment have impacted public policy in the US.
- Show the connections between US constitutional law and state and local criminal law and procedures.
- Examine the importance of diversity training for criminal justice professionals across all levels and parts of the US system.
- Demonstrate knowledge of the causes and consequences of crime.

**EMPLOYMENT OPPORTUNITIES**

The US Bureau of Labor Statistics and the New York State Department of Labor predict that job opportunities will exist over the next decade in law enforcement at the local, county, state, and federal levels, and in correctional institutions, parole and probation departments, private security companies, and police science organizations, among others. Though the numbers point to no more than a stable projected job market over the next few years, the sheer volume of criminal justice positions should ensure ample opportunities for graduates possessing expertise in the field.

**RELATED PROGRAMS**

- [Criminal Justice \(AS\)](#)
- [Human Services](#)
- [Human Services Management](#)
- [Liberal Arts & Sciences: Social Science](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Geometry, Biology

**CRIMINAL JUSTICE - BS DEGREE**

TYPICAL EIGHT-SEMESTER PROGRAM

<b>First</b>			
COMP	1503	Freshman Composition	3
MATH	1123	Statistics I OR	3
MATH	1113	Statistical Concepts OR	3
MATH	2124	Statistical Methods & Analysis	4
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
CJUS	1003	Intro to Criminal Justice Minimum of "C" required	3
			15-16
<b>Second</b>			
PSYC	2093	Abnormal Psychology	3
PLSC	1043	American Government	3
CJUS	2003	Introduction to Law	3
XXXX	xxx3	Gen Ed - Humanities Elective	3
SPCH	1083	Effective Speaking	3
			15
<b>Third</b>			
SOCI	1183	Contemporary Social Problems	3
BUAD	3153	Fundamentals of Management	3
SOCI	1243	Criminology	3
XXXX	xxx3	Gen Ed Elective - Natural Science	3
XXXX	xxx3	Gen Ed Elective - Other World Civ.	3
			15
<b>Fourth</b>			
CJUS	4103	Policing in a Free Society	3
SOCI	1223	Power, Privilege, & Difference	3
XXXX	xxx3	Open Elective	3
XXXX	xxx3	Open Elective	3

CJUS	4003	Corrections Process in the U.S	3
CJUS	4703	Information Security for Criminal Justice	3

**Fifth**

COMP	5703	Technical Writing II	3
SOCI	5023	Research Methods	3
CJUS	5003	Constitutional Issues in Crim	3
CJUS	5103	Courts in Contemporary Society	3
XXXX	xxx3	LAS Elective - Upper	3

**Sixth**

CJUS	6003	Law & Criminal Evidence	3
CJUS	6203	Ethics in Criminal Justice Adm	3
PSYC	6103	Family & Intimate Rel Violence	3
SOCI	6003	Juvenile Justice Admin	3
XXXX	xxx3	LAS Elective - Upper	3
XXXX	xxx3	Professional Elective	3

**Seventh**

PSYC	7003	Working w/Diverse Populations	3
CJUS	7004	Criminal Investigation & Mgmt	4
XXXX	xxx3	Professional Elective	3
XXXX	xxx3	Professional Elective	3
XXXX	xxx3	LAS Elective - Upper	3
HPED	xxx1	Physical Education Elective	1

**Eighth Option #1**

CJUS	8012	Criminal Justice Internship	12
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**Option #2**

CJUS	8103	Criminal Justice Internship OR	3
CJUS	8203	Internship AND	3
SOCI	8003	Terrorism	3
CJUS	8003	Criminal Investigation Capston	3
XXXX	xxx3	Open Elective	3

**INTERNSHIP REQUIREMENTS**

Students who elect to go the internship route will be responsible for locating and securing the internship. The internships (three-hour and 12-hour) require a minimum of either 120 or 480 hours of work experience in an approved public safety agency, commonly defined as police, courts, corrections, fire service, or in a commercial/industrial security agency. The agency or industry selected must be approved by the internship coordinator and the department chair and be specifically related to the curriculum of the student. Students must be in good academic standing (cumulative GPA of 2.0 or higher) and be able to pass any required background check.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

- Good academic standing (cumulative GPA of 2.0 or higher)
- Successful completion of all courses in the prescribed eight-semester plan
- Submission of the college's degree application form

**CULINARY ARTS**

**AOS DEGREE – CODE #0578**

Debra Burch, Department Chair and Program Coordinator

Email address: [burchda@alfredstate.edu](mailto:burchda@alfredstate.edu)

The courses train students in the principles applied to culinary arts. The goal is to prepare men and women for supervisory positions, and culinary positions that require special skills and knowledge of food and business. By learning fundamental and advanced culinary principles in the food service industry and employing the techniques of menu planning, preparation, and supervision in the lab classes, the students develop skills, confidence, and critical thinking.

**ADVANTAGES**

- Students may earn manager sanitation certification from the Educational Foundation of the National Restaurant Association as part of the program.
- The department requires that all students obtain experience under direct managerial supervision for a minimum of 300 hours of employment prior to graduation. This is to enhance skill development and improve career advancement after graduation.
- Graduates have the option of applying for readmission into a dual-degree program, whereby they may obtain a second degree in baking, production and management in one additional year.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Interpret and comply with prevailing food safety regulations.
- Create products from complex recipes.
- Successfully vie for employment or continuing education in the food service industry.
- Productively utilize typical culinary equipment.
- Establish product and plate cost for menu items.
- Demonstrate the relationship among menu, equipment, layout, and design.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State culinary arts graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in

two additional years; others may complete the BBA program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Chef Manager
- Cook
- Sous Chef
- Chef
- Production Manager
- Health Care
- Food Service Manager
- School Servicer
- Caterer
- Food Sales Representative
- Food Marketing
- Dining Room Manager

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 30 percent are employed; 70 percent continued their education.

**EXPENSES**

In addition to regular college expenses, the student must purchase a probe thermometer, calculator, uniform package, and uniform laundry service from the Alfred State Campus Store. Uniforms may cost approximately \$360 to \$460. The uniform laundry service is approximately \$80 per semester. It is mandatory for all culinary arts students to have at least a 5-meal, meal plan. First-semester textbooks cost approximately \$500, and approximately \$100 each succeeding semester.

**RELATED PROGRAMS**

[Culinary Arts: Baking, Production and Management](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Knowledge of basic math, reading, and writing skills.

**TECHNICAL STANDARDS**

Applicants in the culinary arts program must meet the following physical requirements:

- Perform lab functions while standing on their feet for up to five hours daily.
- Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost

control, and calculations associated with food production and service).

- Lift 50 pounds from floor to eye level.
- Visually identify degree of product doneness.
- Handle kitchen equipment, including knives.

**CERTIFICATION OR LICENSURE**

Students may earn manager sanitation certification from the Educational Foundation of the National Restaurant Association as part of the program.

**CULINARY ARTS - AOS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
CULN	1083	Food Safety & Service Training	3
CULN	1143	Culinary Foundations	3
CULN	1373	Purchasing & Cost Control	3
CULN	1479	Kitchen Fundamentals	9
			18
<b>Second</b>			
CULN	2043	Fundamentals of Nutrition	3
CULN	2183	Menu Planning	3
CULN	2263	Cooking Techniques & Preps	3
CULN	2479	Culinary Preparations	9
			18
<b>Third</b>			
CULN	3253	Beverage & Fermentation	3
CULN	3353	Hospitality Supervision	3
CULN	3479	Advanced Culinary Preparation	9
CULN	3173	Intl Cook, Garde Manger & Baki	3
			18
<b>Fourth</b>			
CULN	4033	Intro to Food Science & Techno	3
CULN	4163	Advanced Cuisine	3
CULN	4253	Hospitality Management	3
CULN	4479	Culinary Capstone	9
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

Note: Students must pass 1479 before taking 2479, pass 2479 before taking 3479, and pass 3479 before taking 4479.

## CULINARY ARTS: BAKING, PRODUCTION & MANAGEMENT

### AOS DEGREE – CODE #0423

Debra Burch, Department Chair and Program Coordinator  
Email address: burchda@alfredstate.edu

There's never been greater demand for skilled bakers. Our program will prepare you for this exciting field with 1,350 hours of hands-on production experience, of which approximately 80 percent is concentrated in bakery training. The major includes detailed instruction in methods, ingredients, measurements, controls, equipment, and merchandising. And the production for breakfast, lunch, and dinner requirements is built into one daily schedule.

### ADVANTAGES

- Students may earn sanitation certification from the Educational Foundation of the National Restaurant Association as part of the program.
- The department requires that all students obtain experience under direct managerial supervision for a minimum of 300 hours of employment prior to graduation. This is to enhance skill development and improve career advancement after graduation.
- Graduates have the option of applying for readmission into a dual-degree program whereby they may obtain a second degree in culinary arts in one additional year.

### PROGRAM STUDENT LEARNING OUTCOMES

- Interpret and comply with prevailing food safety regulations.
- Create products from complex formulas.
- Successfully vie for employment or continuing education in the food service industry.
- Competently utilize typical bakery equipment.
- Establish product and plate cost for bakery menu items.
- Demonstrate the relationship among menu, equipment, layout, and design.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State culinary arts: baking, production and management graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two

additional years; others may complete the BBA program in two-and-one-half years.

### OCCUPATIONAL OPPORTUNITIES

- Baker
- Caterer
- Pastry chef
- Sales representative
- Commercial baker and management
- Management
- Product developer
- Entrepreneur

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 79 percent are employed; 21 percent continued their education.

### EXPENSES

In addition to the regular college expenses, the student must purchase decorating tips, a probe thermometer, calculator, uniform package, and uniform laundry service from the Alfred State Campus Store. Uniforms may cost approximately \$360 to \$460. The uniform laundry service is approximately \$80 per semester. It is mandatory that all culinary arts: baking, production & management students have at least a 5-meal, meal plan. First-semester textbooks cost approximately \$500, and approximately \$100 each succeeding semester.

### RELATED PROGRAMS

[Culinary Arts](#)

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Knowledge of basic math, reading, and writing skills.

### TECHNICAL STANDARDS

Applicants in the culinary arts: baking, production and management program must meet the following physical requirements:

- Perform lab functions while standing on their feet for up to five hours daily.
- Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
- Lift 50 pounds from floor to eye level.
- Visually identify degree of product doneness.
- Handle kitchen equipment, including knives.

**CULINARY ARTS: BAKING, PRODUCTION & MANAGEMENT - AOS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
CULN	1083	Food Safety & Service Training	3
CULN	1153	Baking Foundations	3
CULN	1373	Purchasing & Cost Control	3
CULN	1579	Baking Fundamentals	9
			18
<b>Second</b>			
CULN	2043	Fundamentals of Nutrition	3
CULN	2183	Menu Planning	3
CULN	2273	Baking Techniques & Prep	3
CULN	2489	Baking Preparations	9
			18
<b>Third</b>			
CULN	3253	Beverage & Fermentation	3
CULN	3293	Intl Baking & Cooking Fundamen	3
CULN	3353	Hospitality Supervision	3
CULN	3489	Advanced Pastry Preparation	9
			18
<b>Fourth</b>			
CULN	4043	Advanced Pastry	3
CULN	4253	Hospitality Management	3
CULN	4489	Pastry Capstone	9
CULN	4033	Intro to Food Science & Techno	3
			18

**CYBER SECURITY****BTECH DEGREE – CODE #2085**

Scott O'Connor, Program Coordinator

Email address: [oconnosf@alfredstate.edu](mailto:oconnosf@alfredstate.edu)

The Bachelor of Technology degree in cyber security at Alfred State is designed to prepare you to enter the work force as an information security professional—one of the fastest-growing computer and information technology career paths—with a special emphasis in network and host security, secure programming, secure database applications, mobile device security, and cloud security. From courses in security, to programming language sequences such as .NET, Java, and C++, this program will help you meet the needs of today's and tomorrow's information security industry. You will also receive a sound foundation in Web development, networking, and microcomputer systems. And in order to give you the hands-on experience employers are looking for, a full-semester internship is included.

**ADVANTAGES**

- Organizations of all types and sizes need information technology professionals, and emphasis on security has never been higher.
- Due to the solid foundation in all the major fields of information technology, the job opportunities for graduates are wide and numerous.

A laptop computer is required for students entering the cyber security program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate troubleshooting strategies with a variety of security problems.
- Install and configure Web, database, file, and application servers.
- Develop and implement effective security and disaster recovery systems and policies.
- Develop and maintain technical documentation and procedures for security management.
- Demonstrate effective research, planning, and security management of software updates and fixes.
- Apply accumulated knowledge and skills in an actual industry environment.
- Demonstrate effectiveness in the use of computer forensic tools, procedures, techniques, and hardware, as well as maintain physical evidence.

- Demonstrate effectiveness in configuring authentication schemes, such as NAT, content security and content vectoring, SYNDefender, and VPNs using industry standard firewalls.
- Demonstrate effectiveness in the use and scan of a network with heterogeneous operating systems and identify security vulnerabilities.
- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Demonstrate knowledge in design and configuration of Windows security.
- Demonstrate effectiveness in tracking and monitoring attacks against Linux servers and how to prevent them.

**CONTINUING EDUCATION OPPORTUNITIES**

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees, including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into the bachelor's degree at the junior level.

**OCCUPATIONAL OPPORTUNITIES**

Organizations of all types and sizes need information technology professionals and emphasis on security has never been higher. The primary employment field includes security IT specialists, Virtual Private Network administrators, authentication specialists, database administrators, programmers, and system analysts. Due to the solid foundation in other areas, graduates will not be limited to these areas; thus, the job opportunities are wide and numerous.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)

[Computer Information Systems](#)

[Computer Science](#)

[Digital Media and Animation](#)

[Information Technology: Applications Software Development](#)

Information Technology: Network Administration  
Information Technology: Web Development

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2,  
 SAT and/or ACT scores with a recommended  
 combined reading/writing and math SAT score of  
 1080 or a composite ACT score of 21.

**CYBER SECURITY - BTECH DEGREE**

TYPICAL EIGHT-SEMESTER PROGRAM

<b>First</b>			
CISY	1023	Intro to Information Tech	3
CISY	1113	Computer Programming I	3
COMP	1503	Freshman Composition	3
XXXX	xxx3	Gen. Ed. Social Science	3
XXXX	xxx3	Gen. Ed. Other	3
			15
<b>Second</b>			
CISY	2133	Computer Programming II	3
CISY	2143	Microcomputer Systems I	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	College Algebra or Higher*	3
CISY	2153	Database Appl and Programng I	3
			15
<b>Third</b>			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	2124	Statistical Methods & Analysis	4
OR			
MATH	1123	Statistics I	3
XXXX	xxx3	Gen. Ed. Nat Science	3
ACCT	1124	Financial Accounting	4
			16-17
<b>Fourth</b>			
CISY	4053	Linux/Unix Admin and Scripting	3
BUAD	3153	Fundamentals of Management	3
CISY	5203	Network Administration	3
SPCH	1083	Effective Speaking	3
CISY	4723	Essentials of Info Security	3
	xxx3	Gen. Ed. Elective	3
			18

<b>Fifth</b>			
COMP	5703	Technical Writing II	3
XXXX	xxx3	Elective - Upper **	3
CISY	7033	Security Tools	3
CISY	7023	Compu Forensics & Legal Issues	3
XXXX	xxx3	Gen. Ed. Other	3
XXXX	xxx3	Professional Elective - Upper	3
			18

<b>Sixth</b>			
CISY	7003	Project Management	3
CISY	7013	Network & Host Security	3
CISY	5133	Sec Policies, Recov & Risk Man	3
XXXX	xxx3	Elective	3
XXXX	xxx3	Professional Elective - Upper	3
			15

<b>Seventh</b>			
CISY	8703	Information Security Capstone	3
OR			
CISY	8303	Sftw Intgtn & Interoperability	3
CISY	8603	Seminar Critical Issues in IT	3
XXXX	xxx3	Elective	3
XXXX	xxx3	Professional Elective	3
XXXX	xxx3	Elective - Upper*	3
			15

<b>Eighth</b>			
CISY	8712	Info Technology Internship	12
			12

\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

\*\* BUAD 4003 or BUAD 6113 recommended.

GPA of 2.5 or higher is required in major courses; GPA of 2.0 minimum overall is required.

Internship is student-initiated.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

- 124 credit hours
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts/general education courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in college academic regulations
- Seven general education areas are required, including three of the following five: art, language, other world civilizations, American history, or western civilization

**DIAGNOSTIC MEDICAL SONOGRAPHY****AAS DEGREE - CODE #2560**

Bridgett Mayorga, Program Director  
Email address: [mayorgbl@alfredstate.edu](mailto:mayorgbl@alfredstate.edu)

Diagnostic medical sonography is a two-year AAS degree program preparing qualified students to become health care professionals who use high-frequency sound waves to produce anatomical images for diagnostic purposes. The program coordinates on-campus didactic and laboratory classes and clinical experiences at area hospitals, to which students are responsible for their own transportation.

Students must be able to demonstrate technical standards and pass clinical competencies as described by the American Registry of Diagnostic Medical Sonography (ARDMS), the Joint Review Committee on Education in Diagnostic Medical Sonography (JRCEDMS), and the Commission on Accreditation of Allied Health Education Programs (CAAHEP), recognized by the United States Department of Education as the national accreditation agency of programs for sonography. Upon graduation, students are prepared to take the ARDMS SPI and Content Specialty Exams.

Clinical education is assigned to provide experiences consistent with the student's level of achievement in different hospital and outpatient environments. Through clinical assignments, students have opportunities to work with the most modern and specialized equipment available and knowledgeable staff with a wealth of experience in imaging. These assignments include a 12-week (40 hours per week) summer session that is required and provides valuable experience in developing clinical competency skills. In addition, nine weeks of full-time clinical will be assigned in both fall and spring semesters of the second year of the program. Students will require housing close enough to their clinical placements to travel there on a daily basis.

The program currently admits 20 students each year, with a fall semester start date only. One student placement is reserved for an on-campus curriculum change, with the remaining 19 placements being filled by admissions.

**ADVANTAGES**

- Prepares the student for the American Registry of Diagnostic Medical Sonography registry exams.
- Sonography and simulation laboratory on campus.

- Low student-to-faculty ratio.
- Gaining proficiency in the technical skills necessary for diagnostic medical sonography.
- Extensive clinical experience in hospital setting.
- Availability of on-campus housing and variety of campus activities.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate appropriate technical and effective skills in the clinical setting.
- Demonstrate patient-centered, age-specific skills.
- Analyze images to determine diagnostic quality.
- Demonstrate proper work ethics.
- Examine the value of leadership, professional development, and growth.
- Demonstrate critical thinking and problem-solving skills in both the didactic and clinical setting.
- Apply written communication skills to the construction of documents of record that are established professional guidelines.
- Apply communication skills to the explanation of ideas and scientific terminology.
- Using technological resources effectively and appropriately, synthesize theory and concepts from the liberal education domain and other professions into radiologic technology.
- Explain cultural diversity and evaluate the role of cultural competency, values, and ethics in the patient care setting.

**EMPLOYMENT STATISTICS**

National employment statistics are available by visiting the Society for Diagnostic Medical Sonography website at [www.sdms.org](http://www.sdms.org).

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Applicants for the diagnostic medical sonography program must possess a recognized high school diploma or its equivalent. A standardized test (SAT or ACT) is not required but recommended. Specific high school course requirements and recommendations are:

Required: Algebra, Geometry, Algebra 2, Biology

Recommended: Chemistry, Physics

Applicants with previous college experience must submit an official college transcript and their success at the college level will be an admissions consideration. Due to the technical and science

rigor, entrance requirements are higher than those of the institution.

**TECHNICAL STANDARDS**

To participate in the program, the applicant must possess specific non-academic skills. The technical standards described below are consistent with the duties of an entry-level radiographer in a professional position and are required in order to provide adequate patient care and produce a diagnostic image.

The applicant should have the:

- Ability with reasonable accommodation, if necessary, to reach and position the patients on the exam table.
- Ability with reasonable accommodation, if necessary, to move, adjust, and manipulate equipment to perform imaging procedures.
- Ability to review and evaluate recorded images to determine the quality of the image with reasonable accommodation.
- Ability to communicate effectively with patients, doctors, and other personnel so that the patient is not placed in an “at-risk” situation.
- Ability to make proper decisions involving patient and co-worker safety.
- Ability with reasonable accommodation, if necessary, to hear sounds that are necessary to assess patient’s health status.

**CONTINUING EDUCATION OPPORTUNITIES**

The program allows graduates to transfer to a four-year program in imaging science or health care management.

**OCCUPATIONAL OPPORTUNITIES**

- Hospital Sonography Department Staff Technologist
- Advanced Sonography Modalities- Cardiac, Vascular, and Musculoskeletal
- Sonography Education
- Sonography Department Management
- Industry
- Private Physician Offices

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Graduates may enter directly into either the healthcare management BTech, the interdisciplinary studies BTech, or technology management BBA degree program.

Grade of “C+” or better required for all SONO, BIOL and RADT prefix courses.

**DIAGNOSTIC MEDICAL SONOGRAPHY - AAS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
SONO	1003	Fundamentals Sonography/Pt Care	3
RADT	1003	Radiation Physics	3
COMP	1503	Freshman Composition	3
MATH	xxx3	College Algebra or higher	3
BIOL	1404	Anatomy & Physiology I	4
			16
<b>Second</b>			
SONO	2003	Sectional Anatomy	3
SONO	2013	US Physics and Instrument I	3
SONO	2024	Sonographic Procedures I	4
BIOL	2504	Anatomy & Physiology II	4
			14
<b>Summer</b>			
SONO	3016	Sonography Clinical I	6
			6
<b>Third</b>			
SONO	3013	US Physics & Instrument II	3
SONO	3024	Sonography Clinical II	4
SONO	3034	Sonographic Procedures II	4
BIOL	4403	Pathophysiology	3
			14
<b>Fourth</b>			
SONO	4003	Professional Dev in Sonography	3
SONO	4014	Sonographic Clinical III	4
SONO	4044	Sonographic Procedures III	4
SPCH	1083	Effective Speaking	3
			14

Be advised that a prior felony conviction may impede a student’s ability to participate in a required clinical experience.

### GRADUATION REQUIREMENTS

The AAS degree in diagnostic medical sonography has finely prescribed courses reflective of accreditation standards for students to be prepared for admission to the American Registry of Diagnostic Medical Sonography (ARDMS) Certification Examination. Specific graduation requirements are:

- 64 total semester credit hours
- Minimum of 20 credit hours of liberal arts and sciences from three of the 10 SUNY General Education categories
- 2.0 cumulative GPA and a grade of "C+" or better in the core science courses (SONO and BIOL prefixes)
- Approval of department faculty

**DIGITAL MEDIA AND ANIMATION****BS DEGREE – CODE #2018**

Jeremy Speed Schwartz, Program Coordinator  
 Email address: [schwarzj@alfredstate.edu](mailto:schwarzj@alfredstate.edu)

The emerging field of computer imaging and animation is impacting virtually every industry and profession. The digital media and animation program will provide you with a broad range of technical, creative, and problem-solving skills to facilitate your employment in new media and animation. At the core of the program is a sequence of studio courses that enhances individual artistic creativity and provides instruction in the traditional arts and industry-standard computer graphics software.

**ADVANTAGES**

- Students develop critical thinking skills by completing rigorous problem-solving activities.
- Gain experience creating a professional presentation, as well as evaluating, revising, and defending ideas and artistic decisions in presented work.

A laptop computer is required for students entering the digital media and animation program. Laptop specifications are available at [www.alfredstate.edu/required-laptops#Apple-MacBook-Pro](http://www.alfredstate.edu/required-laptops#Apple-MacBook-Pro).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate adaptability/flexibility with technology.
- Illustrate critical thinking by completing course work.
- Demonstrate a strong work ethic through time management and quality works.
- Visually analyze their own work, as well as the work of others, in critiques, presentations, writing, and other activities.
- Apply knowledge of the history and theory relevant to digital media and animation through studio work.
- Communicate verbally using specific terminology associated with the software, hardware, and industry.

**OCCUPATIONAL OPPORTUNITIES**

- Animation
- Interactive media
- Digital imaging
- Media Design
- Fine art

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)  
[Graphic & Media Design](#)  
[Information Technology: Web Development](#)

**ENTRANCE REQUIREMENT/  
RECOMMENDATIONS**

Required: Algebra, Geometry, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Algebra 2

**GENERAL NOTES**

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Minimum of "C" is required for all core courses. A 2.0 GPA or greater in core courses or comparable courses at another institution is required to guarantee admission into DGMA 5103, 5403, and 5603.

Students must complete at least one course from seven of the 10 SUNY General Education silos.

Students are required to complete a digital portfolio assignment and annual reviews to meet graduation requirements.

**DIGITAL MEDIA AND ANIMATION – BS**

**First**

DGMA	1403	Digital Foundations I	3
DGMA	1423	Intro to Visual Communication	3
DGMA	1413	Foundations:Form/Space Rltnshp	3
DGMA	1333	Survey of Animatn & Visual Eff	3
COMP	1503	Freshman Composition	3

**Second**

DGMA	2403	Introduction to 3D Animation	3
FNAT	2423	3D Design/Color	3
FNAT	2433	Figure and Motion	3
FNAT	1313	Art History	3
MATH	xxx3	Gen Ed/Math Elective	3

**Third**

DGMA	3403	Intermediate 3D Animation	3
DGMA	3603	Production I	3
XXXX	xxx3	Gen Ed/LAS Elective	3
XXXX	xxx3	Gen Ed/Natural Sciences Elective	3
SOCI	xxx3	Social Science Elective	3
LITR	xxx3	Literature Elective	3

**Fourth**

DGMA	4103	Interactive Design	3
SPCH	1083	Effective Speaking	3
FNAT	3513	Art History II	3
LITR	2813	Introduction to Film	3
DGMA	xxx3	Technical Elective	3

**TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM**

**Fifth**

DGMA	5603	Interactive Media	3
DGMA	5403	Adv Modeling, Texturing & Ligh	3
DGMA	6103	Production II	3

COMP	5703	Technical Writing II	3
XXXX	xxx3	Gen Ed/LAS Elective (Upper Level)	3

**Sixth**

DGMA	6203	Motion Graphics	3
DGMA	6413	Advanced Animation	3
DGMA	xxx3	Technical Elective (Upper Level)	3
XXXX	xxx3	Gen Ed/LAS Elective (Upper Level)	3
XXXX	xxx3	Gen Ed/Western Civilization OR	3
XXXX	xxx3	Gen Ed/Foreign Language	3

**Seventh**

DGMA	7203	Senior Seminar	3
DGMA	7403	Senior Studio Project I	3
DGMA	7503	Digital Media & Anmtn Internsh	3
OR			
DGMA	3113	Studio Tokyo	3
XXXX	xxx3	Gen Ed/LAS Elective	3
XXXX	xxx3	Gen Ed/LAS Elective	3

**Eighth**

DGMA	8106	Senior Studio Project II	6
DGMA	8103	Portfolio	3
XXXX	xxx3	Gen Ed/LAS Elective	3
XXXX	xxx3	Gen Ed/American History OR	3
XXXX	xxx3	Gen Ed/Other Worl Civ	3

Be advised that a prior felony conviction may impede a student's ability to participate in an internship.

**DIGITAL MEDIA AND ANIMATION****AAS DEGREE – CODE #1212**

Jeremy Speed Schwartz, Program Coordinator  
 Email address: [schwarzj](mailto:schwarzj)

The emerging field of computer imaging and animation is impacting virtually every industry and profession. The digital media and animation program will provide you with a broad range of technical, creative, and problem-solving skills to facilitate your employment in new media and animation. At the core of the program is a sequence of studio courses that enhances individual artistic creativity and provides instruction in the traditional arts and industry-standard computer graphics software.

**ADVANTAGES**

- Students develop critical thinking skills by completing rigorous problem-solving activities.
- Gain experience creating a professional presentation, as well as evaluating, revising, and defending ideas and artistic decisions in presented work.

A laptop computer is required for students entering the digital media and animation program. Laptop specifications are available at [www.alfredstate.edu/required-laptops#Apple-MacBook-Pro](http://www.alfredstate.edu/required-laptops#Apple-MacBook-Pro).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate adaptability/flexibility with technology.
- Illustrate critical thinking by completing course work.
- Demonstrate a strong work ethic through time management and quality works.
- Visually analyze their own work, as well as the work of others, in critiques, presentations, writing, and other activities.
- Apply knowledge of the history and theory relevant to digital media and animation through studio work.
- Communicate verbally using specific terminology associated with the software, hardware, and industry.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State digital media and animation AAS graduates may enter directly into the digital media and animation BS, the interdisciplinary studies BTech, or the technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Animation
- Interactive media
- Digital imaging
- Media design
- Fine art

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 33 percent are employed; 67 percent continued their education.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)  
[Graphic & Media Design](#)  
[Information Technology: Web Development](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry

Recommended: Algebra 2

**DIGITAL MEDIA AND ANIMATION (AAS DEGREE)****TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
DGMA	1403	Digital Foundations I	3
DGMA	1413	Foundations:Form/Space Rltnshp	3
DGMA	1423	Intro to Visual Communication	3
DGMA	1333	Survey of Animatn & Visual Eff	3
COMP	1503	Freshman Composition	3
			15
<b>Second</b>			
DGMA	2403	Introduction to 3D Animation	3
FNAT	2423	3D Design/Color	3
FNAT	2433	Figure and Motion	3
FNAT	1313	Art History	3
MATH	xxx3	Gen Ed - Math Elective	3
			15
<b>Third</b>			
DGMA	3403	Intermediate 3D Animation	3
DGMA	3603	Production I	3
SOCI	xxx3	Gen Ed - Social Science Elective	3
XXXX	xxx3	Gen Ed - Natural Science Elective	3
LITR	xxx3	Literature Elective	3
			15
<b>Fourth</b>			
DGMA	4103	Interactive Design	3
SPCH	1083	Effective Speaking	3
FNAT	3513	Art History II	3
LITR	2813	Introduction to Film	3
DGMA	xxx3	Technical Elective	3
XXXX	xxx3	Liberal Arts Elective	3
			18

Minimum of "C" is required for all core courses.

Students are required to complete a digital portfolio assignment and annual review to meet graduation requirements.

## ELECTRICAL CONSTRUCTION AND MAINTENANCE ELECTRICIAN

### AOS DEGREE – CODE #0498

Bradley Thompson, Department Chair and Program Coordinator

Email address: [thompsbj@alfredstate.edu](mailto:thompsbj@alfredstate.edu)

This program provides in-depth instruction in the theories and principles of electricity. Principles of operation for electrical devices and equipment, and correct and safe operation of tools are covered. You will study and learn to interpret and apply the requirements of the National Electric Code for designing electrical layouts, installation methods, and the maintenance, troubleshooting, and repair of electrical circuits and equipment.

Practical (hands-on) application of the classroom theory is the main emphasis of the laboratory work. As an electrical construction and maintenance electrician student, you will assist in the design and installation of the electrical installations of many projects both on and off campus. Approximately one-third of lab time is spent on actual work sites, gaining real-life work experience.

In your senior year, you will create completely automated projects in the lab using PLCs, pneumatics, electronics, and process controls.

### ADVANTAGES

- Summer internships are available to selected students through the International Brotherhood of Electrical Workers, Village of Wellsville Electric Department, and RADEC Corporation in Rochester, allowing students to gain additional, valuable trade experience.
- Various IBEW Locals have agreed to award qualified graduates from Alfred State's electrical construction and maintenance electrician program advanced placement in their apprenticeship programs. The degree of advanced placement to be awarded will be determined after review by the joint apprenticeship committee and after all conditions of the joint apprenticeship standards have been met.

### PROGRAM STUDENT LEARNING OUTCOMES

- Read, interpret, and apply technical information from the National Electrical Code.
- Perform basic and complex mathematical equations as they apply to the electrical trade.
- Perform layout, design, and installation for commercial and industrial wiring systems.

- Perform entry-level layout, design, and installation of residential wiring systems.
- Apply combined knowledge to perform maintenance and troubleshooting procedures within the electrical trade.
- Students will develop an understanding of efficiency, design, and NEC requirements as pertaining to renewable energy systems.
- Design, sizing, lay-out, and selection of equipment for the electrical systems within a residential dwelling.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State electrical construction and maintenance electrician graduates may enter directly into the construction supervision BTech or technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the baccalaureate program in two additional years; others may complete the program in two-and-one-half years.

### CONTINUING EDUCATION OPPORTUNITIES

The following local chapters of the International Brotherhood of Electrical Workers (IBEW) have signed articulation agreements with the electrical construction and maintenance electrician program at Alfred State.

IBEW Local 86, Rochester      IBEW Local 237, Niagara Falls  
IBEW Local 241, Ithaca

### OCCUPATIONAL OPPORTUNITIES

- Designer
- Installer
- Construction site electrician
- Electrical estimator
- Electrical inspector
- PLC programmer
- Salesperson
- Electrical trade union or non-union apprentice
- Electric motor control technician
- Private contractor (residential, commercial)
- Industrial maintenance electrician
- Technical field representative
- Wholesale representative
- Electrical technician
- Wind turbine technician/installer
- Photovoltaic technician/Installer

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 91 percent are employed; 9 percent continued their education.

**RELATED PROGRAMS**

[Building Trades: Building Construction](#)  
[Electrical Engineering Technology](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Recommended: Algebra; good writing and reading comprehension skills

**TECHNICAL STANDARDS**

Applicants in the electrical construction and maintenance electrician program must meet the following physical requirements:

- Must be able to visually translate information on analog or digital meters and other test equipment.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person 6 to 10 feet away.
- Must be able to read and decipher information found in technical manuals.
- Must be able to adhere to and perform all safety requirements.

**ELECTRICAL CONSTRUCTION &  
MAINTENANCE ELECTRICIAN - AOS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
ELTR	1156	Residential Wiring I	6
ELTR	1166	Residential Wiring Lab IA	6
ELTR	1176	Residential Wiring Lab IB	6
			18
<b>Second</b>			
ELTR	2156	Residential Wiring II	6
ELTR	2166	Residential Wiring Lab IIA	6
ELTR	2176	Residential Wiring Lab II B	6
			18
<b>Third</b>			
ELTR	3156	Electrical Power Systems	6
ELTR	3326	Magnetic Motor Controls	6
ELTR	3306	Alarms and Special Systems	6
			18
<b>Fourth</b>			
ELTR	3336	Photovltc & Wind Trbn System In	6
ELTR	3356	Prgmble Cntrls for Ind Autotn	6
ELTR	3366	Ind Automtn & Process Controls	6
			18

Note: Seniors will rotate through the six courses listed in the third and fourth semesters. These six are taught both semesters.

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

**ELECTRICAL ENGINEERING TECHNOLOGY****AAS DEGREE – CODE #0699****BS DEGREE – CODE #0216**

David Hunt, Program Coordinator

Email address: [huntjdj@alfredstate.edu](mailto:huntjdj@alfredstate.edu)

The electrical engineering technology AAS and BS programs provide the skills and occupational competence necessary for entry into the field as an applied engineer who works with and is responsible for all the electronic equipment in the field. Thus, in addition to a firm foundation in electrical circuit concepts, the program provides a robust laboratory experience.

This program will prepare you by emphasizing basic knowledge and skills during the first year of the program. Studies include fundamental DC and AC circuit analysis and digital circuit logic to develop skills in use of electronic test equipment and in use of tools and printed circuit fabrication equipment. Laboratory experiments supplement classroom instruction and problem solving. Computer problem solving and simulation aid in course instruction.

The second year of the associate degree program continues the study of fundamental electronic circuits. The areas of study include microcontroller circuitry and programming, electronic communication circuits and systems, and IC circuit fabrication on silicon wafers.

**ADVANTAGES**

- The understanding of general processes gained through laboratory experiences prepares students to either continue their education or enter the workforce in the fields of microcontrollers, power systems, and microelectronics.
- Both electrical engineering technology programs are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>
- The Bachelor of Science degree in electrical engineering technology is recognized as a “professional degree” that qualifies for experience/education credit toward New York Professional Engineering Licensure.

A laptop computer is required for students entering the electrical engineering technology programs. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops). Some courses require specialized tools and/or electronic components.

**PROGRAM STUDENT LEARNING OUTCOMES (PSLOS) - AAS DEGREE**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- An ability to conduct standard tests and measurements and to conduct, analyze, and interpret experiments.
- An ability to function effectively as a member of a technical team.
- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments, and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to addressing professional and ethical responsibilities, including a respect for diversity.
- A commitment to quality, timeliness, and continuous improvement.
- The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers, and engineering standards to the building, testing, operation, and maintenance of electrical/electronic(s) systems.
- The applications of physics or chemistry to electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry.

**PROGRAM STUDENT LEARNING OUTCOMES (PSLOS) - BS DEGREE**

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly defined engineering technology activities.
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application

of principles and applied procedures or methodologies.

- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
- An ability to design systems, components, or processes for broadly defined engineering technology problems appropriate to program educational objectives.
- An ability to function effectively as a member or leader on a technical team.
- An ability to identify, analyze, and solve broadly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments, and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A knowledge of the impact of engineering technology solutions in a societal and global context.
- A commitment to quality, timeliness, and continuous improvement.
- The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers, and engineering standards to the building, testing, operation, and maintenance of electrical/electronic(s) systems.
- The applications of physics or chemistry to electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry.
- The ability to analyze, design, and implement control systems, instrumentation systems, communications systems, computer systems, or power systems.
- The ability to apply project management techniques to electrical/electronic(s) systems.
- The ability to utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of electrical/electronic(s) systems.

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

The AAS in electrical engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve electrical engineering problems.
- Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team.
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of electrical engineering solutions on industry and the general public.
- Use current techniques, skills, and tools necessary to support electrical engineering practice.

The BS in electrical engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve electrical engineering problems.
- Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team.
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of electrical engineering solutions on industry and the general public.
- Use current techniques, skills, and tools necessary to support electrical engineering practice.
- Design electrical engineering systems, components, or processes to meet industry needs.
- Design electrical engineering experiments, as well as analyze and interpret data to support the problem-solving process and project design.

### **DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State electrical engineering technology AAS graduates may enter directly into either the construction supervision BTech, the electrical engineering technology BS, the interdisciplinary

studies BTech, or technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Electrical or electronics technician (two-year)
- Electrical or electronics technologist (four-year)
- Communications technician/technologist
- Computer technician/technologist
- Semiconductor manufacturing technician/technologist
- Electrical power technician/technologist

**EMPLOYMENT STATISTICS**

Employment and continuing education rate:

- Electrical Engineering Technology (AAS degree): 100 percent – 33 percent are employed; 67 percent continued their education.
- Electrical Engineering Technology (BS degree): 100 percent – 89 percent are employed; 11 percent continued their education.

**ENROLLMENT AND GRADUATION DATA**

AAS Degree	Enrollment (based on Fall census)
2017	19
2016	20
2015	23
	Degrees Awarded
2016-2017	11
2015-2016	7
2014-2015	15
BS Degree	Enrollment (based on Fall census)
2017	56
2016	55
2015	60
	Degrees Awarded
2016-2017	14
2015-2016	12
2014-2015	10

**RELATED PROGRAMS**

- [Computer Engineering Technology](#)
- [Electrical Construction and Maintenance](#)
- [Electrician](#)
- [Engineering Science](#)

**CERTIFICATION OR LICENSURE**

The Bachelor of Science degree in electrical engineering technology is recognized as a “professional degree” that qualifies for experience/education credit toward New York Professional

Engineering Licensure. Graduates from Alfred State’s program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

Be advised that a prior felony conviction may impede a student’s ability to receive licensure.

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS)**

Required: Algebra, Geometry, Algebra 2  
Recommended: Physics

**ELECTRICAL ENGINEERING TECHNOLOGY -  
AAS DEGREE**
**TYPICAL FOUR-SEMESTER PROGRAM**
**First**

ELET	1001	Seminar	1
ELET	1202	Intro to Electrical Eng Tech	2
ELET	1111	Digital Logic Laboratory	1
ELET	1133	Digital Logic	3
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
XXXX	xxx3	LAS/Gen Ed Elective	3
			16

**Second**

ELET	1103	Circuit Theory I	3
ELET	1151	Circuit Theory Laboratory	1
ELET	1142	Electronic Fabrication	2
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
LITR	xxx3	Gen. Ed. - Literature Elective	3
			16

**Third**

ELET	2103	Electronics Theory I	3
ELET	2151	Electronics Laboratory I	1
ELET	2124	Electrical Power Circuits	4
ELET	2143	Embedded Controller Fundmtls	3
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3
			17

**Fourth**

ELET	3103	Electronics Theory II	3
ELET	3151	Electronics Laboratory II	1
ELET	4154	Microelectronics	4
ELET	4224	Alternative Energy Generation	4
	xxx3	General Education Elective	3
			15

If not required to take math due to placement scores, take LAS elective to complete degree requirements of three credits; otherwise, take free elective.

**ASSOCIATE DEGREE GRADUATION  
REQUIREMENTS**

- 64 semester credit hours
- 28 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- **2.0 grade point average in major courses**
- 2.0 cumulative grade point average, and
- Approval of department faculty

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS (BS)**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

**ELECTRICAL ENGINEERING TECHNOLOGY –  
BS DEGREE****TYPICAL FIVE- THROUGH EIGHT-SEMESTER  
PROGRAM****Fifth**

ELET	5113	Electronic Communications	3
EMET	5004	Instrumentation	4
SPCH	1083	Effective Speaking	3
COMP	5703	Technical Writing II	3
MATH	2074	Technical Calculus II	4
			17

**Sixth**

ELET	6143	Electrical Machines & Controls	3
MATH	6114	Differential Equations	4
ELET	xxx4	Adv. Power Systems or other approved Tech Elective	4
ELET	7404	Embedded & Real Time Systems	4
			15

**Seventh**

BSET	7001	Senior Seminar & Project Des	1
MATH	7113	Economic Analy for Engr Tech	3
MATH	7123	Statistics for Engr Tech & Sci	3
CHEM	5013	Applied Chemical Principles	3
PHYS	8013	Modern Physics	3
ELET	7104	Integrated Circuit Technology	4
			17

**Eighth**

BSET	8003	Senior Technical Project	3
EMET	6004	Feedback Control Systems	4
XXXX	xxx3	Liberal Arts/ Social Science Elective	3
XXXX	xxx3	Liberal Arts/ Social Science Elective	3
			13

**BACHELOR OF SCIENCE DEGREE  
GRADUATION REQUIREMENTS**

- 126 semester credit hours
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major
- Minimum of 30 hours upper division in residence
- **2.0 grade point average in major courses**
- 2.0 cumulative grade point average
- Approval of department faculty

Courses that repeat or significantly overlap those taken in the student's associate degree program cannot be taken for upper-level credit. If the associate degree covered the subject matter in one of the required baccalaureate courses, a different course must be substituted and approved by the faculty adviser.

**ENGINEERING SCIENCE****AS DEGREE – CODE #0530**

Dr. Murat Al, Program Coordinator  
 Email address: [alm@alfredstate.edu](mailto:alm@alfredstate.edu)

Dr. Jon Owejan, Program Co-Coordinator  
 Email address: [owejanjp@alfredstate.edu](mailto:owejanjp@alfredstate.edu)

Embracing a strong core of courses in chemistry, mathematics, and physics, and including basic English and humanities sequences, this program is augmented by basic engineering courses essential to all engineering disciplines. The primary objective of our program is to provide you with a basic two years of study in order to continue your education at the baccalaureate level in any of the engineering disciplines.

**ADVANTAGES**

- The program is structured so that most students do not need to decide upon an engineering discipline until the last semester of the second year, allowing them to carefully investigate disciplines and institutions.
- Students develop laboratory techniques and skills using modern engineering tools.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply knowledge of mathematics, physics, and chemistry to solve engineering problems.
- Integrate the concepts of mathematics, sciences, and humanities in engineering courses.
- Develop student computational proficiency to analyze and interpret data in solving engineering problems.
- Develop laboratory techniques and skills using modern engineering tools, including documentation and engineering reports, which reinforce and advance theoretical concepts.
- Communicate effectively with clear, critical thinking skills and broaden understanding of self and society through the general education requirements.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State engineering science graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent continued their education.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)  
[Construction Engineering Technology](#)  
[Electrical Engineering Technology](#)  
[Mechanical Engineering Technology](#)  
[Surveying Engineering Technology](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, Pre-calculus; Physics or Chemistry

Recommended: Both Physics and Chemistry

**GRADUATION REQUIREMENTS**

- 67 semester credit hours in program as listed above
- 40 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503). A total of three courses in the humanities and social sciences is recommended to enhance transfer
- 2.0 cumulative grade point average, and department requirement of 2.0 grade point average in major courses (ENGR, ELET, CIVL, MECH, CISY)
- Approval of department faculty

**ENGINEERING SCIENCE - AS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

COMP	1503	Freshman Composition	3
CHEM	1984	Chemical Principles I	4
ENGR	1201	Engineering Sci Orientation	1
MATH	1084	Calculus I	4
	xxx3	Technical Elective	3
			15

**Second**

ENGR	2001	Engineering Computing Applctns	1
PHYS	1064	Physics for Engr & Science I	4
	xxx3	General Education Elective	3
LITR	xxx3	Literature Elective	3
SOCI	1193	Marriage & Family Acrs Wrld Cit	3
		OR	
PLSC	1043	American Government	3
		OR	
ANTH	1013	Cultural Anthropology	3
MATH	2094	Calculus II	4
			18

**Third**

ENGR	2201	Engineering Science Seminar	1
ENGR	3004	Circuit Analysis I	4
ENGR	3213	Analytical Mechanics I	3
MATH	6114	Differential Equations	4
PHYS	2064	Physics for Engr & Sci II	4
			16

**Fourth**

ENGR	4213	Analytical Mechanics II	3
ENGR	4264	Engr Mechanics of Materials	4
MATH	6104	Multivariate & Vector Calculus	4
SPCH	1083	Effective Speaking	3
ENGR	3254	Systems Dynamics I	4

ENGR	4004	OR Circuit Analysis II	4
			18

Typical Technical Electives:

BIOL	1104	General Biology I	4
BIOL	2204	General Biology II	4
CHEM	2984	Chemical Principles II	4
CHEM	3514	Organic Chemistry I	4
CHEM	4524	Organic Chemistry II	4
CISY	4003	Comp Prgrmmg III/ Data Strctu	3
CISY	5123	Scientific Programming	3
CIVL	1204	Surveying I	4
CIVL	2204	Surveying II	4
ELET	1133	Digital Logic	3
ELET	1111	Digital Logic Laboratory	1
ELET	1143		
ELET	2143	Embedded Controller Fundmntls	3
ELET	4154	Microelectronics	4
ELET	4224	Alternative Energy Generation	4
MATH	7113	Economic Analy for Engr Tech	3
MATH	7123	Statistics for Engr Tech & Sci	3
MECH	1203	Materials Science	3
MECH	4003	Solid Modeling	3
MECH	1603	Graphics/CAD	3
MECH	1663	Manufacturing Processes	3
PHYS	8013	Modern Physics	3
		Elective (adviser approved)	

**ENVIRONMENTAL TECHNOLOGY****AAS DEGREE - CODE #2193**

Stephanie Rugg, Program Coordinator  
 Email address: [ruggsc@alfredstate.edu](mailto:ruggsc@alfredstate.edu)

The environmental technology program will prepare you to serve as field and laboratory technicians for a wide variety of industrial and governmental employers involved in environmental testing, remediation, and monitoring. The program is an interdisciplinary one, including extensive faculty and laboratory capacity in chemistry, biology, instrumentation, soil and plant sciences, environmental engineering, and spatial analysis, as well as a common core of general studies.

**ADVANTAGES**

- The major emphasis in the required courses is gaining proficiency in technical skills.
- Flexibility through the selection of technical electives will allow you to pursue an interest in a particular environmental sub-discipline and become better prepared for a specific type of job.
- Students in the program also have access to an outdoor laboratory - an engineered wetland treatment system in nearby Wellsville, NY.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Explain and apply the scientific method in order to document, interpret, and present results of an experiment.
- Evaluate scientific literature to summarize current thinking on a significant topic.
- Display effective interpersonal communication and work skills in the lecture and laboratory setting.
- Choose and employ proper safety practices in the laboratory.
- Demonstrate the calibration and operation of scientific instrumentation.
- Utilize gravimetric and volumetric methods to determine the physical and chemical properties of matter.
- Select an appropriate analytical technique to evaluate an environmental problem.
- Apply microbiological techniques to isolate organisms in pure culture.
- Utilize appropriate software to record, manage, retrieve, analyze, and present laboratory data.
- Evaluate the social, ethical, and legal issues in biological research.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State environmental technology graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

For students wishing to transfer to bachelor-level programs in environmental science, electives can be selected that meet specific requirements of transfer institutions. Current articulation agreements with Cornell University's College of Agriculture and Life Sciences and the SUNY School of Environmental Science and Forestry provide excellent options for continued study.

**OCCUPATIONAL OPPORTUNITIES**

- Waste water treatment
- Soil conservation
- Solid waste disposal
- Environmental monitoring
- Laboratory pollutant analysis
- Incinerator operation
- Brownfield remediation

**RELATED PROGRAMS**

[Biological Science \(AAS\)](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, Biology, Chemistry

**TECHNICAL STANDARDS**

Students must possess fine motor skills that allow them to focus a microscope with fine adjustment and use forceps.

**ENVIRONMENTAL TECHNOLOGY - AAS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

**First**

COMP	1503	Freshman Composition	3
BIOL	2803	Environmental Science	3
BIOL	2801	Environmental Sciences Lab	1
CHEM	1114	General Chemistry I	4
		OR	
CHEM	1984	Chemical Principles I (preferred for transfer)	4
MATH	1033	College Algebra	3
		or higher	
XXXX	xxxx	Technical Elective	3-4
			17-18

**Second**

LITR	7003	Literature and Nature	3
MATH	1123	Statistics I	3
		OR	
MATH	2124	Statistical Methods & Analysis	4
AGPS	1103	Soils	3
CHEM	2124	General Chemistry II	4
		OR	
CHEM	2984	Chemical Principles II (preferred for transfer)	4
XXXX	xxx3	Gen Ed Elective	3
			16-18

**Third**

XXXX	xxx3	Open Elective	3
CIVL	6113	Environmental Tech Concepts	3
SPCH	1083	Effective Speaking	3
XXXX	xxxx	Technical Elective	3-4
XXXX	xxxx	Technical Elective	3-4
			15-17

**Fourth**

ENVR	4413	Environmental Law	3
ENVR	4424	Envrnmntl Chem & Microbiology	4
COMP	5703	Technical Writing II	3

XXXX	xxxx	Technical Elective	3-4
ENVR	4411	Environmental Capstone Seminar	1
HPED	xxx1	Physical Education Elective	1
			15-16

**Technical Electives:**

BIOL	1104	General Biology I	4
BIOL	2204	General Biology II	4
CHEM	3514	Organic Chemistry I	4
CHEM	4524	Organic Chemistry II	4
MATH	1063	Technical Calculus I	3
PHYS	1044	College Physics I	4
PHYS	2044	College Physics II	4
AGPS	5003	Integrated Pest Management	3
CHEM	5414	Analytical Principles	4
AGPS	2113	Field & Forage Crops	3
BIOL	1304	Botany	4
BIOL	4254	General Microbiology	4
CHEM	6614	Instrumental Analysis	4
BIOL	1223	Introduction to Forestry	3
BIOL	5223	Ecology	3
MATH	2043	College Trigonometry	3
CISY	3023	Advanced Microcmpr Spreadshts	3

**GRADUATION REQUIREMENTS**

A minimum of 63 credit hours is required for graduation, with an overall cumulative index of 2.0 in the above-listed courses. A grade of "C" or better is required in chemistry, biology, and environmental courses.

Academic programs are subject to modification.

**FINANCIAL PLANNING**

**BBA DEGREE – CODE #1938**

Scott DuMond, Program Coordinator  
 Email address: [dumondsr@alfredstate.edu](mailto:dumondsr@alfredstate.edu)

Personal financial services is one of the most lucrative and rapidly expanding professions in existence. By combining expertise in estate planning, investment planning, risk management, insurance evaluation, tax planning, retirement planning, and employee benefits planning, the CERTIFIED FINANCIAL PLANNER™ professional offers one-stop comprehensive expert advice that would have formerly required a variety of different professionals. As a student completing this four-year degree, you will be eligible to sit for the CERTIFIED FINANCIAL PLANNER™ examination. While there are numerous job opportunities for employment in various types of financial institutions - banks, investment firms, and the insurance industry - perhaps the greatest earnings potential lies in becoming a self-employed CFP® practitioner.

**ADVANTAGES**

- Students receiving their AAS or AS degree in virtually any business concentration will be able to seamlessly transfer into this program and receive the BBA degree in four more semesters, which includes a full- semester internship in the field.
- Students develop the ability to integrate and synthesize the knowledge identified by the CFP® Board’s required topic list and gained from core courses, into decision making, critical thinking, and problem-solving skills.
- This program is registered with the Certified Financial Planner Board of Standards, Inc.

A laptop computer is required for students entering this degree program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate competence in domestic and global environments within the principle functional areas of business.
- Analyze personal finance problems and devise solutions using critical thinking, decision-making processes, and decision-support tools.
- Formulate a financial plan while integrating the major functional areas of business and personal finance.

- Incorporate software, technology, and information systems into personal finance.
- Examine comprehensive personal finance issues and communicate findings and solutions.
- Examine the personal finance environment in relation to the current financial, legal, economic, and social environments.
- Analyze the role of ethics, government regulations, and legalities in personal financial planning processes.

**OCCUPATIONAL OPPORTUNITIES**

- Banking
- Insurance
- Investment firms
- Financial planning firms
- Attorneys' offices
- Self-employment
- Employee benefits specialists
- Accounting firms
- Wealth management firms
- Broker-dealer (securities) firms

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

[Accounting](#)  
[Business Administration](#)  
[Marketing](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 980 or a composite ACT score of 19.

**CERTIFIED FINANCIAL PLANNER®: THE HIGHEST STANDARD**

Today more than ever, CFP® pros are an essential resource. From budgeting, to planning for retirement, to saving for education, to managing your taxes and your insurance coverage, "finances" doesn't mean just one thing for most Americans - and "financial planning" means much more than just investing. Bringing all the pieces of your financial life together is a challenging task.

Although many professionals may call themselves "financial planners," CFP® professionals have

completed extensive training and experience requirements and are held to rigorous ethical standards. They understand all the complexities of the changing financial climate and are required to make financial planning recommendations in your best interest.

### WHY CERTIFICATION MATTERS

Most people think all financial planners are "certified," but this isn't true, nor are all certifications the same. Anyone may call him or herself a "financial planner," but only those who have fulfilled the certification and renewal requirements of the CFP Board can display the CFP® certification marks, which represent a high level of competency, ethics, and professionalism. CFP Board's *Standards of Professional Conduct* require CFP® pros to look out for your interests above their own when delivering financial planning advice.

### EDUCATION

Unlike many financial advisors, CFP® pros are required to develop their theoretical and practical knowledge by completing a comprehensive course of study at a college or university with a curriculum approved by the CFP Board. Planning professionals with training outside of the CFP Board's approved list may meet the education requirement through a review process, which looks at transcripts, previous course work, and other professional designations.

### EXAMINATION

CFP® professionals must pass the comprehensive CFP® Certification Exam, which tests their ability to apply financial planning knowledge to real-life situations. The exam covers the financial planning process, tax planning, employee benefits and retirement planning, estate planning, investment management and insurance. The average pass rate for this difficult exam is only 55 percent to 60 percent. This comprehensive exam ensures that CFP® professionals are highly qualified to develop a plan for your finances.

### EXPERIENCE

CFP® professionals must have a minimum of three years' experience in the financial planning process prior to earning the right to use the CFP® certification marks. This hands-on experience guarantees that CFP® professionals have practical financial planning knowledge, so you can count on them to help you create a realistic financial plan that fits your individual needs.

### ETHICS

When it comes to financial planning, CFP® professionals are held to the highest of standards. CFP Board's *Code of Ethics* outlines CFP® professionals' obligations to uphold principles of integrity, objectivity, competence, fairness, confidentiality, professionalism and diligence. The *Rules of Conduct* require CFP® professionals to put clients' interests above their own, and to provide their financial planning services as a "fiduciary" — acting in the best interest of their financial planning clients. CFP® professionals are subject to sanctions if they violate these standards.

### ENFORCEMENT

CFP Board's rigorous enforcement of its *Standards of Professional Conduct* — including releasing disciplinary information to the public — distinguishes the CFP® certification from the many other designations in the financial services industry. Anyone who seeks CFP® certification is subject to a background check, and those whose past conduct falls short of CFP Board's ethical and practice standards can be barred from becoming certified. After attaining certification, a CFP® professional who violates CFP Board's ethical and practice standards becomes subject to disciplinary action, which could include the permanent revocation of certification. Through diligent enforcement of its ethical and practice standards, CFP Board provides you with the confidence that your CFP® professional is both competent and ethical.

**FINANCIAL PLANNING - BBA DEGREE**  
TYPICAL EIGHT-SEMESTER PROGRAM

xxx3 Business Elective 3  
- Upper 15

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Stats I or Stats Methods	3
CISY	xxx3	Computer Elective	3
			16

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communication	3
SPCH	1083	Effective Speaking	3
	xxx3	Open Elective	3
MATH	xxx3	Gen Ed/Math Elective	3
			16

Third			
BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
BUAD	4203	Intro Personal Financial Plan	3
ECON	1013	Principles of Macroeconomics	3
BUAD	4133	Investments	3
			15

Fourth			
MKTG	1063	Principles of Sales	3
ECON	2023	Principles of Microeconomics	3
BUAD	4193	Insurance and Risk Management	3
LITR	xxx3	Literature Elective	3
	xxx3	Gen Ed Elective	3
	xxx3	Gen Ed/LAS Elective	3
			18

Fifth			
ACCT	3453	Tax Accounting I	3
BUAD	5003	Management Communications	3
BUAD	5023	Human Resource Management	3
FSMA	7023	Estate Planning	3

Sixth			
FSMA	5003	Investment Planning	3
FSMA	6003	Employee Benefit Planning	3
	xxx3	Business Elective	3
	xxx3	Business Elective	3
	xxx3	Gen Ed/LAS Elective	3
			15

Seventh			
FSMA	7123	Persnl Finan Planning Capstone	3
BUAD	5033	Retirement Planning	3
FSMA	5103	Tax Planning	3
FSMA	7103	Money & Banking	3
	xxx3	Business Elective - Upper	3
			15

Eighth			
FSMA	8112	Financial Planning Internship	12

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

- 122 credit hours.
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State
- Cumulative overall index of at least 2.0

**FORENSIC SCIENCE TECHNOLOGY****BS DEGREE - CODE #2023**

Wayne Bensley, Department Chair and Program Director

Email address: [benslewd@alfredstate.edu](mailto:benslewd@alfredstate.edu)

The forensic science technology major is a technically rigorous four-year program culminating in a Bachelor of Science degree. Students in this laboratory-based on-campus program will complete classwork focusing on three areas of physical evidence analysis:

- Biological applications within forensics, e.g., DNA technologies, genetic analysis, and microbiology.
- Chemical practicalities, notably: physicochemical analysis and identification of drugs, poisons, and fire debris.
- Microscopic-based examinations, including the analysis of fingerprints, firearms evidence, and trace evidence.

The forensic science technology program is fully accredited by FEPAC (Forensic Science Education Programs Accreditation Commission).

**MISSION STATEMENT**

The mission of the forensic science technology program at Alfred State is to provide our students with a strong foundation in the natural and physical sciences. This includes not only theoretical didactic delivery, but also a wealth of hands-on laboratory-based forensic analytical techniques. Graduates of the program will be equipped with the knowledge and skills necessary to obtain entry-level positions as laboratory technicians, scientists, or examiners in a variety of governmental, institutional, and industrial settings, or with the background necessary for successful transfer into graduate-level programs in the forensic, biological, and chemical sciences or related subjects.

**VISION STATEMENT**

Through a rigorous hands-on curriculum rooted in the natural and physical sciences, the forensic science technology program at Alfred State strives to produce graduates prepared to be active contributors in a variety of career and educational options.

**ADVANTAGES**

- All students in the program are required to take a core course load that includes preparation in chemistry, biology, physics,

and mathematics as well as more advanced training in organic chemistry, genetics, biochemistry, instrumental methods, analytical chemistry, microbiology, biotechniques, evidentiary law, public speaking, and technical writing.

- Students are trained in the usage and theory of modern instrumental techniques that are utilized by employees in crime laboratories nationwide.
- Students have the opportunity to broaden and deepen their training by selecting from a list of approved technical elective course work.
- All students in the program are required to complete either an off-campus internship or on-campus directed research experience. Students selecting the internship option will be exposed to a workplace setting and may complete this course at a multitude of off-campus locations offering laboratory testing services.
- Students selecting the directed research option will receive preparatory training for future graduate and/or professional school options. In addition, these students will have the opportunity to present their research at both on- and off-campus conferences and/or showcases.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply the scientific principles of chemistry, biology, and physics to specific applications in forensic science.
- Explain and show competency in basic chemical and biological lab procedures, including the identification of and the synthesis of various compounds and the forensic analysis of DNA.
- Demonstrate an understanding of the capabilities, use, potential, and limitations of various laboratory instrumental techniques widely utilized in forensic science.
- Recognize and use appropriate professional and ethical behavior as defined by the forensic science community.
- Demonstrate an understanding of the scientific principles of crime scene investigation and reconstruction, including evidence collection, preservation, and documentation.
- Summarize the criminal justice system and explain the role of the forensic scientist and physical evidence within the criminal justice system.
- Evaluate scientific literature to distinguish fact from opinion, develop informed and

reasonable conclusions, apply knowledge and understanding to problems, develop rational and reasonable interpretations, suspend beliefs and remain open to new information and methods, and assimilate information learned into knowledge base.

- Use technological resources effectively and appropriately to communicate, collaborate, and retrieve information; determine when technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.
- Apply written communication skills to the construction documents of record that are well organized and contain appropriate format, grammar, punctuation, sentence structure, and spelling in accordance with established professional guidelines.
- Apply oral communication skills to the explanation of ideas, scientific terminology, and results of scientific examinations in a competent and confident manner.

### **OCCUPATIONAL OPPORTUNITIES**

- Government crime laboratories and medical examiner's offices
- Private forensic testing laboratories
- Industrial laboratories employing chemical or biological technologists
- Quality control/quality assurance positions in testing laboratories

Examples of locations where our graduates have obtained employment include:

- New York City Office of the Chief Medical Examiner
- New York Police Department Crime Laboratory
- National Security Agency
- United States Army Criminal Investigations Division
- Orange County Medical Examiner's Office
- Onondaga County Medical Examiner's Office
- Erie County Crime Lab
- Erie County Medical Examiner's Office

### **FUTURE EDUCATIONAL OPPORTUNITIES**

- Graduate-Level Forensic Science Programs
- Medicine
- Dentistry
- Pharmacy
- Biology
- Chemistry

Graduates of the program have been accepted into master's or doctorate level programs from several universities including:

- Syracuse University
- Cedar Crest College
- University of Buffalo
- University of Albany
- George Washington University
- Pace University
- Pittsburgh University
- Marshall University

### **EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 58 percent are employed; 42 continued their education.

### **RELATED PROGRAMS**

[Biological Science](#)

[Criminal Justice](#)

[Health Sciences](#)

### **INTERNSHIP OPPORTUNITIES**

Students have completed internship experiences at various locations, including the New York State Police Crime Laboratories, multiple county and municipal crime laboratories both inside and outside of New York State, private testing and industrial laboratories, and hospital clinical laboratories.

### **ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, Biology, Chemistry, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

**FORENSIC SCIENCE TECHNOLOGY - BS DEGREE**

**TYPICAL EIGHT-SEMESTER PROGRAM**

**First**

FRSC	1001	Intro to Fornsc Science Tech I	1
CHEM	1984	Chemical Principles I	4
BIOL	1104	General Biology I	4
COMP	1503	Freshman Composition	3
MATH	1084	Calculus I	4
			16

**Second**

FRSC	2001	Intro to Frnsc Science Tech II	1
CHEM	2984	Chemical Principles II	4
BIOL	2204	General Biology II	4
SPCH	1083	Effective Speaking	3
LITR	xxx3		3
			15

**Third**

FRSC	3001	Topics in Forensic Science I	1
CHEM	3514	Organic Chemistry I	4
PHYS	1044	College Physics I	4
XXXX	xxx3	General Education Elective	3
XXXX	xxx3	General Education Elective	3
			15

**Fourth**

FRSC	4001	Topics in Forensic Science II	1
CHEM	4524	Organic Chemistry II	4
PHYS	2044	College Physics II	4
MATH	2124	Statistical Methods & Analysis	4
XXXX	xxx3	General Education Elective	3
			16

**Fifth**

CJUS	1003	Intro to Criminal Justice	3
CHEM	7784	Biochemistry	4
BIOL	5254	Principles of Microbiology	4

COMP	5703	Technical Writing II	3
XXXX	xxx3	Technical Elective	3-4
			17-18

**Sixth**

BIOL	6534	Genetics	4
CHEM	6614	Instrumental Analysis	4
CJUS	6003	Law & Criminal Evidence	3
FRSC	6214	Microscopy and Criminalistics	4
			15

**Seventh**

FRSC	7214	Forensic Chemistry	4
BIOL	5013	Biotechniques	3
CHEM	5414	Analytical Principles	4
XXXX	xxx3	Technical Elective	3
			14

**Eighth**

FRSC	8213	Forensic Biology	3
FRSC	8111	Forensic Science Tech Capstone	1
FRSC	8113	Forensic Scie Tech Prof Prepar	3
FRSC	8803	Forensic Sci Tech Sr Resch Pjt OR	3
FRSC	8813	Forensic Scien Tech Internship	3
XXXX	xxx3	Technical Elective	3
			13

**Approved Technical Electives:**

- ANTH 5333 Medical Anthropology
- BIOL 1404 Anatomy & Physiology I
- BIOL 2504 Anatomy & Physiology II
- BIOL 2633 Histotechniques
- BIOL 4403 Pathophysiology
- BIOL 5003 Genomics
- BIOL 5900 Directed Study, Biology
- BIOL 6003 Molecular and Cell Biology
- BIOL 6403 Advanced Pathophysiology
- BIOL 8823 Research Methods in Health Sciences
- CHEM 4900 Directed Study, Chemistry
- CHEM 6854 Physical Chemistry
- ENGR 3213 Analytical Mechanics I
- ENVR 4424 Environmental Chemistry and Microbiology
- FRSC 3113 Forensic Pathology

FRSC 8900 Directed Study, Forensic Science  
MATH 2094 Calculus II  
MATH 6114 Differential Equations  
MEDR 1132 Essentials of Pharmacology

### **TECHNICAL STANDARDS**

Students must be able to physically lift 25 pounds and possess fine motor skills that allow them to focus a microscope with fine adjustment and use forceps.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship experience. In addition, students desiring careers within the field of forensic science should be aware that they will likely have to undergo background checks prior to being offered employment or an internship at a crime laboratory. These background checks are often similar to those required for law enforcement officers and may include questions regarding drug usage, criminal history, driving records, credit history, personal associations, and/or past work performance. In addition, they may include drug tests, polygraph examinations, and physical and medical examinations.

### **GRADUATION REQUIREMENTS**

- Minimum of 121 total semester credit hours
- Completion of at least one course from seven of the 10 SUNY General Education Categories
- Minimum of 45 upper-division semester credit hours
- Minimum of 30 upper-division semester credit hours in residence
- Completion of either a minimum 120-hour-long internship in a workplace laboratory setting OR a semester-long research project
- 2.0 cumulative grade point average
- Grade of "C" or higher in courses with BIOL, CHEM and FRSC prefixes
- Completion of a "mock trial" capstone experience
- Approval of department faculty

**GRAPHIC AND MEDIA DESIGN**

**AS DEGREE - CODE #2557**

Constance Pennisi, Program Coordinator  
 Email Address: [pennconn@alfredstate.edu](mailto:pennconn@alfredstate.edu)

The graphic and media design (AS) program provides graduates with foundational knowledge in graphic design for screen-based and print media. The program focuses on developing the contemporary problem-solving and design skills needed to apply the elements and principles of design, drawing, and visual communication. An awareness of design history is combined with the latest topics in graphic and media design to provide an informed student aimed at innovation in the field.

Graduates will possess the skills necessary to be well rounded in both design and production across a wide variety of print and digital media. They will be prepared for entry-level positions at design firms and in-house design and/or production departments within larger companies.

**ADVANTAGES**

The Alfred State graphic and media design (GMD) program is different from other such programs because it is constructed to meet the current needs for design in a time-based, screen-filled world. From cellphones to video billboards, new venues are demanding movement and interaction. This program is built to take advantage of new and ever-changing technologies, and remain at the leading edge of design.

Because designers are being asked to design for print and screen, this requires new thinking, new versatility, and a new type of creative problem-solver. A new versatile designer is what Alfred State's graphic and media design program is designed to produce.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate proficiency and flexibility with technology associated with graphic and media design.
- Demonstrate use of a professional design process to conceptualize and create a finished design project.
- Analyze their own work, as well as others through critiques, presentations, and other activities.
- Employ critical thinking to complete problem-solving activities.
- Create quality graphic and media design that utilizes relevant design history and theory.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Graphic and media design AS graduates may enter directly into either the graphic and media design BS, the interdisciplinary studies BTech, or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

Graduates will be well prepared to continue into baccalaureate programs in graphic design, media production, and education.

**FACILITIES**

- Video and audio production studio
- High-end computer labs
- Screen printing
- Large-format printing
- Traditional materials studios
- 24-hour studio access
- HD video, Apple TVs, and surround-sound in each studio
- Real-world collaborative studio environments
- Virtual reality and 3-D sculpting studio

**OCCUPATIONAL OPPORTUNITIES**

- Graphic design
- Media design
- Fine art
- Video and audio production
- Marketing
- Communications
- Education

**RELATED PROGRAMS**

[Digital Media and Animation](#)

**RELATED CLUBS**

- Visual Impact Club

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry

Recommended: Algebra 2

**GRAPHIC AND MEDIA DESIGN (AS DEGREE)**

TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
DGMA	1401	Freshman Seminar	1
DGMA	1403	Digital Foundations I	3
DGMA	1423	Intro to Visual Communication	3
DGMA	1413	Foundations:Form/Space Rltnshp	3
COMP	1503	Freshman Composition	3
FNAT	1313	Art History	3
			16

<b>Second</b>			
DGMA	2503	Digital Foundations II	3
FNAT	2423	3D Design/Color	3
FNAT	2333	Survey of Design	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Math Elective	3
			15

<b>Third</b>			
DGMA	3303	Digital Photography	3
DGMA	3503	Typography	3
DGMA	3603	Production I	3
SOCI	xxx3	Social Science Elective	3
XXXX	xxx3	Natural Science Elective	3
XXXX	xxx3	Gen Ed/LAS Elective	3
			18

<b>Fourth</b>			
DGMA	4103	Interactive Design	3
SPCH	1083	Effective Speaking	3
FNAT	3513	Art History II	3
DGMA	xxx3	Technical Elective	3
COMP	3603	Writing for Emergent Media	3
			15

Minimum of "C" is required for all core courses.

Students are required to complete a digital portfolio assignment and annual review to meet graduation requirements.

**GRAPHIC AND MEDIA DESIGN**

**BS DEGREE - CODE #2534**

Connie Pennisi, Program Coordinator  
 Email address: [penncconn@alfredstate.edu](mailto:penncconn@alfredstate.edu)

The graphic and media design program provides graduates with expertise in graphic design for screen-based and print media. The program focuses on developing the contemporary problem-solving and design skills needed to apply principles of design, drawing, and visual communication. An awareness of design history is combined with the latest topics in graphic and media design to provide an informed student aimed at innovation in the field.

**ADVANTAGES**

The graphic and media design (GMD) program at Alfred State is different from other graphic design programs. It is designed to meet the current needs for design in a time-based and screen-filled world. From cellphones to video billboards, new venues are demanding movement and interaction. This program is built to take advantage of new and ever-changing technologies and remain at the leading edge of design. Currently, designers are asked to be able to design for print and screen. This requires new thinking, new versatility, and a new type of creative problem solver. This new versatile designer is what this program is designed to produce.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate proficiency and flexibility with technology associated with graphic and media design.
- Demonstrate use of a professional design process to conceptualize and create a finished design project.
- Analyze their own work, as well as others through critiques, presentations, and other activities.
- Employ critical thinking to complete problem-solving activities.
- Create quality graphic and media design that utilizes relevant design history and theory.

**OCCUPATIONAL OPPORTUNITIES**

- Graphic design
- Media design
- Fine art
- Video and audio production
- Marketing
- Communication
- Education

**RELATED PROGRAMS**

- [Digital Media and Animation](#)
- [Information Technology: Web Development](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Algebra 2

**GRAPHIC AND MEDIA DESIGN - BS DEGREE**

TYPICAL EIGHT-SEMESTER PROGRAM

**First**

DGMA	1401	Freshman Seminar	1
DGMA	1403	Digital Foundations I	3
DGMA	1423	Intro to Visual Communication	3
DGMA	1413	Foundations:Form/Space Rltnshp	3
COMP	1503	Freshman Composition	3
FNAT	1313	Art History	3
			16

**Second**

FNAT	2333	Survey of Design	3
DGMA	2503	Digital Foundations II	3
FNAT	2423	3D Design/Color	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Math Elective	3
			15

**Third**

DGMA	3303	Digital Photography	3
DGMA	3503	Typography	3
DGMA	3603	Production I	3
SOCI	xxx3	Social Science Elective	3
XXXX	xxx3	Natural Science Elective	3
XXXX	xxx3	Gen Ed/LAS Elective	3
			18

**Fourth**

FNAT	3513	Art History II	3
DGMA	4103	Interactive Design	3
XXXX	xxx3	Technical Elective	3
SPCH	1083	Effective Speaking	3
COMP	3603	Writing for Emergent Media	3
			15

**Fifth**

DGMA	6103	Production II	3
DGMA	5603	Interactive Media	3
XXXX	xxx3	Technical Elective (Upper Level)	3
COMP	5703	Technical Writing II	3

XXXX	xxx3	LAS Elective (Upper Level)	3
			15

**Sixth**

XXXX	xxx3	Technical Elective (Upper Level)	3
DGMA	6203	Motion Graphics	3
DGMA	7703	Adv Topics Interactive Design	3
XXXX	xxx3	Gen Ed LAS Elective	3
XXXX	xxx3	LAS Elective (Upper Level)	3
			15

**Seventh**

DGMA	7803	Professional Practices	3
DGMA	6303	Special Topics Media Design I	3
DGMA	7603	Advanced Motion Graphics	3
XXXX	xxx3	Lib Arts & Sci Elective	3
XXXX	xxx3	Lib Arts & Sci Elective	3
			15

**Eighth**

DGMA	8403	Sr Studio Proj - Media Design	3
DGMA	8503	Special Topics Media Design II	3
DGMA	8203	Media Design Seminar	3
XXXX	xxx3	Lib Arts & Sci Elective	3
XXXX	xxx3	Gen Ed/ LASElective	3
			15

**GRADUATION REQUIREMENTS**

To fulfill degree requirements, each student must complete 124 total semester credit hours, including a minimum of 60 credit hours of liberal arts and sciences from eight of the 10 State University of New York general education categories, and earn a 2.0 cumulative GPA and a grade of "C" or better in the core courses (DGMA and FNAT prefixes).

Students are required to complete a digital portfolio assignment and annual review to meet graduation requirements.

A typical day consists of two, one-hour lectures and a two-hour studio in the freshman and sophomore years.

**HEALTH INFORMATION TECHNOLOGY****AAS DEGREE – CODE #1969**

Erica Matteson, RHIA, Program Coordinator  
 Email address: [matteses@alfredstate.edu](mailto:matteses@alfredstate.edu)

Health information technology (HIT) professionals play a key role in the planning, implementation, and management of the electronic health record (EHR), and with today's growing reliance on computer-based records, this profession has become one of the fastest-growing in the nation. HIT professionals are educated in the leadership and management of health information, and are considered the custodians of health information.

In this career, your primary function will be to make sure all the medical information collected about an individual is complete, accurate, and protected, while, at the same time, readily available for health care providers when it is needed. Alfred State offers an online Associate of Applied Science degree in health information technology, which combines a profession in health care with information technology. As an HIT professional, you will be responsible for maintaining components of health information systems consistent with medical, legal, accreditation, and regulatory requirements of the health care delivery system. You will also maintain, collect, and analyze data crucial to the delivery of quality patient care.

**ADVANTAGES**

- Graduates are eligible to take the national certification examination to become a registered health information technician (RHIT). Since 1968, when the program was created, Alfred State HIT graduates have traditionally achieved a passing rate above the national average.

**PROGRAM STUDENT LEARNING OBJECTIVES**

- Apply biomedical knowledge (including medical terminology, anatomy & physiology, pathophysiology, and pharmacology) to apply diagnosis/procedure codes (ICD-9-CM, ICD-10-CM, ICD-10-PCS, CPT, and HCPCS level II according to current nomenclature).
- Use established federal guidelines, accreditation standards, and APC and DRG calculator/grouping software to comply with health care documentation (review), reimbursement, and reporting requirements.
- Apply HIM knowledge as defined by organizational policy and external regulations (e.g., Medicare, Medicaid, managed care)

and standards to maintain the accuracy and completeness of the patient record.

- Apply HIM knowledge of policies and procedures for confidentiality and security measures regarding the access and disclosure of protected health information (PHI) to authorized users.
- Apply HIM knowledge in the collection, maintenance, and reporting of data for clinical indices/databases/registries to meet specific organizational and regulatory needs for the purposes of medical research and education.
- Organize and present data for quality management, utilization management, risk management, and other related studies.
- Apply HIM knowledge of legal, ethical, accreditation and certification standards as appropriate for the management of patient information.
- Apply basic methods when calculating descriptive, institutional, and health care vital statistics.
- Apply the use of common software applications (e.g., spreadsheets, databases, word processing, graphics, presentation, email, and so on) and HIM-related software applications (e.g., release of information, electronic health record, patient record abstracting, and so on).
- Apply HIM knowledge to promote ethical standards of practice to health information management and coding.
- Demonstrate effective written and oral communication as appropriate to health information management and coding practices. Communicate effectively with consumers, providers, and other health care professionals.
- Demonstrate critical thinking to problem solving and reasoning skills to health information management and coding practices.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State health information technology graduates may enter directly into either the healthcare management BTech, the interdisciplinary studies BTech, or the technology management BBA degree program.

**PROFESSIONAL PRACTICE EXPERIENCES**

Students complete non-paid professional practice experiences (PPEs) in the Health Information Department of a health care facility (160 hours) in their study. PPE arrangements are made in



in the health informatics and health information management professions. CAHIIM is recognized by the Council for Higher Education Accreditation (CHEA) [One Dupont Circle NW, Suite 510, Washington, DC 20036, 202-955-6126, chea@chea.org]. CHEA is a nationally recognized nongovernmental higher education organization that undertakes recognition of accrediting bodies.

Alfred State is accredited by the Middle States Commission on Higher Education [3624 Market St., Philadelphia, PA 19104, 215-662-5606].

### **CERTIFICATION**

Graduates are eligible to take the Certified Coding Specialist (CCA, CCS and CCS-P) and Certified Professional Coder (CPC, CPC-A, CPC-H-A, CPC-H and CPC-P) exams. It is strongly recommended students complete technical elective courses in this area of study and work for a minimum of one year as a coder before taking the coding certification exam(s).

### **RELATED PROGRAMS**

[Coding & Reimbursement Specialist](#)  
[Computer Information Systems](#)

### **ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: High school keyboarding, biology, MS Office Professional or equivalent.

Must be able to attend Professional Practice Experience (PPE) courses, including 160 hours at a health care facility within reasonable driving/travel distance to their home.

### **GENERAL NOTES**

Working in the Health Information Management HIM profession requires long periods of standing and/or sitting.

Job duties typically include handling paper documents and use of computer screens.

Near vision reading of paper records or computer screens, including the use of multiple computer applications, is required 95 percent of the time.

Documents are handwritten on paper, and other documents and information used are on computer screens, including scanned documents and images.

The computer screen fonts may be small. The extensive use of a computer keyboard and mouse is required.

HIM professionals spend the greater portion of the work day reading and analyzing both handwritten and computerized documents and use multiple software applications such as the electronic health record.

Individuals should assess their personal limitations and abilities within these working environments, as HIM candidates will be assessed in all of these skill sets during the hiring process.

**HEALTH INFORMATION TECHNOLOGY - AAS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM - Full-time**

This program is offered as an Internet-based program only

**First**

BIOL	1114	Human Anat & Physiology I	4
COMP	1503	Freshman Composition	3
MEDR	1133	Medical Terminology	3
MEDR	1132	Essentials of Pharmacology	2
MEDR	1114	Intro to Health Info Managemnt	4
			16

**Second**

BIOL	2214	Human Anat & Physiology II	4
BIOL	4403	Pathophysiology	3
MEDR	3114	Electronic Health Record Mgmt	4
MEDR	1234	ICD-10-CM & ICD-10-PCS Coding	4
MATH	1113	Statistical Concepts	3
*Recommended by CAHIM			
		OR	
PSYC	1013	General Psychology	3
		OR	
SOCI	1163	General Sociology	3
			18

**Third**

MEDR	1223	Hlth Data Mgmt & Hlthcare Stat	3
MEDR	1244	CPT & HCPCS Level II Coding	4
MEDR	4214	Insurance&Reimbursm# Processng	4
MEDR	3414	Quality & Legal Aspects of HIM	4
PHIL	2013	Critical Thinking	3
*Recommended by CAHIM			
		OR	
LITR	2603	Introduction to Literature	3
		OR	
LITR	2343	Children's Literature	3

		OR	
SPAN	1203	Spanish I	3
			18

**Fourth**

MEDR	4514	Alternate Care Hlth Info Mgmt	4
MEDR	4213	Leadership in Health Info Tech	3
MEDR	2614	Advanced Coding & Reimbursmnt	4
MEDR	4312	HIM Operations PPE	2
MEDR	4322	Coding PPE	2
MEDR	4111	Health Informatn Tech Seminar	1
			16

Be advised that a prior felony conviction may impede a student's ability to participate in a required professional practice experience.

**GRADUATION REQUIREMENTS**

HIT students are required to earn a grade of at least a "C" or better in each BIOL and MEDR prefix course prior to placement in the PPEs. Students must also earn a grade of at least a "C" in all BIOL, MEDR, and COMP 1503 courses to graduate from the HIT program.

MEDR 2614 (advanced coding & reimbursement) may be taken in the last semester as an elective.

**HEALTH SCIENCES****BS DEGREE - CODE #2564**

Dr. Kathryn Link, Program Coordinator

Email address:

The Bachelor of Science in health sciences program is a rigorous four-year baccalaureate degree in biological sciences designed to satisfy requirements for students entering health care professions or graduate-level biomedical research. Students in the program will be exposed to a rich offering of liberal arts courses and will advance from basic biology, chemistry, and physics courses to upper-level courses in biology, chemistry, health care, and research. The program further provides opportunities to select from a wide range of health-related technical electives to enhance and broaden the student's expertise. These will prepare the graduate for working with future colleagues from the health care professions and the diverse population that will require their services. In addition, this program will prepare the graduate to seek transfer options to graduate-level or initial professional degree programs.

**ADVANTAGES**

- Students will build a solid foundation in biology and chemistry courses.
- Students will be able to internally and seamlessly transfer from Alfred State's biological science (AAS) degree.
- Students will further advance knowledge and skills in biology, chemistry, health care, and research through courses, including microbiology, genetics, biotechniques, molecular and cellular biology, biochemistry, culture of health care, ethical issues in health care, and research methods.
- Students will have the opportunity to enhance and broaden their training by selecting from a list of approved health-related technical electives such as advanced pharmacology, complementary and alternative medicine, genomics, instrumental analysis, medical anthropology, and more.
- Students will conceptualize and implement their knowledge and skills through a directed research experience or professional internship.

**PROGRAM STUDENT LEARNING OUTCOMES (PSLOS)**

- Apply the scientific principles of biology and chemistry to specific applications in health sciences.

- Explain and show competency in basic biological and chemical laboratory procedures.
- Demonstrate an understanding of the capabilities, use, potential, and limitations of various laboratory instrumental techniques widely utilized in health sciences.
- Recognize and use appropriate professional and ethical behavior as defined by the health sciences community.
- Evaluate scientific literature to distinguish fact from opinion, develop informed and reasonable conclusions, apply knowledge and understanding to problems, develop rational and reasonable interpretations, suspend beliefs and remain open to new information and methods, and assimilate information learned into knowledge base.
- Use technological resources effectively and appropriately to communicate, collaborate, and retrieve information; determine when technology is useful; and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.
- Apply written communication skills to construct documents of record that are well organized and contain appropriate format, grammar, punctuation, sentence structure, and spelling in accordance with established professional guidelines.
- Apply oral communication skills to the explanation of ideas, scientific terminology, and results of scientific examinations in a competent and confident manner.
- Synthesize theory and concepts from the liberal arts education domain and other professions into health sciences.

**OCCUPATIONAL OPPORTUNITIES**

- Biology technologist
- Laboratory assistant
- Pharmaceutical technician
- Environmental health safety officer
- Food scientist
- Biomedical researcher

**FUTURE EDUCATIONAL OPPORTUNITIES**

- Medicine
- Physician assistant
- Dentistry
- Optometry
- Osteopathy
- Pharmacy
- Audiology

- Physical therapy
- Occupational therapy
- Chiropractic
- Clinical psychology
- Environmental science
- Graduate level biology, chemistry, or biomedical science

**EMPLOYMENT STATISTICS**

New program – no data available

**RELATED PROGRAMS**

[Forensic Science Technology](#)

**INTERNSHIP OPPORTUNITIES**

- Academic or industrial research laboratory
- Health care or clinical laboratory
- Pharmacy
- Health care practitioner's office

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Specific high school course requirements and recommendations are:

Required: Algebra, Geometry, Algebra 2, Biology, Chemistry, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

**TECHNICAL STANDARDS**

Students must possess fine motor skills that allow them to focus a microscope with fine adjustment and use forceps.

**HEALTH SCIENCES – BS DEGREE**

## TYPICAL EIGHT-SEMESTER PROGRAM

**First**

BIOL	1104	General Biology I	4
CHEM	1984	Chemical Principles I	4
MATH	xxx3	Math Elective (MATH 1033 or higher)	3
COMP	1503	Freshman Composition	3
HLTH	1101	Intro to Health Sciences OR	1
BIOL	1101	Topics in General Biology	1
			15

**Second**

BIOL	2204	General Biology II	4
CHEM	2984	Chemical Principles II	4
LITR	xxx3	Literature Elective	3
SPCH	1083	Effective Speaking	3
			14

**Third**

BIOL	5254	Principles of Microbiology	4
CHEM	3514	Organic Chemistry I	4
PSYC	1013	General Psychology	3
	xxx3	Open Elective	3
	xxx3	General Education Elective	3
			17

**Fourth**

BIOL	6534	Genetics	4
CHEM	4524	Organic Chemistry II	4
MATH	2124	Statistical Methods & Analysis	4
	xxx3	General Education Elective	3
HLTH	2111	Health Sciences Seminar OR	1
BIOL	2111	Biological Sciences Seminar	1
			16

**Fifth**

CHEM	7784	Biochemistry	4
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NURS	5003	Ethical Issues in Health Care	3
PHYS	1044	College Physics I	4
BIOL	8823	Research Mthds in Hlth Science	3
COMP	5703	Technical Writing II	3
			17

**Sixth**

HLTH	5233	The Culture of Healthcare	3
PHYS	2044	College Physics II	4
	xxx3	Open Elective	3
	xxx3	Open Elective	3
	xxx3	Technical Elective Upper	3
			16

**Seventh**

BIOL	6003	Molecular and Cell Biology	3
BIOL	5013	Biotechniques	3
	xxx3	Open Elective	3
	xxx3	Technical Elective	3
	xxx3	Technical Elective Upper	3
			15

**Eighth**

	xxx3	Technical Elective	3
	xxx3	Open Elective Upper	3
	xxx3	Technical Elective Upper	3
	xxx3	Technical Elective Upper	3
BIOL	8803	Senior Research Project OR	3
HLTH	8713	Prof Internship Hlth Sciences	3
			15

Be advised that a prior felony conviction may impede a student's ability to participate in an internship.

**TECHNICAL ELECTIVES:**

BIOL	1404	Anatomy & Physiology I	4
BIOL	2504	Anatomy & Physiology II	4
BIOL	2633	Histotechniques	3
BIOL	2803	Environmental Science	3
BIOL	4403	Pathophysiology	3
ENVR	4413	Environmental Law	3
ENVR	4424	Environmntl Chem & Microbiology	4
HLTH	1013	Essentials of Exercise Physiol	3
HLTH	1113	Biology of Human Sexuality	3
HLTH	1313	Nutrition	3
MATH	1084	Calculus I	4
MATH	2094	Calculus II	4
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
PSYC	1023	Human Development	3
PSYC	2093	Abnormal Psychology	3
SOCI	1233	Gerontology	3

**TECHNICAL ELECTIVES UPPER:**

ANTH	5333	Medical Anthropology	3
BIOL	5003	Genomics	3
BIOL	6403	Advanced Pathophysiology	3
CHEM	5414	Analytical Principles	4
CHEM	6614	Instrumental Analysis	4
CHEM	6854	Physical Chemistry	4
HLTH	5113	Complementary & Altv Medicine	3
HLTH	5203	End of Life Dilemmas	3
HLTH	6113	Diet and Disease	3
NURS	7033	Healthy Aging in Rural Areas	3
NURS	8003	Informtcs&Tech App in Hlthcare	3
MATH	6104	Multivariate & Vector Calculus	4
MATH	6114	Differential Equations	4
PSYC	5093	Health Psychology	3
PSYC	7003	Working w/Diverse Populations	3

**GRADUATION REQUIREMENTS**

- 124 total semester credit hours
- 74 semester credit hours of liberal arts and sciences from seven of the 10 SUNY General Education Categories
- 48 upper-division credit hours
- 42 upper-division credit hours in the major
- Minimum of 30 upper-division credit hours in residence
- 3 credit hours of research or internship
- 2.0 cumulative grade point average
- Grade of "C" or higher in core courses with BIOL, CHEM or HLTH prefixes
- Approval of department faculty

**HEALTHCARE MANAGEMENT****BTECH DEGREE – CODE #2647**

Wayne Bensley, Department Chair

Email address: [benslewd@alfredstate.edu](mailto:benslewd@alfredstate.edu)

The Bachelor of Technology in healthcare management (HCM-BT) is an online, upper-division program designed to allow a student or working professional who has earned an associate degree (AAS, AA, or AS) in a health-related area (or at least 60 credits toward such a degree) to complete a bachelor's degree. Individuals may currently be working in a laboratory, radiology, records, occupational therapy, surgical technology, paramedic, or ultrasound setting, and seeking advancement into management or administrative positions. The HCM-BT will open doors for these working adults by providing flexible online courses and laddering with all health-related two-year degrees granted by both colleges of technology and community colleges. The program emphasizes the development of managerial skills through a set of core courses and a wide array of electives to address areas such as healthcare finance/accounting, the culture of healthcare, human resources, communications, healthcare law and ethics and policies, information systems, marketing, and quality control. This degree will also provide an opportunity for students to continue their education toward an MBA to become a CNO, CEO, or COO.

**ADVANTAGES**

- Students will build a solid foundation in healthcare-related management courses from those currently working in the field.
- Students will be able to internally, seamlessly transfer from Alfred State's radiologic technology, diagnostic medical sonography, health information technology, and nursing AAS degrees.
- Students will have the opportunity to enhance and broaden their training by selecting from a list of approved healthcare technical electives.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply an understanding of self, as well as an understanding of the dynamics of groups and team interaction.
- Discuss and apply the methods used to plan, organize, and lead a healthcare facility.
- Analyze and use the appropriate skills and techniques needed for problem solving and decision making.

- Analyze and explain the application of employment laws and the legal system to the healthcare environment.
- Communicate effectively: oral, written, and nonverbal, using current technology where appropriate.
- Illustrate basic accounting methods and apply them using current technology.
- Perform financial and statistical analysis.
- Discuss the uses of and be able to prepare a comprehensive healthcare marketing plan.

**OCCUPATIONAL OPPORTUNITIES**

- Medical and health services department managers
- Public relations and fundraising managers
- Administrative services managers
- Training and development managers

**FUTURE EDUCATIONAL OPPORTUNITIES**

- Master of Business Administration (MBA)
- Master of Science (MS) Health Services Administration
- Master of Science (MS) Healthcare Management
- Doctorate of Philosophy (PhD) Healthcare Administration

**EMPLOYMENT STATISTICS**

New program – no data available.

**RELATED PROGRAMS**

[Diagnostic Medical Sonography \(AAS\)](#)  
[Health Information Technology \(AAS\)](#)  
[Radiologic Technology \(AAS\)](#)  
[Technology Management \(BTech\)](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

This upper-division program is designed to accept students who have already earned an associate degree in a health-related field. Accordingly, the admission requirements reflect the requisite advanced standing. In all other respects, the criteria parallel the requirements of similar baccalaureate completion programs at Alfred State.

- Associate degree or 60-plus credits in a health-related field.
- A minimum of 5 SUNY Gen. Education categories covered.
- A minimum of 21 credits in liberal arts and sciences

- Minimum GPA of 2.00

**HEALTHCARE MANAGEMENT – BTECH DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

*First 7-Week Session*

TMGT	7153	Principles of Management	3
XXXX	xxx3	General Education Elective	3
			6

*Second 7-Week Session*

ACCT	5043	Accounting Perspectives	3
HLTH	5233	The Culture of Healthcare	3
XXXX	xxx3	General Education Elective	3
			9

**Second**

*First 7-Week Session*

BUAD	5003	Management Communications	3
XXXX	xxx3	General Education Elective	3
			6

*Second 7-Week Session*

BUAD	5023	Human Resource Management	3
XXXX	xxx3	General Education Elective	3
XXXX	xxx3	Upper Technical Elective	3
			9

**Summer**

*5-Week Session*

COMP	5703	Technical Writing II	3
			3

**Third**

*First 7-Week Session*

BUAD	6003	Managerial Finance	3
HLTH	5223	Info Systems in Healthcare	3
			6

*Second 7-Week Session*

BUAD	7033	Operations Management	3
XXXX	xxx3	General Education Elective	3
XXXX	xxx3	Upper Technical Elective	3
			9

**Fourth**

*First 7-Week Session*

HLTH	5333	Healthcare Law and Ethics	3
XXXX	xxx3	Upper Technical Elective	3
			6

*Second 7-Week Session*

HLTH	5433	Healthcare Marketing	3
	xxx3	Upper Technical Elective	3
			6

**GRADUATION REQUIREMENTS**

- 120 total semester credit hours
- 30 semester credit hours of liberal arts and sciences from seven of the 10 SUNY General Education Categories
- 45 upper-division credit hours in the major
- Minimum of 30 upper-division credit hours in residence
- 2.0 cumulative grade point average and a grade of "C" or better in the required core courses
- Approval of department faculty

**GENERAL EDUCATION ELECTIVES:**

ANTH	5333	Medical Anthropology	3
HIST	1113	Hist of West Civil Since 1648	3
ECON	1013	Principles of Macroeconomics	3
LITR	2913	Introduction to Poetry	3
HLTH	1313	Nutrition	3
ANTH	5113	Cross-Cultural Encounters	3
SOCI	1193	Marriage & Family Acrs Wrld Clt	3
LITR	2033	The Short Story	3
LITR	2603	Introduction to Literature	3
HIST	2153	Surv of American History II	3
HLTH	1113	Biology of Human Sexuality	3
PLSC	1043	American Government	3
SOCI	1223	Power, Privilege, & Difference	3

**UPPER TECHNICAL ELECTIVES:**

BUAD	5043	Business Ethics	3
SOCI	5023	Research Methods	3
BUAD	6113	Strategic & Creative Prob Solv	3
BUAD	6403	Proj Mgmt for Busi Profssnls	3
BUAD	5013	Principles of Leadership	3
MKTG	6003	Strategic Marketing	3
BUAD	7023	Legal Environment of Business	3
TMGT	7003	Managing Tech & Innovation Cap	3

**HEATING, VENTILATION, AND AIR CONDITIONING****AOS DEGREE - CODE #0464**

Jeff Patronek, Program Coordinator  
Email: [patronjg@alfredstate.edu](mailto:patronjg@alfredstate.edu)

The heating, ventilation, and air conditioning program will prepare you for this growing field with courses on all phases of residential and commercial installation, maintenance, troubleshooting, and repair. It includes forced air, hot water and steam heating, gas and oil burner systems, along with hands-on air conditioning and heat pump technology.

The plumbing aspect of the program provides instruction in the basic skills required by the plumber in the construction of residential housing and commercial buildings. The program ranges from the installation of waste and sewage lines to the installation of potable water lines and plumbing fixtures.

**ADVANTAGES**

- The program provides the necessary theory connected with plumbing and HVAC, as well as on-the-job training experience overseen by expert tradesmen.
- Students will take the National Refrigerant Handling Certification Course and Test and the National ARI HVAC (Air Conditioning & Refrigeration Institute Heating Ventilation & Air Conditioning) Competency Test.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Accurately measure and layout PHVAC (plumbing, heating, ventilation, and air conditioning) projects.
- Apply safe practices to hand tools, power tools, and the environment.
- Select and apply the various materials used in the PHVAC trade.
- Perform appropriate trade-related math, including interpretation of charts and graphs.
- Perform installation service and troubleshooting of fuels and emergency sources used in residential and commercial PHVAC.
- Effectively communicate orally.
- Use the computer to access equipment information and operating specifications.
- Effectively communicate in writing.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State heating, ventilation, and air conditioning graduates may enter directly into the construction supervision BTech or technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the baccalaureate program in two additional years; others may complete the program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Maintenance personnel
- Maintenance supervisor
- Sheet metal fabricator
- Sales representative
- Pipe fitter
- Sprinkler installer
- HVAC mechanic or troubleshooter
- Water or sewer plant operator
- Private contractor

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

[Building Trades: Building Construction Masonry](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the heating, ventilation, and air conditioning program must meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder and/or able to climb, un-aided, onto and off equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

**HEATING, VENTILATION, AND AIR CONDITIONING - AOS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

BLCT	3413	Blueprint Readng-Bldg Construct	3
BLCT	3423	Pipe Fitting - Math Estimating	3
BLCT	3433	Cop Pipe & Tub, Water Sys Des	3
BLCT	3443	Drainage Systems & Piping	3
BLCT	3453	Plumb Trade History & Safety	3
BLCT	3463	Watr Heats- Plumb Fix Inst/ Rpr	3
			18

**Second**

BLCT	4143	Basic House Wiring-Forced Air	3
BLCT	4153	Sheet Metal Fabrication	3
BLCT	4163	Mid & Hi Effy Furn-Alt Warm Ar	3
BLCT	4173	Sheet Mtl Air Dist Systm &Vent	3
BLCT	4183	Sheet Metal Trade Safety	3
BLCT	3473	Heating Fuels-Comb Theo&Troubl	3
			18

**Third**

BLCT	3483	Electrical Fundamentals	3
BLCT	3493	Forced Air Furnace Controls	3
BLCT	3503	Hydro Comp, Circu Pump&Ht Emit	3
BLCT	3513	Hydronic Controls and Motors	3
BLCT	3523	Hydronic Funda & Heat Sources	3
BLCT	3533	Hydronic Piping Systems	3
			18

**Fourth**

BLCT	4203	Air Cond Components & Install	3
BLCT	4213	Air Conditioning Fundamentals	3
BLCT	4223	Air Cond Perf & Trou & Ht Pump	3
BLCT	4233	Heat Loss & Heat Gain	3
BLCT	4243	Refrigeration Handling Cert	3
BLCT	4253	Residential Duct System Design	3
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**HEAVY EQUIPMENT OPERATIONS****AOS DEGREE – CODE #1908**

Mark Payne, Program Coordinator

Email address: [paynem@alfredstate.edu](mailto:paynem@alfredstate.edu)

This program will provide you with the hands-on skills and expert training required by heavy equipment operators for the light construction and heavy highway industries. Instruction is provided in heavy equipment operations theory, as well as grades, soils, blueprint reading, safety, and supervision.

You will spend approximately 25 percent of your lab time operating real, industry-standard equipment; the balance of the lab time is spent on equipment inspection, maintenance, grades, lot layout, operation support, and estimating.

**ADVANTAGES**

Programs leading to an AOS degree are hands on and do not include liberal arts and sciences courses. Offered at the School of Applied Technology campus in Wellsville, heavy equipment operations is geared toward a person who would like to enter the heavy equipment operation industry following graduation.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Select the correct piece of equipment and demonstrate the proper use for an earth moving or excavation project.
- Select and use the necessary PPE for a given construction project.
- Demonstrate the proper set-up and use of various types of survey equipment.
- Read and interpret blueprints.
- Accurately estimate materials for a project.
- Demonstrate essential problem-solving and supervisory skills.
- Perform common mathematical calculations.
- Demonstrate how to excavate to meet construction and OSHA standards, based on the soil type.
- Safely operate various equipment utilized in the construction industry.
- Perform computer-based research and communication.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State heavy equipment operations graduates may enter directly into the construction supervision BTech or technology management BBA degree program. Graduates who have

credit for freshman composition, statistics, literature, history, and speech may complete the baccalaureate program in two additional years; others may complete the program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Town, village, or county department of public works
- NYS Department of Transportation
- Highway and heavy construction companies
- Mining companies
- Logging companies

**EMPLOYMENT STATISTICS**

Employment and continuing education rate: 100 percent – 96 percent are employed; 4 percent continued their education.

**RELATED PROGRAMS**

[Heavy Equipment, Truck & Diesel Technician](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

Students will be accepted for the heavy equipment operations program based on the strength of their application. Criteria for consideration will include high school average, regents exam scores (if a New York State student), grades in related course work, results of standardized tests (if available), and additional information provided through letters of recommendation, a personal essay indicating career goals, and a resume.

**TECHNICAL STANDARDS**

Applicants in the heavy equipment operations program must meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder and/or able to climb, un-aided, onto and off equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

**HEAVY EQUIPMENT OPERATIONS - AOS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
BLCT	1053	Safety & Ident of Hvy Equip	3
BLCT	1044	Blueprint Reading & Grades-Par	4
BLCT	1016	Operations - Part I	6
BLCT	1043	Introduction to Earth Moving	3
BLCT	1052	Soils - Part I	2
			18

<b>Second</b>			
BLCT	2023	Equipment Safety - Part II	3
BLCT	2034	Grades & Blueprint Reading II	4
BLCT	2033	Equip Preventive Maintenance	3
BLCT	2036	Operations Part II	6
BLCT	2092	Soils Part II	2
			18

<b>Third</b>			
BLCT	3003	Advanced Equipment Safety	3
BLCT	3002	Blueprint Reading Part III	2
BLCT	3005	Operations Part III	5
BLCT	3013	Paving Part I	3
BLCT	3012	Soils - Part III	2
BLCT	3023	Supervision Part I	3
			18

<b>Fourth</b>			
BLCT	4002	Below Grade Const(Hvy Highway)	2
BLCT	4012	Earth Moving (Hvy Highway)	2
BLCT	4022	Finish Operations	2
BLCT	4032	Finishing & Grading	2
BLCT	4004	Operations Part IV	4
BLCT	4003	Paving Part II	3
BLCT	4013	Supervision Part II	3
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

### HEAVY EQUIPMENT, TRUCK & DIESEL TECHNICIAN

#### AOS DEGREE – CODE #0452

Eric Wilmot, Department Chair and Program Coordinator

Email address: [wilmotej@alfredstate.edu](mailto:wilmotej@alfredstate.edu)

One of our most popular programs, this specialization includes 1,800 hours of practical experience and classroom training designed to prepare you to enter the dynamic field of heavy equipment maintenance and repair. You will receive a strong foundation on all types of vehicles during your freshman year, followed by a year of concentration on trucks, bulldozers, earthmovers, farm tractors, and other diesel-powered equipment during your senior year.

#### ADVANTAGES

- Our heavy equipment, truck & diesel technician program is the only program in New York and New England that is approved by the Association of Diesel Specialists (ADS). The heavy equipment, truck & diesel technician program is one of only nine national ADS TechSmart training programs.
- Students successfully completing the heavy equipment, truck & diesel technician program may return for a third year (senior year) in automotive service technician or motorsports technology and earn a second associate degree. They may be admitted to autobody repair with the department chair's approval.
- Students may take Automotive Service Excellence (ASE) certification exams in eight areas and the ADS TechCert test. Students are eligible for New York State inspection certification upon successful completion of their freshman year. In their senior year, students may take the test for certification in Basic Engine Theory through the Association of Diesel Specialists.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate a focused, coherent, organized written report.
- Perform mathematic calculations required for entry-level automotive employment.
- Demonstrate a functional ability to read and retain/apply written instructions and specifications relevant to their work environment.
- Demonstrate the ability to diagnose and repair heavy equipment/truck drive trains.

- Demonstrate the ability to diagnose and repair heavy equipment/truck electrical and electronic systems.
- Demonstrate the ability to diagnose and repair heavy equipment/truck gas engines.
- Demonstrate the ability to diagnose and repair heavy equipment/truck brakes, steering, and suspension systems.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State heavy equipment, truck & diesel technician graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two additional years; others may complete the BBA program in two-and-one-half years.

#### OCCUPATIONAL OPPORTUNITIES

- Agricultural equipment mechanic
- Service manager
- Diesel engine specialist
- Diesel fuel system specialist
- Shop foreman
- Heavy equipment mechanic
- Truck fleet mechanic
- Industrial equipment mechanic
- Marine engine service technician

#### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 93 percent are employed; 7 percent continued their education.

#### RELATED PROGRAMS

[Autobody Repair](#)  
[Automotive Service Technician](#)  
[Mechanical Engineering Technology](#)  
[Welding Technology](#)

#### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS

Recommended: Algebra

#### TECHNICAL STANDARDS

Applicants for all programs in the Automotive Trades Department must meet the following physical requirements:

- Must be able to lift 50 pounds to eye level.
- Must be able to effectively communicate with a person 6 to 10 feet away.

- Must be able to visually decipher small images on a monitor or digital display.
- Must be able to distinguish sounds associated with mechanical failures.
- Must be able to comprehend written information found in service repair manuals.
- Must have a valid motor vehicle driver's license.

**CERTIFICATION OR LICENSURE**

Students may take Automotive Service Excellence (ASE) certification exams in eight areas and the ADS TechCert test. Students are eligible for New York State inspection certification upon successful completion of their freshman year. In their senior year, students may take the test for certification in Basic Engine Theory through the Association of Diesel Specialists.

**HEAVY EQUIPMENT, TRUCK & DIESEL TECHNICIAN - AOS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
AUTO	1224	Welding	4
AUTO	1245	Trk Bsc Elctrns & Cmpnt Ovrhal	5
AUTO	1219	Truck Brake, Steer & Sus Sys	9
			18
<b>Second</b>			
AUTO	1239	Trk Insp, Maint, AC, Cing/Htng	9
AUTO	2169	Truck Gas Eng Tune-up, Electro	9
			18
<b>Third</b>			
AUTO	3609	Heavy Duty Drive Train	9
AUTO	3649	Diesel Engine Service	9
			18
<b>Fourth</b>			
AUTO	3623	Air Brake Service	3
AUTO	4363	Heavy Duty Elec/Hydr Special	3
AUTO	4669	Diesel Fuel System Service	9
AUTO	2503	Prev Maint for Hvy Tk & Diesel	3
			18

**Continuing Students:**

Students successfully completing the heavy equipment, truck & diesel technician program receive first priority for space if they wish a third year (senior year) in automotive service technician. They may be admitted to autobody repair with the department chair's approval.

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**HUMAN SERVICES**

**AS DEGREE – CODE #1175**

Jill Priest Amati, Department Chair and Program Coordinator

Email address: [amatijp@alfredstate.edu](mailto:amatijp@alfredstate.edu)

The human services program is a broadly based, applied program emphasizing both professional course work in the human services and course work in the social sciences and liberal arts. As a student, you will take courses that provide you with the skills and knowledge to be successful when working in a variety of human services agencies. You will also have the opportunity to take electives in specialty areas such as education, substance abuse, criminal justice, and gerontology.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply critical thinking skills in the context of professional practice.
- Perform the basic operations of personal computer use, as well as employ basic research techniques to locate, evaluate, and synthesize information from a variety of sources.
- Communicate effectively and appropriately in oral and written forms.
- Demonstrate ethical professional behaviors.
- Identify the components of one's own belief systems and the assumptions underlying them.
- Analyze the impact of social policies on client systems, workers, and agencies.
- Identify the bio-psycho-social variables that affect individual and group development and behavior.
- Examine the role of diversity in the human services field.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State human services graduates may enter directly into either the human services management BS, the interdisciplinary studies BTech, or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

The human services program offers excellent transfer potential in fields such as psychology, human services, human services management, education, social work, sociology, criminal justice, gerontology, and communications. Among the colleges to which recent graduates have

successfully transferred are: Alfred University, Mansfield University, Hilbert College, SUNY at Brockport, University of Buffalo, and SUNY at Stony Brook.

**INTERNSHIP OPPORTUNITIES**

In Practicum (HUSR 1074) students complete a substantial internship providing direct service to clients at one local/regional human services agency. Agencies include Accord Corp., Alfred Montessori School, Allegany County ARC, Allegany County Department of Health, Allegany County Office of the Aging, Allegany Rehabilitation Associates, Inc., Catholic Charities, Hornell Area Concern for Youth, Trapping Brook House, and the YMCA of Hornell.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**OCCUPATIONAL OPPORTUNITIES**

- Early childhood programs
- Education
- Social services
- Youth services
- Elderly services
- Criminal justice
- Disability services
- Substance abuse programs
- Activity directors

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 10 percent are employed; 90 percent continued their education.

**RELATED PROGRAMS**

- [Human Services Management](#)
- [Individual Studies](#)
- [Interdisciplinary Studies](#)
- [Liberal Arts & Sciences: Social Science](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra

Recommended: Geometry, Biology

**HUMAN SERVICES - AS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
HUSR	2083	Introduction to Human Services	3
	xxx3	Gen Ed American History Elective	3
			15

HUSR 2083 fall only

<b>Second</b>			
PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services	3
LITR	xxx3	Gen Ed Literature Elective	3
MATH	xxx3	Gen Ed Math Elective	3
			15

HUSR 4033 spring only

<b>Third</b>			
SOCI	1223	Power, Privilege, & Difference	3
XXXX	xxx3	Gen Ed Other World Civiliz. Elective	3
XXXX	xxxx	Gen Ed Natural Science Elective	3-4
XXXX	xxx3	Liberal Arts Elective	3
SPCH	1083	Effective Speaking	3
			15-16

<b>Fourth</b>			
SOCI	1183	Contemporary Social Problems	3
HUSR	1074	Practicum in Human Services	4
XXXX	xxx3	Departmental Elective	3
XXXX	xxx3	Liberal Arts Elective	3
XXXX	xxx3	Open Elective	3
			16

Also required: One credit hour of physical education.

**PRACTICUM (HUSR 1074) PRE-REQUISITES**

- Good academic standing (cumulative GPA of 2.0 or higher)
- Completion of PSYC 1063 and either HUSR 2083 or HUSR 4033 with a combined "C" or higher average grade\*
- Submission of HUSR 1074 practicum application form to the departmental practicum coordinator
- Approval of the departmental faculty
- Ability to pass any agency required background check

**GRADUATION REQUIREMENTS**

- Good academic standing (cumulative GPA of 2.0 or higher)
- Successful completion of all courses in the prescribed four-semester plan
- Combined "C" average or higher among HUSR 2083, HUSR 4033, and PSYC 1063\*
- HUSR 1074 with a "B" or higher\*
- Submission of the college's degree application form

\* Changes effective for fall 2018 and after.

### HUMAN SERVICES MANAGEMENT

#### BS DEGREE – CODE #2153

BS Degree - Accelerated - 3 year - Code #2603

Jill Priest Amati, Department Chair and Program Coordinator

Email address: [amatijp@alfredstate.edu](mailto:amatijp@alfredstate.edu)

The US Bureau of Labor Statistics expects demand for bachelor-prepared human services professionals to grow faster than average through the next decade, especially in rural areas that already face a significant shortage of human services professionals.

The baccalaureate degree (BS) program in human services management will prepare you as a generalist who can work with clients in a wide range of human services agencies and also can employ sound management practices. This interdisciplinary program will not only instruct you on how to offer direct service to clients, but also how to build a strong foundation in the basics of program management and supervision. The program requires you to take lower- and upper-level courses in the human services and additional courses in management, accounting, and leadership.

#### ADVANTAGES

- Internship opportunities are available. See details below.
- Graduate-level programs exist in areas including human services, human services administration, social work, social work administration, business administration, business administration - non-profit and government, and public administration.
- An accelerated three-year option exists for highly motivated and academically talented students.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Apply critical thinking skills in the context of professional practices.
- Perform the basic operations of personal computer use and employ basic research techniques to locate, evaluate, and synthesize information from a variety of sources.
- Communicate effectively and appropriately in oral and written forms.
- Apply a core set of management skills in human resources, finance, operations, and leadership.

- Apply a core set of generalist practice skills in planning, implementing, and evaluating client interventions.
- Adhere to professional ethical standards and value diversity in all areas of practice, including the supervised field practicum, academic experiences, and community involvement.
- Analyze and design intervention strategies to improve social policies impacting client systems at individual, organizational, and community levels.
- Construct a professional portfolio to prepare for employment or graduate study.

#### FUTURE EDUCATIONAL OPPORTUNITIES

Graduate-level programs in areas including human services, human services administration, social work, social work administration, business administration, business administration - non-profit and government, and public administration.

#### OCCUPATIONAL OPPORTUNITIES

- Case, program, or residential manager
- Human services supervisor
- Aftercare coordinator
- Quality assurance specialist
- Outreach coordinator
- Grants management and organizational development specialist
- Program planner

#### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 75 percent are employed; 25 percent continued their education.

The US Bureau of Labor Statistics expects demand for bachelor-prepared human services professionals to grow faster than average through the next decade, especially in rural areas that already face a significant shortage of human services professionals. Depending on location, starting salary will typically range from \$35,000 to \$45,000.

#### RELATED PROGRAMS

[Business Administration](#)

[Human Services](#)

[Interdisciplinary Studies](#)

[Liberal Arts & Sciences: Social Science](#)

### **INTERNSHIP OPPORTUNITIES**

In Field Practicum (HUSR 5314) students complete 400 hours of a management-focused internship. Internship opportunities exist with a number of local and regional human services agencies including, but not limited to, ACCORD Corp., Adelphi Behavioral Sciences, Alfred Montessori School, Allegany County ARC, Allegany County Department of Health, Allegany County Department of Social Services, Allegany County Office for the Aging, Allegany Rehabilitation Associates, Inc., Catholic Charities, Hillside Children's Services, Hornell Area Concern for Youth, St. James Mercy Healthcare, Trapping Brook House, and the YMCA of Hornell.

### **ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

- Applicants are informed that many human services agencies require that field practicum students pass background checks before being allowed to begin their field placements.
- While the program allows students to pursue their degrees on a part-time basis, applicants should be aware that they must enroll as full-time students in the semester in which they take their senior fieldwork (HUSR 5314).

Required: Algebra, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

### **GRADUATION REQUIREMENTS**

- Good academic standing (cumulative GPA of 2.0 or higher)
- Successful completion of all courses in the prescribed eight-semester plan
- Grade of "B" or higher in HUSR 1074 and HUSR 5314
- Completion of HUSR 5003, HUSR 5103, HUSR 5203, and HUSR 5213 with a "C" or higher grade in each course
- Submission of the college's degree application form
- Grade of "C" or higher in HUSR 2083, HUSR 4033, and PSYC 1063\*
- Grade of "C" or higher in all upper-level courses\*

### **Practicum (HUSR 1074) Pre-requisites**

- Good academic standing (cumulative GPA of 2.0 or higher)

- Completion of PSYC 1063 and either HUSR 2083 or HUSR 4033 with a grade of "C" or higher\*
- Submission of HUSR 1074 practicum application form to the departmental practicum coordinator
- Approval of the departmental faculty
- Ability to pass any agency required background check

### **Practicum (HUSR 5314) Pre-requisites**

- Good academic standing (cumulative GPA of 2.0 or higher)
- Completion of at least three of the following four courses - HUSR 5003, HUSR 5103, HUSR 5203, HUSR 5213 - with a "C" or higher grade in each of the three\*
- Submission of HUSR 5314 practicum application form to the departmental practicum coordinator
- Approval of the department faculty
- Ability to pass any required background check
- Completion of HUSR 1074 with a grade of "B" or higher\*

\*Changes effective for fall 2018 and after.

**HUMAN SERVICES MANAGEMENT- BS DEGREE**

TYPICAL EIGHT-SEMESTER PROGRAM

**First**

COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
HUSR	2083	Introduction to Human Services (Fall only)	3
XXXX	xxx3	Gen Ed American History Elective	3
HPED	xxx1	Physical Education	1
			16

**Second**

PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services (Spring only)	3
LITR	xxx3	Literature Elective	3
MATH	1113	Statistical Concepts	3
MATH	2124	OR Statistical Methods & Analysis	4
MATH	1123	OR Statistics I	3
			15-16

**Third**

SOCI	1223	Power, Privilege, & Difference	3
XXXX	xxx3	Gen Ed Other World Civilization Elective	3
XXXX	xxxx	Gen Ed Natural Science Elective	3-4
XXXX	xxx3	Liberal Arts Elective	3
SPCH	1083	Effective Speaking	3
			15-16

**Fourth**

SOCI	1183	Contemporary Social Problems	3
HUSR	1074	Practicum in Human Services	4
			**** (104 hours of field work and two-hour seminar)
XXXX	xxx3	Departmental Elective	3
XXXX	xxx3	Liberal Arts Elective	3
XXXX	xxx3	Open Elective	3
			16

**Fifth**

ACCT	5043	Accounting Perspectives	3
BUAD	3153	Fundamentals of Management	3
			Note: Minimum of "C" required
SOCI	5023	Research Methods (Fall only)	3
PSYC	5013	Counseling Theory (Fall only)	3
HUSR	5003	Community Organizations	3
			Note: Minimum of "C" required (Fall only)
			15

**Sixth**

BUAD	5023	Human Resource Management	3
BUAD	5013	Principles of Leadership	3
BUAD	5003	Management Communications	3
XXXX	xxx3	Liberal Arts Elective	3
HUSR	5103	Social Policy & Human Services	3
			Note: Minimum of "C" required (Spring only)
			15

**Seventh**

XXXX	xxx3	Liberal Arts Elective	3
BUAD	5043	Business Ethics	3
HUSR	5203	Grants Contracts Organ Adv HS Note: Minimum "C" required (Fall only)	3
HUSR	5213	Case Management Systems Note: Minimum "C" required (Fall only)	3
PSYC	5103	Industrial/ Orgnztnl Psychology (Fall only)	3
			15

**Eighth**

HUSR	5314	Human Serv Field Practic & Sem (Spring only) (Grade of "B" (3.0) or higher required) Minimum 400 hours field work, three-hour weekly seminar.	14
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**ONLINE OPTION (FOR LAST TWO YEARS)**

**Fifth**

*First Seven Week Session*

BUAD	3153	Fundamentals of Management	3
HUSR	5003	Community Organizations	3
PSYC	5013	Counseling Theory	3
			9

*Second Seven Week Session*

SOCI	5023	Research Methods	3
PSYC	5013	Counseling Theory	3
			6

**Winter Session**

BUAD	5043	Business Ethics	3
			3

**Sixth**

*First Seven Week Session*

BUAD	5013	Principles of Leadership	3
HUSR	5103	Social Policy & Human Services	3
			6

*Second Seven Week Session*

BUAD	5023	Human Resource Management	3
LAS Elective			3
			6

**Summer**

*First Five Week Session*

LAS Elective			3
			3

*Second Five Week Session*

BUAD	5003	Management Communications	3
			3

**Seventh**

*First Seven Week Session*

HUSR	5203	Grants Contracts Organ Adv HS	3
HUSR	5213	Case Management Systems	3
			6

*Second Seven Week Session*

ACCT	5043	Accounting Perspectives	3
PSYC	5103	Industrial/ Orgnztnl Psychology	3
			6

**Eighth**

*Fifteen Week Session*

HUSR	5314	Human Serv Field Practic & Sem	14
XXXX	xxx3	Liberal Arts Elective*	3
			17

**HUMAN SERVICES MANAGEMENT**

**ACCELERATED 3-YEAR PROGRAM**

**First**

COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
HUSR	2083	Introduction to Human Services (Fall only)	3
XXXX	xxx3	Liberal Arts Elective*	3
XXXX	xxx3	General Ed Other World Civilization Elective**	3
HPED	xxx1	Physical Education Elective	1
			19

**Second**

PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services (Spring only)	3
LITR	xxx3	Gen Ed Literature Elective	3
MATH	1113	Statistical Concepts OR	3
MATH	1123	Statistics I OR	3
MATH	2124	Statistical Methods & Analysis	4
SOCI	1183	Contemporary Social Problems	3
			18-19

**Summer**

XXXX	xxx3	Gen Ed Natural Science Elective	3
XXXX	xxx3	Liberal Arts Elective*	3
			6

**Third**

SOCI	1223	Power, Privilege, & Difference	3
XXXX	xxx3	Department Elective***	3
SPCH	1083	Effective Speaking	3

ACCT	5043	Accounting Perspectives	3
BUAD	3153	Fundamentals of Management Note: Minimum of "C" required pre req for all upper-level BUAD courses	3
HUSR	5003	Community Organizations Note: Minimum of "C" required (Fall only)	3
			18

**Fourth**

HUSR	1074	Practicum in Human Services	4
XXXX	xxx3	Gen Ed American History Elective*****	3
BUAD	5023	Human Resource Management	3
BUAD	5013	Principles of Leadership	3
BUAD	5003	Management Communications	3
HUSR	5103	Social Policy & Human Services Note: Minimum of "C" required (Spring only)	3
			19

**Summer**

XXXX	xxx3	Open Elective	3
XXXX	xxx3	Liberal Arts Elective*	3
			6

<b>Fifth</b>			
SOCI	5023	Research Methods (Fall only)	3
PSYC	5013	Counseling Theory (Fall only)	3
BUAD	5043	Business Ethics	3
HUSR	5203	Grants Contracts Organ Adv HS Note: Minimum of "C" required (Fall only)	3
HUSR	5213	Case Management Systems Note: Minimum of "C" required (Fall only)	3
PSYC	5103	Industrial/ Orgnztnl Psychology (Fall only)	3
			18

<b>Sixth</b>			
XXXX	xxx3	Liberal Arts Elective*	3
HUSR	5314	Human Serv Field Practic & Sem (Spring only) (Grade of "B" or higher required) (Minimum 400 hours field work, three-hour weekly seminar)	14
			17

Relations), SOCI 1193 (Marriage & Family Across World Cultures), or GEOW 9100.

\*\*\* Any non-required course taught in the Department of Social & Behavioral Sciences.

\*\*\*\* HUSR 1074 requires a "C" or higher between PSYC 1063 and either HUSR 2083 or HUSR 4033.

\*\*\*\*\* One of HIST 1143 (American History I), HIST 2143 (American History II), PLSC 1043 (American Government) or GEAH 9100.

For all human services management programs:  
Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

Note:

\* Any non-required course designated as "Liberal Arts and Sciences" in the college catalog.

\*\* One of ANTH 1013 (Cultural Anthropology), ANTH 5113 (Cross-Cultural Encounters), ANTH 5333 (Medical Anthropology), HIST 3003 (World History I), HIST 5133 (Africa and the West), HIST 6133 (World at War), PLSC 1053 (International

**INDIVIDUAL STUDIES****AS DEGREE – CODE #0688**

Dr. Kathleen Ebert, Program Coordinator  
 Email address: [ebertkc@alfredstate.edu](mailto:ebertkc@alfredstate.edu)

This broad-based program will give you the opportunity to explore majors, career options, and futures—all in one place. It is also excellent preparation for transfer into four-year programs or various colleges and universities, and can be tailored to fulfill a career goal that cannot be met by traditional program offerings.

**ADVANTAGES**

- Flexibility to choose courses that fit your needs.
- Ability to sample or select courses from different fields.
- Excellent preparation for transfer or tailoring to specific goals.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Create written communication (including the appropriate use of technology) appropriate for degree type and level that meets standards of style, clarity, and grammatical correctness as described in the Writing Rubric.
- Demonstrate oral communication proficiency.
- Demonstrate foundational knowledge required to be an informed citizen in a global community by successfully completing ("C" or better) seven of the 10 SUNY General Education skill areas.
- Complete 15 credit hours in a concentration and describe their coherent sequence of study and transfer focus.
- Critical thinking (problem-solving, reasoning skills appropriate to degree level and type).
- Use library, online, and other resources to locate and evaluate scholarly articles and other research materials. Perform the basic operations of personal computer use, understand and use basic research techniques and locate, evaluate, and synthesize information from a variety of sources.
- Demonstrate competence in arithmetic, algebra, geometry, data analysis, and quantitative reasoning. Employ basic problem solving strategies.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State individual studies graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 40 percent are employed; 60 percent continued their education.

**RELATED PROGRAMS**

[Business Administration](#)  
[Liberal Arts & Sciences: Adolescent Education - Teacher Education Transfer](#)  
[Liberal Arts & Sciences: Humanities](#)  
[Liberal Arts & Sciences: Math & Science](#)  
[Liberal Arts & Sciences: Social Science](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra

Recommended: Geometry, Biology

**INDIVIDUAL STUDIES - AS DEGREE**

XXXX      xxx3      Liberal Arts      3  
 Elective  
 15

**TYPICAL FOUR-SEMESTER PROGRAM**

**First**

ASDC	xxxx	College & Life Skills, Methods of Inquiry, Academic Literacy, or Career Exploration	1-3
COMP	1503	Freshman Composition	3
XXXX	xxx3	Gen. Education Math Elective	3
XXXX	xxx3	Gen. Education Elective*	3
XXXX	xxx3	Career Area	3
XXXX	xxx3	Elective	3
			16-18

\*Depending on student's career area, additional general education and/or liberal arts credits may be needed to reach the 30-credit-hour requirement of each. If met by career area courses, these are open electives.

**GRADUATION REQUIREMENTS**

- A minimum of 61 hours is required for graduation, with a cumulative index of 2.0.
- Students must have a clear career or transfer focus with at least 15 credit hours, with a 2.0 GPA
- Students must complete at least 30 credit hours in general education with at least seven of the 10 SUNY GE knowledge areas met (two of which must include math and written and oral communication).
- Students must complete at least 30 liberal arts and sciences credits
- HPED

**Second**

SPCH	1083	Effective Speaking	3
XXXX	xxx3	Gen. Education Elective*	3
XXXX	xxx3	Gen. Education Elective*	3
XXXX	xxx3	Career Area	3
XXXX	xxx3	Elective	3
HPED	xxx1	Phys Ed Elective	1
			16

**Third**

XXXX	xxx3	Career Area	3
XXXX	xxx3	Elective	3
XXXX	xxx3	Elective	3
XXXX	xxx3	Gen. Education Elective*	3
XXXX	xxx3	Gen. Education Elective*	3
XXXX	xxx3	OR Liberal Arts Elective	3
			15

**Fourth**

XXXX	xxx3	Career Area	3
XXXX	xxx3	Career Area	3
XXXX	xxx3	Elective	3
XXXX	xxx3	Gen. Education Elective*	3
XXXX	xxx3	Gen. Education Elective*	3
XXXX	xxx3	OR	

**INFORMATION TECHNOLOGY:  
APPLICATIONS SOFTWARE DEVELOPMENT  
BTECH DEGREE – CODE #1502**

Dr. John Burke, Program Coordinator  
Email address: [burkejc@alfredstate.edu](mailto:burkejc@alfredstate.edu)

The Bachelor of Technology degree in information technology: applications software development at Alfred State is designed to prepare you to enter the workforce as an IT professional with a special emphasis in the fast-moving field of programming and database applications. From database application to programming language sequences, including C#, Java, and C++, our expert faculty have created a curriculum to help you meet your career goals. You will also receive a sound foundation in Web development, networking, and microcomputer systems. And a full-semester internship will give you the hands-on experience employers are looking for.

A laptop computer is required for students entering the information technology: applications software development program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**ADVANTAGES**

Due to the solid foundation in all the major fields of information technology, the job opportunities for graduates are wide and numerous.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Produce object-oriented application software with current development programming languages.
- Produce functional databases with current DBMS such as Oracle, MySQL, Access, etc.
- Use the appropriate database design methodologies.
- Perform the full life cycle of software development.
- Develop an outline for an information system project.
- Install, configure, and troubleshoot basic hardware.
- Identify and utilize business principles and problem-solving techniques.
- Demonstrate and use managerial principles of business.
- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Apply accumulated knowledge and skills in an actual industry environment.

**CONTINUING EDUCATION OPPORTUNITIES**

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees, including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into the bachelor's degree at the junior level.

**OCCUPATIONAL OPPORTUNITIES**

Organizations of all types and sizes need computer professionals. The primary employment field includes database administrators, programmers, and systems analysts. Due to the solid foundation in all the major fields of information technology, the job opportunities for graduates are wide and numerous. They include database administrators, software developers, network support, project managers, user support, Web developers, IT managers, technical sales, and technical support staff, to name a few.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)  
[Computer Information Systems](#)  
[Computer Science](#)  
[Cyber Security](#)  
[Information Technology: Network Administration](#)  
[Information Technology: Web Development](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

**INFORMATION TECHNOLOGY: APPLICATIONS SOFTWARE DEVELOPMENT**

**INFORMATION TECHNOLOGY:  
APPLICATIONS SOFTWARE DEVELOPMENT -  
BTECH DEGREE**

xxx3	General Education Elective	3
		18

**TYPICAL EIGHT-SEMESTER PROGRAM**

**First**

CISY	1023	Intro to Information Tech	3
CISY	1113	Computer Programming I	3
COMP	1503	Freshman Composition	3
xxx3		Gen. Ed. - Social Science	3
xxx3		Gen. Ed. - Other	3
			15

**Second**

CISY	2133	Computer Programming II	3
CISY	2143	Microcomputer Systems I	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	College Algebra or Higher*	3
CISY	2153	Database Appl and Programng I	3
			15

**Third**

CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
ACCT	1124	Financial Accounting	4
MATH	2124	Statistical Methods & Analysis	4
MATH	1123	Statistics I	3
xxx3		Gen. Ed. "Other"	3
			16-17

**Fourth**

CISY	4063	Systems Analysis & Design	3
BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
CISY	4003	Comp Prgmng III/ Data Strctu	3
CISY	4723	Essentials of Info Security	3

**Fifth**

CISY	6503	Object- Oriented Programming	3
COMP	5703	Technical Writing II	3
xxx3		General Education Elective	3
xxx3		General Education Elective	3
xxx3		Professional Elective	3
			15

**Sixth**

CISY	7003	Project Management	3
CISY	5403	Database Concepts	3
xxx3		Professional Elective	3
xxx3		Concentration Elective - Upper	3
xxx3		Open Elective - Upper	3
xxx3		Professional Elective - Upper	3
			18

**Seventh**

CISY	8503	Appl Database Management	3
CISY	8603	Seminar Critical Issues in IT	3
xxx3		Open Elective	3
xxx3		Professional Elective - Upper	3
xxx3		Open Elective - Upper (LAS Rec)	3
			15

**Eighth**

CISY	8712	Info Technology Internship	12
			12

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

GPA of 2.5 or higher required in major courses;  
GPA of 2.0 minimum overall; internship is student-  
initiated.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

- 124 credit hours
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in college academic regulations
- Seven general education areas are required, including three of the following five: art, language, other world civilizations, American history, or western civilization

**INFORMATION TECHNOLOGY: NETWORK ADMINISTRATION****BTECH DEGREE – CODE #1505**

Robin Torpey, Program Coordinator

Email address: [torpeyrl@alfredstate.edu](mailto:torpeyrl@alfredstate.edu)

The Bachelor of Technology degree in information technology: network administration at Alfred State is designed to prepare you to enter the workforce as an IT professional with a special emphasis in the growing field of networking. After completing the course work, you will have a strong foundation to obtain professional certification in: Cisco Certified Network Association (CCNA), CCNA Security, Microsoft Certified Technology Specialist, CompTIA A+, and Network+. Core courses will also provide you with a foundation in other essential areas, including Web server administration, programming, database applications, and microcomputer systems. And a full-semester internship will give you the hands-on experience employers are looking for.

A laptop computer is required for students entering the information technology: network administration program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**ADVANTAGES**

Due to the solid foundation in all the major fields of information technology, the job opportunities for graduates are wide and numerous.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate troubleshooting strategies and techniques with a variety of networking problems.
- Identify and configure a variety of networking topologies and protocols.
- Demonstrate effective network operation and management.
- Install and configure both client and server networking software.
- Demonstrate effective network design for LAN and WAN.
- Install and configure Web, database, file, and application servers.
- Develop and implement effective security and disaster recovery systems and policies.
- Develop and maintain technical documentation and procedures for network management.
- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Apply accumulated knowledge and skills in an actual industry environment.

- Identify and utilize business principles and problem-solving techniques.

**CONTINUING EDUCATION OPPORTUNITIES**

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees, including computer information systems, information technology, computer science, and others. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into this degree at the junior level.

**OCCUPATIONAL OPPORTUNITIES**

Organizations of all types and sizes need computer professionals. Due to the solid foundation in all the major areas of computer information technology and systems, job opportunities for graduates are wide and numerous. They include network administrators, systems analysts, project managers, user support, Web developers, security specialists, IT managers, and technical support staff, to name just a few.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed

**RELATED PROGRAMS**

[Computer Engineering Technology](#)

[Computer Information Systems](#)

[Computer Science](#)

[Cyber Security](#)

[Information Technology: Applications Software Development](#)

[Information Technology: Web Development](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing SAT score of 1080 or a composite ACT score of 21.

**INFORMATION TECHNOLOGY: NETWORK ADMINISTRATION - BTECH DEGREE**

**TYPICAL EIGHT-SEMESTER PROGRAM**

**First**

CISY	1023	Intro to Information Tech	3
CISY	1113	Computer Programming I	3
COMP	1503	Freshman Composition	3
	xxx3	Gen Ed - Soc Science Elective	3
	xxx3	Gen Ed Elective	3
			15

**Second**

CISY	2133	Computer Programming II	3
CISY	2143	Microcomputer Systems I	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	College Algebra or Higher*	3
CISY	2153	Database Appl and Programng I	3
			15

**Third**

CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
CISY	xxx3	Concentration Elective	3
ACCT	1124	Financial Accounting	4
MATH	1123	Statistics I OR	3
MATH	2124	Statistical Methods & Analysis	4
			16-17

**Fourth**

CISY	4053	Linux/Unix Admin and Scripting	3
CISY	4723	Essentials of Info Security	3
SPCH	1083	Effective Speaking	3
CISY	xxx3	Concentration Elective	3
CISY	5203	Network Administration	3
	xxx3	General Education Elective	3

18

**Fifth**

BUAD	3153	Fundamentals of Management	3
	xxx3	Open Elective - Upper**	3
COMP	5703	Technical Writing II	3
	xxx3	General Education Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	General Education Elective	3
			18

**Sixth**

CISY	7003	Project Management	3
CISY	6703	Network Design Concepts	3
CISY	xxx3	Professional Elective - Upper	3
	xxx3	Professional Elective	3
	xxx3	Concentration Elective	3
			15

**Seventh**

CISY	8303	Sftw Intgtn & Interoperability	3
CISY	8603	Seminar Critical Issues in IT	3
	xxx3	Professional Elective - Upper	3
	xxx3	Open Elective - Upper (LAS recommended)	3
	xxx3	Open Elective - Upper	3
			15

**Eighth**

CISY	8712	Info Technology Internship	12
			12

\*If not required, take LAS elective to complete degree requirements of three credits, otherwise take free elective.

\*\* BUAD 5003 or BUAD 6113 recommended.

GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

- 124 credit hours
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 30 credit hours in liberal arts/general education courses
- 18 credit hours in core concentration
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in college academic regulations
- Seven general education areas are required, including three of the following five: art, language, other world civilizations, American history, or western civilization

**INFORMATION TECHNOLOGY: WEB DEVELOPMENT****BTECH DEGREE – CODE #1506**

Evan Enke, Department Chair and Program Coordinator

Email address: [enkeeg@alfredstate.edu](mailto:enkeeg@alfredstate.edu)

The Bachelor of Technology degree in information technology: web development at Alfred State is designed to prepare you to enter the workforce as an IT professional with a special emphasis in Web development and applications. Web publishing, programming, and Web server administration comprise the upper level of courses. Additionally, the Web is integrated across the entire program, beginning with the very first course. Through core courses, you will also be given an essential foundation in programming, database administration, networking, and microcomputer systems. And a full-semester internship will give you the hands-on experience employers are looking for.

A laptop computer is required for students entering the information technology: web development program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**ADVANTAGES**

Due to the solid foundation in other areas, graduates will find that job opportunities are wide and numerous.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Produce dynamically functional software with Web development and scripting languages.
- Perform full life cycle of Web software development.
- Create and use a database with appropriate Web design principles.
- Produce functional Web applications using Web composing software.
- Analyze and create interface design.
- Install, configure, and troubleshoot basic hardware.
- Identify and utilize business principles and problem-solving techniques.
- Demonstrate and use managerial principles of business.
- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Apply accumulated knowledge and skills in an actual industry environment.

**CONTINUING EDUCATION OPPORTUNITIES**

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees, including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into this bachelor's degree at the junior level.

**OCCUPATIONAL OPPORTUNITIES**

Organizations of all types and sizes need computer professionals. The primary employment field includes Web administrators and developers. Due to the solid foundation in other areas, graduates will not be limited to these areas; thus, the job opportunities are wide and numerous. They include database administrators, programmers, systems analysts, network support, project managers, user support, IT managers, technical sales, and technical support staff, to name just a few.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed in field.

**RELATED PROGRAMS**

[Computer Engineering Technology](#)

[Computer Information Systems](#)

[Computer Science](#)

[Cyber Security](#)

[Digital Media and Animation](#)

[Information Technology: Applications Software Development](#)

[Information Technology: Network Administration](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing SAT score of 1080 or a composite ACT score of 21.

**INFORMATION TECHNOLOGY: WEB DEVELOPMENT**

**INFORMATION TECHNOLOGY: WEB DEVELOPMENT - BTECH DEGREE**

**TYPICAL EIGHT-SEMESTER PROGRAM**

**First**

CISY	1023	Intro to Information Tech	3
CISY	1113	Computer Programming I	3
OR			
CISY	1123	Intro to Programming for IT	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. "Social Science"	3
	xxx3	Gen. Ed. "Other"	3
			15

**Second**

CISY	4103	Visual Programming & Developmt	3
CISY	2143	Microcomputer Systems I	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	College Algebra or Higher*	3
CISY	2153	Database Appl and Programng I	3
			15

**Third**

CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	2124	Statistical Methods & Analysis	4
OR			
MATH	1123	Statistics I	3
ACCT	1124	Financial Accounting	4
	xxx3	Gen Ed - Nat Science	3
			16-17

**Fourth**

BUAD	3153	Fundamentals of Management	3
CISY	4723	Essentials of Info Security	3
SPCH	1083	Effective Speaking	3
CISY	xxx3	Concentration Elective	3

xxx3	General Education Elective	3
xxx3	Open Elective	3
		18

**Fifth**

CISY	5303	Web Programming I	3
	xxx3	General Education Elective	3
	xxx3	Open Elective	3
COMP	5703	Technical Writing II	3
CISY	xxx3	Concentration Elective	3
			15

**Sixth**

CISY	7203	Web Programming II	3
CISY	7003	Project Management	3
CISY	5403	Database Concepts	3
	xxx3	Professional Elective - Upper	3
	xxx3	Professional Elective - Upper	3
			15

**Seventh**

CISY	8403	Web Applications	3
CISY	8603	Seminar Critical Issues in IT	3
	xxx3	Open Elective - Upper**	3
	xxx3	Professional Elective - Upper	3
	xxx3	Open Elective - Upper (LAS recommended)	3
	xxx3	Professional Elective***	3
			18

**Eighth**

CISY	8712	Info Technology Internship	12
			12

\*If not required, take LAS elective to complete degree requirements of three credits, otherwise take free elective.

\*\* Recommended: BUAD 5003 or BUAD 6113

\*\*\* Recommended: CISO 5233 - Human Computer Interaction or CISO 4053 Linux/Unix Admin & Scripting

GPA of 2.5 or higher required in major courses;  
GPA of 2.0 minimum overall; internship is student-initiated.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

### **GRADUATION REQUIREMENTS**

- 124 credit hours
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts/general education courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in college academic regulations
- Seven general education areas are required, including three of the following five: art, language, other world civilizations, American history, or western civilization

**INTERDISCIPLINARY STUDIES**

**BTECH DEGREE – CODE #0377**

Dr. Kathleen Ebert, Program Director  
 Email: [ebertkc@alfredstate.edu](mailto:ebertkc@alfredstate.edu)

The Bachelor of Technology in interdisciplinary studies program is designed to provide a four-year curriculum in which students are empowered to personalize, within specified core and concentration areas, their technology-based program of study. The program is founded in academic flexibility by providing two sets of broad-based academic options. Students start with a core set of courses selected for years one and two of the program and two concentration areas for years three and four. The general academic categories are as follows:

**YEARS ONE AND TWO CORE AREAS (SELECT ONE):**

- Science/Technology/Engineering/Math (STEM)
- Management
- Design
- Health/Agriculture/Science (HAS)
- Humanities/Social Sciences
- Technical Communication

**YEARS THREE AND FOUR CONCENTRATION AREAS (SELECT TWO):**

- Science/Technology/Engineering/Math (STEM)
- Management
- Technical Communication/Design
- Humanities/Social Sciences
- Health/Science

**ADVANTAGES**

- Students must complete 18 credit hours in a core area during the first two years of the program; most associate degrees will satisfy this.
- Students must also satisfy a minimum of 12 credit hours in each of two academic concentrations during the junior and senior years. Courses satisfying these requirements are identified and categorized by prefix.
- The program affords students the opportunity to design and complete a rigorous, yet flexible interdisciplinary course of study in technology-based disciplines.
- The program will provide an avenue by which students can pursue precise career interests

that cannot be accommodated within typical majors.

- With appropriate advisement, graduates will be well prepared to enter and succeed in a wide range of technology-based careers.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Evaluate the value of the lower-level courses and analyze the relationship of those in the context of the interdisciplinary nature of the degree.
- Synthesize two or more upper-level concentration areas within an approved interdisciplinary course of study.
- Employ written communication skills (including the appropriate use of technology) appropriate for the degree type and level that meets standards of style, clarity, and grammatical correctness.
- Employ verbal communication skills (including the appropriate use of technology) appropriate for the degree type and level that meets standards of style, clarity, and grammatical correctness.
- Employ problem solving, reasoning and critical thinking skills to a situation relevant to the concentration choices.
- Demonstrate foundational knowledge required to be an informed citizen in a global community. (VED)
- Use library, online, and other resources to locate and evaluate scholarly articles and other research materials.
- Competently employ computer technology to present and manage data.

**OCCUPATIONAL OPPORTUNITIES**

The nature of the program allows for many occupational opportunities. Some of the more common interest areas are as follows:

- Technical writer
- Health office manager
- Sales engineer
- Logistician
- Purchasing manager (i.e., for a hospital)
- Health and safety engineer
- Cost estimator
- Training and development specialist
- Computer systems analyst
- Occupational health and safety specialist
- Graphic designer
- Self-employed

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Second Year of Advanced Math, Two Units of Science, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 980 or a composite ACT score of 19.

**INTERDISCIPLINARY STUDIES - BTECH  
DEGREE**

TYPICAL EIGHT-SEMESTER PROGRAM

<b>Years One and Two</b>			
COMP	1503	Freshman Composition	3
SPCH	1083	Effective Speaking	3
CISY	xxxx	Computer Elective	3-4
XXXX	xxxx	Gen Ed Elective (7 areas)	24
XXXX	xxxx	Lower Level Core	18
XXXX	xxxx	Electives	9
HPED	xxxx		1

<b>Years Three and Four</b>			
COMP	5703	Technical Writing II	3
IDST	5001	Interdisc Studies Capstone Des	1
IDST	7002	Interdisc. Studies Capstone Pr	2
XXXX	xxxx	Concentration 1 (at least 9 credits upper level)	12
XXXX	xxxx	Concentration 2 (at least 9 credits upper level)	12
XXXX	xxxx	Upper level credits	21
XXXX	xxxx	Electives	12

**GRADUATION REQUIREMENTS – BT degree**

- 124 total semester credit hours
- 30 semester credit hours of liberal arts
- 30 semester credit hours of general education from seven of 10 SUNY General Education categories (must include math as well as written and oral communication)
- 48 upper-division credit hours from the approved list
- Good academic standing and at least a 2.0 cumulative grade point average
- Approval of the advising committee

**INTERIOR DESIGN**

**AAS DEGREE – CODE #0656**

Betty Torrell, Program Coordinator

Email address: [TorrelBR@alfredstate.edu](mailto:TorrelBR@alfredstate.edu)

This program is designed to provide you with basic knowledge and skills for entry-level positions in the interior design discipline. The program consists of a core graphics sequence with additional courses in appropriate technical areas. Computer applications are integrated throughout the four semesters, with a strong component in 2-D and 3-D computer graphics.

**ADVANTAGES**

- The faculty consists of expert interior designers, as well as licensed architects and engineers.
- Students develop the ability to think creatively, visually, and volumetrically, exhibiting a variety of ideas, approaches, and concepts when designing interior projects.
- Students gain an understanding of how design solutions affect and are impacted by construction systems, power and mechanical, lighting and ceiling systems, acoustics, building methods, and materials.

A laptop computer is required for students entering the interior design program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Think creatively, visually and volumetrically, exhibiting a variety of ideas, approaches, and concepts when designing interior projects.
- Understand and utilize color principles, theories, and systems in design projects.
- Demonstrate competent design skills in selection of interior finishes, layout of furniture, lighting, and decorative elements.
- Demonstrate understanding of ergonomics and the relationship between human behavior and the built environment.
- Demonstrate understanding of the history of art, architecture, interiors, and furnishings.
- Apply 2- and 3-dimensional design principles and elements in the development of the spatial envelope.
- Demonstrate programming skills, including identifying the problem, client and user needs, and gathering and analyzing information.
- Demonstrate competence in manual and computer-aided graphic presentation of interior design projects.

- Express ideas clearly in oral presentations and critiques, and communicate clearly in writing concept statements, reports, and research.
- Understand that design solutions affect and are impacted by construction systems.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State interior design graduates may enter directly into the technology management BBA or the interdisciplinary studies BTech degree program.

**ARTICULATION AGREEMENTS**

An articulation agreement exists between Alfred State and Villa Maria College (with placement based on a portfolio review and an interview).

**OCCUPATIONAL OPPORTUNITIES**

- Interior designer (after successfully passing the NCIDQ and completing internship requirements)
- Kitchen and bath designer
- Space planner
- Product showroom manager
- Product specifier
- Manufacturer's representative
- Facilities manager

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 50 percent are employed; 50 percent continued their education.

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry

Recommended: Algebra 2

**INTERIOR DESIGN - AAS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

ARCH	1184	Design Fundamentals 1	4
FNAT	2333	Survey of Design	3
FNAT	1303	Architectural History I	3
COMP	1503	Freshman Composition	3
XXXX	xxx3	Gen. Ed. Elective/Social Science	3
			16

**Second**

DSGN	1433	Furniture & Finishes	3
ARCH	2394	Design Fundamentals 2	4
ARCH	2014	Computer Visualization	4
MATH	xxx3	Gen. Ed. Elective/Math	3
XXXX	xxx3	Gen. Ed. Elective/Natural Science	3
			17

**Third**

DSGN	2204	Interior Design I	4
DSGN	1443	Color, Lighting and Acoustics	3
ARCH	3014	Construction Technology 1	4
SPCH	1083	Effective Speaking	3
FNAT	1313	Art History	3
			17

**Fourth**

DSGN	2304	Interior Design II	4
ARCH	4014	Construction Technology 2	4
ARCH	4013	Municipal Codes & Regulations	3
BUAD	xxx3	Business Elective	3
			14

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Minimum of "C" is required for ARCH 1184, ARCH 2394, DSGN 2204, and DSGN 2304.

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

## LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER EDUCATION TRANSFER

### AA DEGREE – CODE #1804

Jill Priest Amati, Department Chair and Program  
Coordinator

Email address: [amatijp@alfredstate.edu](mailto:amatijp@alfredstate.edu)

This transfer program will prepare you to enter into baccalaureate programs in adolescent education at public and private colleges and universities. As a graduate, you will have satisfied all of SUNY's general education knowledge requirements and will have completed two courses in a foreign language, one course in adolescent development, one in foundations of education, and at least four courses in one of six concentrations – history/ social studies, biology, chemistry, English, math, or physics.

### ADVANTAGES

- Students have the benefit of small classes taught by expert faculty who take an interest in each student's success and are advised by faculty within their concentration area.
- The US Department of Labor expects employment for secondary school teachers to grow 8 percent through 2026

### PROGRAM STUDENT LEARNING OUTCOMES

- Apply critical thinking skills to the analysis of typical issues in education.
- Perform the basic operations of personal computer use and employ basic research techniques to locate, evaluate, and synthesize information from a variety of sources.
- Communicate effectively and appropriately in written and oral forms.
- Demonstrate competence of subject matter in the content area of specialization.
- Identify the basic concepts and theories in adolescent development.
- Identify basic pedagogical terms and theories.
- Demonstrate competence in all 10 general education knowledge areas defined by SUNY.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS

Alfred State liberal arts & sciences: adolescent education (teacher education transfer) graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

## CONTINUING EDUCATION OPPORTUNITIES

Transfer requirements for students in adolescent education vary across public and private colleges and universities. Therefore, students should work closely with their faculty adviser to ensure that they meet the particular entrance requirements of their transfer college of choice. The minimum cumulative grade point average for admission as a transfer student in adolescent education to SUNY colleges and universities varies from 2.5 to 3.0, with some transfer colleges also setting minimum grade point averages in concentration courses and in courses in adolescent development and foundations of education.

### RELATED PROGRAMS

[Biological Science](#)

[Interdisciplinary Studies](#)

[Liberal Arts & Sciences: Humanities](#)

[Liberal Arts & Sciences: Math & Science](#)

[Liberal Arts & Sciences: Social Science](#)

### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS

- Biology and Chemistry concentrations: Algebra, Geometry, Algebra 2, Biology, Chemistry required
- History/Social Studies and English concentrations: Algebra required
- Math and Physics concentrations: Algebra, Geometry, Algebra 2, Biology, and Chemistry or Physics required

**LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER EDUCATION TRANSFER**

**LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION (TEACHER EDUCATION TRANSFER) - AA DEGREE**

XXXX	xxx3	Liberal Arts Elective	3
			15

TYPICAL FOUR-SEMESTER PROGRAM

**HISTORY/SOCIAL STUDIES CONCENTRATION**

**First**

COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
HIST	1143	Surv of American History I	3
XXXX	xxx3	Foreign Language I	3
MATH	xxx3	General Education Elective (Math)	3
HPED	xxx1	Health/ Physical Education Elective	1
			16

**Second**

PSYC	2033	Adolescent Development	3
XXXX	xxx3	Foreign Language II	3
XXXX	xxx4	Gen Ed Natl. Sc. Elective w/ Lab	4
LITR	2343	Children's Literature OR	3
LITR	2603	Introduction to Literature	3
HIST	2153	Surv of American History II	3
			16

**Third**

HIST	xxx3	Gen Ed Western Civilization Elective	3
XXXX	xxx3	Liberal Arts Elective	3
XXXX	xxx3	Liberal Arts Elective	3
HIST	3003	World History I	3
XXXX	xxx3	Open Elective	3
			15

**Fourth**

EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
PLSC	1043	American Government	3
XXXX	xxx3	Open Elective	3

**BIOLOGY CONCENTRATION**

**First**

COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
CHEM	1984	Chemical Principles I	4
BIOL	1104	General Biology I	4
MATH	2124	Statistical Methods & Analysis	4
			18

**Second**

PSYC	2033	Adolescent Development	3
LITR	2603	Introduction to Literature	3
CHEM	2984	Chemical Principles II	4
BIOL	2204	General Biology II	4
XXXX	xxx3	OW, AH, WC or AR Gen Ed Elective	3
			17

**Third**

XXXX	xxx3	Foreign Language I	3
HPED	xxx1	Health/ Physical Education Elective	1
BIOL	4254	General Microbiology	4
BIOL	1304	Botany	4
BIOL	1404	Anatomy & Physiology I	4
			16

**Fourth**

XXXX	xxx3	Foreign Language II	3
EDUC	2163	Foundations of Education	3
BIOL	6534	Genetics	4
SPCH	1083	Effective Speaking	3
			13

**LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER  
EDUCATION TRANSFER**

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**CHEMISTRY CONCENTRATION**

**First**

COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
MATH	1084	Calculus I	4
CHEM	1984	Chemical Principles I	4
			14

**Second**

PSYC	2033	Adolescent Development	3
LITR	2343	Children's Literature	3
LITR	2603	OR Introduction to Literature	3
CHEM	2984	Chemical Principles II	4
MATH	2094	Calculus II	4
XXXX	xxx3	General Education Elective	3
			17

**Third**

XXXX	xxx3	Foreign Language I	3
HPED	xxx1	Physical Education Elective	1
PHYS	1064	Physics for Engr & Science I	4
CHEM	3514	Organic Chemistry I	4
XXXX	xxx3	Open Elective	3
			15

**Fourth**

EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
XXXX	xxx3	Foreign Language II	3
PHYS	2064	Physics for Engr & Sci II	4
CHEM	4524	Organic Chemistry II	4
			17

**LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER  
EDUCATION TRANSFER**

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**ENGLISH CONCENTRATION**

**First**

COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
MATH	xxx3	Math Elective	3
HIST	xxx3	Gen Ed Elective (American History)	3
XXXX	xxx3	Foreign Language I	3
HPED	xxx1	Physical Education Elective	1
			16

**Second**

PSYC	2033	Adolescent Development	3
LITR	2603	Introduction to Literature	3
XXXX	xxx4	General Education Elective (Natural Science)	4
XXXX	xxx3	General Education Elective (Fine Arts)	3
XXXX	xxx3	Foreign Language II	3
			16

**Third**

COMP	3503	Advanced Composition	3
XXXX	xxx3	General Education Elective (Western Civilization)	3
LITR	3333	Survey of British Literature I	3
		OR	
LITR	3233	Survey of American Lit I	3
		OR	
LITR	2033	The Short Story	3
XXXX	xxx3	General Education (Other World Civilizations)	3
LITR	2343	Children's Literature	3
			15

**Fourth**

EDUC	2163	Foundations of Education	3
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**LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER EDUCATION TRANSFER**

SPCH	1083	Effective Speaking	3	MATH	2124	Statistical Methods & Analysis	4
LITR	xxx3	Literature Elective	3	XXXX	xxx3	Liberal Arts Elective	3
XXXX	xxx3	Open Elective	3				17
XXXX	xxx3	Liberal Arts Elective	3				
			15				
<b>MATH CONCENTRATION</b>							
<b>First</b>							
COMP	1503	Freshman Composition	3	PSYC	1013	General Psychology	3
PSYC	1013	General Psychology	3	MATH	1084	Calculus I	4
MATH	1054	Precalculus	4	HIST	xxx3	General Education Elective (American History)	3
HIST	xxx3	General Education Elective (American History)	3	XXXX	xxx3	Foreign Language I	3
XXXX	xxx3	Foreign Language I	3				16
HPED	xxx1	Physical Education Elective	1	<b>Second</b>			
			17	PSYC	2033	Adolescent Development	3
<b>Second</b>							
PSYC	2033	Adolescent Development	3	LITR	2343	Children's Literature OR	3
LITR	2343	Children's Literature OR	3	LITR	2603	Introduction to Literature	3
LITR	2603	Introduction to Literature	3	PHYS	1064	Physics for Engr & Science I	4
XXXX	xxx4	General Education Elective (Natural Science)	4	MATH	2094	Calculus II	4
MATH	1084	Calculus I	4	XXXX	xxx3	Foreign Language II	3
XXXX	xxx3	Foreign Language II	3				17
			17	<b>Third</b>			
<b>Third</b>							
MATH	xxx3	Math Elective	3	CHEM	1984	Chemical Principles I	4
XXXX	xxx3	General Education Elective (Other World Civilizations)	3	CISY	1113	Computer Programming I	3
MATH	2094	Calculus II	4	MATH	6114	Differential Equations	4
MATH	3003	Linear Algebra	3	PHYS	2064	Physics for Engr & Sci II	4
			13				15
<b>Fourth</b>							
<b>Fourth</b>							
EDUC	2163	Foundations of Education	3	EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3	SPCH	1083	Effective Speaking	3
MATH	6104	Multivariate & Vector Calculus	4	MATH	6104	Multivariate & Vector Calculus	4
				CHEM	2984	Chemical Principles II	4
				HPED	xxx1	Physical Education Elective	1
							15

**LIBERAL ARTS & SCIENCES: HUMANITIES****AA DEGREE – CODE #0201**

Calista McBride, Department Chair and Program Coordinator

Email address: [mcbriidca@alfredstate.edu](mailto:mcbriidca@alfredstate.edu)

If you're planning on continuing your education at another four-year college or university, the liberal arts & sciences: humanities program might be for you. By careful selection of elective credits, you will be qualified to enter a baccalaureate program as a third-year student in a wide variety of fields. The program also serves an exploratory function if you have not decided on a field of study or a specific career.

**ADVANTAGES**

- The liberal arts & sciences: humanities program prepares students for life by stressing the importance of reading, writing, and thinking while developing in them an appreciation of the arts and the wisdom of great minds.
- Colleges, universities, and large corporations are increasingly emphasizing the importance of a liberal arts education upon which to build a career.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Create written communication appropriate for audience and purpose and that meets standards of style, clarity, and grammatical correctness as described in the Writing Rubric.
- Create oral communication appropriate for audience and purpose and which meets standards of presentation as described in the Effective Speaking Rubric.
- Construct and recognize arguments in both written and oral formats that are free from logical defects, as described in the Critical Thinking Rubric.
- Use library, online, and other resources to locate and evaluate scholarly articles and other research materials.
- Create research-based prose in literature, history, philosophy, or the arts.
- Articulate the relevance of the humanities to the self and society.
- Complete eight of the 10 SUNY General Education requirements and meet the two infused competencies.
- Evaluate self and demonstrate sensitivity to others of different cultures or perceptions to work constructively in a pluralistic society

- Analyze and appraise moral and ethical dilemmas.
- Analyze and evaluate the obligations of knowledge to promote common good.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State liberal arts & sciences: humanities graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

[Health Information Technology](#)

[Human Services](#)

[Individual Studies](#)

[Liberal Arts & Sciences: Math & Science](#)

[Liberal Arts & Sciences: Social Science](#)

[Nursing](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra

Recommended: Geometry, Biology

**LIBERAL ARTS & SCIENCES: HUMANITIES - AA DEGREE****TYPICAL FOUR-SEMESTER PROGRAM****First**

COMP	1503	Freshman Composition	3
FNAT	xxx3	Gen Ed - Fine Arts Elective	3
MATH	xxx3	Math Elective	3
XXXX	xxx3	Gen. Psychology or Sociology	3
PHIL	xxx3	Philosophy Elective	3
HPED	xxx1	Phys Ed Elective	1
			16

**Second**

LITR	2603	Introduction to Literature	3
XXXX	xxx3	Gen Ed Humanities Elective	3
MATH	xxx3	Math Elective	3
HIST	xxx3	American History I or II	3
HIST	xxx3	Western Civilization	3
			15

**Third**

LITR	xxx3	Gen Ed - Literature Elective	3
XXXX	xxx3	Gen Ed - Soc Sci Elective	3
SPCH	1083	Effective Speaking	3
XXXX	xxx3	Gen Ed - Nat Sci Elective	3
XXXX	xxx3	Open Elective	3
			15

**Fourth**

XXXX	xxx3	Humanities Elective	3
XXXX	xxx3	Gen Ed - Nat Sci Elective	3
XXXX	xxx3	Open Elective	3
XXXX	xxx3	Humanities Elective	3
XXXX	xxx3	Humanities Elective	3
			15

All students must pass COMP 1503 Freshman Composition with a "C" or better.

Humanities electives can be chosen from among the following course prefixes: COMP, FNAT, ITAL, LITR, RELG, SPAN, or SPCH.

Also required: writing portfolio and one unit of physical education.

**GRADUATION REQUIREMENTS**

Each student must successfully complete 60 credit hours (excluding HPE) with a minimum grade point average of 2.0.

**LIBERAL ARTS & SCIENCES: MATH & SCIENCE****AA DEGREE – CODE #0645**

Earl Packard, Department Chair and Program Coordinator

Email address: [packared@alfredstate.edu](mailto:packared@alfredstate.edu)

The mathematics and science emphasis will provide you with a solid foundation in mathematics and/or science, perfect for transferring and entering into career programs that depend on those skills.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate competence in arithmetic, algebra, geometry, data analysis, and quantitative reasoning.
- Demonstrate methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis.
- Employ proficient written and verbal communication skills.
- Students will identify, analyze, and evaluate arguments as they occur in their own and others' work and develop well-reasoned arguments.
- Students will perform the basic operations of personal computer use, understand and use basic research techniques and locate, evaluate, and synthesize information from a variety of sources.
- Students will successfully transfer to a bachelor's or terminal associate degree.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State liberal arts & sciences: math and science graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

This program is designed in such a way that the student and adviser work together to match courses at Alfred State with first- and second-year courses at the desired transfer school so that the student may enter a baccalaureate program as a full third-year student. Some typical fields of study that graduates choose to enter are mathematics, statistics, math or science education, physical education, biology, chemistry, physics, physical therapy, athletic

training, engineering, pre-med, pre-vet, dentistry, or pharmacy.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 33 percent are employed; 67 percent continued their education.

**RELATED PROGRAMS**

[Biological Science](#)

[Forensic Science Technology](#)

[Individual Studies](#)

[Liberal Arts & Sciences: Humanities](#)

[Liberal Arts & Sciences: Social Science](#)

[Pre-Environmental Science & Forestry](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, and Algebra 2; Biology; Chemistry; or Physics

Recommended: Both Chemistry and Physics

**LIBERAL ARTS & SCIENCES: MATH &  
SCIENCE - AA DEGREE**
**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
XXXX	xxx3	Freshman Composition	3
XXXX	xxx4	Mathematics	3-4
XXXX	xxx4	Science	4
XXXX	xxx3	Psychology or Sociology	3
XXXX	xxx3	Gen. Education Elective	3
XXXX	xxx1	Phys Ed Elective	1
			17-18

<b>Second</b>			
XXXX	xxx3	Literature	3
XXXX	xxx3	Mathematics	3-4
XXXX	xxx4	Science	4
XXXX	xxx3	Gen. Education Elective	3
XXXX	xxx3	Computer Language or Philosophy Elective	3
			16-17

<b>Third</b>			
XXXX	xxx4	Mathematics and/or Science	6-8
XXXX	xxx3	Effective Speaking	3
XXXX	xxx6	Free Elective	6
			15-17

<b>Fourth</b>			
XXXX	xxx4	Mathematics and/or Science	6-8
XXXX	xxx9	Free Elective	9
			15-17

**GRADUATION REQUIREMENTS**

A minimum of 61 credit hours is required for graduation with a cumulative index of 2.0. Students must also have a cumulative index of at least 2.0 in mathematics and science sequence courses.

**LIBERAL ARTS & SCIENCES: SOCIAL SCIENCE****AA DEGREE – CODE #0212**

Jill Priest Amati, Department Chair and Program Coordinator

Email address: [amatij@alfredstate.edu](mailto:amatij@alfredstate.edu)

This transfer program emphasizes course work in the social and behavioral sciences and in the liberal arts. By careful selection of electives, you will be well placed to enter baccalaureate programs at the third-year level with all your general education requirements met.

**ADVANTAGES**

- Students have the benefit of small classes taught by expert faculty who take an interest in each student's success, and are advised by faculty within their concentration area.
- Students interested in education, criminal justice, psychology, sociology, history, or political science may enroll in advanced courses at Alfred University through cross-registration at no extra cost.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply critical thinking skills to the analysis of topical issues in the social sciences.
- Perform the basic operations of personal computer use, as well as employ basic research techniques to locate, evaluate, and synthesize information from a variety of sources.
- Communicate effectively and appropriately in oral and written forms.
- Discuss the social, psychological, and historical influences on human behavior.
- Identify the steps of the scientific method and discuss the research methods employed by social scientists.
- Recognize the effects of globalization.
- Identify the terminology related to theories of and research in the social sciences.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State liberal arts & sciences: social science graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

Graduates are qualified to enter baccalaureate programs in a variety of academic disciplines such

as psychology, sociology, anthropology, history, and political science, as well as professional fields such as early childhood/childhood education, adolescent education, criminal justice, pre-law, human services management, and business administration. Among the colleges to which recent graduates have successfully transferred are Alfred University, University of Buffalo, Cornell University, SUNY Cortland, SUNY Fredonia, SUNY Geneseo, and St. Bonaventure University.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 11 percent are employed; 89 percent continued their education.

**RELATED PROGRAMS**

[Criminal Justice](#)

[Human Services](#)

[Human Services Management](#)

[Individual Studies](#)

[Interdisciplinary Studies](#)

[Liberal Arts & Sciences: Adolescent Education](#)

[\(Teacher Education Transfer\)](#)

[Liberal Arts & Sciences: Humanities](#)

[Liberal Arts & Sciences: Math & Science](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra

Recommended: Geometry, Biology

## LIBERAL ARTS &amp; SCIENCES: SOCIAL SCIENCE - AA DEGREE

## TYPICAL FOUR-SEMESTER PROGRAM

**First**

COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
MATH	xxx3	Gen Ed Math Elective	3
XXXX	xxx3	Gen Ed American History Elective	3
			15

**Second**

PSYC	1023	Human Development	3
LITR	2603	Introduction to Literature	3
SOCI	xxx3	Sociology Elective	3
MATH	xxx3	Math Elective	3
XXXX	xxx3	Gen Ed Western Civilization Elective	3
			15

**Third**

SOCI	1183	Contemporary Social Problems	3
PSYC	xxx3	Psychology Elective	3
SPCH	1083	Effective Speaking	3
XXXX	xxxx	Natural Science Elective	3-4
XXXX	xxxx	Applied Open Elective	3
			15-16

**Fourth**

XXXX	xxx3	Gen Ed Other World Civilization Elective	3
XXXX	xxxx	Natural Science Elective	3-4
XXXX	xxx3	Open Elective	3
XXXX	xxx3	Open Elective	3
SOCI	1223	Power, Privilege, & Difference	3
			15-16

## GRADUATION REQUIREMENTS

- Good academic standing (2.0 cumulative GPA) or higher
- Successful completion of all courses in the prescribed four-semester plan
- Submission of the college's degree application form

Also required: One credit hour of physical education.

## MACHINE TOOL TECHNOLOGY

### AOS DEGREE – CODE #0551

Karen Young, Program Coordinator  
 Email address: [youngkk@alfredstate.edu](mailto:youngkk@alfredstate.edu)

Did you know the average salary for a machinist in industry today is ranked the seventh highest among all American professions (including doctors, lawyers, etc.), and this average salary is higher than the average salary for all four-year college graduates?

If earning a high salary is on your list for selecting occupational opportunities, you need to look at machine tool technology. More than 50 percent of all machinists in America today will retire in the next 10 to 15 years. This fact alone shows the tremendous opportunity that awaits the trained and well-qualified machinist.

The machine tool technology program features instruction in the safe operation of all basic machine tools, such as lathes, milling machines, drill presses, various saws, and grinding equipment, as well as proper measurement and inspection of parts. Interpreting engineering drawings and mathematical calculations required by all machinists is also presented.

The second year includes shop math and CNC (Computer Numerical Controls) programming with an emphasis on hands-on skills using advanced machine tools. A strong emphasis on shop safety is an integral part of the program. The AOS degree program includes operation of CNC lathes (turning centers), and CNC milling machines (maching centers). This includes set-up, as well as operation of the machines. Interpreting engineering drawings and control documents will also be emphasized. The understanding of quality control and how to conduct appropriate measurements and inspection will be integrated into the course work. The intent is to graduate someone with overall advanced machine shop skills.

### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate and apply safe operation of all machine tools.
- Student will be proficient in basic lathe operation.
- Student will be proficient in basic milling operation.
- Demonstrate mathematical operations using accepted mathematical applications.
- Demonstrate ability to perform advanced procedures on assigned projects.

- Student will be proficient in writing CNC programs for lathe.
- Student will be proficient in writing CNC programs for milling machine.
- Student will be proficient and apply GDT to all projects.
- Student will demonstrate ability to operate CNC equipment.
- Student will demonstrate all knowledge in capstone project.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State machine tool technology graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two additional years; others may complete the BBA program in two-and-one-half years.

### OCCUPATIONAL OPPORTUNITIES

- CNC programmers
- CNC machinists
- CNC engineers
- Tool and die makers
- Machine setters and operators
- Machinists
- Mold makers

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 83 percent are employed; 17 percent continued their education.

### RELATED PROGRAMS

[Welding Technology](#)

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

### TECHNICAL STANDARDS

Applicants for the machine tool technology program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds up to eye level.
- Must be able to communicate orally with a person 6 to 10 feet away in a shop environment.

- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
- Must be able to stand for long periods of time.
- Good eyesight is recommended.

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

Students are required to have earned a minimum grade of “C” in MACH CALC. I & II, and in the MATT 4003 senior project. (Articulation is available in MACH. CALC. area.)

**MACHINE TOOL – AOS DEGREE**

**First**

MATT	1004	Basic Industrial Machining	4
MATT	1014	Industrial Machining I	4
MATT	1024	Industrial Machining II	4
MATT	1713	Reading Engineering Drawings	3
MATT	1913	Machinist Calculations I	3
			18

**Second**

MATT	1234	Industrial Machining III	4
MATT	1244	Industrial Machining IV	4
MATT	1254	Industrial Machining V	4
MATT	1723	Reading Engineering Drwngs II	3
MATT	1923	Machinist Calculations II	3
			18

**Third**

MATT	3005	Intro to CNC Machine Program	5
MATT	3015	CNC Industrial Machining I	5
MATT	3025	CNC Industrial Machining II	5
MATT	3003	Geometric Dimensioning & Toler	3
			18

**Fourth**

MATT	4005	CNC Industrial Machining III	5
MATT	4015	CNC Industrial Machining IV	5
MATT	4025	CNC Industrial Machining V	5
MATT	4003	Senior Project	3
			18

## MARKETING

### AAS DEGREE – CODE #0633

Steven Reynolds, Program Coordinator  
 Email address: [reynolsa@alfredstate.edu](mailto:reynolsa@alfredstate.edu)

The American Marketing Association defines marketing as “the process of planning and executing the conception, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives.” Marketing is a fast-moving, diverse field that includes the numerous business activities required to satisfy the needs of both the consumer and the industrial buyer. Our program will help you develop a strong background in communication, management, accounting, advertising, consumer behavior, industrial marketing, and salesmanship. And the degree’s liberal arts foundation will provide you with a solid basis for the human relations elements in the study of marketing.

A laptop computer is recommended, but not required, for students entering the marketing program. The college will provide a list of appropriate laptops to all students who have been accepted to attend Alfred State.

### ADVANTAGES

Students gain a thorough understanding of many areas, including the design and implementation of a sales presentation, consumer-buying behavior, the use of technology in marketing communications, and much more.

### PROGRAM STUDENT LEARNING OUTCOMES

- Recognize the primary theories within the principle functional areas of business.
- Demonstrate professional business communication.
- Illustrate critical thinking and effective decision-making within the principle functional areas of marketing.
- Identify ethical issues within marketing.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS

Alfred State marketing graduates may enter directly into the business administration BBA, the interdisciplinary studies BTEch, or the technology management BBA degree program at Alfred State.

### CONTINUING EDUCATION OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college.

Although not limited to these schools, common transfer institutions include Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Canisius College, Niagara University, and Hilbert College.

### OCCUPATIONAL OPPORTUNITIES

- Consumer and industrial sales
- Service institutions
- Banks
- Advertising agencies
- Financial and credit agencies
- Insurance companies
- Recreational businesses
- Tourist bureaus
- Transportation systems

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 100 percent continued their education.

### RELATED PROGRAMS

[Accounting](#)  
[Business Administration](#) (AS)  
[Business Administration](#) (BBA)  
[Financial Planning](#)  
[Technology Management](#)

### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS

Required: Algebra  
 Recommended: Geometry, Algebra 2

**MARKETING - AAS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
MKTG	2073	Principles of Marketing	3
ACCT	1124	Financial Accounting	4
CISY	xxx3	Intro to Computers/ Info Mgt. Elective	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Math Elective	3
			16

<b>Second</b>			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communication	3
BUAD	3153	Fundamentals of Management	3
MATH	xxx3	Math Elective	3
LITR	xxx3	Literature Elective	3
			16

<b>Third</b>			
BUAD	3043	Business Law I	3
ECON	1013	Principles of Macroeconomics	3
MKTG	1033	Advertising Principles	3
BUAD	4203	Intro Personal Financial Plan	3
XXXX	xxx3	General Education Elective	3
			15

<b>Fourth</b>			
BUAD	4053	Business Law II	3
ECON	2023	Principles of Microeconomics	3
MKTG	1063	Principles of Sales	3
MKTG	3153	Web Design & Marketing	3
XXXX	xxx3	Business or Computer Elective	3
			15

**GRADUATION REQUIREMENTS**

62 semester hours with a 2.0 cumulative index

**MASONRY**

**AOS DEGREE – CODE #0401**

Stephen Richard, Program Coordinator  
 Email address: [richarsb@alfredstate.edu](mailto:richarsb@alfredstate.edu)

Each year, more and more students and employers have asked for additional instruction and skills-based training in masonry beyond what is provided by the building construction program. Our masonry program was designed with these desires in mind. It will provide you with extensive instruction after completing the common first-year building construction curricula.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Estimate, layout, and build various masonry and concrete flatwork systems and explain how to supervise people.
- Properly choose and implement personal and job site safety and access equipment.
- Read and interpret construction drawings and specifications.
- Communicate construction details and estimates with written documents and scale shop drawings.
- Lay out, prepare, and install various concrete flatwork, block work, stone work, and brick work.
- Use the computer to access trade-related specifications.
- Perform computer-based research and communication.
- Demonstrate effective oral communication.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State masonry graduates may enter directly into the construction supervision BTEch or technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the baccalaureate program in two additional years; others may complete the BBA program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Brick or stone salesman
- Kiln mason
- Construction foreman
- Estimator
- Salesperson
- Private or commercial remodeler
- Maintenance supervisor
- Construction superintendent

- Concrete foreman
- Expediter
- Contractor
- Mason

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 71 percent are employed; 29 percent continued their education.

**RELATED PROGRAMS**

Heating, Ventilation, and Air Conditioning  
[Building Trades: Building Construction](#)  
[Electrical Construction and Maintenance Electrician](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the masonry program must be able to meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder and/or able to climb, unaided, onto and off equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

**MASONRY - AOS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
BLCT	1132	Estimating I	2
BLCT	1142	Masonry I	2
BLCT	1124	Construction Essentials I	4
BLCT	1024	Construction Essentials II	4
BLCT	1034	Workplace Environment & Safety	4
BLCT	1022	Wood Fabrication Technology I	2
			18

<b>Second</b>			
BLCT	2132	Estimating II	2
BLCT	2142	Masonry II	2
BLCT	2044	Construction Essentials III	4
BLCT	2054	Construction Essentials IV	4
BLCT	2064	Structural Components	4
BLCT	2032	Wood Fabrication Technology II	2
			18

<b>Third</b>			
BLCT	3159	Masonry III	9
BLCT	3169	Masonry IV	9
			18

<b>Fourth</b>			
BLCT	4176	Masonry V	6
BLCT	4186	Masonry VI	6
BLCT	4043	Masonry Sketching & Detailing	3
BLCT	4053	Blueprint Reading for Masonry	3
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**MECHANICAL ENGINEERING TECHNOLOGY****AAS DEGREE - CODE #0493****BS DEGREE - CODE #0235**

Aric Bryant, AAS Program Coordinator  
Email address: [bryanta@alfredstate.edu](mailto:bryanta@alfredstate.edu)

Chris Tomasi, AAS Program Co-Coordinator  
Email address: [tomasicj@alfredstate.edu](mailto:tomasicj@alfredstate.edu)

Dr. Reza Rashidi, BS Program Coordinator  
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Dr. Matt Lawrence, Department Chair and BS Program Co-Coordinator  
Email address: [lawrenmj@alfredstate.edu](mailto:lawrenmj@alfredstate.edu)

As a mechanical engineering technology program graduate, you will be well prepared to be a mechanical technologist or technician for industry in engineering-related areas, including automotive component design; heating, ventilation, and air conditioning (HVAC); process and component design; mechanical systems design; energy systems; product development; and technical support and sales. You will be able to design, specify, test, analyze, and install mechanical systems. This broad content exposure occurs through the development of analytical skills and theory in the classroom and experience working with engines, complete energy systems, compressors, fans, pumps, controls, instrumentation, engineering graphics, and material testing.

A laptop computer is required for students entering the mechanical engineering technology programs. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**ADVANTAGES**

- Both the AAS and BS mechanical engineering technology programs are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.
- The Bachelor of Science in mechanical engineering technology is recognized as a "professional degree" that qualifies for experience/education credit toward Professional Engineering (PE) licensure.

**PROGRAM STUDENT LEARNING OUTCOMES (PSLOS) - AAS DEGREE**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.

- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- An ability to conduct standard tests and measurements, and to conduct, analyze and interpret experiments.
- An ability to function effectively as a member of a technical team.
- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to addressing professional and ethical responsibilities, including a respect for diversity.
- A commitment to quality, timeliness, and continuous improvement.
- Application of principles of geometric dimensioning and tolerancing.
- Use of computer aided drafting and design software.
- Selection, set-up, and calibration of measurement tools/instrumentation.
- Preparation of laboratory reports and systems documentation associated with development, installation, or maintenance of mechanical components and systems.
- Basic familiarity and use of industry codes, specifications, and standards.
- Use of basic engineering mechanics.
- An integrating or capstone experience utilizing skills acquired in the program.

**PROGRAM STUDENT LEARNING OUTCOMES (PSLOS) - BS DEGREE**

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly defined engineering technology activities.
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.

- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
- An ability to design systems, components, or processes for broadly defined engineering technology problems appropriate to program educational objectives.
- An ability to function effectively as a member or leader on a technical team.
- An ability to identify, analyze, and solve broadly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A knowledge of the impact of engineering technology solutions in a societal and global context.
- A commitment to quality, timeliness, and continuous improvement.
- Application of principles of geometric dimensioning and tolerancing.
- Use of computer aided drafting and design software.
- Perform selection, set-up, and calibration of measurement tools/instrumentation.
- Elements of differential and integral calculus.
- Manufacturing processes.
- Material science and selection.
- Solid mechanics (such as statics, dynamics, strength of materials, etc.).
- Mechanical system design.
- Thermal sciences (such as thermodynamics, fluid mechanics, heat transfer, etc.).
- Electrical circuits (ac and dc) and electronic controls.
- Application of industry codes, specifications and standards.
- Technical communications typically used in preparation of engineering proposals, reports, and specifications.

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

Program educational objectives were established with the assistance of the Industrial Advisory

Committee and are reviewed periodically. The AAS in the mechanical engineering technology program produces graduates who:

- Have knowledge and skills to succeed in continued technical and formal education.
- Can function effectively as technicians in the mechanical or related field of engineering technology.
- Can function professionally and with ethical responsibility as an individual and on multidisciplinary teams.
- Can demonstrate the ability to communicate effectively in oral, written, visual, and graphical modes in both interpersonal and group/team environments.
- Can continuously improve, engage in lifelong learning, and adapt to rapidly changing technologies.
- Can function effectively in an applications-oriented environment by using the techniques, skills, and modern engineering technology tools necessary to support applied technology practice.

The BS in mechanical engineering technology program will produce graduates who:

- Have knowledge and skills to succeed in continued technical and formal education.
- Can function effectively as technicians in the mechanical or related field of engineering technology.
- Can function professionally and with ethical responsibility as an individual and on multidisciplinary teams.
- Can demonstrate the ability to communicate effectively in oral, written, visual, and graphical modes in both interpersonal and group/team environments.
- Can continuously improve, engage in lifelong learning, and adapt to rapidly changing technologies.
- Can function effectively in an applications-oriented environment by using the techniques, skills, and modern engineering technology tools necessary to support applied technology practice.
- Can function effectively as technologists in the mechanical or related field of engineering technology.
- Can function effectively in open-ended activities involving applications, design, analysis, and implementation.
- Can function effectively in leadership or supervisory roles.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State mechanical engineering technology AAS graduates may enter directly into the construction supervision BTEch, the interdisciplinary studies BTEch, the mechanical engineering technology BS, or the technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

A cooperative/transfer program involving one year of appropriate study in either mechanical engineering technology or engineering science at selected regional community colleges, together with a second year of study at Alfred State, will result in the awarding of the AAS degree to qualified graduates.

Graduates from the associate-level mechanical engineering technology program are eligible to continue their education by enrolling in a baccalaureate degree program in mechanical or related engineering technology at Alfred State or elsewhere. Our mechanical engineering technology AAS two-year degree program is the same as the first two years of the mechanical engineering technology BS four-year degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Automotive industry
- HVAC&R industry
- Development/design
- Field service
- Installation supervision
- Aerospace industry
- Utility companies
- Sales and applications
- Manufacturing
- Petroleum industry
- Engineering aide
- Test technicians
- Process equipment

**EMPLOYMENT STATISTICS**

Employment and continuing education rate:

Mechanical engineering technology (AAS degree):  
100 percent – 100 percent continued their education.

Mechanical engineering technology (BS degree):  
100 percent – 98 percent are employed; 2 percent continued their education.

**ENROLLMENT AND GRADUATION DATA**

AAS Degree	Enrollment (based on Fall census)
2017	48
2016	39
2015	32
	Degrees Awarded
2016-2017	14
2015-2016	11
2014-2015	14
BS Degree	Enrollment (based on Fall census)
2017	187
2016	193
2015	185
	Degrees Awarded
2016-2017	58
2015-2016	27
2014-2015	31

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS)**

Required: Algebra, Geometry, Algebra 2

Recommended: Physics

**MECHANICAL ENGINEERING TECHNOLOGY - AAS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
MECH	1203	Materials Science	3
MECH	1603	Graphics/CAD	3
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
XXXX	xxx3	Gen Ed Elective	3
			15
<b>Second</b>			
MECH	1663	Manufacturing Processes	3
MECH	4003	Solid Modeling	3
MECH	4523	Control System Fundamentals	3
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
			16
<b>Third</b>			
MECH	3334	Statics	4
MECH	3223	Mechanical Design Principles	3
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3
SOCI	1193	Marriage & Family Acrs Wrld Clt	3
OR			
PLSC	1043	American Government	3
OR			
ANTH	1013	Cultural Anthropology	3
			16
<b>Fourth</b>			
MECH	4024	Dynamics	4
MATH	2074	Technical Calculus II	4
MECH	3124	HVAC Systems	4
OR			
MECH	4554	Computer Aided Mfg Fundamntals	4
MECH	4224	Mechanical Systems Design	4
			16

If not required to take MATH 1033 and MATH 2043, take LAS elective(s) to complete degree requirements.

**GRADUATION REQUIREMENTS**

- 63 credits
- 20 credits of liberal arts and sciences
- **2.0 grade point average in major courses**
- 2.0 cumulative grade point average
- Approval of department faculty
- Five of 10 General Education areas

Any student who does not enroll in SOCI 1193, PLSC 1043, or ANTH 1013 must enroll in two appropriate General Education courses.

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS (BS)**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

Courses that repeat or significantly overlap those taken in the student's associate degree program cannot be taken for upper-level credit. If the associate degree covered the subject matter in one of the required baccalaureate courses, a different course must be substituted and approved by the faculty adviser.

**MECHANICAL ENGINEERING TECHNOLOGY – BS DEGREE**

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

**Fifth**

MECH	7114	Applied Thermodynamics	4
MECH	5334	Mechanics of Materials	4
MECH	6334	Fluid Mechanics	4
LITR	xxx3	Literature Elective	3
CHEM	5013	Applied Chemical Principles	3
			18

**Sixth**

MATH	6114	Differential Equations	4
COMP	5703	Technical Writing II	3
SPCH	1083	Effective Speaking	3
MATH	7123	Statistics for Engr Tech & Sci	3
MECH	6643	Process Engineering & Manufact	3
			16

**Seventh**

BSET	7001	Senior Seminar & Project Des	1
MECH	7603	Heat Transfer	3
MATH	7113	Economic Analy for Engr Tech	3
MECH	7153	Fluid Power Systems Design	3
EMET	5004	Instrumentation	4
	xxx3	Gen Ed/LAS Elective	3
			17

**Eighth**

BSET	8003	Senior Technical Project	3
MECH	7403	Microfabrication Technology	3
	xxx3	Liberal Arts/ Science Elective	3
	xxx3	Liberal Arts/ Science Elective	3
			12

Typical Liberal Arts/Science Electives:

HIST	1113	Hist of West Civil Since 1648	3
HIST	1143	Surv of American History I	3
HIST	2153	Surv of American History II	3
PLSC	1043	American Government	3
PLSC	1053	International Relations	3
PSYC	1013	General Psychology	3
FNAT	1023	Introduction to Theatre	3
FNAT	1313	Art History	3
SOCI	1163	General Sociology	3
SOCI	1193	Marriage & Family Acrs Wrld Clt	3

**BS DEGREE GRADUATION REQUIREMENTS**

- Completion of above courses
- 126 credit hours
- 45 upper-division credit hours
- 60 credit hours of liberal arts and sciences
- **2.0 grade point average in major courses**
- 2.0 cumulative grade point average
- Approval of department faculty
- Seven of 10 General Education areas

**CERTIFICATION OR LICENSURE**

The Bachelor of Science in mechanical engineering technology is recognized as a “professional degree” that qualifies for experience/ education credit toward Professional Engineering (PE) licensure. Graduates from Alfred State’s program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

Be advised that a prior felony conviction may impede a student’s ability to receive licensure.

**MECHATRONICS TECHNOLOGY**

**AAS DEGREE – CODE #2729**

**STARTING FALL 2019 SEMESTER**

Timothy Cochran, Program Coordinator

Email address: [cochrattj@alfredstate.edu](mailto:cochrattj@alfredstate.edu)

Mechatronics interweaves electrical, mechanical, and computer engineering technology with applications in automated industrial processes and robotics. Mechatronics professionals are the technicians and engineers who design and maintain automated equipment. Technicians and engineers conduct their work in laboratories, offices or on-site at manufacturing plants. These professionals work toward the same goal of producing safe and efficient automated equipment. While technicians primarily maintain machinery, engineers are more concerned with the design and development of components and products. A mechatronics technology graduate will design, adapt, and troubleshoot electro-mechanical systems that are controlled by programmable digital devices.

**ADVANTAGES**

- Combines strength in electrical and mechanical engineering technology.
- Broad background to fit many possibilities and small employers.
- Learn in laboratories outfitted with excellent electronic test equipment
- Hands-on metal and circuit board fabrication facilities.
- Program different devices to perform electromechanical tasks.

A laptop computer is required for students entering the mechatronics technology program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops). Some courses may require specialized tools and/or electronic components.

**PROGRAM STUDENT LEARNING OUTCOMES (PSLOS)**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.

- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- An ability to function effectively as a member of a technical team.
- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A commitment to quality, timeliness, and continuous improvement.
- Use computer-aided drafting or design tools to prepare graphical representations of electromechanical systems.
- Use circuit analysis, analog and digital electronics, basic instrumentation, and computers to aid in the characterization, analysis, and troubleshooting of electromechanical systems.
- Use statics, dynamics (or applied mechanics), strength of materials, engineering materials, engineering standards, and manufacturing processes to aid in the characterization, analysis, and troubleshooting of electromechanical systems.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State mechatronics technology AAS graduates may enter directly into the construction supervision BTech, the interdisciplinary studies BTech, or technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Robotics Testing Technician
- Mechatronics Technician
- Industrial Robotics Mechanic
- Programmable Logic Controller Assembler

**EMPLOYMENT STATISTICS**

None - Inaugural year

**RELATED PROGRAMS**

Computer Engineering Technology Electrical Engineering Technology Mechanical Engineering Technology

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS (AAS)**

Applicants for the mechatronics technology program must possess a recognized high school diploma or its equivalent. A standardized test (SAT or ACT) is not required but recommended. Specific high school course requirements and recommendations are:

Required: Algebra, Geometry, Algebra 2

Recommended: Physics

**MECHATRONICS TECHNOLOGY - AAS  
DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
ELET	1133	Digital Logic	3
ELET	1111	Digital Logic Laboratory	1
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
MECH	1603	Graphics/CAD	3
ELET	1202	Intro to Electrical Eng Tech	2
ELET	1001	Seminar	1
			16

<b>Second</b>			
ELET	1142	Electronic Fabrication	2
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
MCET	xxx3	Circuits Fundamentals	3
MCET	xxx1	Circuits Fundamentals Laboratory	1
LITR	xxx3	Gen. Ed. - Literature Elective	3
			16

<b>Third</b>			
ELET	2103	Electronics Theory I	3
ELET	2151	Electronics Laboratory I	1
MECH	3334	Statics	4
ELET	2143	Embedded Controller Fundmntls	3
MATH	1063	Technical Calculus I	3
XXXX	xxx3	Technical Elective	3
			17

<b>Fourth</b>			
PHYS	2023	General Physics II	3
MATH	2074	Technical Calculus II	4
XXXX	xxx3	Technical Elective	3
	xxx3	General Education/LAS Elective	3
			13

If not required to take math due to placement scores, take LAS elective to complete degree

requirements of three credits; otherwise, take free elective.

**ASSOCIATE DEGREE GRADUATION  
REQUIREMENTS**

- 62 semester credit hours
- Minimum of 20 credit hours of liberal arts and sciences
- Five of 10 SUNY General Education categories
- 2.0 cumulative grade point average and a grade of "C" or better in the core courses
- Approval of department faculty

### MOTORCYCLE AND POWER SPORTS TECHNOLOGY

#### AOS DEGREE - CODE #2590

Kent Johnson, Program Coordinator

Email address: [johnsokw@alfredstate.edu](mailto:johnsokw@alfredstate.edu)

Motorcycle and power sports technology is a two-year AOS degree program that prepares students for a career as motorcycle / power sports / small engine technicians. This program incorporates a progressively challenging format and hands-on laboratories using full-size functioning vehicles. Training will include all aspects of motorcycle and small vehicle repair, including the diagnosis and repair of gasoline and diesel engines, transmissions, electrical/electronic systems, brake systems, steering systems, and suspension systems.

#### ADVANTAGES

- Provides a simulated real-world practice environment that will prepare the student for immediate entry-level employment as a technician after graduation.
- The diverse tools and equipment provided for hands-on practice will prepare the student for a variety of employment opportunities.
- Instructors are well trained, with many years of field experience.

#### PROGRAM STUDENT LEARNING OUTCOMES

Graduates of the program will be able to:

- Prepare a focused, coherent, and organized written report.
- Perform mathematic calculations required for entry-level employment.
- Demonstrate the ability to retain and apply written instructions and specifications relevant to their work environment.
- Demonstrate the ability to understand operation and diagnostic procedures of modern vehicle electrical and electronic systems.
- Demonstrate the ability to describe operation, diagnose, and repair drive train systems.
- Demonstrate the ability to describe operation, diagnose, and repair modern engines.
- Demonstrate the ability to describe operation, diagnose, and repair steering, brakes, and suspension systems.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two additional years; others may complete the BBA program in two-and-one-half years.

#### OCCUPATIONAL OPPORTUNITIES

- Motorcycle technician
- Marine vehicle technician
- Small engine/lawn and garden equipment technician
- Service manager
- Shop foreman

#### RELATED PROGRAMS

- [Autobody Repair](#)
- [Heavy Equipment, Truck & Diesel Technician](#)
- [Mechanical Engineering Technology](#)
- [Motorsports Technology](#)
- [Welding](#)

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

#### TECHNICAL STANDARDS

Applicants in the motorcycle and power sports technology program must meet the following physical requirements:

- Must be able to lift 50 pounds to eye level.
- Must be able to effectively communicate with a person 6 to 10 feet away.
- Must be able to visually decipher small images on a monitor or digital display.
- Must be able to distinguish sounds associated with mechanical failures.
- Must be able to comprehend written information found in service repair manuals.

#### CERTIFICATION OR LICENSURE

The New York State vehicle inspector exam is offered on campus.

**MOTORCYCLE AND POWER SPORTS  
TECHNOLOGY - AOS DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

MOTO	1003	Intro to Shop Service Basics	3
MOTO	1005	Basic Electrical Systems	5
MOTO	1015	Welding & Fabrication	5
MOTO	1025	Brake Systems	5
			18

**Second**

MOTO	2013	Inspection & Preventative Mntn	3
MOTO	2005	Starting & Charging Systems	5
MOTO	2015	Suspension & Steering Systems	5
MOTO	2035	Fuel & Ignition Systems	5
			18

**Third**

MOTO	3003	Diesel Engines	3
MOTO	3005	Two & Four Stroke Engines	5
MOTO	3015	Transmissions	5
MOTO	3035	Drive Systems	5
			18

**Fourth**

MOTO	4023	Exhaust & Induction Systems	3
MOTO	4005	Advanced Drivability	5
MOTO	4015	Advanced Electrical	5
MOTO	4025	Advanced Applications	5
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**MOTORSPORTS TECHNOLOGY****AOS DEGREE - CODE #1619**

Eric Wilmot, Department Chair and Program Coordinator

Email address: [wilmotej@alfredstate.edu](mailto:wilmotej@alfredstate.edu)

This specialization includes 1,800 hours of practical experience and classroom training designed to prepare you for the exciting, fast-paced motorsports field. Our high-tech program includes brake systems, alignment procedures, electronic controls, engine overhaul, and transmission overhaul. Ever dream of learning how to work on real race vehicles alongside industry experts? A major component of our curriculum involves the fabrication and set-up of various types of these incredible machines.

**ADVANTAGES**

- Students may take Automotive Service Excellence (ASE) certification exams.
- First-year courses are certified by NATEF (National Automotive Technicians Educational Foundation, Inc.).
- Students successfully completing the motorsports technology program may return for a third year (senior year) in the automotive service technician program and earn a second associate degree.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate a focused, coherent, organized written report.
- Perform mathematic calculations required for entry-level automotive employment.
- Demonstrate a functional ability to read and retain/apply written instructions and specifications relevant to their work environment.
- Demonstrate the ability to describe operation, diagnose, and repair race automotive drive train systems.
- Demonstrate the ability to describe operation, diagnose, and repair race engines.
- Demonstrate the ability to describe operation, diagnose, and repair race automotive steering, brakes, and suspension systems.
- Demonstrate the ability to fabricate materials required to build and maintain race vehicle chassis, bodies, and components.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State motorsports technology graduates may enter directly into the technology

management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two additional years; others may complete the BBA program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Chassis specialist
- High performance motorsport technician
- Crew foreman
- Pit crew member
- Engine builder
- Transmission builder

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**RELATED PROGRAMS**

[Autobody Repair](#)

[Automotive Service Technician](#)

[Mechanical Engineering Technology](#)

[Welding Technology](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the motorsports technology program must meet the following physical requirements:

- Must be able to lift 50 pounds to eye level.
- Must be able to effectively communicate with a person 6 to 10 feet away.
- Must be able to visually decipher small images on a monitor or digital display.
- Must be able to distinguish sounds associated with mechanical failures.
- Must be able to comprehend written information found in service repair manuals.
- Must have a valid motor vehicle driver's license.

**CERTIFICATION OR LICENSURE**

Students may take Automotive Service Excellence (ASE) certification exams.

**MOTORSPORTS TECHNOLOGY - AOS  
DEGREE**

TYPICAL FOUR-SEMESTER PROGRAM

**First**

AUTO	1109	Brakes, Steering & Susp Sys	9
AUTO	1169	Auto Electric, Fuel & Emission	9
			18

**Second**

AUTO	3409	Engine Service	9
AUTO	4449	Drive Train Service	9
			18

**Third**

AUTO	3506	Introduction to Motorsports	6
AUTO	3504	Motorsport Fabrication I	4
AUTO	3514	Racing Suspension Dynamics	4
AUTO	3524	Hgh Prfrmnce Tune-up/ Electrnics	4
			18

**Fourth**

AUTO	3535	Hgh Prfrmnce Engine Building	5
AUTO	3544	Motorsports Aerodynamics	4
AUTO	3534	Hgh Permnce Sterng/Bks/ Chasis	4
AUTO	3545	Motorsport Fabrication II	5
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**NURSING****AAS DEGREE - CODE #0622**

Linda Panter, Department Chair and Program Coordinator

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The nursing AAS program will prepare you to become a registered professional nurse — one of the fastest-growing fields in the country. Courses are sequential and progress from simple to more complex situations, with specialized content in obstetrics, psychiatric, and pediatric nursing. Learning is enhanced through the use of skill practice for a hands-on approach to gain expertise. During the first year, there is a seven-hour per week clinical experience. During the second year, the clinical experience increases in time and complexity. Simulation is incorporated into the laboratory experience.

Clinical experience, an essential part of each nursing course, further enables students to gain technical competence to apply theoretical knowledge with practice. Clinical experiences are gained through a variety of health care facilities. There is no guarantee that the college will provide bus transportation to and from all clinical sites.

A laptop is required for the nursing program, as it will be needed for on-campus exams and other educational purposes. Microsoft Office is required; Internet access is required. In addition, a handheld pocket-sized electronic device is required (i.e., smart phone) for downloading program software. The device must have the capability to turn off both phone and camera. Further system requirements will be sent via a newsletter in early June to newly admitted, transfer, and continuing students.

All sciences (anatomy and physiology I and II, microbiology) must be passed with a minimum of "C+" in order to progress through the nursing program. Students must earn a "C" in Nursing I (NURS 1108) and Nursing II (NURS 2208) and a "C+" in Nursing III (NURS 3310) and Nursing IV (NURS 4410) to progress in the nursing program. Competency in medication clinical computation is required and is tested as part of the Nursing II (NURS 2208) and Nursing III (NURS 3310) courses.

Note: BIOL 1404 Anatomy & Physiology I and BIOL 2504 Anatomy & Physiology II have to be completed with a "C+" and must be taken in the classroom with lab component at the same college.

Specific policies related to progression in the nursing program and readmission to the nursing program are publicized to enrolled nursing students in the Nursing Student Handbook.

A zero-tolerance for incivility is in effect at Alfred State nursing. Furthermore, if a student's behavior compromises or threatens the health or safety of others, including clients, peers, faculty, and staff, the student may be denied enrollment or continuation in the program. A policy regarding chemical impairment is publicized to enrolled nursing students.

Background checks may be required by affiliating agencies. Background checks will be at the expense of the student.

Nursing students are required to provide documentation of an annual two-step PPD and a self-report health assessment. Hepatitis B vaccine, flu vaccine, and other requirements may be specified by affiliating agencies.

Any student wishing more information should contact the nursing program.

**ADVANTAGES**

- The program is accredited by the Accreditation Commission for Education in Nursing (ACEN) [3343 Peachtree Road, Suite 850, Atlanta, GA 30326] phone 404-975-5000, [www.acenursing.org](http://www.acenursing.org).
- The associate degree in nursing (AAS) is currently being offered in three different educational pathways:
  - The traditional two-year program
  - A three-year part-time program
  - Within a dual-degree format
- Graduates of the AAS degree may directly enroll in the RN-BSN program after filling out the "Joint Intent to Enroll" form.
- Graduates of the AAS degree are eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Acquires self-empowerment to provide holistic care to a diverse population while providing health education using learner-centered focused principles.
- Demonstrates accountability and effective interpersonal relationships with clients and

members of the health care team, and works collaboratively in professional practice.

- Implements evidence-based practice to promote a caring environment that ensures client's safety, comfort, dignity, and self-esteem consistent with his/her developmental stage in an effective and efficient manner.
- Demonstrates responsibility for continued learning and further growth.
- Manages care for clients while evaluating own performance to improve professional practice, quality of care, and safety in a timely and cost-effective manner.
- Applies technology and information management skills to retrieve data, communicate, support decision making, and submit information.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State nursing graduates may enter directly into either the healthcare management BTech, the interdisciplinary studies BTech, the nursing BS, or technology management BBA degree program.

### FACILITIES

Facilities used for clinical experiences may include: Cuba Memorial Hospital, Elderwood, Guthrie Corning Hospital, Highland Hospital, Highland Park Rehabilitation & Nursing Center, Jones Memorial Hospital, Noyes Memorial Hospital, Olean General Hospital, and Hornell Gardens, as well as other area facilities and community sites. Students may be placed in day, evening, and night clinical placement, weekend and weekday rotations, and may be responsible for their own transportation.

### PROFESSIONAL OPPORTUNITIES

- Ambulatory settings
- Health insurance providers
- Hospitals
- Long-term care facilities
- Schools
- Clinics
- Home health care
- Industry
- Physician offices
- Visiting nurses' agencies

### EMPLOYMENT STATISTICS

According to the most recent Employment and Continuing Education survey, of those 2017

graduates responding, 67 percent are employed in their major; 33 percent continued their education.

### STUDENT ACHIEVEMENT DATA

The NCLEX pass rate for the May 2017 graduates is 89 percent. The completion rate for the fall 2016 cohort is 67 percent.

### RELATED PROGRAMS

[Biological Science](#)  
[Diagnostic Medical Sonography](#)  
[Health Information Technology](#)  
[Health Science](#)  
[Human Services](#)  
[Liberal Arts & Sciences: Humanities](#)  
[Radiologic Technology](#)

### ENTRANCE REQUIREMENTS/ RECOMMENDATIONS

- Required: Algebra, Biology, and Chemistry
- Recommended: 980 combined reading/writing and math SAT score or composite ACT score of 19
- Required: It is essential that students are able to fully participate in clinical, caring for clients as assigned. The AAS is a rigorous program that will require a high degree of dedication. Established entrance requirements for nursing students include being able to:
  - Ambulate (walk) without assistive devices
  - Lift at least 35 pounds
  - Function in a safe manner, not placing clients in jeopardy
  - Maintain confidentiality in regard to professional practice
  - Appropriately utilize standard medical equipment
  - Interpret data from electronic devices in the health care setting for the purpose of client care
  - Maintain professional composure at all times
  - Communicate effectively, orally, and in writing

### LICENSURE

Graduates are eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state. Completion of the nursing program does not assure licensure as a registered professional nurse. Graduates of this nursing program meet the education requirements for admittance to the RN licensure exam; however, there is a requirement

that the applicant be of "good moral character" and a fee must be paid for the test and license. On the application for New York State licensure, the applicant is required to truthfully answer the following questions:

- Have you ever been found guilty after trial, or pleaded guilty, no contest, or nolo contendere to a crime (felony or misdemeanor) in any court?
- Are criminal charges pending against you in any court?
- Has any licensing or disciplinary authority refused to issue you a license or ever revoked, annulled, canceled, accepted surrender of, suspended, placed on probation, refused to renew a professional license or certificate held by you now or previously, or ever fined, censured, reprimanded, or otherwise disciplined you?
- Are charges pending against you in any jurisdiction for any sort of professional misconduct?
- Has any hospital or licensed facility restricted or terminated your professional training, employment of privileges or have you ever voluntarily or involuntarily resigned or withdrawn from such association to avoid imposition of such measures?
- If the answer to any of the questions is yes, the applicant must offer full explanation and establish his/her good moral character with the State Education Department, prior to earning a license.

**GENERAL NOTES:**

Min. of a "C" grade is required for Nursing I and II; min. of "C+" is required for Nursing III and IV.

BIOL 1404 Anatomy & Physiology I and BIOL 2504 Anatomy & Physiology II have to be completed with a "C+" and must be taken in the classroom with lab component at the same college.

CPR certification is required BEFORE taking Nursing I (NURS 1108) and must remain active throughout the nursing program.

**RN TRANSFER PROGRAM**

Alfred State students may transfer to most New York State baccalaureate programs consistent with NYS transfer agreement.

**REGISTERED NURSE PROGRAM NURSING - AAS DEGREE**

**TYPICAL TWO-YEAR PROGRAM**

First			
COMP	1503	Freshman Composition	3
BIOL	1404	Anatomy & Physiology I	4
NURS	1108	Nursing I	8
			15

Min. of "C+" is required in BIOL 1404 to progress  
Min. of a "C" grade is required for Nursing I

Second			
PSYC	1013	General Psychology	3
BIOL	2504	Anatomy & Physiology II	4
NURS	2208	Nursing II	8
			15

Min. of "C+" is required in BIOL 2504 to progress  
Min. of a "C" grade is required for Nursing II

Third			
PSYC	1023	Human Development	3
BIOL	4254	General Microbiology	4
NURS	3310	Nursing III	10
			17

BIOL 4254 is a prerequisite for NURS 4411. A min. grade of "C+" is required for BIOL 4254.  
Min. of a "C+" grade is required for Nursing III

Fourth			
LITR	xxx3	Literature	3
SOCI	1163	General Sociology	3
NURS	4410	Nursing IV	10
			16

Min. of a "C+" grade is required for Nursing IV

Be advised that a prior felony conviction may impede a student's ability to participate in a required professional practice experience.

**GRADUATION REQUIREMENTS**

- 36 credits of nursing (nursing I, II, III, IV)
- 12 credits of natural science (anatomy & physiology I and II, microbiology)
- Nine credits of social science (general psychology, general sociology, human development)
- Six credits of English/humanities (freshman composition, literature)

**NURSING****BS IN NURSING DEGREE - CODE #0291**

Linda Panter, Department Chair and Program Coordinator

Email Address: [panterlk@alfredstate.edu](mailto:panterlk@alfredstate.edu)

The demand for nurses with bachelor's degrees or higher has never been greater. In order to meet that need, Alfred State now offers a Bachelor of Science degree in nursing (BS in Nursing). This upper-division completion program will enhance your knowledge and skills foundation to function more autonomously and interdependently in diverse, complex, and dynamic health care environments.

The program will serve as a solid academic foundation for advanced study in nursing at the graduate level. The BS in Nursing program is offered in both an online format and on-campus format, providing flexibility and learning style choices for the adult student and working professional.

The graduate will be prepared to assume a leadership role in the health care delivery system using gained experience, research, and technology for evidence-based decision making. The baccalaureate graduate will be able to deliver, design, and coordinate care for a variety of individuals from diverse backgrounds to improve client outcomes.

The core foundation nursing courses are arranged to increase the student's knowledge base and skill level for the expanded role as a baccalaureate-prepared practitioner.

A professional capstone course (NURS 8013) is required as a culminating educational experience of the BS in Nursing program. To further advance the student's knowledge base and skill level, there are clinical components integrated within the program.

Meeting the needs of registered nurses seeking a bachelor's degree, the BS in Nursing program is offered primarily as an online format. This provides flexibility and learning style choices for the adult student and working professional.

A computer with Internet access, webcam, and Microsoft Office is required for the nursing program. Written work must be submitted in Word format.

Students are permitted to repeat an upper-level (5000 or higher) nursing core course one time

only. If a student is unsuccessful in the same nursing course twice, they will be unable to progress in the nursing program.

Bachelor-level students are expected to write at a BS level proficiency, using APA format. Writing proficiency, grammar, spelling, and APA formatting are all essential elements of every nursing course. Failure to write at a BS level may result in failure of nursing course work.

It is strongly recommended that clinical site affiliations are submitted at least two months prior to taking the course to ensure a clinical site agreement is in place. Clinical components will be required in the following courses:

- NURS 6003 - Nursing Leadership and Management
- NURS 6413 - Health Assessment and Promotion Across the Lifespan
- NURS 7004 - Population Focused Care in the Community

**ADVANTAGES**

The BS in Nursing program can be taken entirely online, allowing the student to progress at their own pace.

**STUDENT ACHIEVEMENT DATA**

The completion rate for the May 2017 graduates is 97 percent.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Synthesize theory and concepts from nursing, the liberal education domain, and other professions to expand knowledge.
- Create a plan to foster social justice through civic engagement.
- Apply principles of critical reflection, inquiry, and evidence-based practice to resolve nursing issues.
- Integrate leadership principles to design, manage, and coordinate care for individuals and populations in complex and changing health care delivery systems.
- Appraise issues related to health promotion and disease prevention to promote healthy life for individuals, families, groups, and populations across the life span, with attention to rural communities, maintenance, and end of life.
- Apply knowledge of informatics to foster inter- and intra-professional communication and collaboration in the delivery of safe, quality health care.

- Create a philosophy as a foundation for commitment to the profession, advancement, and lifelong learning.
- Use a variety of methods to communicate in written and oral form throughout the program.

- Interpret data from electronic devices in the health care setting for the purpose of client care
- Maintain professional composure at all times
- Communicate effectively, orally, and in writing

**PROFESSIONAL OPPORTUNITIES**

Leadership, management, research, education, and practice opportunities in a variety of health care settings and institutions throughout New York State and the US.

Students must have an active, unencumbered state license to progress into the second semester of BSN courses.

**EMPLOYMENT STATISTICS**

According to the most recent Employment and Continuing Education survey, of those 2017 graduates responding, 87 percent are employed in their major and 13 percent continued their education.

**ACCREDITATION/CERTIFICATION**

- Middle States Commission on Higher Education ([www.msche.org](http://www.msche.org)); 3624 Market Street, 2nd Floor West, Philadelphia, PA 19104; phone: (267) 284-5000.
- The baccalaureate degree program in nursing at The State University of New York College of Technology at Alfred is accredited by the Commission on Collegiate Nursing Education, 655 K Street, NW, Suite 750, Washington, DC 20001, 202-887-6791.
- The BS in Nursing program is registered by the NYS Education Department.

**ADMISSIONS REQUIREMENTS**

Admission to the BS in Nursing program requires graduation from an accredited or state-approved associate degree in nursing or certified diploma program in nursing, and plans to secure licensure as a registered professional nurse by completion of the first semester in the program. The minimum GPA requirement for admission is 2.00. The applicant's associate degree course work must include the following:

**ARTICULATION AGREEMENTS**

Articulation agreements are in progress between multiple regional community colleges and Alfred State for the BS in Nursing program.

- A minimum of 30 credits of nursing
- A minimum of 24 hours of liberal arts and sciences credit
- A minimum of three of 10 SUNY General Education categories
- Eight credits of anatomy and physiology (taken at the same school in a classroom setting)
- A lab course in microbiology
- Course work in communication, literature, psychology, and sociology

Required: It is essential that students are able to fully participate in clinical, caring for clients as assigned. Established entrance requirements for nursing students include being able to:

- Ambulate (walk) without assistive devices
- Lift at least 35 pounds
- Function in a safe manner, not placing clients in jeopardy
- Maintain confidentiality in regard to professional practice
- Appropriately utilize standard medical equipment

**NURSING - BS IN NURSING**

**TYPICAL TWO-YEAR UPPER-LEVEL COMPLETION PROGRAM**

<b>First</b>			
NURS	5023	Contemporary Nursing	3
NURS	8003	Informtics&Tech App in Hlthcare	3
MATH	1123	Statistics I	3
SPCH	1083	Effective Speaking	3
XXXX	xxx3	Liberal Arts Elective	3
XXXX	xxx3	Liberal Arts Elective	3
			18

<b>Second</b>			
NURS	5003	Ethical Issues in Health Care	3
NURS	7003	Nursing Research	3
BIOL	6403	Advanced Pathophysiology	3
HLTH	1313	Nutrition	3
XXXX	xxx3	Gen Ed Elective (FA, FL, WC or AH)	3
			15

<b>Third</b>			
NURS	6003	Nursing Leadership/ Management	3
NURS	6413	Health Assmt & Promotion Acros	3
NURS	xxx3	Nursing Elective - Upper	3
XXXX	xxx3	Liberal Arts Elective - Upper Level	3
XXXX	xxx3	Liberal Arts Elective - Upper Level	3
			15

RN license is required before proceeding into NURS 7004 Population Focused Care.

<b>Fourth</b>			
NURS	7004	Population Focused Care in Com	4
NURS	8013	Professional Capstone	3
ANTH	5113	Cross-Cultural Encounters	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
			16

Be advised that a prior felony conviction may impede a student's ability to participate in a required professional practice experience.

**GRADUATION REQUIREMENTS**

- 28 credits of upper-level nursing
- A minimum of 60 credits of liberal arts and sciences (inclusive of associate degree credits)
- A minimum of a "C" grade in upper-level nursing courses

**NURSING DUAL DEGREE PROGRAM  
DUAL DEGREE PROGRAM - CODE #2373**

Linda Panter, Department Chair and Program Coordinator

Email address: [panterlk@alfredstate.edu](mailto:panterlk@alfredstate.edu)

The demand for nurses with bachelor's degrees has never been greater. According to the Health and Medicine Division's (HMD) Future of Nursing: Leading Change, at a minimum, 80 percent of nurses should have at least a bachelor's degree by 2020. In order to meet the recommended need, Alfred State now offers a dual degree.

The new dual degree nursing program is a model to meet the high demand for bachelor's degrees in nursing, while allowing the student to earn both an associate and baccalaureate degree over four years. The graduates of the associate program are eligible to sit for the NCLEX-RN exam at the end of the third year. The nursing program will prepare you to become a registered professional nurse - one of the fastest-growing professions in the country. Courses are sequential and progress from simple to more complex situations, with specialized content in obstetrics, psychiatrics, and pediatrics integrated into the program. Clinical experience, an essential part of each nursing course, further enables you to gain technical competence to apply theoretical knowledge with practice.

**FACILITIES**

Facilities used for clinical experiences may include: Cuba Memorial Hospital, Elderwood, Guthrie Corning Hospital, Highland Hospital, Highland Park Rehabilitation & Nursing Center, Jones Memorial Hospital, Noyes Memorial Hospital, Olean General Hospital, and Hornell Gardens, as well as other area facilities and community sites. Students may be placed in day, evening, and night clinical placement, weekend and weekday rotations, and may be responsible for their own transportation.

The upper-division completion program will enhance your knowledge and skills foundation to function more autonomously and interdependently in diverse, complex, and dynamic health care environments. Moreover, the program will enhance your potential to expand your responsibilities in practice to become a leader, coordinator, and manager of care. Lastly, the program will serve as a solid academic foundation for advanced study in nursing at the graduate level. Some of the BSN core nursing courses will begin to be offered in both an on-campus

setting (for residential students), while online opportunities will be available for students not living on or near campus, providing flexibility and learning style choices for the adult student and working professional.

Clinical components will be required in the following courses:

- NURS 6003 - Nursing Leadership and Management
- NURS 6413 - Health Assessment and Promotion Across the Lifespan
- NURS 7004 - Population Focused Care in the Community

It is strongly recommended that clinical site affiliations are submitted at least two months prior to taking the course to ensure that a clinical site agreement is in place.

As a graduate of this program, you will be prepared to assume a leadership role in the health care delivery system using gained experience, research, and technology for evidence-based decision making. You will be equipped to deliver, lead, and coordinate care for a variety of individuals from diverse backgrounds to improve client outcomes.

**ADVANTAGES**

Both the AAS and BS in Nursing programs are registered by NYS Education Department. Graduates of the AAS degree are eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state.

Articulation agreements are in progress between multiple regional community colleges and Alfred State for the BSN program.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Acquires self-empowerment to provide holistic care to a diverse population while providing health education using learner-centered focused principles.
- Demonstrates accountability and effective interpersonal relationships with clients and members of the health care team, and works collaboratively in professional practice.
- Implements evidence-based practice to promote a caring environment that ensures client's safety, comfort, dignity, and self-esteem consistent with his/her developmental stage in an effective and efficient manner.
- Demonstrates responsibility for continued learning and further growth.

- Manages care for clients while evaluating own performance to improve professional practice, quality of care, and safety in a time and cost-effective manner.
- Applies technology and information management skills to retrieve data, communicate, support decision making, and submit information.
- Synthesize theory and concepts from nursing, the liberal education domain, and other professions to expand knowledge.
- Create a plan to foster social justice through civic engagement.
- Apply principles of critical reflection, inquiry, and evidence-based practice to resolve nursing issues.
- Integrate leadership principles to design, manage, and coordinate care for individuals and populations in complex and changing health care delivery systems.
- Appraise issues related to health promotion and disease prevention to promote healthy life for individuals, families, groups and populations across the lifespan, with attention to rural communities.
- Apply knowledge of informatics to foster inter- and intra-professional communication and collaboration in the delivery of safe, quality health care.
- Create a philosophy as a foundation for commitment to the profession, advancement and lifelong learning.
- Use a variety of methods to communicate in written and oral form throughout the program.

### **PROFESSIONAL OPPORTUNITIES**

- Hospitals
- Clinics
- Long-term care facilities
- Physician offices
- Industry
- Ambulatory settings
- Visiting nurses' agencies
- Schools
- Home health care
- Health insurance providers
- Leadership, management, research, education, and practice opportunities in a variety of health care settings and institutions throughout New York State and the US.

### **STUDENT ACHIEVEMENT DATA**

The NCLEX pass rate for the May 2017 graduates was 89 percent.

The dual degree program was officially registered with the NYS Department of Education as of the fall 2016 semester.

### **EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 50 percent are employed; 50 percent continued their education.

### **RELATED PROGRAMS**

[Biological Science](#)  
[Diagnostic Medical Sonography](#)  
[Health Information Technology](#)  
[Health Sciences](#)  
[Human Services](#)  
[Liberal Arts & Sciences: Humanities](#)  
[Radiologic Technology](#)

### **ENTRANCE REQUIREMENTS**

Required: Algebra, Biology, Chemistry

Combined reading/writing and math SAT score of 1080 or an ACT composite score of 21. Additional details and entrance requirements may be obtained directly from the Admissions Office.

Required: It is essential that students are able to fully participate in clinical, caring for clients as assigned. Established entrance requirements for nursing students include being able to:

- Ambulate (walk) without assistive devices
- Lift at least 35 pounds
- Function in a safe manner, not placing clients in jeopardy
- Maintain confidentiality in regard to professional practice
- Appropriately utilize standard medical equipment
- Interpret data from electronic devices in the health care setting for the purpose of client care
- Maintain professional composure at all times
- Communicate effectively, orally, and in writing

A computer with Internet access, webcam, and Microsoft Office is required for the nursing program. Written work must be submitted in Word format. Students are permitted to repeat an upper-level (5000 or higher) nursing core course one time only. If a student is unsuccessful in the same nursing course twice, they will be unable to progress in the nursing program.

Bachelor-level students are expected to write at a BS level proficiency, using APA format. Writing proficiency, grammar, spelling, and APA

formatting are all essential elements of every nursing course. Failure to write at a BS level may result in failure of nursing course work.

### **LICENSURE**

Upon completion of the AAS degree portion of the dual degree program, graduates are eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state. Completion of the AAS nursing program does not assure licensure as a registered professional nurse. Graduates of this portion of the dual degree nursing program meet the education requirements for admittance to the RN licensure exam; however, there is a requirement that the applicant be of "good moral character" and a fee must be paid for the test and license. On the application for New York State licensure, the applicant is required to truthfully answer the following questions:

- Have you ever been found guilty after trial, or pleaded guilty, no contest, or nolo contendere to a crime (felony or misdemeanor) in any court?
- Are criminal charges pending against you in any court?
- Has any licensing or disciplinary authority refused to issue you a license or ever revoked, annulled, canceled, accepted surrender of, suspended, placed on probation, refused to renew a professional license or certificate held by you now or previously, or ever fined, censured, reprimanded, or otherwise disciplined you?
- Are charges pending against you in any jurisdiction for any sort of professional misconduct?
- Has any hospital or licensed facility restricted or terminated your professional training, employment of privileges, or have you ever voluntarily or involuntarily resigned or withdrawn from such association to avoid imposition of such measures?

If the answer to any of the questions is yes, the applicant must offer full explanation and establish his/her good moral character with the State Education Department, prior to earning a license.

Be advised that a prior felony conviction may impede a student's ability to participate in a required professional practice experience.

### **ACCREDITATION/CERTIFICATION**

- The nursing programs at The State University of New York, College of Technology at Alfred are accredited by the Middle States

Commission on Higher Education [3624 Market Street, 2nd Floor West, Philadelphia, PA 19104; 267-284-5000].

- The AAS nursing program is accredited by the Accreditation Commission for Education in Nursing (ACEN), formerly the National League for Nursing Accreditation Commission (NLNAC) [3343 Peachtree Road, Suite 850, Atlanta, GA 30326]; phone 404-975-5000, [www.acenursing.org](http://www.acenursing.org)
- The baccalaureate degree program in nursing at The State University of New York College of Technology at Alfred is accredited by the Commission on Collegiate Nursing Education, 655 K Street NW, Suite 750, Washington, DC 20001, 202-887-6791.
- Both the AAS and BS in Nursing programs are registered by the NYS Education Department. Graduates of the AAS degree are eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state.

**DUAL DEGREE PROGRAM NURSING – AAS  
TO BS IN NURSING DEGREE**

TYPICAL FOUR-YEAR PROGRAM

**First**

BIOL	1404	Anatomy & Physiology I	4
COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
XXXX	xxx3	General Education Elective (Fine Arts, Foreign Language, Western Civilization or American History)	3
			16

**Second**

BIOL	2504	Anatomy & Physiology II	4
LITR	2603	Introduction to Literature	3
PSYC	1023	Human Development	3
HLTH	1313	Nutrition	3
MATH	1123	Statistics I	3
			16

**Third**

NURS	1108	Nursing I	8
BIOL	4254	General Microbiology	4
ANTH	5113	Cross-Cultural Encounters	3
			15

**Fourth**

NURS	2208	Nursing II	8
SPCH	1083	Effective Speaking	3
XXXX	xxx3	Liberal Arts Elective	3
			14

**Fifth**

NURS	3310	Nursing III	10
NURS	8003	Informtcs&Tech App in Hlthcare	3
NURS	5023	Contemporary Nursing	3
			16

**Sixth**

NURS	4410	Nursing IV	10
BIOL	6403	Advanced Pathophysiology	3

NURS	6413	Health Assmt & Promotion Across	3
			16

Student is eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state.

**Seventh**

NURS	5003	Ethical Issues in Health Care	3
NURS	6003	Nursing Leadership/Management	3
NURS	7003	Nursing Research	3
NURS	xxx3	Nursing Elective (Upper Level)	3
XXXX	xxx3	Liberal Arts Elective (Upper Level)	3
			15

**Eighth**

Evidence of RN Licensure required prior to progression into NURS 7004 Population Focused Care.

NURS	7004	Population Focused Care in Com	4
NURS	8013	Professional Capstone	3
XXXX	xxx3	Liberal Arts Elective (Upper Level)	3
XXXX	xxx3	Liberal Arts Elective (Upper Level)	3
XXXX	xxx3	Liberal Arts Elective (Upper Level)	3
			16

**GRADUATION REQUIREMENTS**

**AAS**

- 36 credits of nursing (nursing I, II, III, IV)
- 12 credits of natural science (anatomy & physiology I and II, microbiology)
- Nine credits of social science (general psychology, general sociology, human development)
- Six credits of English/humanities (freshman composition, literature)

**BS - Total dual degree credits**

- 64 credits of nursing
- 60 gen ed/liberal arts and sciences credits

## PART TIME NURSING BS

### BS IN NURSING DEGREE - CODE #836

Linda Panter, Department Chair and Program Coordinator

Email Address: [panterlk@alfredstate.edu](mailto:panterlk@alfredstate.edu)

The demand for nurses with bachelor's degrees or higher has never been greater. In order to meet that need, Alfred State now offers a Bachelor of Science degree in nursing (BS in Nursing). This upper-division completion program will enhance your knowledge and skills foundation to function more autonomously and interdependently in diverse, complex, and dynamic health care environments.

The program will serve as a solid academic foundation for advanced study in nursing at the graduate level. The BS in Nursing program is offered in both an online format and on-campus format, providing flexibility and learning style choices for the adult student and working professional.

The graduate will be prepared to assume a leadership role in the health care delivery system using gained experience, research, and technology for evidence-based decision making. The baccalaureate graduate will be able to deliver, design, and coordinate care for a variety of individuals from diverse backgrounds to improve client outcomes.

The core foundation nursing courses are arranged to increase the student's knowledge base and skill level for the expanded role as a baccalaureate-prepared practitioner.

A professional capstone course (NURS 8013) is required as a culminating educational experience of the BSN program. To further advance the student's knowledge base and skill level, there are clinical components integrated within the program.

Meeting the needs of registered nurses seeking a bachelor's degree, the BSN program is offered primarily as an online format. This provides flexibility and learning style choices for the adult student and working professional.

A computer with Internet access, webcam, and Microsoft Office is required for the nursing program. Written work must be submitted in Word format.

Students are permitted to repeat an upper-level (5000 or higher) nursing core course one time only. If a student is unsuccessful in the same

nursing course twice, they will be unable to progress in the nursing program.

Bachelor-level students are expected to write at a BS level proficiency, using APA format. Writing proficiency, grammar, spelling, and APA formatting are all essential elements of every nursing course. Failure to write at a BS level may result in failure of nursing course work.

Clinical components will be required in the following courses:

- NURS 6003 - Nursing Leadership and Management
- NURS 6413 - Health Assessment and Promotion Across the Lifespan
- NURS 7004 - Population Focused Care in the Community

It is strongly recommended that clinical site affiliations are submitted at least two months prior to taking the course to ensure a clinical site agreement is in place.

### ADVANTAGES

- The BS in Nursing program can be taken entirely online, allowing the student to progress at their own pace.

### PROGRAM STUDENT LEARNING OUTCOMES

- Synthesize theory and concepts from nursing, the liberal education domain, and other professions to expand knowledge.
- Create a plan to foster social justice through civic engagement.
- Apply principles of critical reflection, inquiry, and evidence-based practice to resolve nursing issues.
- Integrate leadership principles to design, manage, and coordinate care for individuals and populations in complex and changing health care delivery systems.
- Appraise issues related to health promotion and disease prevention to promote healthy life for individuals, families, groups, and populations across the life span, with attention to rural communities, maintenance, and end of life.
- Apply knowledge of informatics to foster inter- and intra-professional communication and collaboration in the delivery of safe, quality health care.
- Create a philosophy as a foundation for commitment to the profession, advancement, and lifelong learning.

- Use a variety of methods to communicate in written and oral form throughout the program.

### PROFESSIONAL OPPORTUNITIES

Leadership, management, research, education, and practice opportunities in a variety of health care settings and institutions throughout New York State and the US.

### ADMISSIONS REQUIREMENTS

Admission to the BS in Nursing program requires graduation from an accredited or state-approved associate degree in nursing or certified diploma program in nursing, and plans to secure licensure as a registered professional nurse by completion of the first semester in the program. The minimum GPA requirement for admission is 2.00. The applicant's associate degree course work must include the following:

- A minimum of 30 credits of nursing
- A minimum of 24 hours of liberal arts and sciences credit
- A minimum of three of 10 SUNY General Education categories
- Eight credits of anatomy and physiology (taken at the same school in a classroom setting)
- A lab course in microbiology
- Course work in communication, literature, psychology, and sociology

Required: It is essential that students are able to fully participate in clinical, caring for clients as assigned. Established entrance requirements for nursing students include being able to:

- Ambulate (walk) without assistive devices
- Lift at least 35 pounds
- Function in a safe manner, not placing clients in jeopardy
- Maintain confidentiality in regard to professional practice
- Appropriately utilize standard medical equipment
- Interpret data from electronic devices in the health care setting for the purpose of client care
- Maintain professional composure at all times
- Communicate effectively, orally, and in writing

Students must have an active, unencumbered state license to progress into the second semester of BS in Nursing courses.

#### First

NURS	5023	Contemporary Nursing	3
NURS	8003	Informtics&Tech App in Hlthcare	3
SPCH	1083	Effective Speaking	3
XXXX	xxx3	LAS Elective (any level)	3
			12

#### Second

XXXX	xxx3	Gen. Ed. Elective	3
HLTH	1313	Nutrition	3
MATH	1123	Statistics I	3
NURS	5003	Ethical Issues in Health Care	3
			12

#### Third

ANTH	5113	Cross-Cultural Encounters	3
NURS	7003	Nursing Research	3
XXXX	xxx3	LAS Upper Elective	3
			9

#### Fourth

BIOL	6403	Advanced Pathophysiology	3
NURS	6413	Health Assmt & Promotion Across	3
XXXX	xxx3	LAS Upper Elective	3
			9

#### Fifth

NURS	6003	Nursing Leadership/ Management	3
NURS	xxx3	Nursing Upper Elective	3
XXXX	xxx3	LAS Upper Elective	3
			9

#### Sixth

NURS	7004	Population Focused Care in Com	4
NURS	8013	Professional Capstone	3
XXXX	xxx3	LAS Upper Elective	3
			10

### GRADUATION REQUIREMENTS

- 28 credits of upper-level nursing

- A minimum of 60 credits of liberal arts and sciences (inclusive of associate degree credits)
- A minimum of a "C" grade in upper-level nursing courses

#### **ACCREDITATION/CERTIFICATION**

- Middle States Commission on Higher Education ([www.msche.org](http://www.msche.org)); 3624 Market Street, 2nd Floor West, Philadelphia, PA 19104; phone: 267-284-5000
- The baccalaureate degree in nursing at The State University of New York College of Technology at Alfred is accredited by the Commission on Collegiate Nursing Education, 655 K Street, NW, Suite 750, Washington, DC 20001, 202-887-6791.
- The BS in Nursing program is registered by the NYS Education Department.

#### **ARTICULATION AGREEMENTS**

Articulation agreements are in progress between multiple regional community colleges and Alfred State for the BSN program.

**PART TIME NURSING AAS****AAS DEGREE - CODE #536**

Linda Panter, Department Chair and Program Coordinator

Email address: [panterlk@alfredstate.edu](mailto:panterlk@alfredstate.edu)

The nursing AAS program will prepare you to become a registered professional nurse — one of the fastest-growing fields in the country. Courses are sequential and progress from simple to more complex situations, with specialized content in obstetrics, psychiatric, and pediatric nursing. Learning is enhanced through the use of skill practice for a hands-on approach to gain expertise. During the first year, there is a seven-hour per week clinical experience. During the second year, the clinical experience increases in time and complexity. Simulation is incorporated into the laboratory experience.

Clinical experience, an essential part of each nursing course, further enables students to gain technical competence to apply theoretical knowledge with practice. Clinical experiences are gained through a variety of health care facilities. There is no guarantee that the college will provide bus transportation to and from all clinical sites.

A laptop is required for the nursing program, as it will be needed for on-campus exams and other educational purposes. Microsoft Office is required; Internet access is required. In addition, a handheld pocket-sized electronic device is required (i.e., smart phone) for downloading program software. The device must have the capability to turn off both phone and camera. Further system requirements will be sent via a newsletter in early June to newly admitted, transfer, and continuing students.

All sciences (anatomy and physiology I and II, microbiology) must be passed with a minimum of "C+" in order to progress through the nursing program. Students must earn a "C" in Nursing I (NURS 1108) and Nursing II (NURS 2208) and a "C+" in Nursing III (NURS 3310) and Nursing IV (NURS 4410) to progress in the nursing program. Competency in medication clinical computation is required and is tested as part of the Nursing II (NURS 2208) and Nursing III (NURS 3310) courses.

Note: BIOL 1404 Anatomy & Physiology I and BIOL 2504 Anatomy & Physiology II have to be completed with a "C+" and must be taken in the classroom with lab component at the same college.

Specific policies related to progression in the nursing program and readmission to the nursing program are publicized to enrolled nursing students in the Nursing Student Handbook.

A zero-tolerance for incivility is in effect at Alfred State nursing. Furthermore, if a student's behavior compromises or threatens the health or safety of others, including clients, peers, faculty, and staff, the student may be denied enrollment or continuation in the program. A policy regarding chemical impairment is publicized to enrolled nursing students.

Background checks may be required by affiliating agencies. Background checks will be at the expense of the student.

Nursing students are required to provide annual documentation of an annual two-step PPD and a self-report health assessment. Hepatitis B vaccine, flu vaccine, and other requirements may be specified by affiliating agencies.

**ADVANTAGES**

- The program is accredited by the Accreditation Commission for Education in Nursing (ACEN) [3343 Peachtree Road, Suite 850, Atlanta, GA 30326] phone 404-975-5000, [www.acenursing.org](http://www.acenursing.org).
- The associate degree in nursing (AAS) is currently being offered in three different educational pathways:
  - The traditional two-year program
  - A three-year part-time program
  - Within a dual-degree format
- Graduates of the AAS degree may directly enroll in the RN-BSN program after filling out the "Joint Intent to Enroll" form.
- Graduates of the AAS degree are eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Acquires self-empowerment to provide holistic care to a diverse population while providing health education using learner-centered focused principles.
- Demonstrates accountability and effective interpersonal relationships with clients and members of the health care team, and works collaboratively in professional practice.

- Implements evidence-based practice to promote a caring environment that ensures client's safety, comfort, dignity, and self-esteem consistent with his/her developmental stage in an effective and efficient manner.
- Demonstrates responsibility for continued learning and further growth.
- Manages care for clients while evaluating own performance to improve professional practice, quality of care, and safety in a timely and cost-effective manner.
- Applies technology and information management skills to retrieve data, communicate, support decision making, and submit information.

### **DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State nursing graduates may enter directly into the healthcare management BTech, the interdisciplinary studies BTech, the nursing BS, or the technology management BBA degree program.

### **FACILITIES**

Facilities used for clinical experiences may include: Cuba Memorial Hospital, Elderwood, Guthrie Corning Hospital, Highland Hospital, Highland Park Rehabilitation & Nursing Center, Jones Memorial Hospital, Noyes Memorial Hospital, Olean General Hospital, and Hornell Gardens, as well as other area facilities and community sites. Students may be placed in day, evening, and night clinical placement, weekend and weekday rotations, and may be responsible for their own transportation.

### **PROFESSIONAL OPPORTUNITIES**

- Ambulatory settings
- Health insurance providers
- Hospitals
- Long-term care facilities
- Schools
- Clinics
- Home health care
- Industry
- Physician offices
- Visiting nurses' agencies

### **STUDENT ACHIEVEMENT DATA**

The NCLEX pass rate for the May 2017 graduates is 89 percent. The completion rate for the fall 2016 cohort is 67 percent.

### **RELATED PROGRAMS**

[Biological Science](#)  
[Diagnostic Medical Sonography](#)  
[Health Information Technology](#)  
[Health Science](#)  
[Human Services](#)  
[Liberal Arts & Sciences: Humanities](#)  
[Radiologic Technology](#)

### **ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

- Required: Algebra, Biology, and Chemistry
- Recommended: 980 combined reading/writing and math SAT score or composite ACT score of 19
- Required: It is essential that students are able to fully participate in clinical, caring for clients as assigned. The AAS is a rigorous program that will require a high degree of dedication. Established entrance requirements for nursing students include being able to:
  - Ambulate (walk) without assistive devices
  - Lift at least 35 pounds
  - Function in a safe manner, not placing clients in jeopardy
  - Maintain confidentiality in regard to professional practice
  - Appropriately utilize standard medical equipment
  - Interpret data from electronic devices in the health care setting for the purpose of client care
  - Maintain professional composure at all times
  - Communicate effectively, orally and in writing

### **LICENSURE**

Graduates are eligible to apply for licensure as a registered professional nurse (RN-NCLEX) in any state. Completion of the nursing program does not assure licensure as a registered professional nurse. Graduates of this nursing program meet the education requirements for admittance to the RN licensure exam; however, there is a requirement that the applicant be of "good moral character" and a fee must be paid for the test and license. On the application for New York State licensure, the applicant is required to truthfully answer the following questions:

- Have you ever been found guilty after trial, or pleaded guilty, no contest, or nolo contendere

to a crime (felony or misdemeanor) in any court?

- Are criminal charges pending against you in any court?
- Has any licensing or disciplinary authority refused to issue you a license or ever revoked, annulled, canceled, accepted surrender of, suspended, placed on probation, refused to renew a professional license or certificate held by you now or previously, or ever fined, censured, reprimanded, or otherwise disciplined you?
- Are charges pending against you in any jurisdiction for any sort of professional misconduct?
- Has any hospital or licensed facility restricted or terminated your professional training, employment of privileges or have you ever voluntarily or involuntarily resigned or withdrawn from such association to avoid imposition of such measures?
- If the answer to any of the questions is yes, the applicant must offer full explanation and establish his/her good moral character with the State Education Department, prior to earning a license.

#### GENERAL NOTES:

Min. of a "C" grade is required for Nursing I and II; min. of "C+" is required for Nursing III and IV.

BIOL 1404 Anatomy & Physiology I and BIOL 2504 Anatomy & Physiology II have to be completed with a "C+" and must be taken in the classroom with lab component at the same college.

CPR certification is required BEFORE taking Nursing I (NURS 1108) and must remain active throughout the nursing program.

#### RN TRANSFER PROGRAM

Alfred State students may transfer to most New York State baccalaureate programs consistent with NYS transfer agreement.

#### GRADUATION REQUIREMENTS

- 36 credits of nursing (nursing I, II, III, IV)
- 12 credits of natural science (anatomy & physiology I and II, microbiology)
- Nine credits of social science (general psychology, general sociology, human development)
- Six credits of English/humanities (freshman composition, literature)

#### REGISTERED NURSE PROGRAM NURSING - AAS DEGREE

##### TYPICAL TWO-YEAR PROGRAM

##### First

COMP	1503	Freshman Composition	3
BIOL	1404	Anatomy & Physiology I	4
PSYC	1013	General Psychology	3
			10

Min. of "C+" is required in BIOL 1404 to progress  
Min. of a "C" grade is required for Nursing I

##### Second

PSYC	1023	Human Development	3
BIOL	2504	Anatomy & Physiology II	4
LITR	XXX3	Literature Elective	3
			10

Min. of "C+" is required in BIOL 2504 to progress  
Min. of a "C" grade is required for Nursing II

##### Third

BIOL	4254	General Microbiology	4
NURS	1108	Nursing I	8
			12

BIOL 4254 is a prerequisite for NURS 4411. A min. grade of "C+" is required for BIOL 4254.  
Min. of a "C+" grade is required for Nursing III

##### Fourth

SOCI	1163	General Sociology	3
NURS	2208	Nursing II	8
			11

Min. of a "C+" grade is required for Nursing IV

##### Fifth

NURS	3310	Nursing III	10
			10

##### Sixth

NURS	4410	Nursing IV	10
			10

Min. of a "C+" grade is required for Nursing IV

**PRE-ENVIRONMENTAL SCIENCE AND FORESTRY**

**AA DEGREE - CODE #0645 (INDICATE P-ESF ON SPECIAL CAMPUS PROJECT LINE)**

Earl Packard, Program Coordinator  
 Email address: packared@alfredstate.edu

Environmental science and forestry is a diverse field requiring professionals of many specialties. That's why we've designed this program to prepare you to enter into several areas—from environmental science to paper science engineering to forestry and natural resource conservation.

**ADVANTAGES**

- This program prepares graduates for the Bachelor of Science degree program in environmental science and/or the associate degree in forestry and natural resource conservation from the SUNY College of Environmental Science and Forestry (ESF).
- After the first two years of study at Alfred State, transfers to ESF may apply to a variety of programs. These include: the biological sciences (botany and forestry pathology, entomology, zoology, wildlife biology, and pest management); chemistry (natural and synthetic polymers, biochemistry, and natural products, environmental); forest engineering; paper science engineering; wood products engineering; and forestry (resource management, forest resource science, management science, environmental education and communications, urban forestry, world forestry, and applied resource management). The program in landscape architecture leads to a baccalaureate degree after one additional year, a Bachelor of Landscape Architecture degree (BLA).
- A student taking the pre-ESF 1+1 ranger option, forest technology, natural resources conservation, or land surveying, completes one year of required liberal arts and sciences courses at Alfred State, and then spends the second year at the Wanakena Campus of ESF. Successful completion of this program leads to an AAS degree in forest technology.

**PROGRAM STUDENT LEARNING OUTCOMES**

- **MATHEMATICS:** Demonstrate competence in arithmetic, algebra, geometry, data analysis, and quantitative reasoning.
- **NATURAL SCIENCES:** Demonstrate understanding of the methods scientists use to explore natural phenomena, including

observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis.

- **COMMUNICATION & INFORMATION:** Employ proficient written and verbal communication skills, including the appropriate uses of technology.
- **REASONING:** Identify, analyze, and evaluate arguments as they occur in their own and others' work, and develop well-reasoned arguments.
- **INFORMATION MANAGEMENT:** Perform the basic operations of personal computer use; understand and use basic research techniques; and locate, evaluate, and synthesize information from a variety of sources.
- **TRANSFERABILITY:** Students will successfully transfer to a bachelor's or associate degree.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State pre-environmental science and forestry graduates may enter directly into the interdisciplinary studies BTech or technology management BBA degree program.

**CONTINUING EDUCATION OPPORTUNITIES**

Students in this program spend two years at Alfred State, and then generally transfer to the SUNY College of Environmental Science and Forestry (ESF) at Syracuse. Those students who complete, with a "C" or better, the lower-division sequences prescribed by ESF, gain admission to ESF 1 with full junior status. An articulation agreement is available with SUNY ESF at Syracuse.

**RELATED PROGRAMS**

- [Agricultural Business](#)
- [Agricultural Technology](#)
- [Biological Science](#)
- [Construction Management](#)
- [Environmental Technology](#)
- [Individual Studies](#)
- [Liberal Arts & Sciences: Humanities](#)
- [Liberal Arts & Sciences: Math & Science](#)
- [Liberal Arts & Sciences: Social Science](#)

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2; Biology; Chemistry or Physics

Recommended: Both Chemistry and Physics

**RADIOLOGIC TECHNOLOGY****AAS DEGREE - CODE #0628**

Bridgett Mayorga, Program Director  
Email Address: [mayorgbl@alfredstate.edu](mailto:mayorgbl@alfredstate.edu)

Radiologic technology is a two-year AAS degree program preparing qualified students to become health care professionals who administer ionizing radiation to produce photographic and digital anatomical images for diagnostic, therapeutic, and research applications. The program coordinates on-campus didactic and laboratory classes and clinical experiences at area hospitals to which students are responsible for their own transportation. Students must be able to demonstrate technical standards and pass clinical competencies as described by the American Registry of Radiologic Technologists (ARRT) and the Joint Review Committee on Education in Radiologic Technology (JRCERT), recognized by the United States Department of Education as the national accreditation agency of programs for radiographers. Upon graduation, students are prepared to take the American Registry Certification Exam administered by ARRT and be granted New York State licensure through the New York State Department of Health.

Clinical education is assigned to provide experiences consistent with the student's level of achievement in different hospital environments. Through clinical assignments, students have opportunities to work with the most modern and specialized equipment available and knowledgeable staff with a wealth of experience in imaging. Clinical education assignments include eight clinical hours per week during the second semester of study and 24 clinical hours per week the third and fourth semesters. In addition, a 12-week (40 hours per week) summer session is required and provides valuable experience in developing clinical competency skills. Clinical placements are in hospitals near Alfred State, so students completing the summer session will require housing close enough to their clinical placements to travel there on a daily basis. For those who need it, summer housing is available at Alfred State; contact the Office of Residential Services for details.

The program currently admits 20 students each year, with a fall semester start date only.

One student placement is reserved for an on-campus curriculum change, with the remaining 19 placements being filled by Admissions.

**ADVANTAGES**

- Prepares the student for the American Registry of Radiologic Technologists' certification examination and New York State licensure
- Energized laboratory on campus
- Low student-to-faculty ratio
- Major emphasis in the required courses is gaining proficiency in the technical skills necessary for radiologic technology
- Extensive clinical experience in area hospitals

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate appropriate technical and affective skills in the clinical setting.
- Apply appropriate radiation protection techniques.
- Demonstrate patient-centered, age-specific skills.
- Analyze images to determine diagnostic quality.
- Demonstrate proper work ethics.
- Examine the value of leadership, professional development, and growth.
- Demonstrate critical thinking and problem-solving skills in both the didactic and clinical setting.
- Apply written communication skills to the construction of documents of record that are established professional guidelines.
- Apply oral communication skills to the explanation of ideas and scientific terminology.
- Using technological resources effectively and appropriately, synthesize theory and concepts from the liberal education domain and other professions into radiologic technology.
- Explain cultural diversity and evaluate the role of cultural competency, values, and ethics in the patient care setting.

**MISSION STATEMENT**

The radiologic technology program embraces the mission and vision statements of Alfred State. It enables students to become competent, efficient, and caring radiographers. The program also has the primary responsibility to ensure that the student has acquired the positive characteristics of dedication to duty, quality care, teamwork, and high ethical standards as they relate to the patient, their families, physicians, and other health care providers. The program embraces the mission and core values of Alfred State in its education of students enrolled in the program.

**PROGRAM GOALS**

- To develop competent practitioners capable of functioning in the highly technical and dynamic field of radiologic technology.
- To develop competent practitioners who demonstrate proficiency in communication skills.
- To develop competent practitioners who demonstrate proficiency in critical thinking skills and problem-solving skills.
- To develop practitioners who model professionalism.

Year	Number of Students Beginning the Program	Number of Students Graduating From the Program	Percent Completion
2015*			
2016*			
2017	13	11	84.6
2018	20	16	
2019			
Five Year Average	0		

\*Transfer of sponsorship occurred Oct. 16, 2015. No graduates.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State radiologic technology graduates may enter directly into either the healthcare management BTech, the interdisciplinary studies BTech, or technology management BBA degree program.

**Transfer program effective data 5 year average:**

Exam - 93%  
 Program Completion - 93%  
 Job Placement - 90%

**ACCREDITATION/CERTIFICATION**

The radiologic technology program at Alfred State is fully accredited by JRCERT, the Joint Review Committee on Education in Radiologic Technology. JRCERT is the only agency recognized by the US Department of Education for accreditation of educational programs in radiologic technology.

**Job Placement Rate**

Year	Number of Students Actively Seeking Employment	Number of Students Employed Within 12 Months	Percentage
2015*	-		
2016*	-		
2017	-		
2018	11	11	100
2019			
Five Year Average	0		

\*Transfer of sponsorship occurred Oct. 16, 2015. No graduates.

**JRCERT**

20 N. Wacker Drive, Suite 2850  
 Chicago, IL, 60606-3182  
 Phone: 312-704-5300  
 Fax: 312-704-5304  
 Email: [mail@jrcert.org](mailto:mail@jrcert.org)  
<http://www.jrcert.org>

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**PROGRAM EFFECTIVENESS DATA**

**ARRT Examination Pass Rate**

Year	Number of Students Attempting Exam	Number of Students Passing Exam on First Attempt	Average
2015*	0		
2016*	0	0	0
2017	0	0	0
2018	11	9	82%
2019			
Five Year Average	0		

\*Transfer of sponsorship occurred Oct. 16, 2015. No graduates.

**ENTRANCE REQUIREMENTS/ RECOMMENDATIONS**

Applicants for the radiologic technology program must possess a recognized high school diploma or its equivalent. A standardized test (SAT or ACT) is not required but recommended. Specific high school course requirements and recommendations are:

Required: Algebra, Geometry, Algebra 2, Biology  
 Recommended: Chemistry and Physics

Applicants with previous college experience must submit an official college transcript, as their success at the college level will be an admissions consideration. Due to the technical and science

**Program Completion Rate**

rigor, entrance requirements are higher than those of the institution.

**TECHNICAL STANDARDS**

To participate in the program, the applicant must possess specific non-academic skills. The technical standards described below are consistent with the duties of an entry-level sonographer in a professional position and are required in order to provide adequate patient care and produce a diagnostic image.

The applicant should have the:

- Ability with reasonable accommodation, if necessary, to reach and position the patients on the exam table.
- Ability with reasonable accommodation, if necessary, to move, adjust, and manipulate equipment to perform imaging procedures.
- Ability to review and evaluate recorded images to determine the quality of the image with reasonable accommodation.
- Ability to communicate effectively with patients, doctors, and other personnel so that the patient is not placed in an “at-risk” situation.
- Ability to make proper decisions involving patient and co-worker safety.
- Ability with reasonable accommodation, if necessary, to hear sounds that are necessary to assess patient’s health status.

**FACILITIES**

The program is located in the newly renovated radiologic technology suite, which includes two lecture classrooms connected to a non-energized and an energized radiology laboratory. Clinical experience is at various local hospitals and clinic sites.

**CONTINUING EDUCATION OPPORTUNITIES**

The program allows graduates to transfer to a four-year program in radiologic science such as ultrasound, radiologic imaging, nuclear medicine, and radiation therapy.

**OCCUPATIONAL OPPORTUNITIES**

- Hospital Radiology Department staff technologist
- Advanced imaging modalities - CT, cardiovascular intervention, mammography
- Radiology education
- Radiology Department management
- Industry
- Private physician offices

**RADIOLOGIC TECHNOLOGY - AAS DEGREE**  
TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
RADT	1004	Fundamentals of Radiologic Sci	4
RADT	1003	Radiation Physics	3
COMP	1503	Freshman Composition	3
MATH	xxx3	College Algebra or higher	3
BIOL	1404	Anatomy & Physiology I	4
			17

<b>Second</b>			
RADT	2003	Radiobiological Protection	3
RADT	2013	Radiographic Exposure & Quality	3
RADT	2014	Radiographic Procedures I	4
RADT	2041	Radiology Clinical I	1
BIOL	2504	Anatomy & Physiology II	4
			15

<b>Summer</b>			
RADT	2044	Radiology Clinical II	4
			4

<b>Third</b>			
RADT	3023	Diagnostic Imaging I	3
RADT	3014	Radiographic Procedures II	4
RADT	3043	Radiology Clinical III	3
BIOL	4403	Pathophysiology	3
			13

<b>Fourth</b>			
RADT	4023	Diagnostic Imaging II	3
RADT	4003	Intro to Adv Diagnostic Imaging	3
RADT	4043	Radiology Clinical IV	3
RADT	4013	Prof Development in Imaging Sc	3
SPCH	1083	Effective Speaking	3
			15

Grade of “C+” or better required for all BIOL and RADT prefix courses.

Be advised that a prior felony conviction may impede a student's ability to participate in a required clinical experience.

### **GRADUATION REQUIREMENTS**

The AAS degree in radiologic technology has finely prescribed courses reflective of accreditation standards for students to be prepared for admission to the American Registry of Radiologic Technologists' Certification Examination and New York State licensure granted by the Department of Health. Specific graduation requirements are:

- 64 total semester credit hours
- Minimum of 20 credit hours of liberal arts and sciences from three of the 10 SUNY General Education categories
- 2.0 cumulative GPA and a grade of "C+" or better in the core science courses (RADT and BIOL prefixes)
- Approval of department faculty

**SPORT MANAGEMENT****AS DEGREE - CODE #1396**

John Lisec, Program Coordinator

Email address: [liseccs@alfredstate.edu](mailto:liseccs@alfredstate.edu)

The growing emphasis on athletics, coupled with the increasing amount of leisure time the public now enjoys, has made the world of sports one of the fastest-growing segments of American business. The sports industry requires a great variety of people with expertise in business. The goal of this program is to prepare you — using both hands-on and theory-based training — for a career in many areas of sport management and administration.

A laptop computer is required for students entering this degree program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**ADVANTAGES**

Students obtain a holistic and in-depth understanding in many areas, such as principles of facility management, the unique aspects of sports marketing, promotions, finance, sport law, media relations, ticket sales, and sponsorship.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Recognize the primary theories within the principle functional areas of business and sport management.
- Demonstrate professional business communication.
- Illustrate critical thinking and effective decision-making within the principle functional areas of sport management.
- Identify ethical issues within sport management

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State sport management graduates may enter directly into the business administration BBA, the interdisciplinary studies BTech, the sport management BBA, or the technology management BBA program.

**CONTINUING EDUCATION OPPORTUNITIES**

Students may transfer directly into our four-year sport management program, which results in a BBA degree.

**OCCUPATIONAL OPPORTUNITIES**

- Professional sports

- College sports
- Minor league sports
- Olympic organizations
- Recreational sport organizations
- Philanthropic sport organizations
- International sport organizations
- Ticket sales
- Sports marketing and promotions
- Sports sponsorship
- Media relations and sports broadcasting
- Sports law and sports agencies
- Facilities and event management

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent continued their education.

**RELATED PROGRAMS**

[Business Administration](#)

[Sport Management \(BBA\)](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry

Recommended: Algebra 2

**SPORT MANAGEMENT - AS DEGREE**

## TYPICAL FOUR-SEMESTER PROGRAM

<b>First</b>			
ACCT	1124	Financial Accounting	4
CISY	xxx3	Intro to Computers/ Info. Mgt.	3
COMP	1503	Freshman Composition	3
SPMG	1123	Intro to Sports Management	3
MATH	xxx3	Math Elective	3
			16
<b>Second</b>			
BUAD	2033	Business Communication	3
ACCT	2224	Managerial Accounting	4
SPMG	2003	Sport in Society	3
MKTG	2073	Principles of Marketing	3
LITR	xxx3	Literature Elective	3
			16
<b>Third</b>			
BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
ECON	1013	Principles of Macroeconomics	3
BUAD	3043	Business Law I	3
SPMG	3001	Field Experience I	1
	xxx3	Gen Ed/ LAS Elective	3
			16
<b>Fourth</b>			
ECON	2023	Principles of Microeconomics	3
SPMG	4001	Field Experience II	1
SPMG	4123	Sport Facility Management	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/ LAS Elective	3
	xxx3	Gen Ed/ LAS Elective	3
			16

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

64 semester hours with a 2.0 cumulative index.

**SPORT MANAGEMENT****BBA DEGREE - CODE #0182**

Robert Romano, Program Coordinator  
 Email address: [romanorj@alfredstate.edu](mailto:romanorj@alfredstate.edu)

The growing emphasis on athletics, coupled with the increasing amount of leisure time the public now enjoys, has made the world of sports one of the fastest-growing segments of American business. The sports industry requires a great variety of people with expertise in business. The goal of this program is to prepare you — using both hands-on and theory-based training — for a career in the areas of administration, marketing, sales, fund development, finance, event promotion and management, communication, and facility management.

A laptop computer is required for students entering this degree program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**ADVANTAGES**

- BBA students will complete a specialization in marketing and event promotion, field experiences during the second year, and a full-semester internship in the senior year.
- Students will study the core body of knowledge in sport management, a sport management specialization, and the required SUNY general education component.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate technical competence in domestic and global environments within the principle functional areas of business.
- Analyze sport-related business problems and devise solutions using critical thinking, decision-making processes, and decision-support tools.
- Formulate solutions to current sport issues by incorporating the major functional areas of business and sport management.
- Incorporate software, technology, and information systems into sport-related operations.
- Examine comprehensive sport management issues and communicate findings and solutions.
- Examine the sport management environment in relation to the current financial, legal, economic, and social environments.
- Analyze the role of ethics, industry-based organizational regulations, and legalities in sport management processes.

**OCCUPATIONAL OPPORTUNITIES**

- Professional sports
- College sports
- Minor league sports
- Olympic organizations
- Recreational sport organizations
- Philanthropic sport organizations
- International sport organizations
- Ticket sales
- Sports marketing and promotions
- Sports sponsorships
- Media relations and sports broadcasting
- Sports law and sports agencies
- Facilities and event management

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 88 percent are employed; 12 percent continued their education.

**RELATED PROGRAMS**

[Business Administration](#) (BBA)  
[Business Administration](#) (AS)  
[Financial Planning](#) (BBA)  
[Marketing](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 980 or a composite ACT score of 19.

Recommended: Algebra 2

**SPORT MANAGEMENT - BBA DEGREE**

## TYPICAL EIGHT-SEMESTER PROGRAM

**First**

ACCT	1124	Financial Accounting	4
CISY	xxx3	Computer Elective	3
COMP	1503	Freshman Composition	3
SPMG	1123	Intro to Sports Management	3
MATH	xxx3	Math Elective	3
			16

**Second**

BUAD	2033	Business Communication	3
ACCT	2224	Managerial Accounting	4
SPMG	2003	Sport in Society	3
	OR		
SPMG	2013	Sport in Europe Soc Study Abrod	3
MKTG	2073	Principles of Marketing	3
LITR	xxx3	Literature Elective	3
			16

**Third**

BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
BUAD	3043	Business Law I	3
SPMG	3001	Field Experience I	1
ECON	1013	Principles of Macroeconomics	3
	xxx3	Gen Ed/LAS Elective	3
			16

**Fourth**

ECON	2023	Principles of Microeconomics	3
SPMG	4123	Sport Facility Management	3
SPMG	4001	Field Experience II	1
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/LAS Elective	3
			16

**Fifth**

COMP	5703	Technical Writing II	3
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SPMG	6003	Sport Marketing	3
SPMG	5003	Sport Business and Finance	3
SPMG	5013	Sport Communication	3
	xxx3	Open Elective - Upper	3
			15

**Sixth**

SPMG	6033	Sponsorship	3
SPMG	6013	Licensing and Endorsements	3
SPMG	6023	Event Promotion and Sales	3
SPMG	6043	Sport Law	3
MKTG	1063	Principles of Sales	3
			15

**Seventh**

SPMG	7001	Pre-Internship Seminar	1
SPMG	7023	Strategic Mgmt in Sport Organz	3
SPMG	7013	Sport Management Capstone	3
	xxx3	Open Elective	3
	xxx3	Open Elective	3
	xxx3	Open Elective	3
			16

**Eighth**

SPMG	8112	Internship	12
			12

Be advised that a prior felony conviction may impede a student's ability to participate in an internship and complete the program.

**GRADUATION REQUIREMENTS**

- 122 credit hours.
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State
- Cumulative overall index of at least 2.0

## SURVEYING AND GEOMATICS ENGINEERING TECHNOLOGY

### BS DEGREE - CODE #1046

Kera Mariotti, Program Coordinator

Email address: [mariotka@alfredstate.edu](mailto:mariotka@alfredstate.edu)

Governmental agencies, private industries, and individuals all benefit from the surveying and mapping of our natural resources and planning of transportation systems, recreational facilities, new cities, and land subdivisions. Using advanced surveying equipment such as the electronic total stations to measure angles and distances, the modern surveyor has learned to increase his/her productivity and measurement accuracy. Particularly exciting about the future of the surveying profession are the emerging technologies of Global Positioning Systems (GPS), Geographic Information Systems (GIS), and Land Information Systems (LIS).

This program will provide you with a thorough understanding of the basic sciences of mathematics and physics, as well as applied subjects such as graphics and computer-aided drafting and design. The knowledge obtained from these basic courses is applied to a well-rounded study of modern surveying theory and practice.

A laptop computer is required for students entering the surveying engineering technology programs. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

### ADVANTAGES

- The student constantly applies theoretical knowledge in meaningful and comprehensive laboratory sessions. Graduates are educated in a two-fold sense, both theoretically and practically.
- Both the surveying engineering technology (AAS) and the surveying and geomatics engineering technology (BS) programs are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

### PROGRAM STUDENT LEARNING OUTCOMES

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly defined engineering technology activities.
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application

of principles and applied procedures or methodologies.

- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
- An ability to design systems, components, or processes for broadly defined engineering technology problems appropriate to program educational objectives.
- An ability to function effectively as a member or leader on a technical team.
- An ability to identify, analyze, and solve broadly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and nontechnical environments, and an ability to identify and use appropriate technical literature.
- An understanding of the need for engagement and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A knowledge of the impact of engineering technology solutions in a societal and global context.
- A commitment to quality, timeliness, and continuous improvement.

### PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The surveying engineering technology program produces graduates who:

- Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession.
- Have an understanding of and are able to implement basic field and office survey procedures.
- Are capable of performing elementary research.
- Are competent in surveying techniques.
- Recognize the need for engagement, and an ability to engage in continued formal education, as well as lifelong learning.
- Will be capable of sitting successfully for the Land Surveyor Examination.
- Have the skills to perform a land title survey in all its complexity.

- Will be capable of employing state-of-the-art surveying techniques in leading a survey crew to the accomplishment of its goal.

**OCCUPATIONAL OPPORTUNITIES**

- Land surveyor (after successfully meeting state requirements)
- Surveying engineering technician
- Project surveyor
- Party chief
- Mapping technologist
- GPS surveyor

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 100 percent are employed.

**ENROLLMENT AND GRADUATION DATA**

	Enrollment (based on Fall census)
2017	27
2016	30
2015	34
	Degrees Awarded
2016-2017	6
2015-2016	7
2014-2015	7

**RELATED PROGRAMS**

[Building Trades: Building Construction](#)  
[Construction Management](#)

**CERTIFICATION OR LICENSURE**

Both the surveying engineering technology (AAS) and the surveying and geomatics engineering technology (BS) are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>. Accreditation means that the graduates from the AAS program will receive two years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State.

Graduates of the BS program will receive four years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State. The BS graduates are eligible to take the first part of the NCEES licensing exam for land surveying in their senior year, eighth semester, if within 20 semester credit hours of graduation.

Additionally, graduates of the BS program will receive six years of credit toward the statutory time for licensure as a professional engineer in New York State. The BS graduates are eligible to

take the first part of the NCEES licensing exam for professional engineer in the fall following their graduation.

**ARTICULATION AGREEMENTS**

Alfred State accepts students from other two-year institutions as juniors into the BS surveying engineering technology program with appropriate course work and grade point averages.

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

**TECHNICAL STANDARDS**

Students in the surveying and geomatics program must meet the following:

- Students must have the ability to complete field work over natural terrain.
- Students must have the ability to use standard software of the profession.

**GRADUATION REQUIREMENTS**

2.0 cumulative grade point average and department requirement of 2.0 grade point average in major courses (CIVL).

**SURVEYING AND GEOMATICS ENGINEERING TECHNOLOGY**

**SURVEYING AND GEOMATICS ENGINEERING TECHNOLOGY - BS DEGREE**

**TYPICAL EIGHT-SEMESTER PROGRAM**

**First**

COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1182	Civil Technology Graphics	2
MATH	1033	College Algebra	3
			13

**Second**

CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	xxx3	Literature Elective	3
			14

**Third**

CIVL	3204	Legal Asp & Prac of Land Surv	4
CIVL	3214	Geodesy	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen Ed Elective	3
			17

**Fourth**

CIVL	4204	Subdivision Theory & Appli	4
CIVL	4214	Surveying Practicum	4
CIVL	4243	Surveying Computer Appli	3
CIVL	4273	Photogrammetry & Image Interpr	3
	xxx3	Gen Ed Elective	3
			17

**Fifth**

CHEM	5013	Applied Chemical Principles	3
MATH	2074	Technical Calculus II	4
CIVL	5114	Land Surveying OR	4
CIVL	7114	Geographic Information Systems	4

XXXX	xxx4	Gen Ed Elective	3
BUAD	3043	Business Law I	3
			17

**Sixth**

SPCH	1083	Effective Speaking	3
CIVL	6104	Anlys & Adjmnts of Surv Mrmnts	4
CISY	1113	Computer Programming I	3
	xxx4	Gen Ed (Upper) (MATH 6114 recommended)	4
	xxx3	Technical or Business Elective (Upper)	3
			17

**Seventh**

MATH	7123	Statistics for Engr Tech & Sci	3
MATH	7113	Economic Analy for Engr Tech	3
CIVL	8104	Global Positioning Systems	4
CIVL	7114	Geographic Information Systems OR	4
CIVL	5114	Land Surveying	4
CIVL	7001	Sr Seminar & Project Design I	1
COMP	5703	Technical Writing II	3
			18

**Eighth**

PHYS	8013	Modern Physics	3
CIVL	8003	Sr Seminar & Project Design 2	3
XXXX	xxx3	Technical Elective (Upper)	3
XXXX	xxx3	Gen Ed Elective	3
			12

Must meet seven of the 10 General Education areas.

Be advised that a prior felony conviction may impede a student's ability to receive licensure.

**SURVEYING ENGINEERING TECHNOLOGY****AAS DEGREE - CODE #1039**

Kera Mariotti, Program Coordinator

Email address: [mariotka@alfredstate.edu](mailto:mariotka@alfredstate.edu)

Governmental agencies, private industries, and individuals all benefit from the surveying and mapping of our natural resources and planning of transportation systems, recreational facilities, new cities, and land subdivisions. Using advanced surveying equipment such as the electronic total stations to measure angles and distances, the modern surveyor has learned to increase his/her productivity and measurement accuracy. Particularly exciting about the future of the surveying profession are the emerging technologies of Global Positioning Systems (GPS), Geographic Information Systems (GIS), and Land Information Systems (LIS).

This program will provide you with a thorough understanding of the basic sciences of mathematics and physics, as well as applied subjects such as graphics and computer-aided drafting and design. The knowledge obtained from these basic courses is applied to a well-rounded study of modern surveying theory and practice.

A laptop computer is required for students entering the surveying engineering technology program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**ADVANTAGES**

- The student constantly applies theoretical knowledge in meaningful and comprehensive laboratory sessions. Graduates are educated in a two-fold sense, both theoretically and practically.
- Both the surveying engineering technology (AAS) and the surveying and geomatics engineering technology (BS) programs are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

**PROGRAM STUDENT LEARNING OUTCOMES**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.

- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- An ability to function effectively as a member of a technical team.
- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and nontechnical environments, and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity.
- A commitment to quality, timeliness, and continuous improvement.

**PROGRAM EDUCATIONAL OBJECTIVES**

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The surveying engineering technology program produces graduates who:

- Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession.
- Have an understanding of and are able to implement basic field and office survey procedures.
- Are capable of performing elementary research.
- Are competent in surveying techniques.
- Recognize the need for engagement and an ability to engage in continued formal education, as well as lifelong learning.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State surveying engineering technology AAS graduates may enter directly into the surveying and geomatics engineering technology BS, the construction supervision BTech, the technology management BBA, or the interdisciplinary studies BTech degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Land surveyor (after successfully meeting state requirements)

- Field technician
  - Drafter - computer
  - Office assistant
  - Instrument person
  - Mapping technologist
- Students must have the ability to complete field work over natural terrain.
  - Students must have the ability to use standard software of the profession.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 60 percent are employed; 40 percent continued their education.

**ENROLLMENT AND GRADUATION DATA**

	Enrollment (based on Fall census)
2017	9
2016	10
2015	8
	Degrees Awarded
2016-2017	12
2015-2016	6
2014-2015	7

**RELATED PROGRAMS**

[Building Trades: Building Construction](#)  
[Construction Engineering Technology](#)  
[Construction Management](#)  
[Construction Supervision](#)

**CERTIFICATION OR LICENSURE**

The surveying engineering technology (AAS) program is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>. Accreditation means that the graduates from the AAS program will receive two years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State.

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2

Recommended: Physics

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Freshman composition and introduction to literature must be taken.

**TECHNICAL STANDARDS**

Students in the surveying engineering technology program must meet the following:

**SURVEYING ENGINEERING TECHNOLOGY - AAS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1182	Civil Technology Graphics	2
MATH	1033	College Algebra	3
	xxx3	Technical or Science Elective	3
			16
<b>Second</b>			
CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	xxx3	Literature Elective	3
			14
<b>Third</b>			
CIVL	3204	Legal Asp & Prac of Land Surv	4
CIVL	3214	Geodesy	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen. Education Elective	3
			17
<b>Fourth</b>			
CIVL	4204	Subdivision Theory & Appli	4
CIVL	4214	Surveying Practicum	4
CIVL	4243	Surveying Computer Appli	3
CIVL	4273	Photogrammetry & Image Interpr	3
	xxx3	Gen. Education Elective	3
			17

Be advised that a prior felony conviction may impede a student's ability to receive licensure.

**GRADUATION REQUIREMENTS**

2.0 cumulative grade point average and department requirement of 2.0 grade point average in major courses (CIVL).

Students receiving credit for math classes shown in the typical four-semester program may require additional LAS electives to complete degree requirements.

**TECHNOLOGY MANAGEMENT****BBA DEGREE - CODE #1318**

Dr. Karla Back, Program Coordinator

Email address: [backkm@alfredstate.edu](mailto:backkm@alfredstate.edu)

The technology management BBA is designed to allow you to take your professional/technical degree to new heights. We've constructed this program to provide you with the hands-on business, administrative, and technological course work necessary to advance into management and supervisory positions in your field. That means you'll have the skills necessary to run a small-to-medium-sized business, manage a department or a division, or own and manage your own business.

In order to earn the bachelor's degree, students entering the program with an earned associate degree must complete all specified upper-level requirements for the bachelor's degree, fulfill all required prerequisites for upper-level courses, and earn a minimum of 60 credits beyond the associate degree. The student will take courses that will result in the fulfillment of seven SUNY General Education course areas.

**ADVANTAGES**

- The technology management degree is designed to allow a student who has earned an associate degree (AAS, AA, AS, or AOS) in a technical or professional area (or at least 60 credits toward such a degree) to complete a bachelor's degree through this upper-division program.
- The program includes an internship in the final semester of the senior year.
- Graduates of this program are eligible for employment in many industries that require both a technical and business background.
- The college offers technology management courses online, making it possible for students who transfer in credit or attend other colleges to earn their degree from Alfred State in technology management. This approach is perfect for working professionals, adult and returning students, or anyone who needs high flexibility in their academic schedule.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate technical competence in domestic and global environments within the principle functional areas of business.
- Analyze business problems and devise solutions using critical thinking, decision-making processes, and decision-support tools.

- Formulate a strategic plan using effective teamwork while integrating the major functional areas of business and innovation.
- Demonstrate and incorporate software, technology, and information systems into business operations.
- Examine comprehensive business issues and communicate findings and solutions.
- Examine the technology-related business environment in relation to the current financial, legal, economic, and social environments.
- Analyze the role of ethics, government regulations, and legalities in management processes.
- Compare and contrast technology-related organizations in a global and diverse community.

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 79 percent are employed; 21 percent continued their education.

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

- Required: Successful completion of an associate degree (AAS, AA, AS, or AOS) with a minimum cumulative GPA of 2.0.
- Students must either possess an AAS, AA, AS, or AOS degree or have amassed at least 60 credit hours, including courses that fulfill five different general education fields.
- Students entering the program should have a minimum cumulative GPA of 2.0.
- A laptop computer will be required of all students. See laptop specifications at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).
- Students entering this major from an AOS degree program are accepted in the program as ASOP students until completion of the five bridge courses (15 credits) in Liberal Arts and Sciences/General Education. The Business Department chair will review all college credits earned and will recommend specific courses to complete this bridge. The chair can be contacted at [greendr@alfredstate.edu](mailto:greendr@alfredstate.edu) or 607-587-3421.

**TECHNOLOGY MANAGEMENT - BBA DEGREE**

**TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM**

<b>Fifth</b>			
BUAD	5003	Management Communications	3
ACCT	5043	Accounting Perspectives	3
TMGT	7153	Principles of Management	3
BUAD	4403	Business Computer Applications	3
OR			
CISY	xxx3	Computer Elective	
ECON	xxx3	Macro or Microeconomics	
	xxx3	Gen Ed or Business Elective	18
<b>Sixth</b>			
BUAD	7023	Legal Environment of Business	3
BUAD	6403	Proj Mgmt for Busi Profssnls	3
BUAD	6113	Strategic & Creative Prob Solv	3
COMP	5703	Technical Writing II	3
MKTG	6003	Strategic Marketing	3
	xxx3	General Ed/LAS or Business Elective	3
			18
<b>Seventh</b>			
BUAD	5043	Business Ethics	3
BUAD	5023	Human Resource Management	3
TMGT	7003	Managing Tech & Innovation Cap	3
SPCH	1083	Effective Speaking	3
OR			
	xxx3	Genl Ed Elective	3
	xxx3	Gen Ed/LAS or Business Elective	3
			15
<b>Eighth</b>			
TMGT	8112	Tech Management Internship	12

	OR	
xxx3	Professional Elective - Upper	3
xxx3	Professional Elective - Upper	3
xxx3	Professional Elective - Upper	3
xxx3	Professional Elective - Upper	3
		12

Students seeking permission to take four upper-level classes in lieu of completing an internship must submit an appeal form with their justification, along with a faculty member's statement of support. Internship appeal forms should be emailed or hand-delivered to the department secretary and will be reviewed by Business Department faculty. Appeal forms are due no later than Oct. 15 for the fall semester and March 15 for the spring semester.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship.

**GRADUATION REQUIREMENTS**

- Total minimum credit hours for graduation is 120.
- A cumulative overall index of at least 2.0 is required in order to graduate.
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State.

**ADDITIONAL PROGRAM INFORMATION**

- Seven of the 10 SUNY-approved General Education categories must be fulfilled.
- 12 credit hours may be transferred back within a seven-year period if you leave Alfred State prior to completing your degree.

**UNDECLARED MAJOR**

**CODE # 0000**

Earl Packard, Program Coordinator  
 Email address: [packared@alfredstate.edu](mailto:packared@alfredstate.edu)

If you're undecided about your career goals, the undeclared major may be right for you. This program gives you the opportunity to try different options and select a course of study the first two semesters that fits your interests and background. Along the way, you can take advantage of extensive support services, including career planning and counseling, offered by caring faculty and staff throughout the program.

Since the primary goal of the program is to explore various academic areas of interest, individual course schedules will vary. The suggested program includes both a component of core courses (English, math, social science) and a component of electives in support of your interests.

Students enrolled in the undeclared major must transfer to a degree-granting program within two semesters. Depending on the choice of major, students may enter the workforce upon graduation, or continue their education in a bachelor's degree program.

**ENTRANCE REQUIREMENTS/  
 RECOMMENDATIONS**

Required: Algebra

Recommended: Biology

**UNDECLARED MAJOR**

**TYPICAL TWO-SEMESTER PROGRAM**

<b>First</b>			
XXXX	xxx1	Career Exploration and Planning*	1
XXXX	xxx3	Freshman Composition**	3
XXXX	xxx3	Math	3
XXXX	xxx3	Social Science Elective	3
XXXX	xxxx	Exploratory Elective	3-4
XXXX	xxxx	Exploratory Elective	3-4
			16-18
<b>Second</b>			
XXXX	xxx3	Introduction to Literature	3
XXXX	xxxx	Math or Science	3-4
XXXX	xxxx	Exploratory Elective	3-4
XXXX	xxxx	Exploratory Elective	3-4
XXXX	xxxx	Exploratory Elective	3-4
			15-19

\*ASOP students will also take other ASDC courses

\*\*Some students may be required to also take COMP 1403 based on placement

**VETERINARY TECHNOLOGY****AAS DEGREE - CODE #0521**

Douglas Pierson, Program Coordinator  
Email address: [piersodj@alfredstate.edu](mailto:piersodj@alfredstate.edu)

Licensed veterinary technicians are indispensable members of the veterinary medical team, capable of providing everything from life support and surgical assistance to physical therapy and nutritional management. Our program is designed to provide you with extensive training in the theory and principles, reinforced with the hands-on technical, animal, and laboratory experience needed to prepare you for this exciting field.

**ADVANTAGES**

- This program has full accreditation status as granted by the American Veterinary Medical Association, Committee on Veterinary Technician Education and Activities, Education and Research Division, [1931 N. Meacham Road, Suite 100, Schaumburg, IL 60173-4360; 847-925-8070].
- Students are eligible to sit for the Veterinary Technician National Exam (VTNE), the state licensing exam for veterinary technicians. Demand for licensed veterinary technicians is strong across the country.

**VETERINARY TECHNICIAN NATIONAL EXAM PERFORMANCE**

- The VTNE pass rate for the Alfred State veterinary technology program students for July 1, 2014 to June 30, 2017 is 85.2 percent
- Number of First Time Candidates Eligible: 81
- Number of First Time Candidates taking the VTNE: 81

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate a working knowledge of anatomy and physiology of domestic, laboratory, and exotic animal species encountered in veterinary medicine.
- Successfully perform animal care and husbandry, restraint, imaging, surgical, anesthetic and laboratory specimen analyses commonly encountered in veterinary clinical practice.
- Demonstrate written and oral communication skills appropriate for animal health care professionals.
- Critically think and reason when calculating and administering therapeutic agents used in veterinary medicine.

- Follow and uphold applicable laws and the veterinary technology profession's ethical codes to provide high-quality patient care.
- Troubleshoot and safely utilize all instruments and equipment commonly utilized in veterinary clinical practice.
- Display the knowledge and skills necessary to successfully pass the Veterinary Technician National Exam.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS**

Alfred State veterinary technology graduates may enter directly into either the interdisciplinary studies BTech or the technology management BBA degree program.

**EXPENSES**

Rabies vaccinations are strongly encouraged for all veterinary technology students. The vaccination series cost varies between \$600 and \$800. Textbooks are the primary annual expense, with the cost averaging \$1,000 to \$1,200 each year.

**CONTINUING EDUCATION OPPORTUNITIES**

The Alfred State veterinary technology program has an established transfer agreement with Cornell University's College of Agriculture. Students have also successfully transferred into the Purdue University BS veterinary technology program.

**OCCUPATIONAL OPPORTUNITIES**

- Veterinary hospitals (small animal, large animal, mixed animal, and exotic animal)
- Biomedical research institutions
- Zoological parks
- Educational institutions
- Specialized dairy calf or cow management
- Colleges of Veterinary Medicine

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 81 percent are employed; 19 percent continued their education.

**RELATED PROGRAMS**

[Agricultural Technology](#)  
[Nursing](#)

**ENTRANCE REQUIREMENTS/  
RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2, Biology, Chemistry

Recommended: Physics

**CERTIFICATION OR LICENSURE**

The veterinary technology program at Alfred State is a two-year educational course of study leading to an Associate in Applied Science degree and students are eligible to sit for the Veterinary Technology National Exam (VTNE). The VTNE is the New York State licensing exam for veterinary technicians. The demand for graduate-licensed or license-eligible veterinary technicians is strong across the country.

**Veterinary Technology - AAS Degree**

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**TYPICAL FOUR-SEMESTER PROGRAM**

**First**

VETS	1203	Intro to Veterinary Technology	3
VETS	1214	Anatmy & Physlgy of Animals I	4
CHEM	1114	General Chemistry I	4
ANSC	1204	Introduction to Animal Science	4
MATH	xxx3	Math Elective (Students planning to transfer to four year program must take MATH 1033)	3
COMP	1503	Freshman Composition	3
			18

**Second**

VETS	2014	Anatmy & Physlgy of Animals II	4
VETS	3013	Animal Parasitology	3
VETS	3003	Animal Health Care	3
VETS	3204	Farm Animal Management	4
CHEM	1114	General Chemistry I	4
MATH	xxx3	Math Elective	3
COMP	1503	Freshman Composition	3
			17

**Summer Session**

Preceptorship Work Experience

**Third**

VETS	2104	Pathophysiology of An Disease	4
VETS	3023	Radiography	3
VETS	4103	Laboratory Animal and Exotics	3
VETS	3022	Intro to Anesthesia & Surg Nsg	2
BIOL	5254	Principles of Microbiology	4
XXXX	xxx3	GenEd Elective	3

**Fourth**

VETS	3004	Anesthesia & Surgical Nursing	4
VETS	3024	Clinical Laboratory Techniques	4
VETS	4302	Pharmacology for the Vet Techn	2
BUAD	3153	Fundamentals of Management	3
XXXX	xxxx	Technical Elective	2-3
			15-16

**Technical Electives**

CHEM	2124	General Chemistry II	4
BIOL	6534	Genetics	4
ANSC	3223	Dairy Calf Management	3
ANSC	3203	Dairy Cattle Production I	3
ANSC	3204	Dairy Cattle Production III	4
ANSC	2102	Dairy Cattle Reprod & A.I Tech	2
ANSC	3003	Feeds and Nutrition	3
ANSC	3103	Livestock Mgmt & Production	3
BIOL	1104	General Biology I	4
BIOL	2204	General Biology II	4
MATH	1054	Precalculus	4
MATH	1084	Calculus I	4
MATH	1123	Statistics I	3
VETS	4202	Small Animal Nutrition	2
VETS	4002	Advanced Animal Health Care	2

**Preceptorship\*** of 240 hours. Either during summer or semester break after successful completion of second semester course requirements. Preceptorship hours can be fulfilled through part-time employment at an appropriate facility.

In order to progress in the veterinary technology program, students must earn a "C" or better in each required veterinary technology course, with the exception of VETS 1214 Animal Anatomy and Physiology I which requires a minimum of a "D" to pass the course. Students receiving an "F" in two or more required courses will be required to change majors.

ASOP students must earn a "C" or better in the Introduction to Veterinary Technology course and earn a "B" or better in the Domestic Animal Anatomy and Physiology course in order to progress to the next level of core veterinary courses.

Be advised that a prior felony conviction may impede a student's ability to participate in an internship.

### **GRADUATION REQUIREMENTS\***

Students must:

- Successfully complete the prescribed sequence of courses.
- Achieve a minimum of 2.0 in their core courses and a minimum of 2.0 overall.
- Be recommended by the department faculty.
- Completed 240-hour preceptorship.

\*The 240-hour preceptorship is a program requirement and a graduation requirement.

**WELDING TECHNOLOGY**

**AOS DEGREE - CODE #0666**

Bradley Thompson, Interim Department Chair  
 Email address: [thompsbj@alfredstate.edu](mailto:thompsbj@alfredstate.edu)

This high-tech program focuses on welding processes performed in all positions on both plate and pipe. You will learn proper safety methods, required math, related skills, layout and fit up, welding codes and standards, welding inspection, testing, and drawing/welding symbol interpretation.

The first year, students will complete AWS Level I standards for an entry-level welder. The second year will take students toward AWS Level II - advanced welder and expert welder. Additional techniques such as high-pressure vessel and high-pressure pipe will be taught, as well as other advanced welding techniques.

**ADVANTAGES**

The welding technology program is taught according to the standards set by the American Welders Society (AWS) and is AWS-certified.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate mathematical operations using accepted mathematical applications.
- Practice shop safety and welding safety.
- Perform straight, bevel and cuts using manual and automatic oxyfuel and plasma equipment.
- Set up and operate constant current welding equipment.
- Set up and operate constant voltage welding equipment.
- Perform fillet and groove welds in all positions on carbon steel plate.
- Perform fillet and groove welds on pipe in all positions.
- Identify and describe the heat relationship to the grain structure of various metals.
- Maintain and develop testing and inspection records.
- Demonstrate layout and fabrication skills resulting from the previous materials used in program.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State welding technology graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA

program in two additional years; others may complete the BBA program in two-and-one-half years.

**OCCUPATIONAL OPPORTUNITIES**

- Industrial welder
- Steel construction
- Equipment repair
- Self-employment
- Fabrication welder
- Structural welder

**EMPLOYMENT STATISTICS**

Employment and continuing education rate of 100 percent – 81 percent are employed; 19 percent continued their education.

**RELATED PROGRAMS**

- [Autobody Repair](#)
- [Heating, Ventilation, and Air Conditioning](#)
- [Machine Tool Technology](#)
- [Mechanical Engineering Technology](#)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: In-depth knowledge of basic math skills.

**TECHNICAL STANDARDS**

Applicants for the welding program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person 6 to 10 feet away in a shop environment.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
- Must be able to visually read an LCD display on welding equipment.
- Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
- Good eyesight is recommended.
- Must be able to stand for long periods of time.

**WELDING - AOS DEGREE**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
WELD	1724	Gas Wldng/ Cutng & Plasma Cutng	4
WELD	1733	Weld Mtlrgy,Blpnt Rdng,Insp,Ts	3
WELD	1104	Intro Shielded Metal Arc Weldg	4
WELD	1204	SMAW I,Carbon Arc Cutting&Goug	4
WELD	1723	Welders Calculations I	3
			18

<b>Second</b>			
WELD	2715	Shld Mtl Arc & Fix Crd Arc Wld	5
WELD	2725	Gas Metal Arc Welding	5
WELD	2735	Gas Tungsten Arc Welding I	5
WELD	2733	Tolerancing & Working Drawings	3
			18

<b>Third</b>			
WELD	3005	SMAW II, Codes/ Insp Basic CNC	5
WELD	3015	GMAW II, FCAW II	5
WELD	3025	GTAW II Comp of Materials	5
WELD	3813	Metlgy, Code, Cert, Insp & Tst	3
			18

<b>Fourth</b>			
WELD	4425	GMAW III, FCAW III, SAW	5
WELD	4435	SMAW III, GTAW III	5
WELD	4445	Welding Fabrication	5
WELD	4013	Senior Project	3
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average. Students are required to earn a grade of "C" or higher in WELD 1723 to

be eligible for graduation. (Articulation is available in this area.)

A "C" or higher must also be received for WELD 4013.

## Course Descriptions

### ACCT - ACCOUNTING

#### ACCT - 1124 Financial Accounting, 4.00 Credits

Level: Lower

Topics included in this course are the fundamental principles of accounting, the accounting cycle and basic procedures, statement of financial position, determination and reporting of periodic earnings, cash and accrual basis of accounting; accounting for a merchandising firm and inventory valuation, principles of internal control. Other topics will include accounting for the acquisition, depreciation, and disposition of property, plant, and equipment.

#### ACCT - 2224 Managerial Accounting, 4.00 Credits

Prerequisite(s): ACCT 1124 with D or better

Level: Lower

Topics include: current liabilities; nature of corporations and related equity and income reporting issues; long-term liabilities; statement of cash flows; analysis of financial statements; nature and behavior of manufacturing costs; introduction to cost accounting concepts and systems; cost-volume-profit relationships; introduction to budgetary planning.

#### ACCT - 3423 Intermediate Accounting I, 3.00 Credits

Prerequisite(s): ACCT 2224 with C or better

Level: Lower

This course provides an in-depth examination of accounting theory in the treatment of assets, liabilities and stockholder's equity. The accounting cycle is reviewed in detail and a full examination and analysis of financial statement development and usage is undertaken. Continual focus will be on fundamental accounting concepts and principles with special emphasis on the contemporary theory and practice that applies to accounting statements. Topics covered include the foundations of accounting, the accounting process, accounting statements, and asset structure of the balance sheet.

#### ACCT - 3453 Tax Accounting I, 3.00 Credits

Prerequisite(s): ACCT 1124 with D or better

Level: Lower

Applied Learning-Practicum

This course will focus on fundamental income tax concepts related to understanding and completing individual federal income tax returns. Manual and computerized income tax preparation will be required. Coverage will include: income tax formula for individuals, gross income and exclusions, taxation of self-employed individuals, retirement plans, rental properties, standard vs itemized deductions, tax credits and additional taxes, depreciation, and capital gains/losses. Students will apply course theory to a contemporary tax software product through the computerized completion of progressively challenging federal tax returns.

#### ACCT - 4523 Intermediate Accounting II, 3.00 Credits

Prerequisite(s): ACCT 3423 with D or better

Level: Lower

Continuation of ACCT 3423. Topics include: long-term investments, fixed assets, current and long-term debt, and stockholder's equity. Special problems of income determination, statement of cash flow and statements from incomplete records.

#### ACCT - 4663 Acctng Sys & Computer Appl, 3.00 Credits

Prerequisite(s): ACCT 2224 with D or better

Level: Lower

Applied Learning-Practicum

This course will cover all aspects of accounting for payroll, including the requirements of the Fair Labor Standards Act, calculations relative to gross pay, statutory and non-statutory deductions, employee and employer payroll taxes, general journal entry work relative to payroll, the payroll register, and the individual earnings record. Determining the amount and timing of payroll deposits, and preparing required quarterly and annual reports will also be covered. The course will then apply payroll and other accounting activities to a contemporary accounting software product covering the following topics: creating a new business, establishing a chart of accounts, recording typical business transactions, creating related financial statements, closing the books and employing available business research and evaluation techniques.

#### ACCT - 5043 Accounting Perspectives, 3.00 Credits

Level: Upper

This course is intended to examine and apply the basic assumptions, principles, concepts, and methods commonly used in the accounting profession. The course is intended more for the users of accounting information than for the originators of it. Debits and credits are virtually ignored. Thus, the student examines the "whys" of accounting to a much greater degree than the "hows". The course is split into two major components. The first half examines financial accounting topics, using the financial statements as a basis of study. The second half of the course examines managerial accounting topics, with the primary emphasis being the fulfillment of the needs of management. The course would be particularly beneficial to individuals in engineering technology, management, marketing, and vocational technology curriculums where the graduate will not actually be expected to do accounting, per se, but will be expected to effectively comprehend accounting reports and statements as well as communicate with accounting personnel.

### AGEC - AGRICULTURE ECON/BUS

#### AGEC - 3213 Farm & Rural Business Mgmt I, 3.00 Credits

Level: Lower

This is the first in a two semester series where both the production management and financial management of a rural or farm business are studied. The course emphasizes the skills needed to manage a profitable business including analysis of financial statements, record keeping, key production management areas, leadership and decision-making skills. Aspects and functions of management as well as types of decision making will be introduced. Acquiring and organizing financial management information will be the primary emphasis of the course including constructing and analyzing financial statements and pertinent production information. The importance of good management (financial and otherwise) to the success of the business will be stressed.

**AGEC - 4303 Farm & Rural Business Mgmt II, 3.00 Credits**

Prerequisite(s): AGEN 3213 with D or better  
Level: Lower

This is the second in a two semester series where both the production management and financial management of a rural or farm business are studied. The course emphasizes the skills needed to manage a profitable business including analysis of financial statements, record keeping, key production management areas, leadership and decision-making skills. The relationship between good management performance and financial success will be stressed. The primary emphasis of the course is improving management skills and acquiring resources for management. This includes farm business organization and transfer, as well as the acquisition of resources for rural enterprises. The importance of risk management and enterprise analysis to the success of the business will be stressed.

**AGPS - AGRONOMY/PLANT SCIENCE**

**AGPS - 1103 Soils, 3.00 Credits**

Level: Lower  
Course Fee \$14.00, Gen Ed - Natural Sciences, Liberal Arts and Science  
Fundamental principles of soil science are studied in an effort to relate soil characteristics to plant growth; plant growth as influenced by soil factors. Soil parent materials and soil formation, physical, chemical and colloidal properties of soils and soil surveys, life in the soil, soil water, and water conservation, plant nutrition, lime and liming practices are all covered in this course. Laboratory components complements lecture material.

**AGPS - 1104 Soils, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum  
Fundamental principles of soil science are studied in an effort to relate soil characteristics to plant growth. Soil parent materials and soil formation, physical, chemical and colloidal properties of soils and soil surveys, life in the soil, soil water, and water conservation, plant nutrition, lime and liming practices are all covered in this course. Laboratory components complement lecture material.

**AGPS - 2113 Field & Forage Crops, 3.00 Credits**

Level: Lower  
Applied Learning-Field Study  
The course will combine fundamental knowledge of field crop physiology with practical training in crop production. Crop interactions with other organisms, both beneficial and deleterious (pests), will be studied. Management of synthetic inputs will be included in this course. Emphasis will be given to cultural (or biological) crop management strategies that reduce input costs in crop production and reduce fluctuations (risks) to crop performance and the environment.

**AGPS - 3004 Soil Fertility, 4.00 Credits**

Prerequisite(s): AGPS 1103 with D or better  
Level: Lower  
Applied Learning-Field Study, Course Fee \$14.00  
This course is a comprehensive study of the management of plant nutrients in agronomic systems for economic response and environmental protection. Topics include diagnosis of nutrient availability and prediction of crop response to fertilizers, interactions between nutrient response and chemical, physical, and biological properties of soils.

**AGPS - 5003 Integrated Pest Management, 3.00 Credits**

Prerequisite(s): AGPS 1104 with D or better or BIOL 1304 with D or better or BIOL 1104 with D or better or BIOL 2803 with D or better

Level: Upper  
Applied Learning-Practicum, Course Fee \$14.00  
This course is an introduction to Integrated Pest Management (IPM); the study of plant pest protection on an interdisciplinary basis. Ecological, biological and economic principles will be emphasized from each of the participating disciplines: entomology, nematology, plant pathology, weed science, engineering, and economics. Reasons and principles for establishing pest management programs will be discussed. Computer-aided instruction is used in portions of the course. The objectives of the course are to: introduce the student to the principles of pest management; develop an understanding of vocabulary and basic concepts; develop an understanding of tactics associated with pest management; and create an awareness of interdisciplinary complexity and necessity of systems approach in IPM.

**AGPS - 5103 Sustainable Vegetb Prodtm Tech, 3.00 Credits**

Prerequisite(s): AGPS 1103 with D or better  
Level: Upper  
Applied Learning-Entrepreneur, Course Fee \$14.00  
Students will learn how to site, design, and manage a small-scale vegetable farm using organic and/or other sustainable practices that support niche-marketing strategies. Particular attention will be paid to crop sequences appropriate for the climates and soils of the Northeastern United States. Students will gain hands-on experience in building soil quality, starting transplants, identifying and managing pests, harvesting and marketing of vegetables. Later in the course students will work with sustainable winter-production technologies, including passively-heated high tunnels and intensive vegetable production using hydroponic techniques. Civic Engagement Intensive (CEI) sections exist.

**AGPS - 5113 Sustainable Fruit Production, 3.00 Credits**

Prerequisite(s): AGPS 1104 with D or better or AGRI 2013 with D or better or BIOL 1304 with D or better or BIOL 1104 with D or better  
Level: Upper  
Students will learn how to site, design and manage a small-scale fruit farm using organic and/or other sustainable practices. Particular attention will be paid to fruit crops that are suitable for the climate and soils of New York. Proper orchard site selection, soil preparation, how to choose appropriate varieties, proper planting, fertilizing and watering, pruning, grafting, common pests and diseases, harvesting and storage of fruit are all topics that will be discussed. Laboratories will include instruction on techniques important to fruit production, such as grafting, pruning and pest control. Field trips to area fruit growers will be used to supplement student learning.

**AGRI - AGRICULTURE**

**AGRI - 1001 Farm Practicum I, 1.00 Credit**

Level: Lower  
Applied Learning-Practicum  
Students enrolled in this course will work 45 hours at the college farm. They will learn practical farming skills such as mixing feed, spreading manure, milking cows, and other daily duties as assigned by the farm manager. Students will keep a daily journal of their experiences and develop proficiency in basic farm skills. Formal management and team building training will also be incorporated into the experience.

**AGRI - 1002 Introduction to Agriculture, 2.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The introduction to Agriculture will give students the opportunity to learn and practice a variety of agriculture skills. Skills will include care and management of dairy animals, machinery and equipment safety and operation, crop, fruit and vegetable production.

**AGRI - 2001 Farm Practicum II, 1.00 Credit**

Level: Lower  
 Applied Learning-Practicum  
 Students enrolled in this course will work 45 hours at the college farm. They will learn practical farming skills such as mixing feed, spreading manure, milking cows, and other daily duties as assigned by the farm manager. Students will keep a daily journal of their experiences and develop proficiency in basic farm skills. Formal management and team building training will also be incorporated into the experience.

**AGRI - 2013 Organic & Sustainable Ag Tech, 3.00 Credits**

Level: Lower  
 This course will introduce students to environmentally sound methods of agriculture. The goal is to help students understand methods and technologies for using water, soil, pasture and manure resources in ways that create a biologically healthy landscape for animals and for society. This course will introduce students to a more natural approach to animal agriculture as well as to explore the synergy of an integrated organic cropping and animal agriculture system.

**AGRI - 2102 Ag Equipment Operation & Repair, 2.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is an introduction to the operation and basic maintenance of agricultural equipment.

**AGRI - 3001 Farm Practicum III, 1.00 Credit**

Level: Lower  
 Applied Learning-Practicum  
 Students enrolled in this course will work 45 hours at the college farm. They will learn practical farming skills such as mixing feed, spreading manure, milking cows, and other daily duties as assigned by the farm manager. Students will keep a daily journal of their experiences and develop proficiency in basic farm skills. Formal management and team building training will also be incorporated into the experience.

**AGRI - 3351 Live Animal Evaluation, 1.00 Credit**

Level: Lower  
 Applied Learning-Practicum  
 The efficiency of animal husbandry depends on the ability of an individual to evaluate, judge and select animals based on their productive and reproductive abilities. Communication, both oral and written, makes the judges reasons much more effective.

**AGRI - 4001 Farm Practicum IV, 1.00 Credit**

Level: Lower  
 Applied Learning-Practicum  
 Students enrolled in this course will work 45 hours at the college farm. They will learn practical farming skills such as mixing feed, spreading manure, milking cows, and other daily duties as assigned by the farm manager. Students will keep a daily journal of their experiences and develop proficiency in basic farm skills. Formal management and team building training will also be incorporated into the experience.

**AGRI - 4002 Senior Seminar/Capstone Proj, 2.00 Credits**

Level: Lower  
 This course enables the student to develop career professionalism, job finding techniques and the personal and social skills necessary for success in the world of work. A job search is organized, resumes prepared with cover letters, and practice interviews are conducted. Many types of jobs are studied using successful graduates. Professional and personal goals are discussed.

**AGRI - 4103 Constructn Technqs for Agrict, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed for students planning for careers requiring general knowledge and basic skills in agricultural building construction and maintenance. The course content consists of proper and safe hand tool and power tool utilization. Safe utilization of these tools in lab will be a hands-on experience. Various building materials will be explained and demonstrated throughout this course. Construction techniques and methods will be presented in lecture and performed in each lab.

**AGRI - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 Students must have permission of their advisor and the department chairperson before enrollment. An outline of the study must be submitted before enrollment. Directed study provides an opportunity to continue study in an area of special interest. Study may be carried out within any curriculum in the department in which the student is enrolled.

**AGRI - 6103 Precision Agriculture, 3.00 Credits**

Level: Upper  
 This course covers the acquisition and analysis of geographically referenced data for the management of crop production systems. Topics include: mapping, map projections, implementation of global positioning systems, data formats, geographic information systems, grid sampling, soil fertility and physical properties, yield monitoring, variable-rate application, and economics.

**ANSC - ANIMAL HUSBANDRY/SCIENCE**

**ANSC - 1204 Introduction to Animal Science, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$33.00, Liberal Arts and Science  
 This course provides a survey of the Dairy Cattle and Livestock industry, including beef, sheep, swine, and horses. Breeding and feeding systems, disease control measures, housing and basic management practices. The selection of animals for production, market, and breeding. Characteristics of the major breeds, their economic importance and marketing trends of their products will be covered.

**ANSC - 2102 Dairy Cattle Reprod & A.I Tech, 2.00 Credits**

Prerequisite(s): ANSC 1204 with D+ or better or VETS 3204 with C or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$14.00  
 This course will provide the student with a basic understanding of reproduction and artificial insemination (A.I.) techniques in dairy cattle. The student will gain an understanding of the anatomy of the bovine reproductive tract through examination and palpation of both slaughterhouse specimens and live animal palpations. The student will learn to read sire summaries, use linear scoring, apply recordkeeping approaches and analysis of herd reproductive performance. Common reproductive diseases will be discussed as well as the latest information on heat detection and synchronization programs. The labs and two required field trips provide individual student A.I. training and practice sessions needed for the National Association of Animal Breeders (NAAB) certification.

**ANSC - 2114 Dom Animal Anat & Phys, 4.00 Credits**

Level: Lower  
 Applied Learning-Other, Course Fee \$14.00, Liberal Arts and Science  
 This course is a systems approach to the study of anatomy and physiology of common domestic animals, emphasizing Ruminant, Equine, Swine, Canine and Feline as the animal models. The on-line course materials will provide the student with a complete overview of how each body system functions in the maintenance of a normal healthy animal. The on-line course materials will be reinforced in the laboratory where skeletons, models and prosected specimen will allow the student to gain applied perspectives of the gross anatomy and normal physiology. Histologic slides, kodachromes, radiographs and live animals will also be used to enhance student understanding. Computer simulated dissection materials will also be used to provide the opportunity for the students to refine their understanding of the required information.

**ANSC - 3003 Feeds and Nutrition, 3.00 Credits**

Level: Lower  
 This course provides the student with an understanding of animal nutrition. Students will learn feeding farm animals for growth, production, and profit, nutrient content and physiological value of feeds; nutrient requirements of farm livestock; physiology of digestion and developing and evaluating rations.

**ANSC - 3013 Animal Disease Control, 3.00 Credits**

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better  
 Level: Lower  
 Fundamental information on the nature of disease and its control and prevention are studied. Students are introduced to the causes, symptoms, prevention and treatment of common diseases as well as to the life cycles, damage, diagnosis, control and treatment of various internal and external parasites.

**ANSC - 3103 Livestock Mgmt & Production, 3.00 Credits**

Level: Lower  
 The course introduces the student to the management and production of assorted species of livestock. Breeds of sheep, beef, and swine will be studied as well as the skills in selecting and judging these species. Feeding and management of each of these species, as well as housing and equipment requirements for animals in specific types of operations will be examined. Students will be introduced to diseases and parasites that may be encountered when managing a species-specific livestock operation. Students will also gain insight into different types of marketing used in livestock production.

**ANSC - 3202 Dairy Management Analysis, 2.00 Credits**

Prerequisite(s): ANSC 3203 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 Dairy Management Analysis is an overview of specific subject matter which influences dairy cattle production units today. Subject matter includes dairy records analysis, fresh cow management, heifer and calf management, housing and ventilation, economics, profitability and employee management. Participation in the Northeast Dairy Challenge interscholastic competition or an assigned farm assessment is required.

**ANSC - 3203 Dairy Cattle Production I, 3.00 Credits**

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better  
 Level: Lower  
 Applied Learning-Field Study  
 Dairy Cattle Production I is an introduction to specific subject matter which influences cattle production units today. Subject matter includes: on-farm disease control and biosecurity, calf and heifer management, milk letdown and physiology of lactation, udder health, basic herdsman skills and introduction to Dairy Comp 305 record keeping software.

**ANSC - 3204 Dairy Cattle Production III, 4.00 Credits**

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better  
 Level: Lower  
 Applied Learning-Field Study  
 Dairy Cattle Production III focuses on dairy farm management analysis to troubleshoot and prioritize production and profitability opportunities. The course includes: developing on-farm observation skills, production records analysis using Dairy Comp 305, monitoring cow and rumen health, nutrition and feeding management and employee management.

**ANSC - 3223 Dairy Calf Management, 3.00 Credits**

Prerequisite(s): ANSC 2114 with D or better or ANSC 1204 with D or better  
 Level: Lower  
 Applied Learning-Field Study  
 This course will provide the student with a basic understanding of the nutritional, environmental and health challenges a calf must go through from birth to yearling stage. Lab sessions will focus on mastering basic calf care skills. Field trips will be incorporated into the laboratories to expose students to different management approaches including custom calf raisers, and large and small herd replacement enterprises. Students will spend two hours per week practicing calf care procedures.

**ANTH - ANTHROPOLOGY**

**ANTH - 1013 Cultural Anthropology, 3.00 Credits**

Level: Lower  
 Gen Ed - Other World Civ, Gen Ed - Social Sciences, Liberal Arts and Science  
 This course promotes understanding of the world's cultures by providing an introduction to cultural anthropology and the study of contemporary cultures worldwide, with an emphasis on non-western cultures. This course will introduce the student to anthropological methods, theories and concepts. It is a broad survey of a variety of belief systems, social and family structures, and different ways anthropologists understand individuals and cultures. Case studies are selected for specific ethnographic focus, through which to explore different approaches to life. The experiences of cross-cultural encounters are examined. After completion of this class the student should be able to define basic anthropological concepts, understand theories of cultural anthropology and critically reflect on personal assumptions you may have about human beings and cultural.

**ANTH - 1113 Anthropology of Europe, 3.00 Credits**

Level: Lower  
 Liberal Arts and Science  
 This course will examine diversity in contemporary Europe as the continent struggles to find a collective identity in an evolving global environment. Students will explore the development of the European Union and cultural issues relating to gender, migration, religion, nationalism, crime, and social innovation. Specific attention will be paid to foods associated with different European cultures and to issues related to food allocation.

**ANTH - 5113 Cross-Cultural Encounters, 3.00 Credits**

Level: Upper  
 Gen Ed - Other World Civ, Liberal Arts and Science  
 This course develops a framework for cross-cultural literacy - understanding different cultural contexts and the dynamics of cross-cultural communication. Attention is paid to the challenges that might be encountered in multi-cultural environments and how they might be resolved. Leading social, economic, and political institutions of several specific cultures will be examined. The course is writing-intensive and a project is required.

**ANTH - 5223 Archaeology - Cities of Fire, 3.00 Credits**

Level: Upper  
 Gen Ed - Social Sciences, Liberal Arts and Science  
 The discovery of the buried city of Pompeii in the 18th century gave birth to the modern science of archaeology, and at the same time added greatly to our understanding of Roman civilization. "Cities of Fire" is offered to students enrolled in the study abroad program in Sorrento, Italy, and takes advantage of the unique cultural heritage of Campania (the region surrounding the Gulf of Naples). The course is a survey of the techniques of archaeology, the vulcanism of the region, and the history and culture of the Roman civilization in Campania. Field lectures at sites including Pompeii, Herculaneum, Baia, Cuma, Puteoli, Mt. Vesuvius and Napoli enrich classroom presentations, and provide a first-hand experience of the ancient cultures of Greece and Rome. Students investigate specific aspects of Roman architecture, city planning, and culture, and present their findings in research reports during field visits.

**ANTH - 5333 Medical Anthropology, 3.00 Credits**

Level: Upper  
 Gen Ed - Other World Civ, Liberal Arts and Science  
 This course will introduce students to the diversity in health seeking practices and beliefs across the globe. Students will learn how to analyze medical practice, including biomedicine, as a cultural institution. We will explore how culture shapes our perceptions of what it means to be sick or healthy. This course will provide a context for understanding the way in which culture plays an integral role in understanding, maintaining and restoring health. We will also examine how social structures and cultural misunderstandings can lead to inequalities in health outcomes and healthcare experiences.

**ARCH - ARCHITECTURE AND DESIGN**

**ARCH - 1184 Design Fundamentals 1, 4.00 Credits**

Prerequisite(s): COMP 1503 with D or better \* and ( MATH 1033 with D or better \* or MATH 1034 with D or better \* or MATH 1054 with D or better \* or MATH 1063 with D or better \* )  
 Level: Lower  
 Course Fee \$53.00  
 An introduction to fundamental design, architectural design drawing and applied drawing techniques. Students are introduced in lecture to design and drawing principles, techniques and conventions used to develop and communicate architectural ideas. Lab assignments emphasize the relationship between drawing and three-dimensional form and space, and include exercises in basic design and model-making. Topics include principles of design and architectural theory, observational sketching, depicting light, texture and depth, analytical drawing, orthographic and paraline projection systems, and professional standards for layout, lettering, use of line weights, and dimensioning of architectural drawings.

**ARCH - 2014 Computer Visualization, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This is an introductory course that examines the practical and theoretical issues of the computer as a tool for the production of architectural presentations. Technical skills in SketchUp, Revit and Photoshop are learned through tutorials and projects. Students learn to create and execute projects utilizing the computer as an architectural tool through the application of technical skills.

**ARCH - 2394 Design Fundamentals 2, 4.00 Credits**

Prerequisite(s): ARCH 1184 with C or better or CIAT 1184 with C or better  
 Level: Lower  
 Course Fee \$53.00  
 Introductory course designed to expose students to fundamental design skills, 3D problem solving, color theory, perspective drawing and rendering. The course examines specific issues such as format, figure/ground, rhythm, contrast, datum, value, space definition, color theory/rendering, one and two point perspective methods and basic model building.

**ARCH - 2433 Urban Sketching and Journaling, 3.00 Credits**

Level: Lower  
 Applied Learning-Intl/Dom Trvl  
 Urban sketching and Journaling is offered to students enrolled at Sant' Anna Institute as part of the study abroad program in Sorrento, Italy. The course is designed to augment the architecture students' experience of their semester abroad, but is also intended for students of the arts, and for any student wishing to develop drawing skills and observational acuity. Emphasis is placed on the fundamentals of drawing as an invaluable tool for seeing, learning, thinking, and communicating. Lectures are centered on the basics of line drawing, perspective, shade and shadow, observational sketching, and note-taking. Lab exercises will capitalize on the unique urban environments of Sorrento and southern Italy. Students are required to keep a running journal of their thoughts and experiences throughout the semester.

**ARCH - 3003 Environmental Controls 1, 3.00 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better or MATH 1054 with C or better or MATH 1063 with C or better  
 Level: Lower  
 This course introduces the student to the fundamental principles of mechanical, electrical and plumbing (MEP) systems for small buildings. Students will explore passive design strategies and their effects on active MEP building systems. The course will emphasize holistic analyses of sites, buildings and small building systems with respect to geographic regions. Instruction will focus on impacts of the built environment on global resources. Tests, calculations and delineation of building systems will form the basis of instruction.

**ARCH - 3014 Construction Technology 1, 4.00 Credits**

Prerequisite(s): ARCH 2014 with D or better  
 Level: Lower  
 This course introduces students to the materials, methods and systems commonly used in residential construction. Students will study the inherent qualities of materials and develop an understanding of their use and integration within a residential structure. The process of construction and the resulting assemblies will be graphically explored using Building Information Modeling (BIM). Emphasis will be placed on the graphic standards used in the architectural industry and developing a basic understanding of construction documents. As the course progresses, each student will apply their understanding of residential construction technology, materials and the software environment by producing a series of architectural documents. As the semester progresses, these drawings, which start as schematic graphics addressing issues of design and organization, will develop into contract documents for construction.

**ARCH - 3104 Design Studio 1, 4.00 Credits**

Prerequisite(s): ARCH 2394 with C or better or CIAT 2394 with C or better  
 Level: Lower  
 Course Fee \$106.00  
 This is a course that presents students with a systematic approach to architectural design methods. Methods of graphic thinking are introduced as a means of exploring and evaluating issues related to the design process. Architectural form and style are investigated relative to human factors and environmental context. Verbal and graphic communication skills are also refined in the development of student design presentations.

**ARCH - 4013 Municipal Codes & Regulations, 3.00 Credits**

Prerequisite(s): ARCH 3014 with D or better or CIAT 3014 with D or better  
 Level: Lower  
 This course covers the municipal code review process and definition of model building and zoning codes. The course emphasizes use and occupancy, special use and occupancy, building heights and areas, types of construction, fire-resistive construction, interior finishes, fire-protection systems, means of egress, accessibility, interior environment, energy efficiency, exterior walls, roof assemblies, structural provisions, building materials and systems and existing structures as described in the Building Code of New York State.

**ARCH - 4014 Construction Technology 2, 4.00 Credits**

Prerequisite(s): ARCH 3014 with D or better  
 Level: Lower  
 This course builds on the construction topics begun in Construction Technology 1. The course is focused on construction techniques for commercial buildings. Topics covered include steel frame, reinforced concrete, pre-cast concrete and building envelope systems. Emphasis is placed on contemporary details and methods of construction. Student evaluations are based on Building Information Modeling (BIM) computer generated projects and periodic tests.

**ARCH - 4304 Design Studio 2, 4.00 Credits**

Prerequisite(s): ARCH 3104 with C or better or CIAT 3104 with C or better  
 Level: Lower  
 Course Fee \$106.00  
 The course concentrates on problem-solving methods for a variety of architectural project types and sizes. Students working individually and in teams explore and document their work through sketches, study models and preliminary working drawings. The students are encouraged to develop a professional approach to investigating, analyzing and solving architectural problems. This is the second studio course and will help students in preparing for more advanced and challenging studio course work in the curriculum.

**ARCH - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ARCH - 5306 Design Studio 3, 6.00 Credits**

Prerequisite(s): ARCH 4304 with C or better and ARCH 4013 with D or better and ARCH 4014 with D or better and CIVL 4103 with D or better  
 Level: Upper  
 Course Fee \$106.00  
 This studio is designed to develop the student's ability to apply and integrate architectural principles and methods to design of buildings and spaces. The exploration and study of architectural design and technology makes connections between theory and practice through the design of buildings and environments that explore the relationship between architecture, building systems, and human experience. Students will be expected to progress through the schematic design and design development phases of short-term and extended design projects.

**ARCH - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ARCH - 6102 Community-Economic Redevelopment, 2.00 Credits**

Level: Upper

Liberal Arts and Science

This course is a multidisciplinary overview of redevelopment process. This course will be run as a seminar that will meet in a seminar and discussion format. Understanding of the course topics will equip students with the knowledge of community economic development and regeneration project development. It will impart valuable skills for staff and leadership in consulting firms, municipalities, agencies and non-profits that do community development and community regeneration.

**ARCH - 6306 Design Studio 4, 6.00 Credits**

Prerequisite(s): ARCH 5306 with C or better or CIAT 5306 with C or better

Level: Upper

Course Fee \$106.00

This studio course concentrates on developing the problem solving skills associated with the design of adaptive reuse and historic preservation building projects. Projects will involve the gathering of information about the historical evolution of the building, the documentation and analysis of the building's structural and material conditions, the understanding of the building's relationship to its wider physical and cultural environment and making appropriate design decisions in respect to new uses. Over the course of the semester, students will creatively synthesize their research, building and site with new program requirements into schematics and design development proposals. Sustainability, standards for documentation of as-built conditions, architectural styles, identifying architectural character, historic construction technology and materials will be addressed.

**ARCH - 6406 Studio Sorrento, 6.00 Credits**

Prerequisite(s): ARCH 5306 with C or better or CIAT 5306 with C or better

Level: Upper

Applied Learning-Intl/Dom Trvl

Studio Sorrento is intended solely for students enrolled in the Junior Year Study Abroad Program in Sorrento, Italy.

The course will be structured around the experiences, field trips and other learning opportunities during the semester of study in Italy. Particular attention will focus on elements of traditional town design, sustainable building strategies, historic building analysis, and adaptive/sustainable re-use of historic structures. Student work for the semester will include: the development of a journal of site visits and analyses, photographic and metric documentation, reflective writing, and small design projects within the Sorrento environment.

**ARCH - 7003 Environmental Controls 2, 3.00 Credits**

Prerequisite(s): ( ARCH 2123 with D or better or CIAT 2123 with D or better or ARCH 3003 with D or better ) and ( ARCH 3304 with D or better or CIAT 3304 with D or better or ARCH 4014 with D or better )

Level: Upper

This course reinforces advanced technical and design strategies to maximize sustainability in large building design, and their relationship to other building service systems. Emphasis will be placed on applications of photovoltaic, geothermal and wind systems in a sustainable environmental context. Qualitative and quantitative measures of building environments with a focus on efficient use of energy through integrated design practices will be employed. Other topics of discussion will include commercial building design practices related to MEP, acoustic, communication, vertical transportation, security, and fire protection systems. Case studies and projects will form the basis of instruction.

**ARCH - 7306 Design Studio 5, 6.00 Credits**

Prerequisite(s): ARCH 6306 with C or better or ARCH 6406 with C or better

Level: Upper

Course Fee \$159.00

This studio focuses on the design of buildings and places in an urban setting that require an intense concentration of support systems. The course exploration and study of architectural design, technology and planning principles is designed to bridge the gap between architectural theory and practice through the design of structures and places for human use and inspiration. Students will be expected to progress through the schematic design and design development phases of short-term and extended design projects. Conventional medial and three-dimensional computer modeling will be used to define, analyze and present solutions to complex architectural problems. Assignments and in-class exercises related to design, theory, technology and criticism will also be used to reinforce topics discussed in class. Civic Engagement Intensive (CEI) sections exist.

**ARCH - 8003 Professional Practice, 3.00 Credits**

Prerequisite(s): ARCH 4014 with D or better

Level: Upper

The context within which buildings and spaces are created is rapidly evolving as is the way in which architecture and design is practiced. This advanced course is designed to provide the future practitioner with a comprehensive study of the business and practice of architecture and design. Emphasis will be placed on practical skills and usable information that will enhance the student's ability to function within the design professions and/or related disciplines.

**ARCH - 8306 Design Studio 6, 6.00 Credits**

Prerequisite(s): ARCH 7306 with C or better or CIAT 7306 with C or better

Level: Upper

Applied Learning-Creative Work, Course Fee \$159.00

This course is the capstone of the six semester sequence of architectural design studios. Building upon the thesis research completed during the previous semester, students will finalize a design program for their chosen thesis project. They will carry out a comprehensive design development study, present their design solution to a jury of faculty and visiting professionals, and defend the decision making process that gave rise to their design. The student is expected to show competence and care in their technological solutions and in the creation of a livable, efficient, and contextually appropriate structure.

**ARCH - 8716 Design Studio 7-Thesis Defntn, 6.00 Credits**

Prerequisite(s): ARCH 8306 with C or better  
 Level: Upper  
 Course Fee \$159.00  
 This course will consist of lectures and associated projects intended to provide the student with a framework that will support and guide them through the beginning stage of their Bachelor of Architecture thesis project exploration. Emphasis will be placed on developing research and writing skills that will enhance the student's ability to define an acceptable thesis project, develop a program based on a given set of requirements, and select an appropriate project site. The student will complete the Schematic Design of the thesis project for review and approval by the department faculty.

**ARCH - 8733 Modern Architectural Theory, 3.00 Credits**

Prerequisite(s): FNAT 5303 with C or better and ( ARCH 8306 with B or better or CIAT 8306 with B or better )  
 Level: Upper  
 This seminar introduces the student to theories and criticisms of contemporary architecture from the beginnings of the Bauhaus to the issues of contemporary practice. The course is designed to be interactive and will consist of discussion, writing assignments, in class exercises and presentations. Students, singularly and in groups of two, will have the responsibility of initiating weekly discussion of the assigned readings. In class discourse includes discussion and analysis of the central arguments and conclusions of the theoretical constructs presented in the piece. Students will prepare a term paper from selected readings analyzing the author's position and prepare a response that either supports or opposes the stance. A brief oral presentation will accompany the term paper to engage classmates and invited guests in critical commentary.

**ARCH - 8753 Advanced Structural Concepts, 3.00 Credits**

Prerequisite(s): CIVL 5213 with C or better  
 Level: Upper  
 This course addresses advanced architectural structures, exterior building envelopes and production technologies. It explores structural elements and expands to include more complex determinate, indeterminate, long-span, thin shells and tensile systems. Materials covered are; reinforced concrete, steel and contemporary composites. Material performance and detailing of the exterior envelope are emphasized.

**ARCH - 8776 Design Studio 8-Thesis Develop, 6.00 Credits**

Prerequisite(s): ARCH 8716 with C or better  
 Level: Upper  
 Applied Learning-Creative Work, Course Fee \$159.00  
 This course is the capstone of the eight semester sequence of architectural design studios. Building upon the thesis research completed during the previous semester in Design Studio 7 – Studio Definition, students will finalize a design program for their chosen thesis project. They will carry out a comprehensive design development study, present their design solution to a jury of faculty and visiting professionals, and defend the decision making process that gave rise to their design. The student is expected to show competence and care in their technological solutions and in the creation of a livable, efficient, and contextually appropriate structure.

**ARCH - 8793 Professional Development, 3.00 Credits**

Prerequisite(s): ARCH 8003 with C or better or CIAT 8003 with C or better  
 Level: Upper  
 This comprehensive course will enhance the student's exposure to the architect's professional role based on case studies of real-world experiences. It expands upon previously introduced architectural business practices such as marketing, responding to client requests for services, assembling project teams, working with the appropriate consultants, and delivering a project, all within financial constraints of both project and business management. The changing role of the architect in nontraditional practice types and project delivery methods will also be explored. Throughout the course, professional written, verbal and graphic communication skills will be emphasized in relation to their importance in the business setting.

**ASDC - ALFRED STU SUCCESS CENTER**

**ASDC - 1012 College and Life Skills\*, 2.00 Credits**

Level: Upper  
 Remedial  
 This course will assist students in making the transition to college and in completing collegiate work successfully. In this course the student will learn strategies for: making use of campus resources; self-awareness and exploration; academic success; effective communication on a college campus; and management of time, health, and financial resources. Students will read and respond to articles, participate in class discussions, summarize topics verbally or in writing, and complete a short research project.

**ASDC - 1092 Methods of Inquiry, 2.00 Credits**

Level: Lower  
 This college level course introduces students to current and proven research on learning and intelligence. Students will set personal and academic goals and apply methods to reach them through mindsets, critical thinking, and self-management strategies. Students will also be presented with basic information literacy skills, study techniques, as well as effective strategies for critical thinking, problem solving, listening, note taking, test taking, and communication. This course will build on the summer bridge program, incorporate information management aspects, integrate blackboard and include preliminary development of a portfolio.

**ASDC - 1901 Structured Learning\*, 1.00 Credit**

Level: Lower  
 Pass/Fail  
 This course will be supplemental instruction and recitation for students who need more structured study and development time. It will be co-taught by a faculty, professional tutor, and/or a student success staff. Faculty develop additional review problems to match homework and topics of need. This course will coincide with a registered course (e.g. math, science or English) and serve as a co-requisite or stand alone. This course will be graded Pass/Fail.

**ASDC - 2011 Career Exploration & Planning\*, 1.00 Credit**

Level: Lower  
Remedial  
This course will assist students with exploring and selecting a college major and/or career goal. The students will learn a decision making model designed to make appropriate, well-informed career/life choices. The students will engage in a variety of assessments using software programs and self-directed career searches. Students will complete out of class assignments designed to integrate self-awareness with career options and will develop their own marketing materials such as resumes, cover letters, and career portfolios. This is a pass/fail course.

**ASDC - 2193 Intro to Academic Literacy, 3.00 Credits**

Level: Lower  
This course focuses on the continued improvement of literacy skills - reading comprehension skills, reading efficiency and flexibility, critical thinking, development of a college-level vocabulary, and the grammar, writing, and study skills needed for success with college course work. Students may be placed in this course on the basis of their placement test scores or may take it as an elective to expand their basic literacy skill levels.

**ASDC - 2900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**AUTO - AUTOMOTIVE**

**AUTO - 1109 Brakes, Steering & Susp Sys, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course provides a practical understanding of the principles, operation, diagnosis, and repair of suspension, steering, and brake systems. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. This training will supplement the students' auto education in preparation for entry-level employment.

**AUTO - 1124 Automotive Welding, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum, Course Fee \$54.00  
This course covers all facets of welding as they apply to the servicing of cars and light trucks. Some methods covered are: stick, oxy-acetylene, MIG, and TIG. The safe use of the cutting torch and plasma cutter and booth time is supplemented by the use of various processes in the actual repair of vehicles and equipment.

**AUTO - 1135 Bsc Elctrn & Compnt Overhaul, 5.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course is designed to provide instruction in the diagnosis and repair of electrical circuits, charging systems, and starting systems. OHMS law, alternators, and starters will be investigated.

**AUTO - 1149 Inspec, Main, AC Htng & Cng, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course includes lecture and lab instruction on the diagnosis and repair of automotive cooling, heating, and air conditioning systems. In addition automotive preventive maintenance, exhaust system service, and annual safety inspection checks are also covered.

**AUTO - 1169 Auto Electric, Fuel & Emission, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This unit begins with instruction on basic electrical theory and progresses through the operation and diagnosis of many of the advanced electrical and electronic systems used on modern vehicles. Topics covered include: basic electrical theory, circuit design, common electrical components, fuel, ignition, emission control and electronic engine controls systems.

**AUTO - 1219 Truck Brake, Steer & Sus Sys, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This unit of instruction is designed to train high school graduates and adult learners in the service and diagnosis of light truck brake, steering, and suspension systems. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. This training will supplement the students' truck education in preparation for entry-level employment.

**AUTO - 1224 Welding, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum, Course Fee \$54.00  
The application of several common welding methods in use in the heavy repair field is covered in this course. Actual welding using arc, gas, MIG, TIG, and spot are practiced in the lab. The safe use of the cutting torch and plasma cutter and "booth time" is supplemented by the use of various processes in the actual repair of vehicles and equipment.

**AUTO - 1239 Trk Insp, Maint, AC, Cng/Htng, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course includes lab application of vehicle preventive maintenance and mandated annual safety inspection. Repair techniques to insure driver comfort and engine efficiency through the control of heat are studied as they apply to the truck cooling, heating and air conditioning systems. Analyzing how refrigerated cargo is maintained is a part of this course.

**AUTO - 1245 Trk Bsc Elctrns & Compnt Ovral, 5.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course is designed to provide instruction in the diagnosis and repair of electrical circuits, alternators, distributors, starters, and fuel systems. Basic wrecker operation and the use of manuals and computer information services are also included.

**AUTO - 1306 Rust Repair, 6.00 Credits**

Level: Lower  
Applied Learning-Practicum  
Encompasses the causes, repair, and prevention of rust formation and develops an awareness in the student that it is his/her ethical duty to make rust repairs properly and economically.

**AUTO - 1313 Wrecker Operation & Estimating, 3.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course provides instruction and practical experience in wrecker operation including hook-ups, winching, dolly use, wheel lifts, and safety. It includes instruction and practical experience in auto body damage estimate writing and analysis.

**AUTO - 1326 Body Welding, 6.00 Credits**

Level: Lower  
Applied Learning-Practicum, Course Fee \$54.00  
This course covers welding methods used for securing body sheet metal including the thinner, high-strength, low alloy steels. Some of the methods covered in depth are: arc, oxy-acetylene, MIG, and TIG welding. Emphasis is placed on proficiency in repairing steels found in panels and vehicle frames, the use of heat as a straightening medium is investigated, and choosing welding equipment for a body shop, sheet metal fabrication and fuel tank repairs are included.

**AUTO - 1343 Refinishing Basics, 3.00 Credits**

Level: Lower  
Applied Learning-Practicum, Course Fee \$106.00  
Develops in the student the basic skills of the refinishing industry and provides the technical knowledge of different types of finishes as well as the sequence of foundation coats.

**AUTO - 1344 Recondtning & Mechancl Componts, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum  
Designed to acquaint trainee with the proper procedure of reconditioning a vehicle before customer delivery. Students will learn how to remove and install seat upholstery as well as interior trim panels and hardware.

**AUTO - 2169 Truck Gas Eng Tune-up, Electro, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This unit begins with instruction on basic electrical theory and progresses through the operation and diagnosis of many of the advanced electrical and electronic systems used on modern vehicles. Topics covered include: basic electrical theory, circuit design, common electrical components, fuel, ignition, emission control and electronic engine controls systems.

**AUTO - 2309 Brakes, Susp & Structrl Anlys, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This unit of instruction is designed to train high school graduates and adult learners in the service and diagnosis of automotive brake and suspension systems as they relate to collision repair. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. In addition, identification and analysis of structural damage, as well as frame and body measuring techniques are covered. This training will supplement the students' autobody education in preparation for entry-level employment.

**AUTO - 2365 Chassis Electrical, 5.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This unit of instruction is designed to enable trainees to become proficient in chassis electrical testing, repair, and component replacement.

**AUTO - 2503 Prev Maint for Hvy Tk & Diesel, 3.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course is designed to teach scheduled preventive maintenance procedures as they apply to trucks and heavy equipment. Vehicle system checks include air brakes, tires, critical fluids and lubrication points. Training is focused on ensuring safety and reliability between scheduled Preventive Maintenance checks.

**AUTO - 3409 Engine Service, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
Theory of operation and repair procedures of gasoline engine valve systems, crankshaft and bearings, connecting rods, cylinders, and pistons, diagnosis of engine malfunctions repair procedures, cooling system repairs and diagnosis, cylinder boring, piston pin fitting, connecting rod reconditioning, valve guide resizing and replacement, valve seat replacement, and other machine work and service procedures.

**AUTO - 3429 Adv Elctrn & Engine Perfmnc, 9.00 Credits**

Level: Lower  
Applied Learning-Practicum  
Lecture sessions cover most areas of the automobile except engine and drive train repairs. Designed to update and bring together earlier training with emphasis on diagnosing sophisticated automotive electrical, drivability and emission-related problems. This is an extremely critical area with enhanced inspection programs and OBDII systems.

**AUTO - 3504 Motorsport Fabrication I, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum, Course Fee \$138.00  
This course is designed to teach the student the fundamental skills of complete chassis and roll cage fabrication. Major topics include principles of layout, bending, bead rolling, riveting and welding processes. Laboratory exercises emphasize technique and skill development to build race cars.

**AUTO - 3506 Introduction to Motorsports, 6.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course is designed to teach the student the fundamental skills of team organization and management. Major topics include introduction to motor sports, team structure, budgeting and finance. Laboratory exercises emphasize technique and skill development for success at the track. A sponsorship proposal is developed by each student.

**AUTO - 3514 Racing Suspension Dynamics, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course is designed to teach the student advanced skills in race car chassis. Major topics include principles of suspension set-up, development and weight transfer. Laboratory exercises emphasize technique and skill development in modified suspension and steering geometry to build race cars to meet different track demands.

**AUTO - 3524 Hgh Prfmnce Tune-up/Electrnrcs, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course is designed to teach the student the advanced skills of tuning the race car for optimum performance at the track. Major topics include principles of handling modified race fuels and modified delivery. Laboratory exercises emphasize techniques and skills to modify fuel and ignition systems.

**AUTO - 3534 Hgh Permnce SternG/Bks/Chasis, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed to teach the student the formulas and concepts of race car brakes and steering. Major topics include the principles of modifying chassis, brakes, and steering. Laboratory exercises emphasize technique and skill development in the different modified demands.

**AUTO - 3535 Hgh Prfrmnce Engine Building, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed to teach the student the advanced skills for reconstruction of high performance engines. Major topics include modified engine building and dynamometer testing. Laboratory exercises emphasize technique and skill development in engine assembly and dynamometer testing.

**AUTO - 3544 Motorsports Aerodynamics, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed to teach the student the fundamental principles of aerodynamics for racing and performance cars. Major topics include principles of aerodynamic effects on braking, handling, lift and drag coefficient. Laboratory exercises emphasize technique and skill development to build race cars.

**AUTO - 3545 Motorsport Fabrication II, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed to teach the student the advanced skills of complete chassis, cage, and suspension fabrication. This course and its laboratory exercises evaluate the actual process of fabricating a complete racecar.

**AUTO - 3609 Heavy Duty Drive Train, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course consists of the service and repair of heavy duty clutches, transmissions, drive line and rear axle, leaf, torsion bar, and air suspensions, the alignment of front and rear axle, also alignment of trailer suspension and on-vehicle tire balancing. This will include Eaton and Meritor clutches, Mack and Eaton transmissions, and Meritor, Eaton and Mack rear axles. Also covered are Road Ranger auto shift transmissions.

**AUTO - 3623 Air Brake Service, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course consists of maintenance and repair of air brake systems including compressors, valves, tubing, and circuitry. This course will also include troubleshooting of foundation brakes and related components. Also covered is air ABS brake components, operation and troubleshooting.

**AUTO - 3649 Diesel Engine Service, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This nine credit hour course covers the procedures needed to understand, test, repair, and overhaul diesel engines and their related components. Major emphasis is placed on the mid-range and heavy duty diesels of the following makes: Cummins, Caterpillar, Detroit Diesel, Mack, John Deere, and Navistar. Covered is the use of special tools and equipment necessary to troubleshoot, maintain, and overhaul these engines and their related components.

**AUTO - 3809 Inspec, Gen Alignment & AC, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Includes lab application of body panel alignment and mandated annual safety inspection, repair techniques to insure customer satisfaction with component fit and operation, keeping customer safety in mind when components are replaced, and techniques to insure customer comfort and engine efficiency through control of heat as they apply to auto cooling, heating and air conditioning systems.

**AUTO - 3819 Auto Body Skis/Computrzed Est, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$106.00  
 Includes the different states of repair: metal analysis, metal straightening, filling and metal finishing, glass replacement, alignment problems, fender and door replacement, any and all small, quick, one or two day jobs. Also includes how to make manual and computerized estimates.

**AUTO - 4363 Heavy Duty Elec/Hydr Special, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This three credit hour course consists of the service and troubleshooting of electrical systems as they pertain to heavy equipment, truck and diesel. This will include series parallel circuits including 12 and 24 volt systems. Included in this course is the service and troubleshooting of hydraulic systems as found in heavy equipment, truck and diesel. This will include pumps, valves, actuators, accumulators and other related components in today's hydraulic systems.

**AUTO - 4439 Shop Management & Enhanced Sys, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will provide insight into other aspects of the automotive trade. Covered in shop management is repair order writing, duties of a shop adviser, customer relations, customer communications, questioning and follow-up, estimating repair costs, checking for recalls, searching for technician service bulletins, researching new product information, motorist's bill of rights, lemon laws and understanding the nature of the automotive business and reviewing Hybrid vehicles information. The lab portion allows the student to perform as a service manager in one of our many automotive shops. Work scheduling, quality control, maintenance, and record keeping are stressed as part of this program.

**AUTO - 4449 Drive Train Service, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Study and actual repair of standard, automatic, and automatic transmissions and transaxles with emphasis on overdrives and electronically controlled units. Full coverage of clutches, axles, drivelines, C-V joints, and 4 x 4 transfer cases, as well as open, limited-slip, and front drive differentials. Extensive hands-on work in a busy "line shop" situation. This is a seven and one-half (7 1/2) week course.

**AUTO - 4629 Major Refinishing, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed to further the student's knowledge and practical experience in the use of painting and refinishing equipment, blending paints, metallic finishes, and hard to match colors, correcting paint failures, custom refinishing and how to solve their problems.

**AUTO - 4639 Major Collision Repair, 9.00 Credits**

Level: Lower

Applied Learning-Practicum

Provides instruction in the repair procedures of vehicles considered by appraisers to be totals, or near totals. Study and repair of frame and uni-body damage, suspension repairs. This includes computerized measuring systems, plastic welding, use of structural adhesives, and complete vehicle refinishing.

**AUTO - 4669 Diesel Fuel System Service, 9.00 Credits**

Level: Lower

Applied Learning-Practicum

This nine credit hour course is intended for heavy equipment, truck and diesel mechanic majors. Coverage will include the fundamentals of diesel fuel systems, both mechanical and computer-controlled will be covered. Engine tune-up procedures, and diesel fuel system troubleshooting and computer usage will be included. Injection pumps, governors, injectors, emission control devices, automatic advance units and transfer pumps of the following systems will be covered: American Bosch, Caterpillar, Detroit Diesel, Cummins and Navistar.

**BIOL - BIOLOGY****BIOL - 1101 Topics in General Biology, 1.00 Credit**

Level: Lower

A one-credit hour course to supplement the General Biology (BIOL 1104) course for biology majors. The focus of this course is to expand on topics discussed during the lecture/laboratory portions of BIOL 1104 and to discuss current topics of interest to biology students. The format of the course is reading and discussion. Each participant will be responsible for being a discussion leader at least once during the semester. The discussion leader's role is to introduce the topic, provide background information about the subject, and encourage the group to offer comments and ask questions. Topics for discussion may be directly related to lecture material or may originate from current media sources, as long as that topic was already introduced in the BIOL 1104 class lecture or lab and the students have some familiarity with the subjects.

**BIOL - 1104 General Biology I, 4.00 Credits**

Level: Lower

Applied Learning-Other, Course Fee \$7.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course incorporates a survey of molecular, cellular, and hereditary principles. Topics include the chemistry and physics of cellular activities; the ultra-structure of cells, photosynthesis and cellular metabolism; the structure and function of DNA; recent developments in DNA bio-technology; and hereditary aspects of early embryonic development of plants and animals into complex structures (organogenesis).

**BIOL - 1114 Human Anat & Physiology I, 4.00 Credits**

Level: Lower

Gen Ed - Natural Sciences, Liberal Arts and Science

This is a lecture and lab based online course that is the first in a two-semester sequence, including laboratory components, that covers the structure and function of the human body. General study covers the organization, covering, support, and movement of the body. Topics include an orientation to the human body, chemistry of life, cells and tissues, and the integumentary, musculoskeletal, nervous, and sensory systems.

**BIOL - 1133 Marine Biology, 3.00 Credits**

Level: Lower

Applied Learning-Intl/Dom Trvl, Liberal Arts and Science

This course focuses on the biology of organisms residing in the sea, from the diversity of planktonic communities to marine megafauna, taking into consideration the ecological principles that govern marine life. The course aims to provide a solid educational background in basic and applied marine biology. Emphasis will be placed on marine environment issues and the adaptive and evolutionary mechanisms of organisms that allow them to occupy marine habitats. In particular, the Mediterranean Sea will play a central role in the course subjects, profiting from the availability of unique ecosystems and a nearby renowned marine research institute to conduct thematic field trips and practical tutorials.

**BIOL - 1223 Introduction to Forestry, 3.00 Credits**

Level: Lower

Applied Learning-Field Study, Course Fee \$3.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is designed to familiarize students with the sustainable management of New York hardwood forests. Students are introduced to the history of forests and forestry practices in North America and New York State, as well as basic tree biology, silvicultural systems, and forest management. Major emphases are placed on practical management strategies for maintaining and developing wood lots and farm forests for a variety of desired outcomes, including lumber, fuel, aesthetics, erosion control, and wildlife habitat. The financial aspects of various forestry strategies also are discussed. As part of the practical component of the course, students will be required to complete a detailed forest management plan.

**BIOL - 1304 Botany, 4.00 Credits**

Level: Lower

Applied Learning-Other, Course Fee \$10.00, Gen Ed - Natural Sciences, Liberal Arts and Science

Each of us is intimately involved with plants. We wear them, ingest them, exchange gas molecules with them, live under them, etc. In this course students will develop knowledge of plant morphology (form) and function that later enhances their lives. Topics include the study of human food, ornamental plants, feed, forestry, and any other use of plants to sustain life on the planet Earth or provide other ecosystem services. The laboratory portion of the course includes field ecology and classification of important plant groups in addition to morphological and anatomical study of the major plant organs. Use of the laboratory, the college farm, field trips, and the plant science greenhouse integrates various teaching methods for the above subjects.

**BIOL - 1404 Anatomy & Physiology I, 4.00 Credits**

Level: Lower

Applied Learning-Other, Course Fee \$12.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the study of the gross and microscopic anatomy of various human systems, emphasizing how structure facilitates function. The areas emphasized are: basic anatomical and directional terminology; fundamental concepts and principles of cell biology; histology; the integumentary system; the nervous system and special senses; the skeletal system; and the muscular system.

**BIOL - 2111 Biological Sciences Seminar, 1.00 Credit**

Prerequisite(s): ( BIOL 2204 with C or better and BIOL 1104 with C or better and CHEM 1984 with C or better ) or ( CHEM 1114 with C or better and CHEM 2124 with C or better )

Level: Lower

This course is intended for students typically in their fourth semester of the two-year Biological Sciences curriculum. The course is designed to prepare the student for transfer to a four-year institution and/or enter the workforce. Students are introduced to the theoretical and practical aspects of preparing and delivering a full-feature (40-45 minute length) presentation on a given topic within the realm of a biological discipline.

**BIOL - 2204 General Biology II, 4.00 Credits**

Prerequisite(s): BIOL 1104 with D or better

Level: Lower

Applied Learning-Other, Course Fee \$15.00, Gen Ed - Natural Sciences, Liberal Arts and Science  
A continuation of BIOL 1104 (General Biology I), with emphasis on animal and plant systematics, evolution and ecology. Laboratory topics include the study of the following mammalian organ systems: digestion, respiration, circulation, homeostasis, reproduction, chemical and nervous control, and musculoskeletal structure and function. Lecture topics include systematics, evolution, ecosystems, and bioenergetics, including human impacts on the environment.

**BIOL - 2214 Human Anat & Physiology II, 4.00 Credits**

Prerequisite(s): BIOL 1114 with C or better or BIOL 1404 with C or better

Level: Lower

Liberal Arts and Science

The second in a two-semester Internet-based course sequence, including laboratory components, that covers the structure and function of the human body. General issues include the maintenance of the human body, pregnancy, human development and heredity. Topics include the endocrine, blood, cardiovascular, lymphatic, immunity, respiratory, digestive, urinary, and reproductive body systems.

**BIOL - 2301 Human Biology Laboratory, 1.00 Credit**

Prerequisite(s): BIOL 2303 with D or better \*

Level: Lower

Applied Learning-Other, Course Fee \$24.00, Liberal Arts and Science

This course is a group of laboratory exercises to aid in the study of human systems and their physiology. The laboratory sessions are designed to provide students with a basic understanding of the structure and functions of cells, tissues and organ systems. The goals of the course are to promote an appreciation for the remarkable complexity of our bodies; to develop a proficiency in the use of laboratory equipment and the proper handling of materials, and to foster the development of self-sufficiency in the conduct of laboratory experiments and observations.

**BIOL - 2303 Human Biology, 3.00 Credits**

Level: Lower

Gen Ed - Natural Sciences, Liberal Arts and Science  
An introduction study of human systems and their physiology. Included in the course are examination of how the body normally functions at the cellular, tissue, organ system levels. Topics will include basic chemistry, cell structure and biochemistry, digestion, circulation and blood, immunity, respiration, excretion, nervous integration, senses, endocrine system, and reproduction. Sexually transmitted diseases also will be discussed. Students cannot receive credit for BIOL 2303 if BIOL 1404 or BIOL 1114 is concurrently or previously taken.

**BIOL - 2504 Anatomy & Physiology II, 4.00 Credits**

Prerequisite(s): BIOL 1404 with D or better

Level: Lower

Applied Learning-Other, Course Fee \$17.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of Anatomy and Physiology I (BIOL 1404). It is a study of the gross and microscopic anatomy of various human systems, emphasizing how structure facilitates function. The areas emphasized are the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems.

**BIOL - 2633 Histotechniques, 3.00 Credits**

Prerequisite(s): BIOL 1104 with D or better or BIOL 1404 with D or better or BIOL 1114 with D or better or ANSC 1214 with D or better or VETS 2014 with D or better

Level: Lower

Course Fee \$129.00

An applied and theoretical technology course which provides instruction and hands-on experiences in the preparation of tissues for microscopic examination by paraffin, and frozen section and smear techniques. Normal and diseased animal and plant tissues will be used to provide the students an opportunity to use a variety of techniques involved in processing tissues. Tissue identification and classification will be discussed as it relates to preparation procedures. Care, maintenance, and use of instrumentation in tissue preparation will be stressed. One-hour lecture and 2 two-hour laboratories per week with significant additional supervised time spent in the lab by students.

**BIOL - 2801 Environmental Sciences Lab, 1.00 Credit**

Prerequisite(s): BIOL 2803 with D or better \*

Level: Lower

Applied Learning-Field Study, Course Fee \$96.00, Liberal Arts and Science

This course is a series of field-oriented laboratory experiences involving analyses of various local ecosystems. Topics to be stressed include identification of organisms, use of environmental monitoring equipment, and collection and interpretation of field data.

**BIOL - 2803 Environmental Science, 3.00 Credits**

Level: Lower

Gen Ed - Natural Sciences, Liberal Arts and Science

This course is an introduction to the science of ecology and the interrelationship between humans and their environment. The physical environment of the Earth's climate, geographic and geologic systems, and the cycling of minerals and water are described. The biology of populations, species, ecosystems and biomes section deals with organisms and their interactions with one another and their environment is discussed. The world's human populations, and their role in the ecosystems is investigated including the history of human populations, current demographic trends, and projected future population parameters. The impacts of human populations on the environment are covered as well.

**BIOL - 4254 General Microbiology, 4.00 Credits**

Level: Lower  
 Applied Learning-Other, Course Fee \$29.00, Gen Ed - Natural Sciences, Liberal Arts and Science  
 This course is designed to provide an introductory survey to the various microorganisms, prions, viruses, bacteria, protozoans, and multicellular parasites, their structures, physiology, identification, with the various medical and non-medical implications in our daily lives. Lecture topics include prokaryotic cell structure and function, biochemical processes, physical and chemical factors that affect cell growth, classification and identification, physical and chemical methods of control. A major portion of the course deals with the pathogenic properties of microorganisms and the body's defense mechanisms including the functions of the immune systems. Laboratory topics include bacterial culture and staining, metabolism and biochemical reactions, physiological characteristics, patient specimen collection and processing as done in a microbiology laboratory and pathogen identification and antibiotic sensitivity determination.

**BIOL - 4403 Pathophysiology, 3.00 Credits**

Prerequisite(s): BIOL 2504 with C or better \* or BIOL 2214 with C or better \*  
 Level: Lower  
 Gen Ed - Natural Sciences, Liberal Arts and Science  
 This is a lecture-based online course that includes the study of disruptions of normal physiology, processes that bring about these disruptions, and various ways in which the disruptions manifest themselves as symptoms, signs, physical findings, and laboratory findings. The course will explore the pathophysiology of genetic diseases, hypersensitivity and autoimmune diseases, infectious diseases, neoplasia, diseases due to physical and chemical agents, disturbances of fluid and electrolyte balance, and endocrine dysfunction.

**BIOL - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 Liberal Arts and Science  
 Elective courses for students interested in advanced work in the biological sciences on problems in their special field of interest. Enrollment limited in order to allow each student the opportunity to pursue his/her field of special interest.

**BIOL - 5003 Genomics, 3.00 Credits**

Prerequisite(s): BIOL 6534 with D or better  
 Level: Upper  
 Applied Learning-Practicum, Liberal Arts and Science  
 This is a project based-learning course that will introduce the students to the emerging science of genomics and its implications for human biology, medicine, social policy and individual life path choices in the 21st century. Our genome is the blueprint that encodes all the information we need to develop from a single cell into a hugely complicated functional organism. This course will instruct students how to use bioinformatics tools to analyze genes and their expression. The course will explore techniques used to study genomes, what information is available, and how this information is used to understand how organisms differ or match; how different organisms evolved; how the genome is constructed and how it operates. In addition the course will examine genome structure and function in terms of our future health and wellbeing. The laboratory portion of the course will enable students to use bioinformatics tools to annotate genes from the bacterium *Kytococcus sedentarius* and to participate in a DNA Barcoding project to catalog living organisms such as <http://www.studentdnabarcoding.org/>.

**BIOL - 5013 Biotechniques, 3.00 Credits**

Prerequisite(s): ( CHEM 2984 with D or better or CHEM 2124 with D or better ) and BIOL 2204 with D or better  
 Level: Upper  
 Applied Learning-Practicum, Course Fee \$152.00, Liberal Arts and Science  
 This course focuses on the development of advanced practical skills, competencies, and knowledge in laboratory techniques commonly used across the biological sciences in research and industry. It is based on a full "hands on" approach where all students undertake a variety of practical exercises derived principally from the areas of DNA science, cellular biology, protein analysis and tissue preparation. This course requires the student to use appropriate professional laboratory protocols that will lead to advanced study and employment.

**BIOL - 5223 Ecology, 3.00 Credits**

Prerequisite(s): ( BIOL 1104 with D or better and BIOL 2204 with D or better ) or ( BIOL 1304 with D or better and BIOL 2204 with D or better )  
 Level: Upper  
 Liberal Arts and Science  
 The course will analyze the biotic and abiotic factors that influence or limit distributions of organisms. Emphasis will be placed on population and community biology, including evolution, genetics, behavior, models of population growth, species interactions and community structure. Metabolic and energy relationships at the ecosystem level also will be explored. Examples will be drawn from all Domains and Kingdoms of organisms. Students will be required to evaluate the role of a specific "Keystone" species in an ecosystem and how the loss of that species impacts biodiversity in the ecosystem.

**BIOL - 5254 Principles of Microbiology, 4.00 Credits**

Prerequisite(s): ( BIOL 2204 with C or better or BIOL 2504 with C or better ) or ( VETS 2013 with C or better or VETS 2014 with C or better or VETS 1203 with C or better or VETS 1214 with D or better ) or ( BIOL 1104 with C or better or BIOL 1404 with C or better )  
 Level: Upper  
 Applied Learning-Other, Course Fee \$26.00, Liberal Arts and Science  
 A survey of microorganisms, their structures, physiology, and identification, with the various medical and non-medical implications in our daily lives. Topics include prokaryotic cell structure and function, biochemical processes, physical and chemical factors that affect cell growth, classification and identification, and physical and chemical methods of control. A major portion of the course deals with the pathogenic properties of microorganisms and the body's defense mechanisms including the functions of the immune systems. Laboratory topics include bacterial culture and staining, metabolism and biochemical reactions, physiological characteristics, patient specimen collection and processing as done in a microbiology laboratory and pathogen identification and antibiotic sensitivity determination.

**BIOL - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper  
 A student may contract for one to six credit hours of upper-level independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**BIOL - 6003 Molecular and Cell Biology, 3.00 Credits**

Prerequisite(s): BIOL 6534 with D or better

Level: Upper

Liberal Arts and Science

This course will provide a firm foundation on the principles of modern molecular and cellular biology. The first half of the course will focus on the molecular structure and function of DNA, RNA and proteins and the tenets of the central dogma of molecular biology. The second half of the course will focus on the fundamental processes that enable cells to grow, move, and communicate as well as introduce the processes underlying tissue formation and cell death. During recitation the students will read and analyze primary journal articles, create a short oral presentation on a topic and submit a short "News and Views" article written for a general audience.

**BIOL - 6403 Advanced Pathophysiology, 3.00 Credits**

Prerequisite(s): BIOL 2504 with D or better or BIOL 2214 with D or better

Level: Upper

Liberal Arts and Science

This internet-based course examines abnormal human physiology in a clinical context, with intent to develop specific intellectual skills related to nursing and other allied health professions. Pathophysiology is considered from a systemic perspective, with emphasis given to cellular abnormalities, disruptions of homeostasis, infectious disease, inflammation, and disorders of the blood, immune, cardiovascular, respiratory, digestive, endocrine, neurological, musculoskeletal, integumentary, renal, genitourinary, and reproductive systems. The course concludes with case study presentations to allow students to derive and discuss correlations among clinical healthcare or other related disciplinary settings.

**BIOL - 6534 Genetics, 4.00 Credits**

Prerequisite(s): BIOL 1104 with C or better or BIOL 1304 with C or better or BIOL 1404 with C or better or VETS 1214 with C or better

Level: Upper

Applied Learning-Other, Course Fee \$104.00, Liberal Arts and Science

A study of heredity and the gene from the perspective of the individual, the cell, and the population. The human species will be emphasized along with recent advances in biotechnology. Laboratory work includes *Drosophila* breeding, polymerase chain reaction, and DNA electrophoresis.

**BIOL - 8803 Senior Research Project, 3.00 Credits**

Prerequisite(s): BIOL 8823 with C or better

Level: Upper

Applied Learning-Research

This course is intended for students in the final year of the four-year Health Sciences curriculum. Students are required to complete an approved research project in an area of special interest in health sciences. The student will submit a plan for research acceptable to the Health Sciences program director and to the department chair. The instructor and student will confer regularly regarding the progress of study and research. The student will be required to prepare a formal scientific paper and will be required to give a formal presentation to the campus community upon completion of the research project. Students will be encouraged to present their findings at a national or regional health science conference.

**BIOL - 8813 Professional Internship, 3.00 Credits**

Prerequisite(s): BIOL 8823 with C or better

Level: Upper

Applied Learning-Internship

This course is intended for students in the final year of the four-year Health Science curriculum. Students are required to complete a supervised internship at an approved off-campus site. Students will work under the supervision of a qualified personnel to whom they are assigned. Students will also receive college faculty consultation. The internship is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. This internship consists of 120 hours, which can be completed on a full-time basis (40 hours/week for three weeks) or on a part-time basis over an extended period of time (e.g., 8 hours/week for 15 weeks). All students will be required to give a formal presentation to the campus community following completion of the internship.

**BIOL - 8823 Research Methods in Hlth Science, 3.00 Credits**

Prerequisite(s): BIOL 2204 with D or better and CHEM 4524 with D or better

Level: Upper

Liberal Arts and Science

This course familiarizes the student with laboratory protocols, safety, and experimental design. It covers searching for, reading, writing, and presenting scientific literature. Students also learn skills for exploring and obtaining careers in the health professions.

**BLCT - BUILDING CONSTRUCTION**

**BLCT - 1016 Operations - Part I, 6.00 Credits**

Level: Lower

This course covers the use and maintenance of the most commonly used machines on a construction site. The course emphasizes safe operation as well as basic operating techniques for each machine. This will include safe setup of machines as well as excavating foundations, septic systems, driveways, etc.

**BLCT - 1022 Wood Fabrication Technology I, 2.00 Credits**

Level: Lower

Course Fee \$25.00

This course introduces hand and power tools. Skills are developed through practical experience in tool usage through a series of required projects. Students will learn hand tool skills by completing a series of wood joints using chisels, planes, handsaws, and layout tools. Students will expand on these skills while building two shop projects. One project using only hand tools and the other project introducing them to stationary power tools, usage, setup and safety. Power tools used include: table saws, radial arm saws, jointers, planers, band saws, drills, and sanders.

**BLCT - 1024 Construction Essentials II, 4.00 Credits**

Level: Lower

This course provides students with a basic knowledge of residential floor and wall framing and introduces them to codes relevant to these systems. The course content includes applicable terminology, plan reading necessary for layout, and instruction in framing conventional floor and wall systems. Units also included are sheathing materials and installation, insulation products with reference to energy code and installation, roofing materials, and hand tool/power hand tool safety.

**BLCT - 1034 Workplace Environment & Safety, 4.00 Credits**

Level: Lower

This course explores the opportunities provided by the various occupations associated with the construction trades and covers the insurance requirements, as well as the risk management and loss control issues in this industry. Much of this course will follow the training requirements set forth by the Occupational Safety & Health Administration (OSHA) Construction Safety Outreach Program including the use of personal protective equipment, electrical safety, fall protection and the safe use of scaffolding and ladders. Excavation safety and materials handling, proper record keeping requirements, and harassment policies will also be covered in this course.

**BLCT - 1043 Introduction to Earth Moving, 3.00 Credits**

Level: Lower

Provides a broad introduction to the processes of planning and executing earth moving activities on various types of construction projects. Explains the uses of heavy equipment such as bulldozers, scrapers, excavators, and loaders.

**BLCT - 1044 Blueprint Reading & Grades-Par, 4.00 Credits**

Level: Lower

This course is an introduction to different types of plans and how they represent finished grades of buildings. This course will present the parts of blueprints in detail including symbols, the title block, and grid lines. Students will be introduced to site plans and the concept of preparing graded surfaces using heavy equipment. Identification of construction stakes and interpretation of marks on each type of stake will be covered. The process for grading slopes will also be discussed.

**BLCT - 1052 Soils - Part I, 2.00 Credits**

Level: Lower

This course provides an overview of soil composition and characteristics. The students will describe different types of soil classification methods and how to use them. The course introduces the concept of soil compaction in highway and building construction.

**BLCT - 1053 Safety & Ident of Hvy Equip, 3.00 Credits**

Level: Lower

This course introduces the most used pieces of heavy equipment. The course describes the functional operation for each piece of equipment while providing a comprehensive overview of safety requirements on job sites with emphasis on OSHA, and NIOSH requirements. Basic requirements for personal protection, safely operating equipment, and HazCom will be presented.

**BLCT - 1124 Construction Essentials I, 4.00 Credits**

Level: Lower

This course provides the student with an introduction to foundation layout, blueprints, and light commercial construction. Course content includes applicable terminology, reading of construction drawings to interpret dimensions, building layout, foundation layout, and light commercial building techniques. Infused in this course will be discussions on critical and creative thinking, methods to optimize personal performance, as well as how goals contribute to a successful construction project.

**BLCT - 1132 Estimating I, 2.00 Credits**

Level: Lower

This course develops mathematical concepts and application skills necessary for the carpenter and mason to estimate building quantities and associated costs. Topics include arithmetic operations with whole numbers, decimals, and fractional numbers. Formulas for area, volume, board foot quantities, and basic geometry as it pertains to construction will be studied. The quantities estimated are in the framing/sheathing stages of enclosing a building including concrete, brick, and block calculations.

**BLCT - 1142 Masonry I, 2.00 Credits**

Level: Lower

Applied Learning-Practicum

This course covers basic block laying, sizes, uses, layout, bonding, and foundations. Mortar mixing is studied along with an introduction to concrete footers and footer forming. Foundation drainage and damp proofing are also covered in this course.

**BLCT - 2023 Equipment Safety - Part II, 3.00 Credits**

Level: Lower

This course presents safety requirements for operating heavy equipment, activities of the Occupational Safety and Health Administration relative to OSHA inspections and reporting requirements, and use of protective gear. This course will prepare students for the OSHA 10-hour certification exam.

**BLCT - 2032 Wood Fabrication Technology II, 2.00 Credits**

Prerequisite(s): BLCT 1022 with D or better

Level: Lower

Course Fee \$68.00

This course expands on BLCT 1022 Wood Fabrication Technology I, covering hand and power tools usage through practical experience with the tools. Each student will build projects that will require shop drawing interpretation and copying pieces from a jig or actual item. Compound bevels and cutting techniques are introduced that require advanced setups on the table saw and other power tools in the lab. Students are expected to produce a higher quality project. All tool usage is encouraged (hand and power).

**BLCT - 2033 Equip Preventive Maintenance, 3.00 Credits**

Level: Lower

This course covers preventive maintenance responsibilities including specifying basic equipment subsystems and major mechanical systems; knowing how and when to service equipment; and how and when to complete routine inspections of equipment.

**BLCT - 2034 Grades & Blueprint Reading II, 4.00 Credits**

Level: Lower

This course presents proper practices for setting grades off benchmarks and describes methods of setting grades using various types of levels. The student is taught how to read and interpret construction plans to determine grading requirements. The course will review basic grading operations, and also cover site prep, D.S.N.Y., contours, establishing grades, reading and understanding site plans.

**BLCT - 2036 Operations Part II, 6.00 Credits**

Prerequisite(s): BLCT 2033 with D or better \*

Level: Lower

Applied Learning-Practicum

This course continues the study of tractors, dump trucks and front-end loaders. Safe operation practices as well as preventive maintenance requirements will be covered for each piece of equipment. Common uses of each piece of equipment and their attachments will also be discussed. Site training will also continue on the back hoe and bulldozer. Students will be introduced to advanced positioning systems and automated controls.

**BLCT - 2044 Construction Essentials III, 4.00 Credits**

Level: Lower

This course is an introduction to drywall, plaster, steel buildings, and transits. An introduction to commercial construction is also included with a focus on apprenticeship training, energy insulated foam systems, and pre-fab concrete systems.

**BLCT - 2054 Construction Essentials IV, 4.00 Credits**

Level: Lower

This course provides the student with a basic knowledge of residential siding. Course content includes applicable terminology, comparisons of different siding types and installation instruction for several types of siding. A unit on cornice design and installation and a unit on windows are included, covering design criteria as specified by building and energy codes as well as installation.

**BLCT - 2064 Structural Components, 4.00 Credits**

Prerequisite(s): BLCT 1024 with D or better

Level: Lower

This course explores a variety of structural components and building practices in frame construction. Major topics include manufactured building materials, span and load bearing requirements, floor systems, roof system, fastening techniques, and estimating, as well as common frame construction techniques. The lab exercises allow the student to practice the layout, assembly, and construction of a variety of structural components with concentration on common rafters and manufactured joists, trusses, and beams.

**BLCT - 2092 Soils Part II, 2.00 Credits**

Prerequisite(s): BLCT 1052 with D or better

Level: Lower

This course describes basic soil classification methods, details factors affecting classification, and presents soil density and compaction requirements. The course also includes requirements for handling and combining different types of materials.

**BLCT - 2132 Estimating II, 2.00 Credits**

Level: Lower

The Estimating II course is a continuation of Estimating I. This course develops mathematical concepts and application skills necessary for the carpenter and mason to estimate building quantities and associated costs. Topics include formulas for area, lineal footage, board foot quantities, and basic geometry as it pertains to construction. The student will be required to figure material takeoffs for sidings, roof materials, and cornice. These are the exterior finish materials for building a house. Upon completion of this course the student will be able to estimate a structure to the point of trimming it out.

**BLCT - 2142 Masonry II, 2.00 Credits**

Level: Lower

Applied Learning-Practicum

This course covers the various types of mortar mixes and their appropriate uses, reinforces and builds on trade aspects and skills introduced in BLCT 1142. The evolution of the masonry trade, tools, and materials used will be studied. We will develop the skills needed by those restoring or maintaining historic masonry structures. Bricklaying and stone veneers will be introduced. The basics of plasterwork will be covered.

**BLCT - 3002 Blueprint Reading Part III, 2.00 Credits**

Level: Lower

This course covers the equipment and supplies required to perform structural work. Discussions include the following topics: bridge types and materials, bridge substructures, bridge superstructures, structural concrete and structural steel. Reading and interpreting site plans will also be reinforced.

**BLCT - 3003 Advanced Equipment Safety, 3.00 Credits**

Level: Lower

This course teaches advanced safety techniques and requirements for heavy equipment operators and emphasizes organizing and conducting safety meetings. Discussions include OSHA hazardous material requirements and safe operation of equipment. Course topics also include safety reporting, inspections and investigations.

**BLCT - 3005 Operations Part III, 5.00 Credits**

Prerequisite(s): BLCT 1016 with D or better and BLCT 2036 with D or better

Level: Lower

This course presents the use, safe operation, and maintenance of excavators, trucks, and trailers. Students will explain and demonstrate the use of excavators in ditching, grading, and slope-finishing operations, describing various operating techniques. The course describes the types of trucks used in highway/heavy construction including rigid frame trucks, such as dump trucks, transit-mix trucks, and tractor trailer trucks. The trailers discussed include bulk haulers and flatbed trailers. Truck controls and components, preventive maintenance and operation, and required licensing are also covered. This course will continue to reinforce correct operation of backhoes, bulldozers, and front end loaders.

**BLCT - 3012 Soils - Part III, 2.00 Credits**

Level: Lower

This course addresses problems associated with bridged areas and breakthroughs, as well as soil stabilization. It presents the proper use of geo-textile materials. Students will review soil compaction requirements, specific procedures for running moisture-density tests and methods of fixing compaction problems.

**BLCT - 3013 Paving Part I, 3.00 Credits**

Level: Lower

This course includes the processing and preparation of asphalt and concrete, including quarrying, crushing, screening, and testing. The operation of concrete plants, hot mix asphalt plants, and pug mills is also explained. Students will be prepared for MSHA (Mine Safety Health Administration) certification.

**BLCT - 3023 Supervision Part I, 3.00 Credits**

Level: Lower

In this course students will learn the principles of project planning, scheduling, estimating, and management, and the basic skills required for supervising personnel.

**BLCT - 3033 Cabinet & Counter Top Const, 3.00 Credits**

Prerequisite(s): BLCT 1022 with D or better and BLCT 2032 with D or better  
 Level: Lower  
 This course covers the principles of cabinet construction and countertop fabrication. The students will build cabinets and work on fabricating laminate countertops in the laboratory.

**BLCT - 3123 Constructn Drawings & Specifct, 3.00 Credits**

Prerequisite(s): BLCT 2054 with D or better  
 Level: Lower  
 The four major plan groups are architectural, structural, mechanical, and civil. The students will be able to identify major types of plans. Emphasis is placed on residential plan reading and development.

**BLCT - 3159 Masonry III, 9.00 Credits**

Level: Lower  
 This course covers job supervision, foundations, material estimates, fireplace design and construction, stone masonry skills in these areas and to provide repetition to increase production and accuracy.

**BLCT - 3169 Masonry IV, 9.00 Credits**

Level: Lower  
 This course provides instruction in mortar types for specific applications, masonry repair and restoration, ornamental masonry and bonding patterns. Cold weather construction techniques relevant to concrete and masonry construction is studied. A unit on engineered brick masonry and prefabrication is included. Lab activities are provided to develop hands-on skills.

**BLCT - 3203 Estimating III, 3.00 Credits**

Prerequisite(s): BLCT 2132 with D or better  
 Level: Lower  
 This course is a study of cost and quantity estimating, for materials, labor, and work units for residential and light commercial construction. Construction Specification Institute (CSI) Division specifications are applied in an estimate and bid project as part of the course requirements.

**BLCT - 3213 Exterior Construction Details, 3.00 Credits**

Prerequisite(s): BLCT 2054 with D or better  
 Level: Lower  
 This course covers the methods used in the construction and installation of residential exterior elements. The course content includes the construction of porches, decks and breezeways. Students will learn about flooring and decking materials, different types of entrance doors and their installation, garage doors, footings and fasteners, railing systems and structural supports, and building code requirements.

**BLCT - 3223 Home Remodeling, 3.00 Credits**

Level: Lower  
 This course covers the evaluation of overall conditions found in older buildings. Students will learn about the construction techniques used in remodeling and how they differ from new construction. This will include the process of identifying and handling hazardous materials, historical framing styles, and different styles of interior and exterior trim.

**BLCT - 3233 Advanced Framing, 3.00 Credits**

Prerequisite(s): BLCT 2054 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course will teach roof design, including the cutting and fitting of hip and valley rafters. The course will also cover truss design and installation of trusses.

**BLCT - 3313 Basic CAD for Resid Drawings, 3.00 Credits**

Prerequisite(s): BLCT 2054 with D or better  
 Level: Lower  
 Course instruction provides basic computer aided drafting (CAD) techniques. Eight initial projects incorporate the application of appropriate commands, including drawing file management and software settings. CAD basics introduced in lecture are then applied in a laboratory setting with emphasis on developing CAD preliminary residential prints.

**BLCT - 3323 Interior Trim, 3.00 Credits**

Prerequisite(s): BLCT 1024 with D or better and BLCT 2044 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course covers hanging and trimming doors; trimming windows; and installing interior moldings in a laboratory setting.

**BLCT - 3413 Blueprint Readng-Bldg Construct, 3.00 Credits**

Corequisite(s):  
 Level: Lower  
 This course covers instruction in blueprint reading, concentrating on plumbing blueprints, building blueprints, and instruction in the use of the architect's scale for taking measurements. The course covers all components of a wood frame structure including foundations. Students will be taught the proper installation of piping and fixtures so as not to jeopardize the building's structural integrity.

**BLCT - 3423 Pipe Fitting - Math Estimating, 3.00 Credits**

Corequisite(s):  
 Level: Lower  
 This course covers basic math and materials estimating the plumbing trades. Pipe fitting math is practiced and applied to ensure proper plumbing drainage, as well as water and gas line pipe length installations. Material lists and job estimating is also taught as it pertains to various plumbing systems and fixtures. The students are given instruction on materials mark up for profit, proper customer billing, and required income and sales tax as it pertains to a self-run plumbing business.

**BLCT - 3433 Cop Pipe & Tub, Water Sys Des, 3.00 Credits**

Corequisite(s):  
 Level: Lower  
 This course covers the study and installation of various types of copper pipe and tubing and proper methods of joining. Also includes instruction on fitting use and proper code applications. The methods of testing potable water lines are also covered.

**BLCT - 3443 Drainage Systems & Piping, 3.00 Credits**

Corequisite(s):  
 Level: Lower  
 Applied Learning-Practicum  
 This course covers the instruction in the design, joining, installation, and proper application of various types of drainage piping used in drainage and venting systems. Also covered will be instruction and study of public and private sewage systems, their make-up, various aspects of troubleshooting and maintenance.

**BLCT - 3453 Plumb Trade History & Safety, 3.00 Credits**

Level: Lower  
 This course covers the study of safety practices and OSHA training related to the plumbing trades. All students obtain a 10-hour OSHA training card upon successful completion of the course. The history of plumbing and how plumbing systems and codes originated is covered. This course also covers the instruction in the proper care, use, and application of various hand and power tools used in the plumbing trade.

**BLCT - 3463 Watr Heatrs-Plumb Fix Inst/Rpr, 3.00 Credits**

Corequisite(s):

Level: Lower

This course covers the instruction and study of selection and installation of water heaters for industry standards. Instruction is also given on gas and electric water heater troubleshooting and repairs. This course also covers the instruction of plumbing fixture specifications and installation. Fixture troubleshooting and repair is also covered in this course.

**BLCT - 3473 Heating Fuels-Comb Theo&Troubl, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course is an introduction to the various fuels used in the heating trades and the methods of converting fuels for various applications. The theory of combustion and combustion troubleshooting is also covered in the course. Common forced air furnace parts and components are discussed and various manufactured retrofit products are applied. This course also includes basic wiring of conventional forced air furnaces and principles and troubleshooting of furnace electronic ignition.

**BLCT - 3483 Electrical Fundamentals, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better \*

Level: Lower

The objective of this course is to develop knowledge of electricity and the units used to describe and measure it. The course will also show how different types of electrical circuits function and what different electrical components do in those circuits. Special emphasis is placed on temperature controls and switching. Elementary wiring diagrams are introduced.

**BLCT - 3493 Forced Air Furnace Controls, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

The objective of this course is to develop skills in the installation and service of electrical components of gas and oil forced air furnaces. This includes gas standing pilot and electronic ignition systems. It applies to both 80% and 90% efficient furnaces including those with integrated circuit boards.

**BLCT - 3503 Hydro Comp, Circu Pump&Ht Emit, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

Applied Learning-Practicum

The purpose of the course is to develop an understanding of piping materials, fittings and various components used in hydronic heating systems. This includes knowledge about types and performance of circulating pumps. Also included are heat emitters which have been used in the past and several new types which are currently gaining popularity.

**BLCT - 3513 Hydronic Controls and Motors, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course covers electrical components as they apply to hydronic heating. Students will produce wiring diagrams for external boiler wiring as it applies to zone valves and pumps. Investigation into areas of multiple boiler controls, injection mixing controls and outdoor reset controls are pursued. The theory and application of different motors used in the HVAC industry are also presented.

**BLCT - 3523 Hydronic Funda & Heat Sources, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course will introduce students to basic thermodynamic principles. The course will explore the advantages of hot water and steam heating, as well as the various types of boilers used in the industry.

**BLCT - 3533 Hydronic Piping Systems, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

The objective of this course is to develop an understanding of various piping systems used in hydronic heating systems including series loop, one pipe two pipe (direct and reverse return) and primary/secondary piping. The course will also cover the applications and installations available for a variety of radiant heating types.

**BLCT - 4002 Below Grade Const(Hvy Highway), 2.00 Credits**

Level: Lower

Applied Learning-Practicum, Course Fee \$136.00

This course discusses the below grade construction processes that are necessary to perform highway/heavy construction. Excavation support systems, excavation safety, underground piping materials and fittings, joining methods for underground pipe, box culverts, and catch basins are covered.

**BLCT - 4003 Paving Part II, 3.00 Credits**

Prerequisite(s): BLCT 3013 with D or better

Level: Lower

This course explains how to perform hot mix asphalt paving and concrete paving. The course covers the operation of asphalt pavers and all equipment required to perform paving. Discussions will include concrete paving equipment such as concrete pavers, slip-form pavers, and texture/curing machines.

**BLCT - 4004 Operations Part IV, 4.00 Credits**

Prerequisite(s): BLCT 3005 with D or better

Level: Lower

Applied Learning-Practicum

This course presents information on the operation and maintenance of excavators. Students learn basic operation of equipment and apply this knowledge in performing earth work activities such as ditching, placing riprap, and slope finishing. Included are safety issues and preventive maintenance activities.

**BLCT - 4012 Earth Moving (Hvy Highway), 2.00 Credits**

Level: Lower

Applied Learning-Practicum

This course describes the necessary procedures for preparing ground for highway/heavy construction. It explains soil basics, including terminology, identification, and classification. Earthmoving operations, such as laying out slopes and grades, site excavation, and hauling, are addressed along with methods of stabilizing soils.

**BLCT - 4013 Supervision Part II, 3.00 Credits**

Prerequisite(s): BLCT 3023 with D or better

Level: Lower

Applied Learning-Practicum

This course will reinforce Supervision - Part I. In addition to this the student will learn about prevailing wage schedules used by DOL, professional ethics, customer focus, ability to listen, teamwork, communication, attitude, responsibility, and patience.

**BLCT - 4022 Finish Operations, 2.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course contains information about the responsibilities of the finish operator. It discusses leadership abilities in relation to organizing and directing workers and operations, and how to understand and interpret production requirements and specifications. Also the course explains how to set up and adjust leveling instruments.

**BLCT - 4023 Form Building, 3.00 Credits**

Level: Lower  
 This course provides the basics of building footer forms and installing concrete wall forms. It will also introduce students to SMAW (Shielded Metal Arc Welding) electric arc welding and cutting steel with an oxy-acetylene torch.

**BLCT - 4032 Finishing & Grading, 2.00 Credits**

Level: Lower  
 This course provides instruction in the use of various types of heavy equipment to finish and trim grades and slopes of roads, pads, ditches, and other structures; specifications used for grading will be discussed as well as procedures for checking the final grade.

**BLCT - 4033 Historic Framing Techniques, 3.00 Credits**

Level: Lower  
 This course will look at the evolution of systems used in the construction of wooden house frames throughout the history of building in America. We will begin with an in-depth look at the centuries-old techniques employed in timber framing, and then follow the progression through braced-frame and balloon frame buildings. Students will apply these techniques to new and/or existing structures.

**BLCT - 4042 Construct Business Operation, 2.00 Credits**

Prerequisite(s): BLCT 3203 with D or better \*  
 Level: Lower  
 This course is an overview of the basic requirements of ownership and operation of a small construction business. The course also covers the building code sections that establish minimum standards for public safety and protect consumers from hazardous design and construction.

**BLCT - 4043 Masonry Sketching & Detailing, 3.00 Credits**

Prerequisite(s): BLCT 3169 with D or better  
 Level: Lower  
 This course will give students the knowledge and ability to use an architect's scale and basic drafting skills to produce shop drawing sketches of masonry wall systems, masonry details, shapes for architectural building stone and architectural pre-cast.

**BLCT - 4053 Blueprint Reading for Masonry, 3.00 Credits**

Prerequisite(s): BLCT 3169 with D or better  
 Level: Lower  
 Students will develop a working knowledge of blueprints and specifications for masonry projects. Topics will include masonry cost and material estimating, jobsite preparation and construction. Students will interpret and apply standards commonly used in masonry construction.

**BLCT - 4143 Basic House Wiring-Forced Air, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better  
 Level: Lower  
 Course Fee \$13.00  
 This course offers instruction and application of basic house wiring and theory. The student is also introduced to the heating trade and to the theory of proper furnace installation. Reasons for human comfort and discomfort as it pertains to forced air heat are discussed. Troubleshooting of disturbing and distressing noises and conditions as well as indoor air quality is also covered in this course.

**BLCT - 4153 Sheet Metal Fabrication, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better  
 Level: Lower  
 Course Fee \$24.00  
 This course covers the instruction and the application of various materials of the sheet metal trade. Students are also instructed in the forming and use of different seams and edges required for various applications. Instruction and proper application of methods of joining sheet metal such as riveting, welding, brazing, and soldering is also covered.

**BLCT - 4163 Mid & Hi Effy Furn-Alt Warm Ar, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better  
 Level: Lower  
 This course covers the proper evaluation and installation of mid and high efficiency furnaces. Fuel oil burner breakdown, maintenance, and installations are covered in this course. Instruction is given on the proper sizing and installation of natural gas and propane gas distribution pipelines. Alternate warm air heat sources, types, and installations are also taught. Proper trade practices of the HVAC technician, heat system analysis, and maintenance are also covered in this course.

**BLCT - 4173 Sheet Mtl Air Dist Systm & Vent, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better  
 Level: Lower  
 This course covers the many types of furnace ductwork and proper application of various duct fittings. Proper application and installation of furnace air distribution systems is also covered. Instruction on Type B galvanized sheet metal vent pipe and components is given and the proper sizing and installation of this metal piping is covered. Sheet metal math such as perimeter, area, and volume is also included in this course.

**BLCT - 4176 Masonry V, 6.00 Credits**

Level: Lower  
 To give the student a working knowledge of the concrete industry by showing form construction as well as various types of concrete and their uses. Stair building, brick and concrete are also included within this course. This is a five (5) week course.

**BLCT - 4183 Sheet Metal Trade Safety, 3.00 Credits**

Prerequisite(s): BLCT 3453 with D or better  
 Level: Lower  
 This course covers instruction in the proper use and application of various hand and power tools used in the sheet metal trade. Sheet metal trade and tool safety is also covered in this unit. Students will be introduced to different sheet metal types and their proper applications as well as mechanical drawing. Students will develop and lay out patterns for sheet metal to be cut and formed.

**BLCT - 4186 Masonry VI, 6.00 Credits**

Level: Lower  
 This course serves as an overview of contracting, applying for jobs, small business and structural details on commercial and heavy construction. This is a five-week course.

**BLCT - 4203 Air Cond Components & Install, 3.00 Credits**

Level: Lower  
Students will learn about air conditioning components and accessories. Students will learn how to install air conditioning including pressure testing, evacuation, and charging.

**BLCT - 4212 Construction Safety, 2.00 Credits**

Prerequisite(s): BLCT 1034 with D or better  
Level: Lower  
Construction Safety is a comprehensive study of the requirements of an effective safety and health program that focuses on worker safety, improved productivity and accident risk management. This is done using an OSHA Outreach safety training format designed to provide students with a basic understanding and application of the OSHA standards relative to their field of study.

**BLCT - 4213 Air Conditioning Fundamentals, 3.00 Credits**

Level: Lower  
This course teaches the fundamentals of air conditioning and how the components of the system work together to perform the cooling process. This includes an examination of types of systems, and detailed look at the types and performance of evaporators and compressors.

**BLCT - 4223 Air Cond Perf & Trou & Ht Pump, 3.00 Credits**

Level: Lower  
This course teaches electrical and mechanical troubleshooting capabilities that are usable in real life applications. Students will also study heat pumps and a variety of applications in which they are feasible.

**BLCT - 4233 Heat Loss & Heat Gain, 3.00 Credits**

Prerequisite(s): BLCT 3523 with D or better  
Level: Lower  
Students will determine the heat loss and heat gain in a residential or small commercial building, which would allow a technician to determine what size equipment and to select and size heating and cooling ductwork and diffusers.

**BLCT - 4243 Refrigeration Handling Cert, 3.00 Credits**

Level: Lower  
This course prepares students to take the EPA Refrigerant Handling Certification test.

**BLCT - 4253 Residential Duct System Design, 3.00 Credits**

Prerequisite(s): BLCT 4233 with D or better \*  
Level: Lower  
Students will learn the fundamentals of duct system design as it applies to residential forced air heating and cooling systems. This includes an in-depth look at blower performance and equipment which affects airflow in ductwork.

**BLCT - 4303 Interior Surfaces, 3.00 Credits**

Prerequisite(s): BLCT 3323 with D or better  
Level: Lower  
This course covers the installation of finished ceiling, floor, and wall materials as well as the principles of stair building. The student will install floor and wall materials as well as calculate, cut and assemble stair parts in the laboratory.

**BLCT - 4312 Intro to Resid Jobsite Manage, 2.00 Credits**

Level: Lower  
Course instruction provides basic management skills for a residential jobsite lead carpenter or supervisor. This course includes information on hiring workers, managing sub-contractors, material deliveries, scheduling, contracts, and documentation.

**BSET - BACHELOR OF SCI ENGR TECH**

**BSET - 7001 Senior Seminar & Project Des, 1.00 Credit**

Level: Upper  
First of two-semester sequence Bachelor of Science seniors. Students design technical project for completion in BSET 8003. Project proposal and design oral reports are presented. Weekly seminar deals with various aspects of post-graduation professional employment.

**BSET - 8003 Senior Technical Project, 3.00 Credits**

Level: Upper  
Applied Learning-Creative Work  
Students build and test a technical project designed in BSET 7001. Each student must complete a formal oral presentation, project demonstration and submit a written project report. The project is subject to faculty approval. Each student chooses or is assigned a faculty project advisor.

**BUAD - BUSINESS ADMINISTRATION**

**BUAD - 1043 Occupational Experience, 3.00 Credits**

Level: Lower  
Applied Learning-Internship, Pass/Fail  
This is a semester-long experience where a business student can gain hands-on work experience in a sponsor company. Students benefit from this employer-employee relationship as an extension of classroom theory/applications and learn to work within corporate rules/regulations as expected of a newly hired worker. Satisfactory completion of this training, as well as related assignments, is required.

**BUAD - 1543 Grammar for Court Reporters, 3.00 Credits**

Level: Lower  
In this course students will develop a high-level ability in spelling, vocabulary, sentence structure, word choice, capitalization and punctuation with direct application to business writing and speaking. This course encourages application of this knowledge through editing activities. Attention is given to diagnosing fragments, run-ons, comma splices and parallelism errors. Emphasis is placed upon mastery of grammatical structure needed for effective writing of sentences, paragraphs, and essays. When this course serves as the prerequisite for another course, the student must receive a grade of "C" or better in this course.

**BUAD - 2033 Business Communication, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
Level: Lower  
Gen Ed - BC-COMP1503/BUAD2033, Gen Ed - BC-COMP3503/BUAD2033  
Students will develop skills in communicating in the digital age workplace. In addition to learning fundamentals of communication theory and principles, special attention is given to the business writing process, preparing short workplace messages and digital media, preparing positive, negative and persuasive messages, written and oral reports. Emphasis is also given to preparing students for the job search, application and interview process in the digital age. Workplace professionalism will be modeled, preparing students for workplace communication success.

**BUAD - 3043 Business Law I, 3.00 Credits**

Level: Lower

This course offers a general inquiry into the nature of law and the legal system in the United States. Areas covered include, but are not limited to, the different schools of jurisprudential thought, the Common Law tradition, Alternative Dispute Resolution, court procedures, legal research and case citations. Special attention is given to Constitutional Law and business, Torts and Crimes, Intellectual Property and the Common Law of Contracts.

**BUAD - 3114 Intl Tourism: Ital Food & Geog, 4.00 Credits**

Level: Lower

The course presents concepts of tourism relating to food and geography, using Italy as its example. The course is relevant to students of all backgrounds but was designed specifically for students of hospitality, business, and culinary arts. Students will study international organizations operating in tourism (i.e. WTO) and the different types of tourism, with particular attention paid to sustainable tourism. Students will be asked to investigate the tourism geography of Italy, becoming familiar with the most important tourist sites in Italy and Campania (through several excursions). The third module of the course will be dedicated to a very important kind of tourism in Italy and of the Campania Region: Food and Wine Tourism. Students are expected to actively participate and contribute to class discussion. Students will learn about marketing and/or sales activities such as marketing research and advertising, promotional campaign organization, and media relations connected with the promotion of tourism in Italy and Campania.

**BUAD - 3153 Fundamentals of Management, 3.00 Credits**

Level: Lower

This course deals with the skills necessary to become a manager. The students will develop an understanding of management theories and management skills through an examination of the basic functions of management. The concepts of planning, organizing, leading, and controlling a business organization are examined to show how these basic principles can be used to create a healthy and thriving organization in today's global environment. Special attention will be given to decision making, problem solving, and leadership in an environment where productivity improvements are a major concern.

**BUAD - 4004 Ess of Entrepr & Sm Bus Mgmt, 4.00 Credits**

Level: Lower

This course offers the student a step-by-step approach to starting a business. The course covers the fundamental principles of marketing, law, management, and office administration as applied to beginning a new venture. The class will be divided into teams that will prepare a comprehensive individualized business plan to include a market profile, site analysis, competitive analysis, financials, goals and objectives, pricing and marketing strategies, and executive summary. A major focus of this course is to explore each step necessary in structuring and launching a new venture, and discussing ways of recruiting the necessary resources to accomplish this venture.

**BUAD - 4053 Business Law II, 3.00 Credits**

Level: Lower

This course is an examination of the law of sales, commercial paper, agency-employment relationships, business organizations and government regulation of same. Article 2 of the UCC is used in the sales area with special attention paid to contract formation, title and risk of loss, performance and product liability. In examining commercial paper, Article 3 of the UCC is referenced with emphasis on function and form, holders in due course and liability and discharge. Attention is also given to employer/employee relationships, and distinguishing between sole proprietorships, partnerships, limited liability companies and corporations. Finally, government regulation of business is examined, especially in the areas of anti-trust and restraint of trade.

**BUAD - 4133 Investments, 3.00 Credits**

Level: Lower

This course is designed to be an introductory course in investments. Topics covered are sources of information, establishing investment goals, investment returns and risks, time value of money, investing in common stocks, bonds, and mutual funds, tax aspects of investing, analysis of financial statements, portfolio management techniques, and introduction to futures and options.

**BUAD - 4193 Insurance and Risk Management, 3.00 Credits**

Level: Lower

This course covers one of the six components of financial planning. This course will describe the techniques a financial planning/risk manager will use to analyze risk and assess alternate strategies. The course begins by examining the pervasive nature of risk and its impact on both the individual and society. It also demonstrates the ways in which insurance can be used to deal with the problems posed by such risk. Insurance is an integral part of the personal financial planning process; therefore the course is designed to be consumer oriented. The course can also be useful in preparation for a career in the fields of life, health and disability, and property and casualty insurance.

**BUAD - 4203 Intro Personal Financial Plan, 3.00 Credits**

Level: Lower

Applied Learning-Practicum

This course is an introduction to personal finance covering those areas that are necessary for an individual to make better financial decisions throughout one's lifetime. Topics include: developing financial statements, plans, budgets, time value of money, money management, credit management, tax planning, insurance, investments, retirement planning, and estate planning. Computer, business calculator applications, and case studies will be used throughout the course. The creation of a comprehensive financial plan will be required.

**BUAD - 4403 Business Computer Applications, 3.00 Credits**

Level: Lower

This course will introduce students to multiple aspects of business computer applications used in the business environment using current computer software packages to include: representing, storing, manipulating, and using digital information. Topics include: essential applications; information collection and analysis; research methods; and using digital information to enhance presentations in the workplace. This course prepares students to work with Microsoft Office in a career setting or for personal use. Students also develop an understanding of key ethical issues they will face in the context of using information technology.

**BUAD - 5003 Management Communications, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better or BUAD 2033 with D or better  
Level: Upper

This course is designed to provide the student with the range of communication issues a manager will face in the future. Enduring issues on how to write and speak effectively and devise a successful communications strategy as well as how to make the best use of telecommunications technology will be explored. Through lecture and application, the student will study such areas as handling feedback, managing meetings, communicating change, communicating with diverse populations and external audiences. Special emphasis will focus on how to use communications to achieve an organizational mission, how to adapt their communications to the specific needs of their audiences, and how to prepare for intercultural communication challenges.

**BUAD - 5013 Principles of Leadership, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better  
Level: Upper

This course is an examination of the theory, practice, and principles of leadership within the realm of management. Major topics include the evolution of leadership theory, an examination of the major leadership theories operating in modern organizations, and the impact of each on organizational effectiveness. The development, refinement, and application of effective leadership principles and skills are also examined. Students will be expected to analyze the spectrum of leadership theories and formulate opinions as to the most effective and efficient forms of leadership given a specific situation or organizational context.

**BUAD - 5023 Human Resource Management, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better  
Level: Upper

This course is designed to provide the students with an understanding of human resource management, and how they can improve their use of human resources through management tactics. It will discuss what human resource management contributes to the organization in terms of effectiveness and competitiveness. Discussion and research will take place on some of the challenges and workforce issues being faced in this area. Some of the topics covered include strategic human resource planning, staffing, training and development, compensation, employee and labor relations, and workplace safety.

**BUAD - 5033 Retirement Planning, 3.00 Credits**

Prerequisite(s): BUAD 4203 with D or better  
Level: Upper

This course provides an overview of the retirement planning process. It will describe the ongoing, systematic procedures a financial planner will utilize to assist a client in establishing meaningful retirement objectives and creating appropriate strategies. Topics will include employer sponsored retirement plans, Social Security, Medicaid, Medicare, post retirement health and quality of life issues, as well as investment, estate, and tax planning strategies.

**BUAD - 5043 Business Ethics, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better  
Level: Upper

This course explores the complex nature of ethical issues confronted by modern business leaders and managers. It integrates perspectives from a variety of disciplines, including, but not limited to, philosophy, law, management, economics, marketing, and public policy. Coursework is designed to illustrate the ethical principles applicable in a business setting while considering policies concerning employees, customers, and the general public, and while building trust, commitment, and effort within the business organization.

**BUAD - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**BUAD - 6003 Managerial Finance, 3.00 Credits**

Prerequisite(s): ( ACCT 1124 with D or better and ACCT 2224 with D or better ) or ACCT 5043 with D or better  
Level: Upper

This course is a comprehensive examination of the theoretical and practical approaches to financial management. Analyzing, planning, controlling investment and short and long term financing are examined for decision-making purposes. Topics include: the financial environment, risk and rates of return, capital budgeting techniques, the cost of capital and capital structure, analysis of financial statements, financial planning and control, and ethics in finance.

**BUAD - 6113 Strategic & Creative Prob Solv, 3.00 Credits**

Prerequisite(s): TMGT 7153 with D or better or BUAD 3153 with D or better  
Level: Upper

The focus of this course is the analysis of issues that managers typically address in technology-based environments and application of creative problem techniques. Emphasis is on fostering creative thinking as a way to approach and solve problems, and analysis of personal thinking styles. Problem, evaluation, and decision analysis techniques as well as computer-assisted problem solving will be used. Preparation and presentation of written and oral reports is required. The course offers an opportunity for students to practice communication of ideas and accomplishments through informal discussion, formal presentation, team decision-making and written case analysis. The applied case study problems explored in this course are based upon real and current industry problems.

**BUAD - 6213 Business in the European Union, 3.00 Credits**

Level: Upper

Applied Learning-Intl/Dom Trvl

The course describes how economic, political and social factors interrelate, and influence business in the European Union. Students will research sustainable business practices from different European Union member state's perspective. Guest lecturers and field trips are planned for students enrolled in the study abroad program.

**BUAD - 6303 Mktg & Commntg thru Soci Media, 3.00 Credits**

Prerequisite(s): ( CISY 1103 with D or better or CISY 1003 with D or better or CISY 1023 with D or better ) and ( BUAD 3153 with D or better or TMGT 7153 with D or better )

Level: Upper

Upon completion of this course, the student will understand the key concepts of social media and their application in today's business environment. This course is designed specifically to address business needs related to the design, development, and implementation of social media projects in areas such as customer relationship management (CRM), marketing and public relations, and internal organizational communication. In addition to the presentation of key concepts via lectures, this course will use case studies to illustrate business applications of social media, and hands-on projects in which students will create their personal social "brand" online. Students will also work on a larger team project that involves the development of a social media project for a not for profit organization that is selected and approved in coordination with the faculty.

**BUAD - 6403 Proj Mgmt for Busi Proffsnls, 3.00 Credits**

Prerequisite(s): ( CISY 1103 with D or better or CISY 1003 with D or better or CISY 1023 with D or better or BUAD 4403 with D or better ) and ( BUAD 3153 with D or better or TMGT 7153 with D or better )

Level: Upper

This course provides a comprehensive introduction to the standards, principles, guidelines, and processes for project management in business, government, and non-governmental organizations. The primary focus of this course will be the business project management processes identified in the Project Management Institute (PMI) Guide to the Project Management Body of Knowledge (PMBOK Guide). With the PMBOK Guide as the primary text, students will use a personal case study to develop the key deliverables for a Project Management Plan. Microsoft Project will be used for some aspects of the case study work, but instruction in use of the software will be limited to its basic functions (task listing, sequencing, and scheduling; resource identification and allocation; and cost estimating). Students will also become familiar with the use of GANTT charts and critical path analysis related to project management in general business settings.

**BUAD - 6503 Intro to Supply Chain Mgmt, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is an introduction to, along with application of, theoretical approaches and practices to managing a global supply chain. Course focus will be on managing material and information outside of the factory walls including aspects of product design collaboration, demand planning and forecasting, inventory management and deployment, understanding and designing distribution channels, procurement in global economy, general logistics, and career opportunities. Supply chain management (SCM) is a system approach to managing the entire flow of information, materials, and services from raw materials suppliers through operations facilities and warehouses to the end-customer. This course stresses the need to identify and maintain customer value throughout the entire process. Students will learn how supply chain strategies support corporate strategies.

**BUAD - 7004 Small Business Planning & Mgmt, 4.00 Credits**

Prerequisite(s): MKTG 2073 with D or better or BUAD 3153 with D or better or TMGT 7153 with D or better  
Level: Upper

Applied Learning-Creative Work

This course offers the student a step-by-step approach to starting and managing a small business. The course covers the fundamental principles of marketing, law, management, and office administration as applied to beginning a new venture. Each student will prepare a comprehensive individualized business plan to include a market profile, site analysis, competitive analysis, financials, goals and objectives, pricing and marketing strategies, and executive summary. A major focus of this course is to explore each step necessary in structuring and launching a new venture, and discussing ways of recruiting the necessary resources to accomplish this venture.

**BUAD - 7023 Legal Environment of Business, 3.00 Credits**

Level: Upper

This course will expose students to the legal environment within which businesses operate. It focuses on business' relationship with government agencies (public law issues) as well as with other businesses, consumers, suppliers, etc., (private law issues). The course specifically addresses the global, political, social, environmental and regulatory legal issues confronting businesses, with a special emphasis on the law of technology. It is intended to better equip the business manager for decision making by exploring the legal issues involved in contracts, torts, business organizations, employment law, the Uniform Commercial Code, intellectual property law and Constitutional Law. A variety of specific problems for business found within the law will be examined and analyzed through case briefs and studies, research projects and advocacy exercises. Students will have an opportunity to explore law related topics of particular interest to themselves with oral presentations to the class.

**BUAD - 7033 Operations Management, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

Upon completion of this course, the student will understand modern (quantitative and qualitative) concepts in production management and their application to problems relevant to today's workplace, for both industrial and service organizations. This course specifically addresses the impact of operational decisions on the firm and emphasizes cross-functional decision making. The course essentially deals with the process design, delivery systems, quality management, ERP, inventory control, scheduling and management of transformation processes to create and deliver value to customers by identifying opportunities and direction for change. This course will cover the terminology, problems, concepts and tools associated with managing operations. Special topics include: supply chain management, e-operations, service blueprinting, competency-based strategy, Six Sigma, lean systems, and mass customization.

**BUAD - 7043 Quantitative Decision Making, 3.00 Credits**

Prerequisite(s): MATH 1123 with D or better or MATH 2124 with D or better or MATH 1014 with D or better or MATH 1033 with D or better or MATH 1034 with D or better

Level: Upper

This course is an introduction to quantitative problem solving methods used in business applications. Topics include General Linear Programming and Sensitivity Analysis; Transportation, Assignment, and Transshipment Problems; Network Flow Algorithms; Project Scheduling: PERT/CPM; Inventory Models; Waiting Line Models; and Markov Processes. Software applications will be utilized whenever possible to aid students in the problem solving process.

**BUAD - 7273 Organizational Behavior, 3.00 Credits**

Prerequisite(s): TMGT 7153 with C or better or BUAD 3153 with C or better

Level: Upper

This course is designed to create an understanding of the behavior of people in organizations. The purpose of this course is to improve the effectiveness of human resources, both at the individual's level and organizational level. Students will integrate their learning through active participation in experiential exercises, personal experiences, case analysis, and general behavior experiments and study. The course will also focus on personal growth and development.

**BUAD - 8003 Management Info Systems - MIS, 3.00 Credits**

Prerequisite(s): ( CISY 1003 with D or better or CISY 1103 with D or better or CISY 1023 with D or better ) and ( BUAD 3153 with D or better or TMGT 7153 with D or better )

Level: Upper

This course focuses on a management perspective of information systems activity from development through implementation. The goal of this course is to help business students learn how to use and manage information technologies to revitalize business processes, improve business decision making, and gain competitive advantage. This course places major emphasis on up-to-date coverage of the essential role of Internet technologies in providing a platform for business, commerce, and collaboration processes among all business stakeholders in today's networked enterprises and global markets. This course places a major emphasis on the strategic role of information technology in providing business professionals with tools and resources for managing business operations, supporting decision making, and gaining competitive advantage.

**BUAD - 8013 International Business, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is an application of theoretical approaches to the globalization of business. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include the examination of how businesses and managers focus and succeed in the global economy including an overview of the economic, political, legal, social, and cultural systems involved. Emphasis is given to the scope and theories of international business, the framework for international transactions, relations with host countries and host cultures, global business strategies, and the contrasting international management and ethical issues managers may face.

**BUAD - 8023 Strategic Management Capstone, 3.00 Credits**

Prerequisite(s): ( BUAD 3153 with D or better or TMGT 7153 with D or better ) and BUAD 5023 with D or better and BUAD 6003 with D or better and ( MKTG 2073 with D or better or MKTG 6003 with D or better ) and BUAD 7033 with D or better

Corequisite(s): ( BUAD 3153 with D or better or TMGT 7153 with D or better ) and BUAD 5023 with D or better and BUAD 6003 with D or better and ( MKTG 2073 with D or better or MKTG 6003 with D or better ) and BUAD 7033 with D or better

Level: Upper

Applied Learning-Other

This course is an application of theoretical approaches to Strategic Management. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include creating a competitive advantage, analyzing the external and internal environment of an organization, recognizing an organization's intellectual assets, developing business level, corporate level, and international level strategies, strategic control and corporate governance, creating organizational designs, creating a learning organization and an ethical organization, and managing innovation and fostering corporate entrepreneurship. The completion of a business simulation will be required.

**CHEM - CHEMISTRY**

**CHEM - 1013 Introductory Chemistry, 3.00 Credits**

Level: Lower

Gen Ed - Natural Sciences, Liberal Arts and Science  
This non-laboratory course is designed for students who need to understand the basic concepts of chemistry. Students will explore mathematical relationships using the factor labeling (conversion factor method), atomic and molecular structures (with emphasis on the special nature of carbon), pH, essential building block molecules, water, ions and ionization, and other topics of interest to those who live in our chemical world. Students cannot receive credit for CHEM 1013 if CHEM 1114 or CHEM 1984 is concurrently or previously taken.

**CHEM - 1114 General Chemistry I, 4.00 Credits**

Level: Lower

Applied Learning-Other, Course Fee \$6.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is designed for science majors particularly focused in the health or agricultural areas who have had high school chemistry. It can be a terminal course in chemistry for those seeking an AAS in veterinary technology. Topical coverage includes: metric units and conversions, atomic theory, periodicity, electronic bonding models (Lewis, Pauling, Gillespie VSEPR), inorganic nomenclature, inorganic reactions (metathesis, acid-base, redox), stoichiometry and the mole concept, gas laws, phase transitions (phase diagrams, cooling curves, critical phenomena, heat capacities, intermolecular interactions), equilibrium (calculations involving K, Le Chatelier's principle) and elementary kinetics (Arrhenius model).

**CHEM - 1984 Chemical Principles I, 4.00 Credits**

Level: Lower

Applied Learning-Other, Course Fee \$8.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is intended for physical science and engineering majors. While providing a general overview of modern chemistry, the course emphasizes the development of chemical concepts and problem-solving techniques that are essential in science. General topics include atomic structure of matter, chemical reactions, thermochemistry, electronic structure of the atom and chemical bonding.

**CHEM - 2124 General Chemistry II, 4.00 Credits**

Prerequisite(s): CHEM 1114 with D or better or CHEM 1984 with D or better

Level: Lower

Applied Learning-Other, Course Fee \$27.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of General Chemistry I and is intended for science majors. It completes the presentation of topics started in General Chemistry I by surveying the topics of: Acids & Bases, Electrochemistry and Nuclear Chemistry. After these foundations are laid, the course will then explore two broad chemical themes: 1) Organic Chemistry, where the language and chemistry of selected functional groups (alkanes, alkenes, aromatics, alcohols, aldehydes, ketones, amines, and carboxylic acids), along with an exploration of chirality will be covered and 2) Biochemistry, where the chemistry and structure of carbohydrates, lipids and proteins will be surveyed.

**CHEM - 2984 Chemical Principles II, 4.00 Credits**

Prerequisite(s): CHEM 1984 with D or better or CHEM 1114 with D or better

Level: Lower

Applied Learning-Other, Course Fee \$10.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of Chemical Principles I and is intended for physical science and engineering majors. Those basic concepts from the first semester are applied to more complex aspects of chemistry which include the states of matter, solutions, thermodynamics, equilibrium, electrochemistry and nuclear chemistry. In addition, the course is designed to have more out-of-class activities related to these topical areas which are completed by a team of students.

**CHEM - 3514 Organic Chemistry I, 4.00 Credits**

Prerequisite(s): CHEM 2124 with D or better or CHEM 2984 with D or better

Level: Lower

Applied Learning-Other, Course Fee \$22.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the first semester of a two semester sequence in organic chemistry and is a thorough introduction to the language, mechanisms, materials and concepts fundamental to organic chemistry. Lecture topics include: VSEPR and atomic orbital models; basic valence hybrid and molecular orbital theory; the language of stereochemistry; the basic 'activated complex' model of Eyring and Polanyi; free radical reactions, notably as they occur in alkanes; alkene preparation and synthesis; SN1 and SN2 substitution reaction pathways notably as they occur in alkyl halides and alcohols; E1 and E2 elimination pathways, notably as they occur for alcohols and alkyl halides; the stereochemistry and energetics of cycloalkanes, and an introduction to retrograde, multi-step synthesis. Lab skills taught include: principles and practice of simple, fractional and steam distillation; recrystallization, solvent extraction, melting point, refractive index determination, IR and GC instrumental characterizations of compounds. Students are also required to synthesize three different compounds, including a multi-step Grignard synthesis to 2-methyl-2 hexene starting from 2-propanone and 1-bromobutane.

**CHEM - 4524 Organic Chemistry II, 4.00 Credits**

Prerequisite(s): CHEM 3514 with D or better

Level: Lower

Applied Learning-Other, Course Fee \$22.00, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the second semester of a two semester sequence in organic chemistry starting with Organic Chemistry I. Lecture topics include: synthetic routes to and from unsaturated aliphatics, notably: alkenes, alkynes, allylic and alkadienes with emphasis on accompanying mechanistic pictures notably: radical and carbocation additions, concerted additions, radical substitutions; synthetic routes to and from substituted aromatic compounds with emphasis on the electrophilic substitution mechanism; synthetic routes to and from carbonyl compounds including: aldehydes, ketones, carboxylic acids and their derivatives with particular focus on the special role played by the beta hydrogen; a brief survey of reactions and properties of amines, ester enolates, and a survey of carbohydrate structure and chemistry. A thorough introduction to stereochemical language not covered in the first semester is also carried out. Lab topics include mastery of organic techniques not covered in the first semester, e.g. NMR and polarimetry, mass spectroscopy and, hands-on experience with the various reactions discussed in lecture, notably: ring substitution, cycloaddition, stereoaddition, carbonyl condensations, and esterification.

**CHEM - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower

Liberal Arts and Science

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

**CHEM - 5013 Applied Chemical Principles, 3.00 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better

Level: Upper

Applied Learning-Practicum, Course Fee \$3.00, Liberal Arts and Science

This course is designed to provide engineering students with a foundation in the important concepts and principles of chemistry needed to communicate effectively with colleagues, develop manufacturing methods, and solve industrial problems related to Chemistry. Emphasis will be placed on those areas considered most relevant in an engineering context, and practical applications in engineering and technology will be examined. Topics include: atomic theory, bonding, stoichiometry, acid-base chemistry, oxidation-reduction, gases, and chemical equilibrium.

**CHEM - 5414 Analytical Principles, 4.00 Credits**

Prerequisite(s): CHEM 2124 with C or better or CHEM 2984 with C or better

Level: Upper

Applied Learning-Practicum, Course Fee \$62.00

This course is an in-depth examination of the chemistry and mathematical underpinnings connected to classical chemical calculations and wet chemical methods that form the foundation of modern quantitative chemistry. Using only a balance, buret and various classical volumetric devices, students will develop skills and understanding of gravimetric, titrimetric, complexometric, argentometric and redox methodologies. The course contains a thorough coverage of the manifold concentration systems and conversions as well as complete treatment of the details of equilibrium equations connected to precipitation, acid-base reactions, buffers, complexation and redox. Non-ideal corrections, notably Debye-Huckel theory, will also be covered.

**CHEM - 6614 Instrumental Analysis, 4.00 Credits**

Prerequisite(s): CHEM 4524 with D or better

Level: Upper

Applied Learning-Practicum, Course Fee \$55.00

A strongly lab-focused course devoted to providing students a thorough exposure to the most common instrumental methods found in modern chemistry and material science labs including: UV-VIS spectroscopy, Atomic Absorption Spectroscopy (AAS), Infrared Spectroscopy (IR), Gas Chromatography (GC), Mass Spectroscopy (MS), High Performance Liquid Chromatography (HPLC), optical and electron microscopy, calorimetric methods including Differential Scanning Calorimetry (DSC) and X-ray Diffraction (XRD). Additionally, fundamentals of glass, glass blowing and basic electronics including passive component behavior as well as some exposure to the fundamentals of semiconductor devices (transistors, op amps) will be explored.

**CHEM - 6854 Physical Chemistry, 4.00 Credits**

Prerequisite(s): CHEM 2984 with C or better and PHYS 1064 with C or better and MATH 6114 with C or better

Level: Upper

Applied Learning-Practicum, Course Fee \$57.00

This course provides students who plan future studies in forensic science technology, chemical sciences or chemical engineering a firm grounding in the quantum mechanical description of molecules, as well as a critical set of insights into thermochemical reasoning. The quantum mechanical focus will be on key model systems, notably the 1- and 2D particle-in-a box, the rigid rotor, the harmonic oscillator and hydrogen atom. Selected approximation methods applicable to multi-electron atomic systems and applications of infrared and visible spectroscopy will be explored, and students will be given experience in using current quantum calculation software to estimate optimal structures, predict IR spectra and estimate activated complex geometries. It is expected that students taking this course will have already taken a course of ordinary differential equations, but some of the course will also include mathematical excursions developing necessary mathematical tools, notably eigenvalue problems, series solutions of differentials and various matrix algebraic methods. The thermodynamic focus will be on efficiently developing the 4 laws of thermodynamics into useful forms whereby chemical equilibria and phase change of chemical systems can be predicted and described. A strong emphasis will be laid on using the practical chemical results of thermodynamic reasoning (K and Q predictions, Clausius-Clapeyron, Gibbs-Helmholtz and Nernst equation, phase rules and Gibbs-Duhem equations) rather than deriving the abstracted expressions of the several thermodynamic laws.

**CHEM - 7784 Biochemistry, 4.00 Credits**

Prerequisite(s): CHEM 4524 with C or better and BIOL 2204 with C or better

Level: Upper

Applied Learning-Practicum, Course Fee \$109.00

This course is a comprehensive course intended for science majors. Topics covered include the basic structure and reactions of biological compounds (carbohydrates, lipids, proteins, enzymes, and nucleic acids), the digestion and absorption of nutrients, bioenergetic principles, and catabolic and anabolic metabolism of major biochemicals in the human body. The laboratory exercises include classic techniques in isolation, purification and assay of proteins, enzymes (and kinetics), carbohydrates, lipids, and nucleic acids as well as polypeptide and polynucleotide sequencing and synthesis.

**CISY - COMPUTER INFORM SYSTEMS****CISY - 1003 Intro to Microcomputer Appl, 3.00 Credits**

Level: Lower

An introductory course in business computing, focusing on microcomputer technology utilizing operating system commands, word processing, spreadsheets, and database software used in business organizations.

**CISY - 1023 Intro to Information Tech, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This is an introductory course in information technology and computer applications. The course focuses on computer concepts and technology emphasizing secure file and memory management within various operating systems. The course also covers operating system commands, spreadsheets, databases, web tools and other applications used in business and scientific environments.

**CISY - 1103 Info Technology Management, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will introduce the student to multiple aspects of information technology management including: representing, storing, manipulating, and using digital information. Topics include: computer hardware and software fundamentals, essential applications, networking and the Internet, and computer user security and risks. Students will develop skills in collecting, analyzing, and using information from a variety of resources in order to complete class projects.

**CISY - 1113 Computer Programming I, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course covers the fundamentals of computer problem solving and programming. Topics include: program development process, differences between the object-oriented, structured, and functional programming methodologies, phases of language translation (compiling, interpreting, linking, executing), and error conditions associated with each phase, primitive data types, memory representation, variables, expressions, assignment, fundamental programming constructs (sequence, selection, iteration), algorithms for solving simple problems, tracing execution, subprograms/functions/methods, parameter passing, secure coding techniques (criteria for selection of a specific type and use, input data validation), and professional behavior in response to ethical issues inherent in computing.

**CISY - 1123 Intro to Programming for IT, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 An introductory programming course for information technology or CIS majors. The development of solutions through a set of logical steps and basic control structures (including selection and iteration) will be introduced. Students will write, debug and execute programs using a high level visual programming language.

**CISY - 2133 Computer Programming II, 3.00 Credits**

Prerequisite(s): CISY 1113 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course covers the fundamentals of algorithms and object oriented software development. Topics include: modern IDE for software development, primitive and reference data types, encapsulation, information hiding, selection, iteration, functions/methods, parameters, recursion, exception handling, generic linear data structures (arrays, records/structs) and maps, file types, file I/O, simple GUIs with event handling, programming to an interface, lambda expressions, semantics of inheritance and use of polymorphism, and relation with subtyping. Additionally focus will be given to searching (sequential, binary), selecting (min, max), and sorting (bubble, insertion, selection) algorithms, complexity notation, documentation using standard tools, program testing (unit testing) and debugging, reasoning about control flow in a program, and societal impacts related to computing and software.

**CISY - 2143 Microcomputer Systems I, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides an exposure to computer operating systems and hardware. Topics include hardware, troubleshooting, operating system commands, system utilities, memory managers, graphical user interface (GUI) software and computer security.

**CISY - 2153 Database Appl and Program I, 3.00 Credits**

Prerequisite(s): CISY 1023 with D or better  
 Level: Lower  
 Applied Learning-Creative Work  
 A comprehensive exposure to the use of database software concepts, capabilities and application; focusing on relational database techniques, SQL, normalization, database programming and developing application systems. A final/comprehensive project will be required.

**CISY - 3023 Advanced Microcmprtr Spreadshts, 3.00 Credits**

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better or CISY 1103 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 A comprehensive exposure to the use of microcomputer spreadsheet: concepts, capabilities and applications beyond the introductory level focusing on developing expertise in using a contemporary spreadsheet software package and companion products to develop business systems.

**CISY - 3193 Computer Architecture & Organi, 3.00 Credits**

Prerequisite(s): CISY 1113 with D or better  
 Level: Lower  
 This course covers fundamentals of computer architecture and organization. Topics include: classical von Neumann machine, major functional units, primary memory, representation of numerical (integer and floating point) and nonnumerical data, CPU architecture, instruction encoding, fetch-decode-execute cycle, instruction formats, addressing modes, symbolic assembler, assembly language programming, handling of subprogram calls at assembly level, mapping between high level language patterns and assembly/machine language, interrupts and I/O operations, virtual memory management, and data access from a magnetic disk.

**CISY - 3223 Intro to Web Page Development, 3.00 Credits**

Prerequisite(s): CISY 1023 with D or better  
 Level: Lower  
 An introductory course in web page development with HTML and XHTML. Also included will be various software packages that automate the web page design process. These may include Dreamweaver, Front Page, and others. This course is suitable for anyone who would like to create simple, but useful web pages. Topics include: the internet, tables, frames, forms, scripting language(s), multi-media.

**CISY - 3283 Internetworking I, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This is the first of two courses in a series to be offered covering the Cisco academy semesters 1 and 2. Students will develop skills and knowledge in Network media installation and testing, router and switch installation and configuration, and concepts of Local Area Networks (LANs) and Wide Area Networks (WANs). Instruction will be completed through on-line resources, lecture, and hands-on skills development. Students will be prepared for Cisco Certified Network Associate certification exams upon completion of both courses.

**CISY - 4003 Comp Prgmming III/Data Strctu, 3.00 Credits**

Prerequisite(s): CISY 2133 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course covers the fundamentals of data structures and software modeling. Topics include: modern IDE for software development and code version management systems, design and development of reusable software, software modeling (class diagram, use case, CRC card), introduction to analysis of algorithms (order notation), abstract properties, implementation and use of stacks, queues, linked lists, binary trees, binary search trees, and recursion and efficiency of recursive solutions. Additional focus will be given to range of searching (sequential, binary), selecting (min, max, median) and sorting algorithms (quicksort, merge sort, heap sort) and their time and space efficiencies. Software quality assurance (pre and post conditions, program testing), team development of software applications, and professional responsibilities and liabilities associated with software development will be discussed.

**CISY - 4033 Networking I, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This is an introductory course in networking with a survey and evaluation of network media, access methods, topologies, and terminology. Topics will include end user perspective, network cabling, hardware and software protocols, internetworking, network operating systems, and system administration. Included will be basic server installation, configuration, and management. A variety of workstation and server operating systems will be explored through extensive hands-on labs with an emphasis on network security.

**CISY - 4053 Linux/Unix Admin and Scripting, 3.00 Credits**

Prerequisite(s): CISY 4033 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course will take a more in depth look at Linux and Unix-like system administration. This will include console and graphical interfaces. Major topics include file systems, text processing, installation, system configuration, software packages, network configuration, backup, and kernel management. A significant portion of the course will concentrate on script analysis and creation. Laboratory exercise will provide hands-on exercise in each of these topics.

**CISY - 4063 Systems Analysis & Design, 3.00 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course covers the fundamental concepts underlying all business information systems including security. Emphasis is on a structured process in the design of computer-based information systems. Current tools and techniques are applied to a case study project.

**CISY - 4103 Visual Programming & Developmt, 3.00 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better  
 Level: Lower  
 A visual programming environment will be used in a continuation of Computer Programming I. Emphasis will be placed on advanced algorithms, program design and development. Topics included will be sub-programs, arrays, files, and data abstraction. Debugging and proper program design and documentation will be stressed.

**CISY - 4283 Internetworking II, 3.00 Credits**

Prerequisite(s): CISY 3283 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 Students will develop skills and knowledge in network media installation and testing, router and switch installation, and concepts of Local Area Networks (LANs) and Wide Area Networks (WANs). Instruction will be completed through on-line resources, lecture, and hands-on skill development. Students will be prepared for Cisco Certified Network Associate certification exams upon completion of CISY 3283 and this course.

**CISY - 4423 Intro to Mobile Robotics & Ani, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The course covers basic programming techniques of mobile and stationary robotic systems with respect to autonomous function and interaction with the environment. Topics include basic programming techniques, robot platforms, use of sensors, embedded control, pre-programmed problem solving, robot construction, and human-robot interaction. Students will complete programming and robot construction projects. Theoretical concepts presented in the lecture will be reinforced in the laboratory.

**CISY - 4723 Essentials of Info Security, 3.00 Credits**

Prerequisite(s): CISY 4033 with D or better or ELET 2012 with D or better

Level: Lower

This course is a comprehensive survey of all aspects of computer security. This includes local host, network web, and database security as well as other objects that are prone to attack. Special focus will be given to the identification of security threats and countermeasures that can be taken to make these systems more secure. Students will develop a security plan for a small to mid-sized organization.

**CISY - 5123 Scientific Programming, 3.00 Credits**

Prerequisite(s): or MATH 1033 with D or better

Level: Upper

Applied Learning-Practicum

In this course students will learn structured programming techniques to solve scientific and engineering application using conventional programming languages. Topics include data types, flow control structures, functions, I/O pointers, program design and maintenance, top-down design and programming techniques.

**CISY - 5133 Sec Policies, Recov & Risk Man, 3.00 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better

Level: Upper

Applied Learning-Practicum

Students will be introduced to security policies, the tools and techniques used in security management, and risk management procedures. They will analyze risk and security threats in the organization as well as manage, test, and establish security policy. Topics such as information protection, code of practice for information security, risk management, security awareness and security evaluations will be explored. A final project in security assessment will be required.

**CISY - 5203 Network Administration, 3.00 Credits**

Prerequisite(s): CISY 4033 with D or better or ELET 2012 with D or better

Level: Upper

Applied Learning-Practicum

Students will use a variety of network management tools to manage, monitor, support and troubleshoot network operations. Topics will include performance issues, end-user accounts, data security, disaster recovery, supporting applications, and documentation.

**CISY - 5233 Human Computer Interaction, 3.00 Credits**

Prerequisite(s): CISY 4103 with D or better and CISY 3223 with D or better

Level: Upper

This course will cover the design, prototyping, and evaluation of user interface to computers. This will include the implementation of interactive computing systems for human use and the study of major phenomena surrounding them. In addition, the course will stress the importance of good interfaces and the relationship of user interface design to human-computer interaction within multi-disciplinary dynamics. Example systems, case studies, methodologies and models will be used to demonstrate the concepts and the importance of human computer interaction.

**CISY - 5303 Web Programming I, 3.00 Credits**

Prerequisite(s): CISY 3223 with D or better

Level: Upper

A comprehensive survey of HTML and web publishing software to create robust, functional web pages. This course will examine HTML standards, browser capabilities, information architecture, bandwidth considerations, image format, maps, frames, forms, and server/client side scripting. Topics of current interest will be included, such as: JavaScript, VBScript, ActiveX, Active Server Pages, Dynamic HTML, and Cascading Style Sheets.

**CISY - 5403 Database Concepts, 3.00 Credits**

Prerequisite(s): CISY 2153 with D or better

Level: Upper

Applied Learning-Practicum

This course is a study of the terminology, design, implementation and software associated with database systems. Topics include the need for database management systems, file organization, sequential and direct access methods and physical implementation. Other topics covered are relational database design, entity and semantic models, hierarchical and network models, SQL, database applications using the internet, and sharing enterprise data. Students will design, implement, test, and debug database management systems according to industry standards.

**CISY - 5613 UNIX/Linux Server Admin, 3.00 Credits**

Prerequisite(s): CISY 4053 with D or better

Level: Upper

This course will introduce students to the techniques and practices associated with the installation, configuration, troubleshooting, and maintenance of a UNIX/Linux based network. Students will create an operational UNIX/Linux server within a network domain to support DNS, DHCP, gateway, file, print, and other services. Applications will be installed and supported for network users. Operational practices including security, user and group management, backups, logging, script use, and documentation will be addressed as a final project.

**CISY - 5723 Essentials of Info Security, 3.00 Credits**

Prerequisite(s): CISY 4033 with D or better or ELET 2012 with D or better

Level: Upper

This is a comprehensive survey of all aspects of computer security. This will include local host, network, web, database security as well as other objects that are prone to attack. The student will focus on the identification of security threats and countermeasures that can be taken to make these systems more secure. Students will develop a security plan for a small to mid-size company.

**CISY - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper

A capstone course which provides an integrative experience in applying the knowledge and skills of earlier course work, with particular emphasis on computer science management information systems, and communications skills in an integrated/internship setting; requires student to present and defend, orally and in writing, solutions to experienced real-world problems encountered.

**CISY - 6103 Web Server Administration, 3.00 Credits**

Prerequisite(s): CISY 4053 with D or better and CISY 3223 with D or better

Level: Upper  
Applied Learning-Practicum

This is a comprehensive survey of all aspects of web server administration. Students will gain hands-on experience by actually installing and administering their own web servers. Topics include: server installation and configuration, site planning, supporting dynamic content, security, and maintenance.

**CISY - 6123 Adv Pro with Vid Game Des & Dev, 3.00 Credits**

Prerequisite(s): CISY 4003 with D or better or CISY 6503 with D or better

Level: Upper  
Applied Learning-Practicum

This course is an advanced study of programming using current tools to create video games. Topics covered include higher-level programming techniques, writing programs that use the windows user interface, and creating and using graphic objects. The gaming topics of data structures and algorithms, artificial intelligence, physics modeling, and mathematics will also be covered. A final project will be required incorporating AI and physics.

**CISY - 6503 Object-Oriented Programming, 3.00 Credits**

Prerequisite(s): CISY 4103 with D or better

Level: Upper  
Applied Learning-Practicum  
Object-analysis (OOA) and object-oriented design (OOD) concepts will be covered using an object-oriented programming (OOP) language such as Java. Topics include: objects, messages, classes, encapsulation, inheritance, polymorphism, code reuse, and method-driven and model-driven object-oriented approaches, methodologies and tools. Students will formulate object solutions to practical problems in the business and scientific areas.

**CISY - 6703 Network Design Concepts, 3.00 Credits**

Prerequisite(s): CISY 4033 with D or better \*

Level: Upper  
Applied Learning-Practicum  
In this course students will design and implement network systems, utilizing various topologies, media, and protocols. Students will control network hardware such as switches, and routers. Design concepts will be implemented through a variety of laboratory exercises. Students will be required to analyze and present a network design plan.

**CISY - 7003 Project Management, 3.00 Credits**

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better or CISY 1113 with D or better or CISY 1123 with D or better or BUAD 5053 with D or better

Level: Upper  
Applied Learning-Practicum  
A comprehensive approach to project management tools and applications in an interdisciplinary and global environment. Emphasizing concepts, techniques, and principles associated with project management, this course is vital to students entering the IT management field. The course will focus on the changes in the computing environment including hardware, software, and networking. Students will be able to plan, schedule, budget, estimate, control, and monitor projects. In addition, they will become familiar with resource allocation, resource loading, CPM, CMM, GANTT, and PERT. The use of project management software will be a major component of the course.

**CISY - 7013 Network & Host Security, 3.00 Credits**

Prerequisite(s): CISY 4033 with D or better and CISY 4053 with D or better

Level: Upper  
Applied Learning-Practicum  
This course will provide a practical, hands-on approach to the security of both hosts and networks. Students will be provided with the opportunity to perform penetration testing and then apply results to updating and patching hosts to mitigate discovered vulnerabilities. It includes access control and authentication systems as well as planning and implementation for wireless network security. A variety of client and network operating systems will be used. This course assumes a prerequisite knowledge of network operating systems and introductory security concepts. A major network security project is a requirement of the course and will be presented in written and oral formats.

**CISY - 7023 Compu Forensics & Legal Issues, 3.00 Credits**

Prerequisite(s): CISY 5203 with D or better or CISY 5613 with D or better

Level: Upper  
Applied Learning-Practicum  
This course will provide a practical, hands-on approach to the process of scientifically retrieving, examining and analyzing data from computer storage media so that data can be used as evidence in court. This course assumes a prerequisite knowledge of network operating systems and security concepts. A final project will be required.

**CISY - 7033 Security Tools, 3.00 Credits**

Prerequisite(s): CISY 5203 with D or better or CISY 4043 with D or better or CISY 4053 with D or better

Level: Upper  
Applied Learning-Practicum  
This course provides a practical, hands-on approach to a myriad of security tools employed in wired and wireless networks. These security tools will include Industry Standard Firewalls, Virtual Private Networks (VPNs), wired network vulnerability scanners, wireless security probes, wireless intrusion detectors, wireless scanners and wireless encryption cracking utilities. Advanced firewall concepts and technologies will be covered in depth and include design considerations for enterprise networks, large company networks and medium business networks. The course will include VPN concepts, technologies, and configurations for site to site VPNs as well as configurations for client remote access VPNs. The course will cover various vulnerability scanners for networks with heterogeneous operating systems and advanced firewall configurations. Students, in a laboratory environment, will attack and defend networks and submit a project paper detailing lessons learned and how to best defend both wired and wireless networks. The course assumes a prerequisite knowledge of network operating systems and security concepts.

**CISY - 7203 Web Programming II, 3.00 Credits**

Prerequisite(s): CISY 5303 with D or better

Level: Upper  
Applied Learning-Practicum  
A survey of programming languages and techniques for Web development. Topics include CGI'S (Common Gateway Interface), client side programming with JavaScript, dynamic content using Java and ActiveX, server side programming using Active Server Pages and VBScript, creating dynamic database driven content, and developing web based client/server database applications.

**CISY - 8303 Sftw Intgtn & Interoperability, 3.00 Credits**

Prerequisite(s): CISY 6703 with D or better and CISY 4723 with D or better

Level: Upper

Applied Learning-Practicum

In this course, students will integrate network system components to construct a working enterprise network. Topics addressed include integration of different network topologies, interoperability between network operating systems, integration of client-server applications, web based information systems, other support systems and support of end-user needs.

**CISY - 8403 Web Applications, 3.00 Credits**

Prerequisite(s): CISY 7203 with D or better

Level: Upper

Applied Learning-Creative Work

In this capstone course, students will create web based multi-media applications for companies and/or organizations. These applications will demonstrate client and server side design, programming and maintenance. Additional topics include: systems development life cycle, web-site hosting and administration, e-commerce, and integrated software applications.

**CISY - 8503 Appl Database Management, 3.00 Credits**

Prerequisite(s): CISY 5403 with D or better and CISY 6503 with D or better

Level: Upper

Applied Learning-Creative Work

In this capstone course, students will create and maintain Database Applications in a commercial and/or academic setting. This course provides an integrative experience in applying the knowledge and skills of earlier course work, focusing on multi-user database systems. A major portion of this course will be design, implementation, and documentation of an enterprise data system. Additional topics may include: systems development life cycle, web applications, and application reliability and security.

**CISY - 8603 Seminar Critical Issues in IT, 3.00 Credits**

Prerequisite(s): CISY 4103 with D or better

Level: Upper

Applied Learning-Creative Work

This is a research-oriented and performance-oriented course. The course addresses critical (both theoretical and pragmatic) issues in information technology (IT). Issues of concern may include, but are not limited to, IT systems security, ethics of using IT systems, human-IT systems interface, and data analysis requirements at different organizational levels. Students are expected to conduct research, present their findings, accept feedback on their presentations, and document their knowledge of their topics. Students will also complete a project working with a cross-disciplinary team and prepare strategies/materials for an effective job search. Every student is expected to attend all class presentations and guest speaker sessions.

**CISY - 8703 Information Security Capstone, 3.00 Credits**

Prerequisite(s): CISY 5133 with D or better

Level: Upper

Applied Learning-Creative Work

In this course, students will integrate, configure and analyze network system components, security tools and procedures necessary to create enterprise class network security perimeters. Topics addressed include a combination of open source and proprietary security applications covering the fundamental components of an effective network security perimeter. These components include: firewalls, Intrusion Detection Systems (IDSs), Intrusion Prevention Systems (IPS) Virtual Private Networks (VPN), authentication systems, port scanning, vulnerability scanning penetration testing, disaster recovery systems and security management systems. An in-depth analysis of the security risks associated with the TCP/IP protocol and associated sub-protocols will also be included as part of a final project.

**CISY - 8706 Info Technology Internship, 6.00 Credits**

Level: Upper

Applied Learning-Internship, Pass/Fail

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. Two papers will be completed in each of the 6 hour internships. These courses are offered as a two-part alternative to CISY 8712, 8706 and 8716 are to be taken in sequence as two 6 credit hour classes. These 12 hours will be equivalent of CISY 8712. Students may not enroll in CISY 8712 and CISY 8706 / 8716.

**CISY - 8712 Info Technology Internship, 12.00 Credits**

Level: Upper

Applied Learning-Internship, Pass/Fail

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends.

**CISY - 8716 Info Technology Internship, 6.00 Credits**

Level: Upper  
 Applied Learning-Internship, Pass/Fail  
 Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. Two papers will be completed in each of the 6 hour internships. These courses are offered as a two-part alternative to CISY 8712, 8706 and 8716 are to be taken in sequence as two 6 credit hour classes. These 12 hours will be equivalent to CISY 8712. Students may not enroll in CISY 8712 and CISY 8706 / 8716.

**CIVL - CIVIL ENGINEERING TECH**

**CIVL - 1011 Civil AutoCAD, 1.00 Credit**

Level: Lower  
 This course will give the student the basic skills necessary to complete dimensioned drawings in AutoCAD. Topics include: setting up a drawing, basic lines and coordinates, geometric shapes, layering, editing commands, dimensioning, creating text, hatching and plotting to scale.

**CIVL - 1013 Portland Cement Concrete, 3.00 Credits**

Level: Lower  
 Applied Learning-Field Study, Course Fee \$15.00  
 This course introduces aggregates and concrete as construction materials. Standard techniques of measurements and computation are presented and then applied to testing materials. The student is prepared to reach the level of Concrete Field Testing Technician Grade 1, with emphasis on the American Concrete Institute studies of Portland Cement Concrete, and on quality control in the field. Concrete masonry block is reviewed as a product of cement.

**CIVL - 1182 Civil Technology Graphics, 2.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This is an introductory course in construction/civil/surveying graphics. The student will be introduced to scales, dimensioning, surveying maps, house plans, building codes, and construction terminology. Contour maps, wall sections, foundation plans, floor plans, and house elevations will be drawn and plotted using AutoCAD.

**CIVL - 1204 Surveying I, 4.00 Credits**

Level: Lower  
 Applied Learning-Field Study  
 This course is a study of the fundamentals of plane surveying. Emphasis will be placed on the use and care of total station, level, tape and leveling rod, note keeping and basic surveying calculations and adjustment of data. The course introduces measurement techniques through applications in an outdoor laboratory environment.

**CIVL - 2154 Quality Control of Const Matl, 4.00 Credits**

Level: Lower  
 Applied Learning-Field Study  
 This course equips the student with entry level skills as a quality control technician in Soil and Asphaltic Concrete. Students will design and test asphaltic concrete mixes using industrial procedures and standards. Soil classification, permeability, sampling, and composition are studied and applied in laboratory.

**CIVL - 2204 Surveying II, 4.00 Credits**

Prerequisite(s): CIVL 1204 with D or better  
 Level: Lower  
 Applied Learning-Field Study  
 This is the second course of a two-semester sequence emphasizing plane and route surveying theory and techniques. Emphasis will be on circular curves, vertical curves, profiling, cross-sectioning, realignment of circular curves, spiral curves, earthwork calculations, construction stakeout procedures and an introduction to electronic distance measurement.

**CIVL - 3204 Legal Asp & Prac of Land Surv, 4.00 Credits**

Prerequisite(s): CIVL 2204 with D or better  
 Level: Lower  
 In this course students will develop an understanding of the professional land surveyor's role in society and legal responsibility. Emphasis will also be placed on systems used to describe real property, types of transfer of real property, techniques of record research, as well as locating sequential and simultaneous real property conveyances.

**CIVL - 3214 Geodesy, 4.00 Credits**

Prerequisite(s): MATH 1054 with D or better or MATH 2043 with D or better or MATH 1063 with D or better  
 Level: Lower  
 Course emphasizes the techniques of precise horizontal and vertical control surveying used by government or private surveyors and engineering consultants. Use of directional theodolites, precise levels and total station measurement equipment are stressed. Projects are used to present underlying theory of field work, standards, specifications, and adjustment of horizontal and vertical data.

**CIVL - 3553 Comm Bldg Const Methods & Prac, 3.00 Credits**

Prerequisite(s): CIVL 1011 with D or better and CIVL 1182 with D or better  
 Level: Lower  
 This course is a study of materials and methods of construction employed in commercial building construction. This course will be used to extend the students' graphics skills using BIM/3-D software as well as their knowledge of the building construction process. Topics include: foundation, steel frame and reinforced concrete construction. Throughout the course, attention will be given to sustainability of construction materials and methods.

**CIVL - 4043 Construction Management, 3.00 Credits**

Level: Lower  
 This course is a study of the business organizations, contracts, personnel and ethics used in construction projects. Topics include the stakeholder, contracts, cost accounting, construction documentation, planning and scheduling, bonding, insurance, labor relations and ethics as specifically experienced in the construction industry.

**CIVL - 4103 Structures I, 3.00 Credits**

Prerequisite(s): ( MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2043 with D or better ) and ( PHYS 1024 with D or better or PHYS 1044 with D or better )

Level: Lower

This course provides the students with a quantitative understanding of the effect of loads on structural elements in a building. Principles of structural mechanics are covered from forces and stresses to properties of section, and finally to shear and bending moments on beams. The designs of basic timber and steel beams and columns are also presented.

**CIVL - 4143 Contracts, Specs, & Estimating, 3.00 Credits**

Prerequisite(s): CIVL 3553 with D or better or ARCH 4014 with D or better

Level: Lower

Applied Learning-Creative Work

This course is a study of contracts and specifications governing contractors in the construction phase of a project. Students will practice the estimating of earthwork, masonry, concrete, steel, and wood. Students will progress through manual takeoffs to electronic spreadsheets. At the completion of this course, the student will be able to create an estimate for a construction project.

**CIVL - 4204 Subdivision Theory & Appli, 4.00 Credits**

Prerequisite(s): CIVL 3204 with D or better

Level: Lower

Applied Learning-Practicum

This course is an introduction to the U.S. Public Lands Survey System, the laws of simultaneous conveyances, and subdivision of lands. Governmental regulations and environmental considerations will be addressed. Industry standard software will be utilized in the laboratory.

**CIVL - 4214 Surveying Practicum, 4.00 Credits**

Prerequisite(s): CIVL 3214 with D or better and CIVL 3204 with D or better

Level: Lower

Applied Learning-Practicum

This course consists of a series of field and office problems in surveying. Topics include research, field reconnaissance, data collection, deed interpretation, and mapping. Students are responsible for the execution of a comprehensive surveying project.

**CIVL - 4243 Surveying Computer Appli, 3.00 Credits**

Prerequisite(s): CIVL 1204 with D or better and CIVL 2204 with D or better and CIVL 3214 with D or better

Level: Lower

This class is an introduction to the concepts of field to office automation, the use of coordinate geometry (COGO) software programs and computer aided drafting (CAD) software programs. Emphasis will be placed on the use of the computer in the solution of problems and projects that stress data analysis, data adjustment, mapping calculations and the application of computer graphics.

**CIVL - 4273 Photogrammetry & Image Interpr, 3.00 Credits**

Level: Lower

This course will introduce the advantages of photogrammetry, LiDAR and Remote Sensing as a mapping and planning tool. The types of photography, photo scale, flight planning techniques and specifications, displacement calculations and stereoscopic measurement are covered.

**CIVL - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**CIVL - 5114 Land Surveying, 4.00 Credits**

Prerequisite(s): CIVL 3204 with D or better

Level: Upper

This course is a study of licensure requirements, professional liability and ethics. The legal concepts of the rules of evidence are presented and applied to written and unwritten transfers of land ownership. Riparian rights, reversionary rights, problems of apportionment, and field and office procedures for locating written title boundaries are discussed. The writing of deed descriptions is discussed in both a theoretical and applied sense.

**CIVL - 5213 Foundations and Concrete, 3.00 Credits**

Prerequisite(s): CIVL 4104 with D or better or CIVL 4103 with D or better

Level: Upper

This course introduces students to basic design principles of reinforced concrete structural members such as beams, slabs, and walls. Topics will include bending of single and doubly reinforced beams, T-beams, and slabs, as well as shear design of these members. The design of development length and splicing of reinforcing bars in the members will be included as well. Methods and materials used in concrete work will be discussed with attention given to the materials and methods of formwork construction and pertinent ACI codes and regulations.

**CIVL - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**CIVL - 6102 Community-Economic Redevelopme, 2.00 Credits**

Level: Upper

Liberal Arts and Science

This course is a multidisciplinary overview of redevelopment process. This course will be run as a seminar that will meet in a seminar and discussion format. Understanding of the course topics will equip students with the knowledge of community economic development and regeneration project development. It will impart valuable skills for staff and leadership in consulting firms, municipalities, agencies and non-profits that do community development and community regeneration.

**CIVL - 6104 Anlys & Adjmnts of Surv Mrmnts, 4.00 Credits**

Prerequisite(s): MATH 2074 with D or better or MATH 2094 with D or better

Level: Upper

This course is an introduction to the adjustment of survey data, incorporating the use of the computer and matrix algebra. Error propagation, least-squares adjustment methods and the analysis of survey measurements will be covered.

**CIVL - 6113 Environmental Tech Concepts, 3.00 Credits**

Prerequisite(s): MATH 1033 with D or better or MATH 1034 with D or better or MATH 2043 with D or better or MATH 1063 with D or better

Level: Upper

This course focuses on environmental technology systems. Topics covered will include: basic environmental concepts, water quality, water pollution, drinking water, storm water management, wastewater treatment, municipal solid waste, hazardous waste, air pollution, noise pollution, erosion control and environmental assessments. During the course, the student will analyze a site plan to determine the "best practice" solutions to storm water management challenges using industry standards. At the end of the course the student will be able to make decisions with regards to various environmental issues that will come both in the workplace and in the student's personal life. Leadership in Energy and Environmental Design, (LEED) criteria and sustainable building issues will also be addressed.

**CIVL - 6123 Mechanical Systems, 3.00 Credits**

Prerequisite(s): CIVL 3553 with D or better or CIVL 3554 with D or better

Level: Upper

An introduction to building equipment for single and multi-story projects including domestic water, sewer, heating and ventilating systems, and electrical systems. Students will design these systems for a residence or small office building. Students will review blueprints and analyze systems for a large commercial building.

**CIVL - 6154 Supervisory Estimating, 4.00 Credits**

Prerequisite(s): CIVL 7503 with D or better

Level: Upper

This course provides in depth study of construction estimating as used in winning bids and the change order process during construction. The course teaches the student to use a database estimating software package to incorporate advanced estimating techniques into a final project cost estimate. During the course the students will complete estimates in several disciplines of construction to include commercial building and heavy civil construction estimates.

**CIVL - 6212 Construction Safety, 2.00 Credits**

Prerequisite(s): CIVL 3553 with D or better or ARCH 4014 with D or better

Level: Upper

This course is a comprehensive study of the requirements of an effective safety program that focuses on worker safety, improved productivity and accident risk management. The course will also provide students with an understanding of the Occupational Safety Health Administration (OSHA) standards and their application to the construction industry.

**CIVL - 6214 Advanced Estimating, 4.00 Credits**

Prerequisite(s): CIVL 4143 with D or better

Level: Upper

Applied Learning-Practicum

This course is an extension of topics learned in the basic estimating course. The course teaches students to use a database estimating software package to incorporate advanced estimating techniques into a final project cost estimate. During the course, the students will create estimates on several types of construction including commercial building and heavy civil projects. The student will also learn the concepts of database estimating including how to create and edit a database.

**CIVL - 7001 Sr Seminar & Project Design I, 1.00 Credit**

Level: Upper

Applied Learning-Creative Work

This course is the first of a two-semester sequence required for all Geomatics/Land Surveying Engineering Technology Bachelor seniors. Students design and implement a technical project for completion in CIVL 8003. Project proposal and oral reports are presented for initial approval by department faculty. The weekly seminar encompasses professional licensure examination preparation, aspects of post-graduation professional employment, review of initial project proposal and consultation on project progress.

**CIVL - 7103 Land Development & Design, 3.00 Credits**

Prerequisite(s): CIVL 1204 with D or better and ( MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2043 with D or better or MATH 2074 with D or better or MATH 2094 with D or better )

Level: Upper

This course is intended to give the Civil Engineering Technology student an understanding of the issues related to site development and drainage issues for land development. Students will study and create land development plans including drainage calculation, street and road design, water distribution, and sewer design. Issues related to sustainable development will be integrated into the topics to provide the student with an appreciation of concerns related to energy, as well as material and land conservation.

**CIVL - 7114 Geographic Information Systems, 4.00 Credits**

Prerequisite(s): CIVL 3214 with D or better

Level: Upper

A broad-based introduction to GIS; especially the application of spatial analysis and modeling. Applications will cover hardware and software considerations, map overlays, automation in thematic and topographic mapping, raster/vector devices, data acquisition, and related database storage and algorithms. Advanced topics will include error modeling, data uncertainty, and new directions and impacts of GIS.

**CIVL - 7213 Construction Systems, 3.00 Credits**

Prerequisite(s): CIVL 4143 with D or better

Level: Upper

This course examines how people and machines interact to build efficient systems that improve productivity in the construction industry. This course will document existing and emerging construction systems and will delve extensively into production capacity and uses of construction equipment. This course culminates with a project to design equipment spreads for an earthwork project.

**CIVL - 7223 Construction Project Planning, 3.00 Credits**

Prerequisite(s): CIVL 3554 with D or better or CIVL 3553 with D or better

Level: Upper

Applied Learning-Creative Work

Students will develop a construction project management logic diagram for large multi-phased projects. The students will use software for scheduling, monitoring, and "crashing" projects to evaluate alternatives to reduce time to completion and to ensure cost effectiveness and safety considerations.

**CIVL - 7503 Construction Business and Law, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better \*  
 Level: Upper  
 Study of specific contract clauses that are common in construction contracts including change orders, differing site conditions, construction delays, liquidated damages, construction claims and dispute resolutions. Students will read construction contract disputes and determine reasonable outcomes based on the given fact patterns. Additionally students will be introduced to the business of construction through construction job site cost accounting.

**CIVL - 7523 Construction Scheduling, 3.00 Credits**

Prerequisite(s): CIVL 7503 with D or better  
 Level: Upper  
 This course is the study of job site construction scheduling. Software will be employed to produce Critical Path Method analysis. Topics include crew distribution and leveling as well as construction equipment resource loading.

**CIVL - 8003 Sr Seminar & Project Design 2, 3.00 Credits**

Prerequisite(s): CIVL 7001 with D or better  
 Level: Upper  
 Applied Learning-Creative Work  
 In this course, students implement a capstone technical project proposed and designed in CIVL 7001. Each student must do research, prepare a plat/map, conduct a formal oral presentation and submit a comprehensive written report.

**CIVL - 8104 Global Positioning Systems, 4.00 Credits**

Prerequisite(s): CIVL 3214 with D or better  
 Level: Upper  
 This course is designed to provide an introduction to the following topics: The U.S. Global Positioning System; other satellite-based navigation systems; GPS terminology; sources of error; GPS accuracy in forested conditions; post-process differential correction; WAAS, DGPS; and mission planning.

**CIVL - 8123 Construction Project Admin, 3.00 Credits**

Prerequisite(s): CIVL 4043 with D or better or CIVL 7503 with D or better  
 Level: Upper  
 This course is an in depth study of the documents and processes for construction project administration, including submittals, subcontracting, expediting, pay procedures, closeout and reporting. This course culminates in a simulated construction project where students assume various stakeholder roles.

**CIVL - 8512 Construction Mgmt Internship, 12.00 Credits**

Prerequisite(s): CIVL 7503 with D or better  
 Level: Upper  
 A work experience designed to assist the student in making the transition from classroom to the construction industry. Students will complete an approved supervised work experience under the direct supervision of an owner, manager or supervisor in a construction related industry. Each student will have a planned work program of education objectives approved by the student, site supervisor, and Internship Coordinator. Written and oral reports, along with a journal of work activities and experience, will be required.

**CJUS - CRIMINAL JUSTICE**

**CJUS - 1003 Intro to Criminal Justice, 3.00 Credits**

Level: Lower  
 This course examines the three segments of the criminal justice system in the U.S. - law enforcement, the courts and corrections. Included is study of their evolution, philosophy, structure, responsibilities, agencies, and ethical obligations. Also examined are the role of the U.S. Constitution and of state and federal laws, the role of the criminal justice system in a democratic society and current issues facing those who work in the criminal justice field.

**CJUS - 2003 Introduction to Law, 3.00 Credits**

Level: Lower  
 This course introduces students to civil and criminal law. It examines the historical development of laws in the United States, distinguishing between civil and criminal laws. It also examines the essential elements of substantive law, procedural law and civil processes, and how they interact, as well as the evolution of legal realism and legal interpretation. The roles of those involved with civil and criminal law to include types of courts, plaintiffs, defendants, police, prosecutors, judges and other court-related personnel are discussed. Special emphasis is placed on the basic principles to manage complex situations during the administration of justice.

**CJUS - 3003 Cybercrime, 3.00 Credits**

Level: Lower  
 As emerging technologies continue to redefine the very nature of crime, the legal apparatus in the United States and around world must adapt accordingly. This course is designed to provide an overview of topics related to cybercrime. The theories and legal issues, with emphasis on technology will be used to address cybercrime issues and to apply critical thinking skills to modern criminal justice practices, procedures, and policies related to cybercrime. Topics include legalistic, enforcement, behavioral, social, and technological issues that are related to the cybercrime problems.

**CJUS - 4003 Corrections Process in the U.S., 3.00 Credits**

Prerequisite(s): CJUS 1003 with D or better  
 Level: Lower  
 This course provides an introduction to the corrections process and examines state, local and federal correctional programs in the United States. Included is the study of the evolution, philosophy, structure, responsibilities and types of correctional agencies as well as the roles and ethical obligations of those working in the corrections system. The impact of American Correctional Association Standards (ACA) on correctional agencies is examined. Attention also is paid to public policy as it relates to issues affecting the corrections process including incapacitation versus rehabilitation and offender versus victim rights.

**CJUS - 4103 Policing in a Free Society, 3.00 Credits**

Prerequisite(s): CJUS 1003 with C or better  
 Level: Lower  
 Applied Learning-Creative Work  
 This course is an introduction to the responsibilities of police and police agencies at the local, state and federal levels. Police operations are examined relative to their effectiveness in crime control, delivery of services and maintenance of order with particular emphasis on patrol operations and preserving the freedom of citizens. Principles of management as they relate to organizational structures and activities of public and private police and corrections agencies in America are introduced. Also examined are the development of policy, personnel administration, inspection procedures, performance evaluations, and planning and research in police agencies. The students will complete a final capstone project synthesizing supervisory and leadership aspects of the course.

**CJUS - 5003 Constitutional Issues in Crim, 3.00 Credits**

Prerequisite(s): CJUS 1003 with D or better  
 Level: Upper  
 A comprehensive examination of the U.S. Constitution and the impacts of resulting case law on public policy relative to criminal and social systems, governmental authority and civil liberties. In this course students will research and analyze social and political policy resulting from these impacts in areas such as pornography, abortion, women's rights, voting rights, sentencing equality, immigration, terrorism, juvenile death penalty, and the Patriot Act to name a few. This is a discussion-based course requiring students to participate in in-depth peer discussions. Students are required to analyze the impacts of case law on state and local law enforcement as it pertains to a specific topic culminating in a research project.

**CJUS - 5103 Courts in Contemporary Society, 3.00 Credits**

Prerequisite(s): CJUS 1003 with D or better  
 Level: Upper  
 The Courts in Contemporary Society is a comprehensive analysis of the courts: structure, process, and issues. This course provides a historical perspective of courts in America from past to present requiring students to critically analyze social policy affecting the courts' transformation to contemporary functions including diversion, alternative dispute resolution, recidivism, and specialty courts. This examines the law and its origins, compares the federal and state court systems, and examines juvenile justice process in America.

**CJUS - 5113 Contemp Public Safety Leadersh, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or CJUS 4103 with D or better  
 Level: Upper  
 This course provides the evolution of leadership theorists and theories including behavioral, situational and contingency schools of thought. Students evaluate the various leadership styles and attributes of effective and ineffective leaders. Students must analyze the relationship between effective leadership and teamwork, organizational culture, diversity, ethics, interpersonal communications, organizational performance, futures planning, technology, conflict resolution, and problem solving. This course culmination requires a synthesizing of leadership models for transformational change in a written practical exercise.

**CJUS - 6003 Law & Criminal Evidence, 3.00 Credits**

Prerequisite(s): CJUS 1003 with D or better or SOCI 1243 with D or better  
 Level: Upper  
 The course examines the origin, development, philosophy, and legal bases of evidence, including a brief survey of the system of constitutional and procedural rules and standards affecting evidence collection and admissibility. Specific topics include evidence collection and preservation, the trial process, expert and lay opinion, scientific evidence, and confessions and admissions. The course requires a research paper.

**CJUS - 6203 Ethics in Criminal Justice Adm, 3.00 Credits**

Prerequisite(s): SOCI 1183 with C or better  
 Level: Upper  
 This course examines ethical issues in the criminal justice (CJ) field, including an analysis of diversity and situational events of persons employed in the criminal justice field. Students will evaluate leadership theory and the emerging issues and challenges confronting leaders in public safety/criminal justice. Students will also synthesize ethical philosophies and the responsibilities of CJ practitioners at the local, state, and federal levels. Research will be conducted on contemporary CJ topics such as immigration, terrorism, and police conduct in conjunction with the U.S. Constitution culminating with a written practical framework for successful and ethical leadership in a CJ setting.

**CJUS - 7004 Criminal Investigation & Mgmt, 4.00 Credits**

Prerequisite(s): CJUS 6003 with D or better  
 Level: Upper  
 Applied Learning-Practicum  
 This course is a comprehensive examination of contemporary techniques, principles, problems, and theories and management of the criminal investigation process. This course provides interactive experience between classroom and crime scene evaluation. Emphasizing initial response to a scene through the questioning of witnesses and suspects; collection and preservation of evidence; preparation of case evidence for courtroom testimony and the management of this discipline. This course requires a lab course in conjunction with classroom presentation and is an applied course.

**CJUS - 8003 Criminal Investigation Capston, 3.00 Credits**

Prerequisite(s): CJUS 7004 with D or better  
 Level: Upper  
 Applied Learning-Practicum  
 The Criminal Investigation Capstone course applies case law, evidence identification, securing and preservation of evidence from initial crime scene through courtroom testimony. This course evaluates the scientific aspects of criminal investigation from the crime scene to the crime laboratory. This includes the application of identifying, preserving and processing fingerprints; tool impressions; hair, fibers, blood and narcotics; casts and molds; and interview and interrogation techniques. This course utilizes law enforcement and crime lab experience in an applied setting. This capstone project requires student's crime scene notes, logs, and investigative reports in a completed case file that identifies the crime, suspects, methods used to secure suspects and witnesses, as well as documentation of assistance from external sources. A course fee may be required.

**CJUS - 8012 Criminal Justice Internship, 12.00 Credits**

Prerequisite(s): CJUS 1003 with C or better and CJUS 6203 with C or better

Level: Upper  
Applied Learning-Internship

This course requires a minimum of 480 hours of work experience in an approved public safety agency, commonly defined as police, courts, corrections, or fire service, or in a commercial/industrial security agency. The agency or industry selected must be approved by the Department Chair and Internship Coordinator and be specifically related to the curriculum of the student. This course requires a comprehensive final report contrasting the selected agency with contemporary issues and the maintenance of a daily diary. Students must meet the standards of their cooperating agency in order to participate.

**CJUS - 8103 Criminal Justice Internship, 3.00 Credits**

Prerequisite(s): CJUS 1003 with C or better and CJUS 6203 with C or better

Level: Upper  
Applied Learning-Internship

This course requires a minimum of 120 hours of work experience in an approved public safety agency, commonly defined as police, courts, corrections or fire service, or in a commercial/industrial security agency. The agency or industry selected must be approved by the Internship Coordinator and be specifically related to the curriculum of the student. The course requires a comprehensive final report and daily diary.

**COMP - COMPOSITION**

**COMP - 1403 English Fundamentals\*, 3.00 Credits**

Level: Upper  
Remedial

English Fundamentals is a course designed specifically for the study and for the improvement of basic writing skills and techniques. As such, English Fundamentals allows the student to master a variety of sentence constructions and paragraph types, culminating in the ability to create a multi-paragraph essay. The emphasis is on grammar, spelling, punctuation, sentence structure, writing and revising techniques, and proofreading and editing to produce clear, concise, and information-rich sentences and paragraphs. This is a remedial/developmental course; it will not satisfy any graduation requirements. Student performance on the Comprehensive Language Usage Exam and the Writing Competency Exam will affect the final course grade.

**COMP - 1503 Freshman Composition, 3.00 Credits**

Level: Lower  
Gen Ed - BC-COMP1503/SPCH1083, Gen Ed - BC-COMP1503/SPCH5083, Gen Ed - BC-COMP1503/BUAD2033, Liberal Arts and Science

Freshman Composition is intended to enable students to express themselves in essays. They will generate ideas, develop thesis statements, plan paragraphs, organize compositions, and select rhetorical strategies. Essays and a reference paper are required. Readings stimulate language use, critical thinking, and writing techniques.

**COMP - 2900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
Liberal Arts and Science

The student may contract for one to four credit hours of independent study through an arrangement with the instructor. The student must submit a plan acceptable for the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

**COMP - 3503 Advanced Composition, 3.00 Credits**

Prerequisite(s): COMP 1503 with C or better and ( LITR 2603 with C or better or LITR 2033 with C or better or LITR 2343 with C or better or LITR 2503 with C or better or LITR 2603 with C or better or LITR 2703 with C or better or LITR 2813 with C or better or LITR 2900 with C or better or LITR 2903 with C or better or LITR 2913 with C or better or LITR 3233 with C or better or LITR 4333 with C or better or LITR 7003 with C or better )

Level: Lower  
Gen Ed - BC-COMP3503/SPCH1083, Gen Ed - BC-COMP3503/SPCH5083, Gen Ed - BC-COMP3503/BUAD2033, Liberal Arts and Science

This course focuses on developing the student's ability to write at an advanced level about topics of broad cultural importance. Students will demonstrate assurance and skill in producing written communications on par with published prose. This class will go beyond the mechanics of proper English composition and explore concepts such as originality, honesty of both fact and presentation, clarity, sincerity of emotion, economy of expression, and naturalness of style. This course can be taught from many perspectives. It will strive to instill Alexander Pope's thought that "true ease in writing comes from art, not chance". Writing is emphasized in response to readings from accomplished essayists such as Plutarch, Montaigne, Johnson, Orwell, Emerson, Thoreau, Mencken, Didion, and Dillard, among others.

**COMP - 3603 Writing for Emergent Media, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Lower  
Liberal Arts and Science

This course is an introduction to writing for emergent media. Students will be taught basic principles of good writing as they apply to various media forms, practices, and online audiences. An emphasis will be placed on textual and visual development for use in different contexts: digital narrative, Web page content, blogging, screenwriting, online journalism, and hypertext styles. Students will design, edit and publish online content using current methods and tools across different platforms. Ethics in writing for emergent media will be a focus in the course.

**COMP - 5703 Technical Writing II, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better \* and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Upper  
 Liberal Arts and Science

This course is offered for students completing requirements for a bachelor's degree. It will prepare students to handle typical workplace assignments in a competent and professional manner. It will also prepare students to communicate their ideas effectively in writing to persons in and out of their particular professional disciplines. The course centers on the knowledge and practice of format and style in technical writing when producing upper-level documents; this includes an emphasis on audience analysis and document design as well as research and editing decisions in the composition of long formats.

**CTRP - COURT REPORTING**

**CTRP - 1174 Realtime Writing Theory I, 4.00 Credits**

Level: Lower

Applied Learning-Practicum

Realtime Writing Theory I teaches students how to write the spoken word with punctuation by means of a conflict-free, realtime-ready shorthand theory and provide instantaneous translation. It includes the use of on-line computer-aided technology and teacher interaction; live practice dictation for speed and accuracy; read back and analysis of shorthand notes. NCRA requirements include the following: students are required to transcribe steno notes and speed takes under timed institutional supervision or if an internet student, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA requirements.

**CTRP - 2274 Realtime Writing Theory II, 4.00 Credits**

Prerequisite(s): CTRP 1174 with C or better

Level: Lower

Applied Learning-Practicum

This course is a continuation of basic realtime writing theory. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory and provide instantaneous translation. Each class requires a minimum of three hours of practice time per day. The course is designed for both on campus and internet training. On campus students will meet at a designated time and place. Internet students can access the class at any time during the day, but are required to spend the same amount of time in class and out of class as an on campus student. All students are expected to spend a minimum of three hours a day on homework, which includes practicing accuracy and speed. Students are required to transcribe steno notes and speed takes under institutional supervision or, if an internet student, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of "C" or better. The course includes on-line computer-aided technology for realtime translation.

**CTRP - 2603 Persnl Dictionary Prod & Maint, 3.00 Credits**

Prerequisite(s): CTRP 1174 with C or better and CTRP 2274 with C or better

Level: Lower

This course will be an extension of the material learned in the Computer Aided Transcription course (CTRP 3373) and is a direct application of the realtime techniques learned in the Realtime Writing Theory I course (CTRP 1174). The topics to be covered will include personal dictionaries; update area; D-Defines, J-Defines, and E-Defines, job dictionaries; power defines; phonetic tables; how to insert, modify, and delete entries; filtering dictionary; printing dictionary, backing up and restoring dictionaries, and dictionary maintenance. Students will build and maintain their personal dictionary by adding new entries throughout the course.

**CTRP - 3111 Transcript Production, 1.00 Credit**

Prerequisite(s): CTRP 2274 with D or better

Level: Lower

Students will learn how to properly format and prepare judicial transcripts, including cover page, appearance page, examination and exhibit indexes, question-and-answer, colloquy, parentheticals, jurats, and certification pages, as well as how to prepare ASCII disks and mini-transcripts.

**CTRP - 3163 Speedbldg I for Report & Capt, 3.00 Credits**

Prerequisite(s): CTRP 2274 with C or better

Level: Lower

Applied Learning-Practicum

The prerequisite for this course is the successful completion of the Realtime Writing Theory courses (CTRP 1174 and CTRP 2274) or approval of the instructor. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. The course is structured into 45 class periods. The typical structured classroom meets every Monday, Wednesday, and Friday throughout the semester and online in the summer. Each class requires a minimum of three hours of practice time per day. The course is designed for Internet training.

The course suffices as a survey course to explore the two different modes of reporting: judicial reporting and broadcast reporting. Students must be able to transcribe 3 five minute dictations of unfamiliar material in the following areas: 80 wpm on literary material, 100 wpm on jury charge material, and 120 wpm on two-voice material. All speed takes must be transcribed with a minimum of 95 percent accuracy or higher. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Internet students must sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of C or better. The course includes online computer-aided technology for realtime translation.

**CTRP - 3363 Tech for Reporting/Captioning, 3.00 Credits**

Prerequisite(s): CTRP 2274 with C or better

Level: Lower

This course will complement the Computer Aided Transcription course (CTRP 3373) to the extent that information pertaining to the computers, hardware, software, maintenance, and upkeep will be enhanced. The material covered in this class for reporting students will relate to reporting technology, computer operating systems, realtime applications, realtime reporting in the captioning/CART environment, litigation support, videotaping, and information on related software packages used by judicial reporters. The material covered in this class for captioning students will relate to captioning technology, computer operating systems, on-line translations systems, administrative hearings, indexing and archiving steno notes, both paper and electronic, care and maintenance of computer hardware data input device, basic setup and maintenance of broadcast captioner's equipment, broadcast news production preparation, prescripting, psychology of on-air captioning, verbatim vs. word substitutes, finger spelling, history of captioning, and information relating to the deaf and hard-of-hearing community.

**CTRP - 3373 Computer Aided Transcription, 3.00 Credits**

Level: Lower

This course will teach the student how the computer works with the shorthand writing machine to produce an instantaneous transcript using realtime translation. The course includes computer concepts and terminology and basic file management, saving, editing, and printing. This course will take the student from the basics of a computer application software program to a more advanced level of understanding and appreciation. The goal of the CAT course is to integrate computer concepts and English punctuation rules to produce an accurate and saleable work product. Students will review basic punctuation rules and apply them to transcript production.

**CTRP - 4264 Spd Bldg II for Reprtr & Captn, 4.00 Credits**

Prerequisite(s): CTRP 3163 with C or better

Level: Lower

Applied Learning-Practicum

This course is a continuation of Speed Building I for Reporters and Captioners. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. Reporting students must be able to transcribe five minutes of unfamiliar dictation with at least 95 percent accuracy in each of the areas listed: literary at 130 wpm, jury charge at 150 wpm, and two-voice at 170 wpm. Dictation includes two-voice and multi-voice testimony (including medical and technical material), literary, jury charge, and current events. Captioning students must be able to write five minutes of literary material at 130 wpm with 96 percent accuracy or higher. In addition, captioning students must write a 20 minute broadcast news program with an accuracy rate of 96 percent or better. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students are required to transcribe steno notes and speed takes under institutional supervision or if Online students, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Online students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of "C" or better. This course includes on-line computer-aided technology for realtime translation.

**CTRP - 4364 Spd Bldg III for Reprtr & Captn, 4.00 Credits**

Prerequisite(s): CTRP 4264 with C or better

Level: Lower

Applied Learning-Practicum

This course is a continuation of Speed Building II for Reporters and Captioners. Students will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. In this course dictation includes two-voice and multi-voice testimony (including medical and technical material), literary, and jury charge. Captioning students must be able to write three 5-minute takes of literary material at 180 wpm with 96 percent accuracy or higher. In addition, captioning students must write a 30-minute broadcast news program with an accuracy of 96 percent or better. Students are required to perform a line-by-line edit/analysis of steno notes. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students will be required to transcribe steno notes and speed takes under institutional supervision or if online students, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes will be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Online students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of "C" or better. Students must be able to pass three 5-minute dictations with 95% accuracy in each of the following areas: Q & A at 225 wpm, jury charge at 200 wpm, and literary at 180 wpm. The course includes on-line computer-aided technology for realtime translation.

**CTRP - 4602 Int & Prac for Reporter & Capt, 2.00 Credits**

Prerequisite(s): CTRP 4264 with C or better

Level: Lower

Applied Learning-Internship, Pass/Fail

Students will arrange for an off-campus experience with a qualified courtroom, freelance, or realtime reporter, or captioner within a geographical proximity of their hometown. Students should try to arrange for a variety of experiences over the internship. NCRA requirements: reporting students are required to pass a pre-internship test at 180 wpm in Q & A material, complete a minimum of 50 hours, 40 hours of which must be in-court; and complete a minimum of 40 pages of computer printed transcript. Captioning students are required to pass a pre-internship test at 160 wpm in literary material; complete a minimum of 40 hours, 25 hours of which must be actual writing time and 15 hours of research and dictionary preparation; and complete an unedited captioned translation of three 15 minute segments on varied topics. Students must submit a written narrative report summarizing the internship experience. Reporting students must produce 40 pages of transcript from various experiences during the internship, and submit a signed internship verification form. Captioning students must produce three 15 minute segments on varied topics of unedited captioned translation and submit a signed internship verification form.

**CTRP - 4634 Proc for Reporters & Captioner, 4.00 Credits**

Prerequisite(s): CTRP 3163 with C or better

Level: Lower

This course is an introduction of court and realtime reporting procedures and practices for court reporting including: professional responsibilities of federal and state court systems; civil and criminal trials; logistics of reporting; reporting techniques; and transcript production. The course includes a description and discussion of the role of the captioner and CART provider. Included in this course will be a simulation of a deposition where the student will act in the role as the reporter and administer the oath, mark exhibits, and perform other responsibilities germane to transcript production. Students will be required to apply professional ethics to various situations and identify and use appropriate library and reference material used in transcript preparation including software and internet search engines. Students will also be required to simulate and transcribe the National Court Reporter's Association (NCRA) Registered Professional Reporter (RPR) test as well as the Certified Realtime Reporter (CRR) test.

**CTRP - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**CULN - CULINARY ARTS**

**CULN - 1083 Food Safety & Service Training, 3.00 Credits**

Level: Lower

Applied Learning-Practicum

This course is an introduction to the basic aspects of culinary arts sanitation with an emphasis on various types of food service operations, correct sanitation procedures, rules and regulations pertaining to the safe use and maintenance of small tools and heavy equipment, correct methods of customer service, and personal hygiene as related to foods and food service. The importance of employee training will be stressed. Students will be required to sit for the Education Foundation of the National Restaurant Association exam at the completion of this course.

**CULN - 1143 Culinary Foundations, 3.00 Credits**

Level: Lower

Applied Learning-Practicum

Through the use of demonstrations and lectures this course will focus on the basic methods and scientific principles of cookery, and will explore the fundamentals of industry specific cooking techniques used in contemporary gastronomy. In addition, students will be introduced to the history of the culinary industry, professional standards, and kitchen organization. The basics of product identification and introductory cooking techniques will also be explored. Palate development and development of flavor profiles accompanies the course.

**CULN - 1153 Baking Foundations, 3.00 Credits**

Level: Lower

Applied Learning-Practicum

This introductory course will teach students the proper procedures, mixing methods, and equipment used in basic baked goods production. Culinary and baking history will be discussed.

**CULN - 1373 Purchasing & Cost Control, 3.00 Credits**

Level: Lower  
 This course incorporates basic math as related to the food service industry. Topics will include principles of food cost controls, daily yields and menu pricing, monthly report forms, food check preparation, recipe conversion and standardization procedures. This course will also cover cashier's report procedures, the use of balance sheets to determine the state of a food service operation, and costing as related to budgeting, improvements of operation efficiency and comparisons of similar operations. In addition this course will cover the principles of purchasing, receiving and storage. Students will learn the ABC's of inventory as well as how to utilize sales history and popularity percentages to create forecasting as it pertains to budgeting and production.

**CULN - 1479 Kitchen Fundamentals, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 The student will acquire experience in the preparation of and service of quantity foods with an emphasis on school, institutional, and commercial cafeterias; and an a la carte restaurant. The course covers basic equipment usage, knife skills, as well as storage and inventory procedures. Students will acquire experience in salad and stock preparation and will learn about the fabrication of chicken, pork, and beef cuts. Scientific, economic, and artistic aspects of food preparation will also be developed as the student involvement increases in each area of food production.

**CULN - 1579 Baking Fundamentals, 9.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 This lab section introduces students to the fundamental aspects of baking. Students will learn about the preparation, use and safety considerations of baking equipment, and will get hands-on experience preparing fried bakery goods, yeast dough, quick breads, pies, cookies, cakes and icings. Students will rotate bi-weekly through experiences with general baking concepts, preparation, equipment use, safety, mixing, panning and finishing of the products.

**CULN - 2043 Fundamentals of Nutrition, 3.00 Credits**

Level: Lower  
 This course will cover the function and importance of nutrients and vitamins in the body, daily nutritional requirements, important food sources and the effects of nutrient deficiencies. Nutritional guidelines and standards will also be reviewed. The importance of producing, storing, and using nutritious ingredients in the daily production of food will be stressed. In addition, students will examine various topics related to the American diet such as fad diets, herbs and supplements, diet and exercise, allergens, special needs diets and food additives.

**CULN - 2183 Menu Planning, 3.00 Credits**

Level: Lower  
 This course will focus on the basic principles of menu planning with an emphasis on classical menu patterns, menu formats, and the relationship of the menu to the complete operation of a food service establishment. The pricing and profitability of menu items, menu design, as well food merchandizing and styling will be covered.

**CULN - 2263 Cooking Techniques & Preps, 3.00 Credits**

Prerequisite(s): CULN 1143 with D or better or FDSR 1373 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course is a continuation of Culinary Foundations (CULN 1143). This course aims to provide understanding of cooking theory and mastery of a set of manual skills. These are applied to a wide range of cooking styles and products.

**CULN - 2273 Baking Techniques & Prep, 3.00 Credits**

Prerequisite(s): CULN 1153 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course will cover the proper procedures for mixing methods, and equipment used in intermediate baked goods production. Topics include laminated doughs, frozen desserts, intermediate yeast raised products such as baguettes and brioche, as well as intermediate baked goods, cakes, icings, and specialty desserts. The course will also introduce students to basic chocolate work, including tempering and piping.

**CULN - 2479 Culinary Preparations, 9.00 Credits**

Prerequisite(s): CULN 1479 with D or better or FDSR 1478 with D or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 This lab is a study and practice of the principles, standards and procedures involved in quantity and quality food preparation. Students will rotate the duties involved in all areas of preparation, service, and sanitation within the a la carte restaurant and the cafeteria. The course emphasizes improvement of basic knife, fabrication, and bakery skills needed for the preparation of breakfast items, meat, fish and poultry, soups and vegetables.

**CULN - 2489 Baking Preparations, 9.00 Credits**

Prerequisite(s): CULN 1579 with D or better or FDSR 1578 with D or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 This lab section develops intermediate level skills in baking and production. Students will build on skills learned in CULN 1579 and will rotate bi-weekly through experiences with yeast dough, pastries, specialty cookies, finishing and decorating.

**CULN - 3162 Hospitality Accounting, 2.00 Credits**

Prerequisite(s): CULN 1373 with D or better or ( FDSR 2183 with D or better and FDSR 2153 with D or better )  
 Level: Lower  
 This course focuses on introductory accounting principles and practices specific to the hospitality industry. Activities in this class are directed toward developing and refining a professional fluency in budget and forecast preparation. This class will also explore operational performance analysis based upon income statements and balance sheets. Students will study basic accounting principles, rules and standards. The course will introduce and raise awareness of the importance of business plans, tax implications, and cash controls.

**CULN - 3173 Intl Cook, Garde Manger & Baki, 3.00 Credits**

Prerequisite(s): CULN 2263 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course introduces baking products, techniques, advanced food preparation and regional cuisines. It is broken down into three separate modules; each one dealing with those three areas. The course will establish a strong foundation in basic baking, advance ability in higher level food preparations, and develop an understanding and appreciation for global cuisine.

**CULN - 3251 Beverages, 1.00 Credit**

Level: Lower  
 Applied Learning-Practicum  
 Students will learn about the history, classification, methods of production, and the characteristics of wine, spirits and beers. Mixology, lounge service, systems of beverage controls, laws controlling beverage sales, nonalcoholic beverages, and profitability will also be covered in this course.

**CULN - 3253 Beverage & Fermentation, 3.00 Credits**

Level: Lower  
 Students will learn about the history and production of beer, wine and cheese through hands-on experience. They will develop an understanding of styles and characteristics of different types of beer, wine, and cheese. The course covers systems of beverage controls, laws controlling beverage sales, and nonalcoholic beverages.

**CULN - 3293 Intl Baking & Cooking Fundamen, 3.00 Credits**

Prerequisite(s): CULN 2273 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course will teach students the proper baking procedures and mixing methods used to produce advanced baked goods. The course will cover specialty items such as mousses, puddings, and cream desserts, as well as meringues, advanced gateaux and tortes. Students will learn about advanced bakery techniques using gingerbread, marzipan, and specialty sauces. Ethnic desserts and baked goods will be a focus of the course. Baking students will also become familiar with fundamental culinary skills.

**CULN - 3353 Hospitality Supervision, 3.00 Credits**

Level: Lower  
 The emphasis of this course is on kitchen management techniques, cost control, employee hiring and supervision. A major focus will be budgets, including labor and product cost controls and analysis. The importance of internal and external communications, conflict management, and creative problem solving will be stressed. The hiring, training, and rating of employees, as well as the role of unions in the hospitality industry, will be covered. Students will give an oral report on their work experience required by department mandates as it relates to personnel management. Each student will be prepared for job procurement through resume writing, cover letter creation and insights on interviewing.

**CULN - 3479 Advanced Culinary Preparation, 9.00 Credits**

Prerequisite(s): CULN 2479 with D or better or FDSR 2479 with D or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 Students will practice menu planning and the preparation of restaurant items in the working labs of the program. This lab provides hands-on experience in order to develop supervisory and management skills in the kitchens and dining room. In addition, the student is expected to develop a mastery of skills for a la carte and volume preparation of basic sauces, appetizers, vegetables, grains and pastas, salads, sandwiches, and a variety of entrees, with an emphasis on accepted culinary techniques and presentation.

**CULN - 3489 Advanced Pastry Preparation, 9.00 Credits**

Prerequisite(s): CULN 2489 with D or better or FDSR 2489 with D or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 This lab section will develop advanced techniques and disciplines for fine dining and high volume baking operations. In weekly rotations in the lab, students will gain hands-on experience producing wedding cakes, specialized pastries and cookies, layer and ethnic cakes, tortes, seasonal baked goods, and specialty doughs. Management of a bakery operation will also be addressed.

**CULN - 4033 Intro to Food Science & Techno, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is an introduction to food science - the biology, chemistry, and physics of food ingredients and food production. The role of formulation, heating, and cooling on foods, as well as the way taste, texture and appearance effect food production will be covered. The chemical interactions of key food ingredients are a major focus of the course. There will be an emphasis on the scientific method as it pertains to food science and technology, ingredient substitution, and the development and testing of food products. Students will gain experience creating new or improved food products using formulation variables.

**CULN - 4043 Advanced Pastry, 3.00 Credits**

Prerequisite(s): CULN 3293 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course will introduce the student to specialized techniques in baking and pastry. Skill development covering petit fours, candy making, decorative sugar, wedding cakes, various ethnic ingredients, desserts, and baked goods will be the focus. Bakery packaging and merchandising will also be covered.

**CULN - 4163 Advanced Cuisine, 3.00 Credits**

Prerequisite(s): CULN 3173 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course deals with advanced cooking techniques and cuisine issues. Much of the activity is directed toward developing and refining a personal culinary philosophy by the students. Students will study cooking techniques in depth. They will develop a perspective on their use, and will study basic methods of product development in the foodservice industry. The course will introduce topics, begin discussion, and raise awareness of sustainable food production and will establish a firm connection between cooking and culture.

**CULN - 4253 Hospitality Management, 3.00 Credits**

Prerequisite(s): CULN 3353 with D or better  
 Level: Lower  
 This course builds on the supervisory elements covered in Hospitality Supervision. The fundamentals of personnel management relating to motivation, performance, employee rights and labor relations will be covered. In addition, the course will emphasize basic planning, organizing, staff development, and interfacing with government and the public. Students will be exposed to management and motivation theory, allowing them to begin developing personal philosophies in both areas.

**CULN - 4479 Culinary Capstone, 9.00 Credits**

Prerequisite(s): CULN 3479 with D or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 Using the knowledge and experience gained through previous lecture and lab experiences, this capstone course provides students with hands-on managerial experience in the planning, organizing and direction of kitchen production. Students will rotate through experiences as chef, station cook and dining room manager. These experiences will help students develop a personal/professional cooking style through creativity, innovation and synthesis based on previous lab exposures. The lab will emphasize refined sauce making, braising, smoking, cooking proteins to order and sophisticated plate presentation.

**CULN - 4489 Pastry Capstone, 9.00 Credits**

Prerequisite(s): CULN 3489 with D or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$60.00  
 In this capstone course students will incorporate earlier lab and lecture experiences, and will demonstrate managerial level skills in the planning, organizing, and direction of bake-shop production. Students will be encouraged to develop a personal/professional baking style through creativity, innovation, and synthesis. In weekly rotations in the lab, students will gain hands-on experience with a wide variety of pastry items including but not limited to plated desserts, cakes and tortes, chocolate sculpting, sugar artistry, and candy production. Inventory control, ordering, and pricing, as well as promotion and merchandising of bakery products will also be covered.

**DCAD - DRAFTING/CAD**

**DCAD - 1053 Technical Calculations I, 3.00 Credits**

Level: Lower  
 Mathematics review, basic algebra, industrial applications applying the decimal and metric systems, use of reference books and electronic calculators. Successful completion of this course requires a grade of "C" or better.

**DCAD - 1205 Industrial Drafting Intro, 5.00 Credits**

Level: Lower  
 Applied Learning-Creative Work  
 The use of traditional drafting equipment, lettering, sketching, geometric construction, and orthographic projection, along with similar application on computer programs will also be addressed. In this course, 3 dimensional solid modeling sketching, and software orientation shall occur. Student will be instructed in the creation, use and manipulation of 3 dimensional solids using industrially accepted CAD software.

**DCAD - 1305 Industrial Drafting I, 5.00 Credits**

Prerequisite(s): DCAD 1205 with D or better  
 Level: Lower  
 Preparation of casting and machine detail drawings using proper dimensioning practices and applications of conventional section views. Introduction of various manufacturing processes, shop terminology, machine operations, and materials used in industrial applications.

**DCAD - 1405 Industrial Drafting II, 5.00 Credits**

Prerequisite(s): DCAD 1305 with D or better  
 Level: Lower  
 Applied Learning-Practicum  
 The use and application of auxiliary view drawings. Also the use and application of development drawings. Students will develop, through projection and solid modeling processes, developed sheet metal developments and intersections. This course will address aspects of freeform modeling and HVAC applications.

**DCAD - 2053 Introduction to Unigraphics, 3.00 Credits**

Level: Lower  
 Applied Learning-Creative Work  
 In this course the student will model, using a current version of Unigraphics, industrial projects giving careful consideration to their interrelated features. The student will use both sketches and Boolean operations to complete their models. The importance of parametric controls within and between part files will be stressed.

**DCAD - 2063 Technical Calculations II, 3.00 Credits**

Level: Lower  
 Practical geometry and trigonometry as a continuation of Technical Calculations I. The scope of this course includes solutions of geometric shapes and solids, right and oblique transfers using industrially related situations. Successful completion of this course requires a grade of "C" or better.

**DCAD - 2205 Industrial Drafting III, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Develop and complete industrial assembly drawings and detail drawings for assemblies, using appropriate dimensioning and ANSI tolerances, complete bill of materials including threads and fastener information and identification. Course will involve, also, aspects of tolerance stack up their calculations. Addresses the family of drawings and assembly.

**DCAD - 2305 Welding Drawings, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Develop and complete industrial weldment drawings using various welding processes and types of joints used to draw weldment assemblies using related symbols, appropriate materials and dimensioning practices. This will include raw stock materials, piping and structural members. Converting castings to fabrication parts will also be addressed. Successful completion of this course requires a grade of 70% or better on a comprehensive II exam.

**DCAD - 2805 Dftng for Residential Const, 5.00 Credits**

Level: Lower  
 The application of basic methods, symbols and conventions to prepare working drawings for the construction of residential buildings. This course is designed to permit the drafting student to develop, design and create drawings typical to the residential industry. These drawings will allow the student to demonstrate their understanding and design capabilities applied to residential structures. Each student will perform appropriate calculations and prepare all drawings applicable to modern residential construction.

**DCAD - 3023 Geometric Dimen & Tolerncng, 3.00 Credits**

Level: Lower  
Correctly specify geometric form controls and positional tolerances to engineering drawings with the use of ANSI geometric symbols.

**DCAD - 3024 Layout & Details, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum  
Preparation of mechanical design layouts, details and assembly drawings, using mechanisms such as linkages, pneumatics, hydraulics, gear trains, belt and chain drives and control systems. Application of geometric dimensioning and tolerances to appropriate detail drawings. This is a five (5) week course.

**DCAD - 3044 Fluid Power, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum  
In this course students will prepare layouts of single and double line drawings for hydraulic and pneumatic systems, and will also study and apply mathematic calculations as they pertain to their assignments. The use of vendor catalogs and live components are used in the preparation of the above-mentioned drawings. The student will also prepare a sequence of operations explaining how each schematic operates.

**DCAD - 3103 Intro to 3D Parametric Model, 3.00 Credits**

Level: Lower  
Applied Learning-Practicum  
The student will model, using a current version of 3D parametric software, industrially correct projects giving careful consideration to their interrelated features. The student will use both sketches and Boolean operations to accomplish their models. The importance of parametric controls within and between part files will be stressed.

**DCAD - 3104 Advanced Mechanical Layout, 4.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course will address advanced layout techniques and practices that are typical in the design industry. Students will be presented with design concepts and will use problem solving techniques to accomplish tasks. The course includes the study of power transfer systems such as couplings, chain and sprocket drives, and the use of motors and bearings. Instruction in the application of clutches, and their uses in machine design, will also be stressed.

**DCAD - 4003 Senior Project, 3.00 Credits**

Level: Lower  
Applied Learning-Creative Work  
This course shall be considered a capstone project for the authentic assessment of the curriculum. The student shall select a project that shall challenge the student and demonstrate various abilities and skills acquired in their previous classes. This project shall include an oral presentation along with a written report and a demonstration of their chosen project. This demonstration may include all associated drawings, a finished part of their design, and an electronic "slide show". This course is designed as a research/lab course to design/improve a consumer product. Instructor shall supply minimal guidance in the development of this project.

**DCAD - 4125 Process Piping I, 5.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course will facilitate the concepts and principals employed by drafters in the Industrial Process Piping industry. Using practical laboratory application with topics including flow diagrams, orthographic and isometric spool drawings, plan & elevation piping arrangements, selection of valves, pipe racks and supports. Students will generate a variety of accurate CAD piping assignments similar to the ones currently used in industry today.

**DCAD - 4155 Technical Illustration, 5.00 Credits**

Level: Lower  
Applied Learning-Practicum  
In this course students will master isometric exploded view technical illustration, including such topics as applications, pictorial selections, and illustration techniques. In addition students will learn about basic printing process, scaling artwork for press runs and coordinating with printing firms. The student will also supply complete assembly instructions (sequence of operations) explaining how this job is put together and functions.

**DCAD - 4225 Process Piping II, 5.00 Credits**

Level: Lower  
Applied Learning-Practicum  
This course will include the necessary theory and laboratory application in the design of chemical processing plant layout. Calling upon skills developed in prerequisite coursework, in addition to Industrial Process Piping Plant Layout standards, students will create an actual CAD model of a plant that they have designed for a comprehensive understanding of piping plant design.

**DCAD - 4335 CNC Machine Programming, 5.00 Credits**

Level: Lower  
Applied Learning-Practicum  
Through the use of standard industrial codes and formulas to write computer programs that will enable CNC machining centers and CNC turning centers to produce parts, within quality standards. To be able to write these CNC programs both from scratch and with the use of commercially available CNC programming software.

**DCAD - 4900 Directed Study, 1.00 TO 9.00 Credits**

Level: Lower  
By arrangement with advisor. Directed study is to provide an opportunity for the student to continue study in a subject area of special interest or special concern, related directly to an actual job opportunity within the drafting curriculum.

**DGMA - DIGITAL MEDIA & ANIMATION**

**DGMA - 1333 Survey of Animatn & Visual Eff, 3.00 Credits**

Level: Lower  
This course will take students through a comprehensive history of animated films beginning with their conception in the early 1900's through the present. Students will learn how the medium reflects social issues, political views as well as human creativity. The various types of animation and how they were created in different countries and cultures will be the major focus. The screenings and discussions will span various genres and styles of animation including anime, experimental, commercial, computer, and independent film as well as gaming.

**DGMA - 1401 Freshman Seminar, 1.00 Credit**

Level: Lower  
This introductory course prepares students with basic skills that will help them succeed in the Graphic & Media Design or Digital Media & Animation programs. These skills include but are not limited to: file management, time management, research practices, effective critique strategies, and online portfolio management.

**DGMA - 1403 Digital Foundations I, 3.00 Credits**

Level: Lower  
This is an introductory digital media course that focuses on the manipulation of both raster and vector-based imagery. Students will learn the basics of Photoshop as well as digital imaging and use the software to develop their skills in the visualization of motion and time. The course will have a strong emphasis on principles of lighting, layout and composition.

**DGMA - 1413 Foundations:Form/Space Rltnshp, 3.00 Credits**

Level: Lower  
This is a visual rendering course in the Digital Media and Animation major. Broad experience is emphasized with diverse graphic tools and techniques to develop observation of and analyze visual information. This course is designed to deconstruct preconceived ideas of form/space relationships and replace them with objective understandings.

**DGMA - 1423 Intro to Visual Communication, 3.00 Credits**

Level: Lower  
This is a course that focuses on creative, technical, and environmental/collaborative issues involved in visual communication. Building on the elements and principles of design/communication the students work through increasingly difficult projects to their final cumulative piece. An investigation of color theory as it applies to traditional and computer generated images is also pursued.

**DGMA - 2403 Introduction to 3D Animation, 3.00 Credits**

Prerequisite(s): DGMA 1403 with C or better  
Level: Lower  
Applied Learning-Practicum  
This course provides an introduction to 3D modeling, texturing, lighting, and animating. Students will use a variety of tools and techniques to create various hard and soft surface models that address specific design problems.

**DGMA - 2503 Digital Foundations II, 3.00 Credits**

Prerequisite(s): DGMA 1403 with C or better  
Level: Lower  
Applied Learning-Practicum  
This course expands upon the fundamental concepts behind visual communications introduced in previous courses. Emphasis will be placed on the creative process and design thinking using multiple models of visual communication. Students will explore technical and conceptual ideas associated with digital media communications through the production of time based and interactive projects.

**DGMA - 2603 Media Forge I, 3.00 Credits**

Prerequisite(s): DGMA 1403 with C or better  
Level: Lower  
Applied Learning-Practicum  
This course provides an introduction to media design studio practice. Students work within design teams on real-world media design problems, with emphasis on video production, motion graphics and project management.

**DGMA - 3111 Japanese Media, 1.00 Credit**

Level: Lower  
This course is an overview of Japanese art, cinema, animation and digital media. Students will explore Japanese media in native and transnational contexts through a series of lectures and research projects. Special emphasis is given on communication strategies for art and digital media collaboration across cultures, with the goal of participation in a short-term study abroad program.

**DGMA - 3113 Studio Tokyo, 3.00 Credits**

Prerequisite(s): DGMA 3111 with D or better and JAPAN 1203 with D or better  
Level: Lower  
Applied Learning-Intl/Dom Trvl  
Students will explore Japanese art, cinema, animation and digital media through a study-abroad program based in Tokyo. Students will create animation and digital media projects in collaboration with local artists, and expand upon their research from Japanese Media (DGMA 3111) through screenings and site visits.

**DGMA - 3203 Interactive Authoring, 3.00 Credits**

Prerequisite(s): CIAT 2403 with C or better or DGMA 2403 with C or better  
Level: Lower  
This is a course that introduces the student to the art of creating cartoon-style animation applicable to industry needs in graphic design, interactive media, the internet, film, and television using Macromedia Flash. The course emphasizes student acquisition production with both cameraless and computer-based techniques.

**DGMA - 3303 Digital Photography, 3.00 Credits**

Level: Lower  
In this course, students will be introduced to digital photography covering basic to advanced techniques necessary for the production of art work, as well as learning about the visual arts, how to look at and critique photography, photographic vocabulary, and be introduced to works by well known photographers. Students will also gain a better understanding of the use of external hardware such as lenses, flashes, lights, and other equipment and their impact on photography.

**DGMA - 3403 Intermediate 3D Animation, 3.00 Credits**

Prerequisite(s): DGMA 2403 with C or better  
Level: Lower  
This course delves deeper into 3D computer animation while reinforcing the modeling, texturing, and lighting techniques learned in DGMA 2403. Various animation techniques will be explored and applied through object and character animation, as well as rigging that addresses specific animation problems. There will be a strong focus on the study of human and animal anatomy and how they influence motion.

**DGMA - 3503 Typography, 3.00 Credits**

Level: Lower  
This course introduces students to the fundamentals of typography. Students combine research and design principles to move projects from concept to execution. Emphasis is given to new technologies and modes of delivery.

**DGMA - 3603 Production I, 3.00 Credits**

Level: Lower  
 Applied Learning-Creative Work  
 This course will introduce the student to the use of current non-linear editing technology. Class projects will develop an understanding of the methods used for creating, sampling and storing digital video and audio and the constraints placed on these media assets when used for media based products. Emphasis is placed upon the technology of digital video and audio, including: formats, data rates and compression algorithms.

**DGMA - 4103 Interactive Design, 3.00 Credits**

Prerequisite(s): DGMA 2403 with C or better or DGMA 2503 with C or better  
 Level: Lower  
 Applied Learning-Creative Work  
 This course is an exploration of visual communication through interactive media and interface design. Students will explore the fundamental concepts of interactivity and visual perception with regard to computer interfaces with special focus on design for websites and online media. Students will complete interactive titles of their own design with intuitive interfaces that incorporate concepts covered in class.

**DGMA - 4203 Color Theory, 3.00 Credits**

Level: Lower  
 Students will explore the history and theories associated with the use of color in graphic design, and develop design practices that utilize concept driven color solutions for projects. Students will gain experience in the techniques and color management practices necessary for the production of effective screen-based and print-based design.

**DGMA - 4443 Advanced 3D Animation, 3.00 Credits**

Prerequisite(s): DGMA 3403 with C or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course focuses on rigging and animation for 3D. Students will continue their work with modeling, texturing, lighting, rigging, and animation from previous courses, and apply it towards creating an animated short.

**DGMA - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**DGMA - 5103 Production I, 3.00 Credits**

Prerequisite(s): ( CIAT 4103 with C or better or DGMA 4103 with C or better ) or ( CIAT 4423 with C or better or DGMA 4423 with C or better )  
 Level: Upper  
 Applied Learning-Creative Work  
 This course will introduce the student to the use of current non-linear editing technology. Class projects will develop an understanding of the methods used for creating, sampling and storing digital video and audio and the constraints placed on these media assets when used for media based products. Emphasis is placed upon the technology of digital video and audio, including: formats, data rates and compression algorithms.

**DGMA - 5113 Studio Tokyo II, 3.00 Credits**

Prerequisite(s): DGMA 3111 with D or better and JAPN 1203 with D or better and ( DGMA 3113 with D or better or DGMA 6203 with D or better )  
 Level: Upper  
 Applied Learning-Intl/Dom Trvl  
 In this course, students will explore Japanese art, animation and digital media through a study-abroad program based in Tokyo. Students will schedule and lead teams in the creation of animation and digital media projects. Students will also conduct and present individual research into topics introduced in Japanese Media (DGMA 3111). Special emphasis will be given to linguistic, cultural and industrial differences in media production in Japan.

**DGMA - 5303 Sound Design, 3.00 Credits**

Prerequisite(s): DGMA 2503 with C or better  
 Level: Upper  
 This course explores fundamental concepts of sound as a creative medium. Emphasis will be placed on concurrent development of theory and practice of sound and how it contextualizes visual experience. Students will learn about waveform synthesis, expanded foley techniques, electronics, performance, acoustics and theories of listening. By the end of this course, students will create both stand alone and integrated sonic artworks for use in film, interactive and other digital media applications.

**DGMA - 5333 Special Topics in Art & Design, 3.00 Credits**

Prerequisite(s): DGMA 1403 with C or better  
 Level: Upper  
 This is an upper-level course, which focuses on a topic of special interest to the instructor and relevance to Digital Media & Animation and/or Graphic & Media Design students. Students will utilize the study of a special topic as a catalyst in the generation of aligned project(s). Faculty and topic may vary each time the course is offered.

**DGMA - 5403 Adv Modeling, Texturing & Ligh, 3.00 Credits**

Prerequisite(s): ( CIAT 4443 with C or better or DGMA 4443 with C or better )  
 Level: Upper  
 Applied Learning-Creative Work  
 This course develops a refinement of skills from the preceding semesters' work with modeling focusing on NURBS based models. The student will build upon their knowledge of modeling and will provide an in depth study of NURBS modeling coupled with lighting and texturing. The course shows students how to visualize an object and how to effectively build it in the 3D world using various NURBS surface types and communicate scenarios and moods through the use of textures and light to surface interactions.

**DGMA - 5603 Interactive Media, 3.00 Credits**

Prerequisite(s): DGMA 4103 with C or better  
 Level: Upper  
 In this course, students expand their skills in interactive design as they are introduced to new control systems and developing interactive technologies. Students will create applications that communicate with viewers through text, image and sound utilizing skills developed in previous courses. Special emphasis will be given to the incorporation of video and animation in interactive environments. Students will explore the possibilities of communication through interactive media in studio experiments and complete interactive titles of their own design that incorporate concepts covered in class.

**DGMA - 5900 Directed Study, 1.00 TO 4.00 Credits**

Prerequisite(s): DGMA 1403 with D or better  
 Level: Upper  
 A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**DGMA - 6103 Production II, 3.00 Credits**

Prerequisite(s): DGMA 3603 with C or better  
 Level: Upper  
 Applied Learning-Creative Work  
 This is an advanced course that expands upon the fundamental concepts involved in time based visual communications. Emphasis will be placed on the creative process of making images that can convey ideas and information to others. Students will learn advanced cinematography, editing and collaborative workflow techniques while incorporating expanded theoretical concepts from the history of narrative and non-narrative media to their projects.

**DGMA - 6203 Motion Graphics, 3.00 Credits**

Prerequisite(s): DGMA 5103 with C or better or DGMA 3603 with C or better  
 Level: Upper  
 Applied Learning-Practicum  
 From experimental video and film title sequences to revolutionary TV commercials, broadcast design and motion graphics are used to inspire and influence. Through a series of exercises and projects, students will develop skills in motion design and compositing, utilizing techniques developed in previous courses.

**DGMA - 6303 Special Topics Media Design I, 3.00 Credits**

Prerequisite(s): DGMA 4103 with C or better  
 Level: Upper  
 This course focuses on current issues in media design and explores the latest techniques and processes. Students will evaluate emerging technologies and the changing role of media design. Students will utilize research-based practices as a catalyst in the generation of project(s) aligned with a special topic. Topics may vary each time the course is offered.

**DGMA - 6413 Advanced Animation, 3.00 Credits**

Prerequisite(s): DGMA 3403 with C or better  
 Level: Upper  
 Applied Learning-Creative Work  
 This course is a continuation of the sequence of animation, focusing on more in depth and complex character animation as well as the animation of organic and non-organic shapes and object. Areas covered in this class include: pre-visualization, advanced character set-up and animation, facial animation, soundtrack synchronization, and advanced animation principles and techniques.

**DGMA - 6603 Media Forge II, 3.00 Credits**

Prerequisite(s): DGMA 2603 with C or better or DGMA 5103 with C or better  
 Level: Upper  
 Applied Learning-Practicum  
 This course continues to develop the students' media design studio practice. Students in this upper level course lead design teams on real-world media design problems, with emphasis on video production, motion graphics, and project management.

**DGMA - 7203 Senior Seminar, 3.00 Credits**

Level: Upper  
 This seminar will serve two purposes. The first is to enhance students' understanding of opportunities in the field of animation and digital media through presentations, workshops and discussions. The second is to generate new techniques for problem solving in digital media projects. The course will include in-class exercises, discussions and responses to visiting artist presentations.

**DGMA - 7403 Senior Studio Project I, 3.00 Credits**

Prerequisite(s): DGMA 6103 with C or better and DGMA 6413 with C or better  
 Level: Upper  
 Applied Learning-Creative Work  
 In this course, students will integrate aspects of their studies from the previous three years in a semester-long production. Students will use this semester to create a short animation, video or interactive piece from start to completion. Students will be responsible for all aspects of this project, including conceptualization, design, pre-production, animation, cinematography, sound design, post production and final delivery.

**DGMA - 7503 Digital Media & Anmtn Internsh, 3.00 Credits**

Level: Upper  
 Applied Learning-Internship, Pass/Fail  
 This course provides the students with practical application of skills in the Digital Media and Animation major. The internship provides valuable real-life experience while extending the skills of the student towards various businesses, organizations, and professionals. The student will be responsible for all aspects of the project for a business or organization.

**DGMA - 7603 Advanced Motion Graphics, 3.00 Credits**

Prerequisite(s): DGMA 6203 with C or better  
 Level: Upper  
 Applied Learning-Creative Work  
 This course builds on the knowledge and skills gained in Motion Graphics. Focus is on 3D motion graphics, special effects, and compositing. Students will complete projects using Motion Graphics software.

**DGMA - 7703 Adv Topics Interactive Design, 3.00 Credits**

Prerequisite(s): DGMA 5603 with C or better  
 Level: Upper  
 In this course students will expand on skills developed in Interactive Media, and apply them in interactive design projects that work across platforms. Students will build interactive projects both individually and in groups that visualize complex data sets and respond to active and passive user input. Special emphasis will be given to development of media for emerging technologies.

**DGMA - 7803 Professional Practices, 3.00 Credits**

Prerequisite(s): DGMA 6103 with C or better  
 Level: Upper  
 In this course there will be an exploration of the importance of integrity in professional relationships, which lies in all aspects of the design process. Students will examine multiple communication paths and how to maintain coherent communication that follows the design process from conception to completion. Forms, documents and ethical issues of the business relationship shall be covered.

**DGMA - 8103 Portfolio, 3.00 Credits**

Prerequisite(s): CIAT 7403 with C or better or DGMA 7403 with C or better

Level: Upper

This course will prepare students for the task of finding the next opportunity to advance their professional career be it graduate school, employment in industry, exhibition and/or freelance work. The students will develop a strategy to promote skills in an ever-changing field. Instruction will be given to develop a professional identity that is conveyed in the design of their portfolio. Current print and web design software will be utilized to produce an electronic portfolio detailing their work.

**DGMA - 8106 Senior Studio Project II, 6.00 Credits**

Prerequisite(s): CIAT 7403 with C or better or DGMA 7403 with C or better

Level: Upper

Applied Learning-Creative Work

This is a cumulative two-part course where students will integrate aspects from their studies of the previous three years. Students will use this semester to create one of the following: a 3D animated film; a 2D animated film; and Experimental Animation film (Stop Motion, Mixture of 3D and 3D animation or a fully Interactive/Informative Media project). Students will produce all pre-production work including proposal, storyboards and animatics. Students will also generate all post-production work including editing, sound mixing and final delivery format (using current technology) prior to a film screening.

**DGMA - 8203 Media Design Seminar, 3.00 Credits**

Prerequisite(s): DGMA 6103 with C or better

Level: Upper

This seminar will prepare Graphic Media and Design seniors to transition into the professional world by focusing on critical self-evaluation. Students will examine their own body of work as well as the work of professionals in the field. Special focus will be given to a designer's responsibilities in social, cultural, and environmental contexts. This course will include field trips and lectures from visiting artists.

**DGMA - 8403 Sr Studio Proj - Media Design, 3.00 Credits**

Prerequisite(s): DGMA 6103 with C or better

Level: Upper

Applied Learning-Creative Work

In this course, students will identify an existing design problem and complete the design process towards a successful solution.

**DGMA - 8503 Special Topics Media Design II, 3.00 Credits**

Prerequisite(s): DGMA 6103 with C or better

Level: Upper

This course focuses on current issues in media design and explores the latest techniques and processes. Students will evaluate emerging technologies and the changing role of media design. Students will utilize research-based practices as a catalyst in the generation of large scale project(s) aligned with a special topic. Topics may vary each time the course is offered.

**DSGN - INTERIOR DESIGN**

**DSGN - 1433 Furniture & Finishes, 3.00 Credits**

Prerequisite(s): ARCH 1184 with C or better or CIAT 1184 with C or better

Level: Lower

This survey course examines the selection, specification, composition, manufacture, and application of finishes and materials in interior design and presents an overview of furniture construction, types, planning and selection.

**DSGN - 1443 Color, Lighting and Acoustics, 3.00 Credits**

Prerequisite(s): ( ARCH 1433 with C or better or CIAT 1433 with C or better )

Level: Lower

This course is a fundamental course that investigates the properties and principles of basic color theory and its interrelationship with lighting. The focus is on the psychological and physiological effects of color and lighting as it applies to the form, texture, and finish of interior spaces. Course content provides a basic understanding of lighting calculations, types of lamps, appropriate use and application. General acoustic principles with an exploration of material application are introduced.

**DSGN - 2204 Interior Design I, 4.00 Credits**

Prerequisite(s): CIAT 2394 with C or better or ARCH 2394 with C or better

Level: Lower

Course Fee \$106.00

This studio course emphasizes the design process and space planning for modest size facilities. The students will apply color rendering techniques to present interior design solutions. Students will select appropriate materials for various spaces in accordance with accepted design standards. Design issues such as furniture planning and layouts, application of color, and building code and ADA (American with Disabilities Act) considerations are included.

**DSGN - 2223 History of Interior Design, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

This survey course offers a critical overview of the history of interior design, its connection to different periods and cultures, and its integral relationship with architecture, stylistic movements and the decorative arts. Course content introduces students to major historical design periods from prehistoric civilizations to contemporary design. Lectures highlight period design, furniture styles, decorative objects, color palettes and their relevance to present-day interior design.

**DSGN - 2304 Interior Design II, 4.00 Credits**

Prerequisite(s): DSGN 2204 with C or better or CIAT 2204 with C or better

Level: Lower

Course Fee \$106.00

This advanced studio focuses on creating interior solutions with the tools of programming strategies, the development of conceptual ideas and the generation of design development drawings. Projects emphasize branding a client image through design of the interior architecture and selection of a representative FF&E (Furniture, Fixtures & Equipment) package. Students will focus on institutional, residential and retail projects that include intensive pre-design research, development of a concept statement, space-planning, assigning interior design elements, color scheme and finishes. Sustainable principles will be introduced with exercises designed to teach the student how to effectively evaluate the "greenness" of manufacturers and their products. Interior Design Studio II students will build upon knowledge and expand skills acquired in previous courses. In particular, improving project book organization and specification writing will be emphasized. The refinement of hand and computer generated drawing with advanced rendering techniques is expected by the end of the course. Advanced board design and material board techniques will be reinforced and professional presentation practices underscored.

**ECON - ECONOMICS**

**ECON - 1013 Principles of Macroeconomics, 3.00 Credits**

Level: Lower  
 Gen Ed - Social Sciences, Liberal Arts and Science  
 This is an introductory course, which views the behavior of the economy as a whole and the problems of economic organization. Students will explore the fluctuations of output and prices. Problems and measurement of economic growth, inflation, unemployment, and income will be discussed. Money, credit and financial institutions will be analyzed, as well as their impact on fiscal policies and international trade.

**ECON - 2023 Principles of Microeconomics, 3.00 Credits**

Level: Lower  
 Gen Ed - Social Sciences, Liberal Arts and Science  
 This course provides an analysis of the basic market forces of supply and demand, and economic outcomes under different market structures such as competitive, imperfectly competitive and monopolistic markets. The labor and capital markets are analyzed. In addition, the economics of the public sector emphasizes tax policy, externalities, monopoly power, and the provision of public goods. The course examines contemporary social issues such as income distribution, poverty, and the welfare system as well as global issues such as international trade and protectionism.

**ECON - 5133 Territy & Entrprnrshp: Trdtn., 3.00 Credits**

Prerequisite(s): ECON 1013 with D or better or ECON 2023 with D or better  
 Level: Upper  
 The course aims to analyze the relationship between sustainability, economy, quality and globalization. It will also focus on the European Union and sustainable development. Other included topics will be: food industry in Italy (especially in the Campania region), organic farming in Italy, "local food, local market, local business" and sustainable tourism in Italy.

**EDUC - EDUCATION**

**EDUC - 2163 Foundations of Education, 3.00 Credits**

Level: Lower  
 Applied Learning-Creative Work  
 The course examines the social, historical, ethical and philosophical foundations of the U.S. educational system. Attention also will be paid to contemporary educational opportunities and challenges including the evolving teaching role, school equity and funding, educational standards and assessment, classroom diversity and multicultural education, social justice, and reform initiatives. Students will complete a portfolio as the culmination of their work within the program.

**ELET - ELECTRICAL ENGI TECH**

**ELET - 1001 Seminar, 1.00 Credit**

Level: Lower  
 An examination of strategies for success, including organizational and study skills, and transfer and career opportunities for engineering technology students in industry. There will be at least a dozen textbook and research readings followed by written assignments on topics to include the variety of engineering transfer institutions and engineering majors, diversity in society and the technical workplace, personal assessments of goals, values, strengths and weaknesses as related to student and technical career success, and employment application techniques such as resume writing, letters of application, interviewing and follow-up communications. Research assignments use library and Internet as resources and all written assignments are generated by computer.

**ELET - 1103 Circuit Theory I, 3.00 Credits**

Prerequisite(s): MATH 1033 with D or better or MATH 1034 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2043 with D or better  
 Level: Lower  
 In circuit theory, a student will analyze electrical circuits according to the fundamental definitions and laws as they apply to direct current circuits. The physical parameters defined include charge, voltage, current, resistance, capacitance and inductance. The laws applied include Ohm's Law, Joule's Law, Kirchhoff's Voltage Law, and Kirchhoff's Current Law. The analysis relies on algebra and exponentials.

**ELET - 1111 Digital Logic Laboratory, 1.00 Credit**

Corequisite(s):  
 Level: Lower  
 Applied Learning-Other  
 This laboratory implements the theoretical principles of ELET 1133, Digital Logic. Students learn to build working circuits based upon design goals. Applications include examples of combinatorial and sequential logic such as adders, multiplexers, counters and 7-segment displays. Logic solutions utilize programmable logic devices and external interfaces as well as transistor-transistor logic integrated circuits, and simulation software. Written laboratory reports are required.

**ELET - 1133 Digital Logic, 3.00 Credits**

Level: Lower  
 Digital Logic introduces a student to two-state logic. Logic analysis will use the binary number system and Boolean algebra. Both combinational (AND-OR) logic and sequential (flip-flop) logic are studied. Typical logic designs include 7-segment displays, adders, multiplexers, and counters. Logic designs are implemented using simulation, programmable logic devices and transistor-transistor logic.

**ELET - 1142 Electronic Fabrication, 2.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course covers the fundamentals of prototype design, fabrication, and documentation. Major topics include: safety, sheet metal fabrication, printed circuit board design & fabrication, schematic & wiring diagram drafting & analysis, computer applications for schematic drawing & printed circuit board layout, circuit construction, troubleshooting fundamentals, soldering techniques, project parts procurement & cost analysis, and the ability to work in teams. Personal laptop computers are required.

**ELET - 1151 Circuit Theory Laboratory, 1.00 Credit**

Prerequisite(s): ELET 1104 with D or better \* or ELET 1103 with D or better \*

Level: Lower

Applied Learning-Other

Laboratory experiments parallel material presented in Circuit Theory. The theories and laws governing dc circuits are applied and verified. Hands-on building of electrical circuits reinforces the interpretation of schematic diagrams. Verification includes detailed analysis of the circuit under test by calculation, measurement, and simulation. Outside preparation and laboratory report writing are required.

**ELET - 1202 Intro to Electrical Eng Tech, 2.00 Credits**

Level: Lower

Applied Learning-Practicum

This is an introductory course related to the field of electrical engineering technology. Laboratory topics introduce the students to the fundamental electrical principles and practices. The student will be introduced to various electrical components such as resistors, capacitors, inductors, diodes, LEDs, transistors, and integrated circuits. Analog and digital meters will be used for measuring electrical quantities, such as resistance, voltage, and current, in electrical circuits. Circuit construction and operation, reading schematic diagrams, computer applications for schematic drawing and simulation, familiarization with electrical tools and fabrication, and soldering techniques will also be introduced.

**ELET - 2103 Electronics Theory I, 3.00 Credits**

Prerequisite(s): ( ELET 1104 with D or better and ELET 1151 with D or better ) or ( ELET 1103 with D or better and ELET 1152 with D or better ) or ( ELET 1103 with D or better and ELET 1151 with D or better )

Corequisite(s): ( ELET 1104 with D or better and ELET 1151 with D or better ) or ( ELET 1103 with D or better and ELET 1152 with D or better ) or ( ELET 1103 with D or better and ELET 1151 with D or better )

Level: Lower

This course demonstrates a mastery of subject in the area of solid state devices. These subjects on solid state devices include diodes, bipolar transistors, and field effect transistors. The theory of operation, biasing, stabilization, frequency response, and distortion, gain using mathematical analysis, equivalent circuits, and computer models will be discussed.

**ELET - 2124 Electrical Power Circuits, 4.00 Credits**

Prerequisite(s): ELET 1104 with D or better and ( MATH 2043 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 2074 with D or better )

Level: Lower

Applied Learning-Practicum

Students will build upon dc circuit theory concepts as they apply to alternating current using phasor analysis in single and three-phase circuits. Complicated networks are analyzed using mesh and nodal matrix methods. MATLAB is introduced as a computational tool. The course emphasis is upon ac power applications including transformers and three-phase systems. Passive filters are investigated for signal conditioning using frequency domain analysis. Laboratory sessions will back up the analysis with hands on exercises using electronic instrumentation.

**ELET - 2143 Embedded Controller Fundmtls, 3.00 Credits**

Prerequisite(s): ELET 1111 with D or better and ELET 1133 with D or better and ( ELET 1142 with D or better or ELET 1143 with D or better )

Level: Lower

Applied Learning-Practicum

Fundamentals of both the hardware and software aspects of the microcontroller. A RISC (reduced instruction set computer) microcontroller is used with an in-system programmer to create an engineering development system. Structured programming code is written in assembly language, assembled and downloaded to the controller. Switches, light emitting diodes, seven segment displays, pneumatic solenoids and motors are among the devices that will be connected to the controller.

**ELET - 2151 Electronics Laboratory I, 1.00 Credit**

Prerequisite(s): ELET 1103 with D or better and ELET 1151 with D or better

Corequisite(s): ELET 1103 with D or better and ELET 1151 with D or better

Level: Lower

Applied Learning-Other

The material in this course parallels and supplements the subject matter in ELET 2103. The use of appropriate electronic test equipment is emphasized, along with computer simulation, and computer aided test equipment.

**ELET - 3103 Electronics Theory II, 3.00 Credits**

Prerequisite(s): ELET 2103 with D or better

Corequisite(s): ELET 2103 with D or better

Level: Lower

This course involves the study and application of operational amplifiers. Inverting, non-inverting and follower amplifiers are presented in detail with consideration of gain, bandwidth, and impedance. Different feedback circuits are studied to realize basic mathematical operations. Op-amps topologies are then used to make filters, oscillators, and regulated power supplies.

**ELET - 3151 Electronics Laboratory II, 1.00 Credit**

Prerequisite(s): ELET 2103 with D or better

Corequisite(s): ELET 2103 with D or better

Level: Lower

Applied Learning-Other

This laboratory is an experimental study of operational amplifiers and linear integrated circuits as applied to comparators, amplifiers, waveform generators, signal conditioning, and regulated power supplies. Emphasis is placed on design, proper measuring techniques and documentation of results. Device characteristics and limitations will be studied. The use of manufacturer's data sheets is required. Computers are used to design, analyze and test circuits along with manual measuring techniques.

**ELET - 4154 Microelectronics, 4.00 Credits**

Prerequisite(s): ELET 1143 with D or better and ELET 1103 with D or better

Level: Lower

This course provides the student with a realistic experience in semiconductor manufacturing processes. Oxidation/ diffusion, photolithography (spin/bake/expose/develop), etc, and vapor deposition equipment allow students the opportunity to design, build, and test simple solid-state devices.

**ELET - 4224 Alternative Energy Generation, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The purpose of this course is to provide students with a realistic look at the potential and the limitations of electrical generation through energy conversion. The energy sources include solar, wind and water. The course will include semiconductor properties of photovoltaic cells and the electronic circuits necessary for energy conversion. Using trigonometry, students will be able to calculate the position of the sun at any time or place and calculate the energy available at different panel orientations. Students will have the beginning tools to design off-grid and on-grid photovoltaic energy systems. MATLAB and LabVIEW software will be used to analyze and measure the solar resource.

**ELET - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower  
 A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

**ELET - 5113 Electronic Communications, 3.00 Credits**

Prerequisite(s): ELET 2103 with D or better  
 Level: Upper  
 Applied Learning-Other  
 This course is the study of analog and digital communication concepts and systems. Students begin by learning the terminology and measurements used in the communication industry. The course includes analysis of AM, and FM transmission and reception, Single-Sideband communications, Digital Wired and Wireless Communications, Network Communications, and Multiplexing and De-multiplexing techniques. Emphasis is on the system approach with block diagrams, with the presentation of theoretical fundamentals and study of the concepts within each diagram. The associated laboratory and projects augment the lecture theory. Students investigate further by completing an individual project.

**ELET - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper  
 A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

**ELET - 6004 Advanced Power Systems, 4.00 Credits**

Prerequisite(s): ( ELET 2124 with D or better or ELET 2123 with D or better ) and ELET 2103 with D or better  
 Level: Upper  
 Applied Learning-Practicum  
 This course is the study of electrical power transmission and conversion. A project involves the design of a dc-dc converter from theory through a completed printed circuit board. Circuit topologies studied include linear, buck, boost and buck-boost converters. On the utility scale, ac circuit theory is applied to grid power flow and transmission line models. Synchronous generators and transmission lines are modeled in theory and examined in the laboratory. Power electronics are analyzed for their role in conversion and transmission.

**ELET - 6143 Electrical Machines & Controls, 3.00 Credits**

Prerequisite(s): ELET 1103 with D or better or ELET 1104 with D or better  
 Level: Upper  
 Applied Learning-Practicum  
 Students will study electromagnetic machines through circuit models, mathematical analysis, and experimental measurements. Mechanical, electrical, and electromagnetic fundamentals are reviewed as applied to motors and generators. Machine topologies studied include single and three-phase ac, wound field and permanent magnet dc, servo and stepper. Students will control these machines by designing relay ladder logic circuits and programming programmable logic controllers. Variable frequency drives and SCR drives are analyzed and tested. Green engineering is promoted in this course through the selection of the most efficient and appropriate machine and control system for the application.

**ELET - 7104 Integrated Circuit Technology, 4.00 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better  
 Level: Upper  
 Applied Learning-Practicum  
 This course is an introduction to the physics, chemistry and materials of integrated circuit fabrication. Topics include the basic process steps of crystal growth, oxidation, photolithography, diffusion, ion implantation, chemical vapor deposition (CVD) and metallization used to build integrated circuits. The laboratory uses a 4-level metal gate PMOS process to fabricate a working integrated circuit test-chip and provide experience in device design, process design, materials evaluation, in-process characterization and device testing.

**ELET - 7404 Embedded & Real Time Systems, 4.00 Credits**

Prerequisite(s): ELET 2143 with D or better and CISY 5123 with D or better  
 Level: Upper  
 Applied Learning-Practicum  
 This course prepares the students for the design and implementation of a real-time operating system (RTOS) on an embedded microcontroller. The course is constructed around a project where each student is required to design and prototype a real-time traffic light using MicroC/OS-II operating system loaded on a PIC18F452 microcontroller. The lecture portion of the course is comprised of lectures and quizzes that support the course project. Lecture topics include basic characteristics of the real-time applications and real-time operating systems, hardware interfacing techniques, fixed and dynamic priority scheduling algorithms, concurrency theory, intertask communication, synchronization, response-time analysis, Petri-net modeling, fixed-point computations, and optimization. The lab portion of the course consists of labs that provide the building blocks of the course project. Upon completion of the course project students will compare MicroC/OS-II with other similar operating systems such as FreeRTOS and Salvo.

**ELTR - ELECTRICAL/ELECTRONICS**

**ELTR - 1156 Residential Wiring I, 6.00 Credits**

Corequisite(s):

Level: Lower

This lecture course introduces a student to the theories, principles, and laws of static and dynamic electricity. Direct and alternating current circuits are studied utilizing the related trade mathematics covering topics such as Ohm's law, resistance, power, inductance, and capacitance. Major emphasis is placed on applying trade related mathematics and analytical reasoning to troubleshooting series, parallel and compound circuits. National Electrical Code requirements and proper techniques for soldering/terminating conductors are covered. Students will learn to interpret and draw electrical schematics and wiring diagrams relating to low voltage signal circuits. The National Electrical Code and its application to residential branch circuit requirements and non-metallic wiring methods as well as correct electrical and component terminology is introduced.

**ELTR - 1166 Residential Wiring Lab IA, 6.00 Credits**

Corequisite(s):

Level: Lower

Applied Learning-Practicum, Course Fee \$26.00

Students will apply techniques learned in theory required to make proper terminations and soldered splices.

Alternating and direct current circuits are constructed and students will analyze and confirm electrical principles and applicable laws. Emphasis is placed on safety, craftsmanship, correct, and accurate laboratory test procedures using appropriate test equipment such as Volt- Ohm-Milliampere Meters (VOM). Schematic drawings are required for each circuit and outside of lab, report and analysis writing is necessary.

**ELTR - 1176 Residential Wiring Lab IB, 6.00 Credits**

Corequisite(s):

Level: Lower

Applied Learning-Practicum, Course Fee \$26.00

Students receive hands-on training in the fundamentals of low and line voltage circuit construction. An emphasis is placed on safety, craftsmanship, NEC requirements, circuit planning, and circuit layout using the appropriate cable wiring methods. The correct selection and terminology of electrical components used for assigned circuits is required. Students will also demonstrate proper troubleshooting methodology and usage of test equipment required to find faults and repair electrical circuits. Time will be spent working on actual job sites. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

**ELTR - 2156 Residential Wiring II, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Corequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Level: Lower

Understanding and interpretation of the National Electrical Code requirements for residential branch circuits are covered in detail. Practical considerations for the economic and adequate distribution of electrical energy are discussed, as well as the adequacy of circuit design. Reading and interpreting floor plan drawings as they relate to all trades is taught. Power calculations along with all N.E.C. and utility company requirements for the installation of any type of residential service are covered. Conduit wiring methods are covered as well as all related National Electrical Code requirements. Substantial time is spent performing the mathematical calculations utilized for designing, laying out and bending conduit. Students are required to perform all tasks in a neat craftsman-like manner. Emphasis is placed on the reasonings of why workmanship is important.

**ELTR - 2166 Residential Wiring Lab IIA, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Corequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Level: Lower

Applied Learning-Practicum, Course Fee \$27.00

Substantial time is spent with students working the wiring systems on actual residential homes built off campus. In lab students design, layout, and manufacture every type of bend utilized with conduit raceway systems. Conduit fill calculations are applied as well as utilizing correct methods for installing branch circuit conductors. Students are required to apply the National Electrical Code to all work done in labs and on the outside projects. Major emphasis is placed on safety, craftsmanship, circuit analysis, and troubleshooting of circuit faults. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

**ELTR - 2176 Residential Wiring Lab II B, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Corequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Level: Lower

Applied Learning-Practicum, Course Fee \$27.00

The lab emphasizes the application of the complete wiring system used for residential applications. Students will be required to complete several types of services, such as riser, mast, conduit and cable installations. Students will complete their freshman capstone project, which requires each student to redraw a two story residential home to scale. They will then perform the design work and layout all of the wiring required by the National Electrical Code and ensuring that it will meet the minimum adequacy requirements of a prospective homeowner. Students will then complete a spreadsheet containing all the components with their complete descriptions that are necessary to complete the Capstone project. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

**ELTR - 3156 Electrical Power Systems, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

Applied Learning-Practicum, Course Fee \$17.00

This course will provide instruction in the applied mathematics, circuit analysis, design, installation, distribution methods, protection, and trouble of single phase and three phase electrical power systems.

**ELTR - 3306 Alarms and Special Systems, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

Applied Learning-Practicum, Course Fee \$17.00

This course will provide instruction in the applied mathematics, operation, design methodology, installation requirements, and National Electrical Code requirements for alarms and special systems.

**ELTR - 3326 Magnetic Motor Controls, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

Applied Learning-Practicum, Course Fee \$17.00

This course is designed to teach foundational concepts of motors and motor control. Safe work practices and code compliance procedures will be reinforced. The student will be introduced to the basic circuits, devices and components used in their control; advanced circuits of alternating, sequencing, latching, and time delay operations of motor control will be presented. The lab will progressively lead the student to a basic understanding of individual control devices. The student will apply the basic knowledge and safety protocol towards integration into a totally automated system using magnetic and solid state controls. Throughout all projects, from basic to fully automated systems, the student will be taught troubleshooting techniques of industrial motor controls. Students will be evaluated to assess their troubleshooting skills and techniques within the lab practicums.

**ELTR - 3336 Photovoltaic & Wind Turbine System In, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

Applied Learning-Practicum, Course Fee \$17.00

The course will cover the fundamentals of photovoltaic and wind power generation, installation and maintenance practices. The course content will include the components used in stand-alone systems, grid interconnect systems, and grid connected systems with battery back-up. Areas of focus will be: safe work practices and PPE, site evaluation, system sizing, zoning restrictions, funding resources, and installation practices in accordance with National Electrical Code, Building Code and NABCEP training objectives and requirements.

**ELTR - 3356 Programmable Controllers for Industrial Automation, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

Applied Learning-Practicum, Course Fee \$17.00

This course presents the origin and evolution of programmable logic controllers. Special emphasis is placed on the fundamentals of Relay Ladder Logic (RLL) programming methods and the analysis of circuit operations as well as various applications of Programmable Logic Controllers (PLC's) used in modern industrial applications. Students will receive the necessary hands-on experience in lab to be able to design, program, construct, troubleshoot, and perform preventive maintenance of all components of a PLC controlled process. Students will be evaluated on troubleshooting techniques, terminations of input and output devices, and the proper maintenance of at least two different types of PLC Manufacturers.

**ELTR - 3366 Industrial Automation & Process Controls, 6.00 Credits**

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

Applied Learning-Practicum, Course Fee \$17.00

This course involves the study of effective process control theory. A systems approach is used in an effort to understand each instrument's function within the system. The course will also examine how pneumatics, hydraulics, Servo motors, and system automation are used in industry today for the manufacturing of products. This course also involves the practice of hands-on effective process control theory. A systems approach is used in an effort to understand each instrument's function within the system.

**EMET - ELECTROMECH ENGR TECH**

**EMET - 5004 Instrumentation, 4.00 Credits**

Prerequisite(s): ( PHYS 2023 with D or better or PHYS 2044 with D or better ) and ( MATH 1063 with D or better or MATH 1084 with D or better )

Level: Upper

This course introduces the student to general characteristics of electromechanical sensors and transducers, electrical measurement systems, electronic signal conditioning, data acquisition systems, and response characteristics of instruments. The lectures focus on the selection, calibration techniques and applications of electromechanical transducers. The laboratory has industrial equipment, such as a punch press, drill press, and metal lathe, which are equipped with sensors that are configured to measure physical quantities such as force, strain, displacement, velocity, and acceleration. Data acquisition and real-time software applications are applied in a laboratory environment.

**EMET - 6004 Feedback Control Systems, 4.00 Credits**

Prerequisite(s): MATH 6114 with D or better

Level: Upper

Feedback control systems with topics in time response, stability, criteria, system representation, root locus diagrams, and compensation. The systems include electrical, mechanical, and electromechanical networks. The laboratory features simulation of electrical and mechanical systems using MATLAB and SIMULINK as well as a variety of physical controllers.

**ENGR - ENGINEERING SCIENCE**

**ENGR - 1201 Engineering Sci Orientation, 1.00 Credit**

Level: Lower

An examination of strategies for success, including organizational and study skills, and transfer and career opportunities for engineering students in industry. There will be at least a dozen textbook and research readings followed by written assignments on topics to include the variety of engineering transfer institutions and engineering majors, diversity in society and the technical workplace, personal assessments of goals, values, strengths and weaknesses as related to student and technical career success, employment application techniques such as resume writing, letters of application, interviewing, follow-up communications, and an introduction to MS word and Excel.

**ENGR - 2001 Engineering Computing Applctns, 1.00 Credit**

Prerequisite(s): MATH 1084 with D or better

Level: Lower

This is an introductory, software-oriented, engineering computing course using an interactive, high-performance, scientific and engineering software package which integrates computation and visualization in a programming environment to solve engineering application problems. Topics will include embedded mathematical functions, complex numbers, matrix manipulation, plotting, user defined script and function files, matrix algebra, numerical techniques and graphical user interfaces.

**ENGR - 2201 Engineering Science Seminar, 1.00 Credit**

Prerequisite(s): ENGR 1201 with D or better

Level: Lower

The purpose of this course is to assist sophomore engineering science students in choosing and transferring to the college or university of their choice in order to complete a baccalaureate degree in engineering. Transfer admissions visitors are invited to classes and there may be class trips to potential transfer institutions depending on the interest of the students. This is a required course for the Engineering Science associate degree.

**ENGR - 3004 Circuit Analysis I, 4.00 Credits**

Prerequisite(s): MATH 2094 with D or better

Corequisite(s): MATH 2094 with D or better

Level: Lower

This Calculus-based course covers dc circuit analysis including voltage, current, resistance, power and energy. Circuit analysis techniques and Kirchhoff's laws are applied to series, parallel and combined circuits. Thevenin's, Norton's and Superposition theorems are applied to dc circuits. Operational amplifiers are introduced. Inductance and capacitance are introduced and the transient response of RL, RC and RLC circuits to step inputs is studied using differential equations. The laboratory incorporates use of manual and computer-controlled equipment and simulation software to reinforce lecture concepts. Computational software is required for circuit calculations.

**ENGR - 3213 Analytical Mechanics I, 3.00 Credits**

Prerequisite(s): MATH 2094 with D or better and PHYS 1064 with D or better

Level: Lower

This course covers statics at the intermediate level. Equilibrium of particles and rigid bodies in two and three dimensions, centroids, centers of gravity, analysis of structures, friction, area and mass moments of inertia. Calculus and vector mathematics are employed throughout.

**ENGR - 3254 Systems Dynamics I, 4.00 Credits**

Prerequisite(s): MATH 6114 with D or better and PHYS 1064 with D or better

Level: Lower

Applied Learning-Practicum

This course covers analysis, modeling and design of dynamic and feedback control systems using a common methodology regardless of physical discipline. Mathematical modeling, block diagrams, transfer functions, system excitation, response and stability of linear mechanical and electrical systems in both time and frequency domains will be studied using classical techniques, state space representation, matrix notation and Laplace transforms. The laboratory will include programming and simulation of independent and coupled, first and second order electrical and mechanical systems using appropriate software such as MATLAB and SIMULINK. An experimental project or simulation will be required.

**ENGR - 4004 Circuit Analysis II, 4.00 Credits**

Prerequisite(s): ENGR 3004 with D or better and MATH 6114 with D or better

Level: Lower

This course covers AC circuit analysis beginning with the study of sinusoidal steady-state solutions for circuits in the time domain. Nodal, loop and mesh methods of AC circuit analyses and the Thevenin, Norton and Superposition theorems are applied to the complex plane. AC power, transformers, mutual induction, three-phase circuits and two-port networks are introduced and used for analysis. Laplace and Fourier Transforms and the Fourier Series are applied to circuit analyses. Complex frequency analysis is introduced to enable discussion of transfer functions, frequency dependent behavior, resonance phenomenon and simple filter circuits. The laboratory incorporates use of manual and computer-controlled equipment and simulation software to reinforce lecture concepts. Computational software use is required for circuit calculations.

**ENGR - 4213 Analytical Mechanics II, 3.00 Credits**

Prerequisite(s): ENGR 3213 with D or better

Level: Lower

This course covers dynamics at the intermediate level. Topics in kinematics and kinetics include particles, systems of particles and rigid bodies, mechanical vibrations, force, mass, acceleration, work and energy, impulse and momentum. Calculus and vector mathematics are employed throughout.

**ENGR - 4264 Engr Mechanics of Materials, 4.00 Credits**

Prerequisite(s): ENGR 3213 with D or better and ( MATH 2074 with D or better or MATH 2094 with D or better )

Level: Lower

Course Fee \$46.00

This course is a calculus-based study of advanced concepts in Mechanics of Materials. It addresses the behavior of deformable mechanical components when subjected to tension, compression, torsion, flexure/ bending or a combination of these loads. Extensive use is made of free body diagrams as well as Mohr's Circle for stress and strain. Experience is gained in the analysis of beam deflection, shafts in torsion, power, column buckling and thin walled pressure vessels. Analysis includes examination of stress concentrations, elastic and inelastic response, residual stresses, indeterminate structures and thermal effects. Superposition, singularity functions and theories of failure are studied. Laboratory experiences include traditional mechanical material testing and computer software applications.

**ENGR - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ENVR - ENVIRONMENTAL TECHNOLOGY****ENVR - 4411 Environmental Capstone Seminar, 1.00 Credit**

Prerequisite(s): ENVR 4424 with D or better \*

Level: Lower

This course is intended for students in the last semester of the Environmental Technology program. Current environmental issues are considered by utilizing guest speakers, an alumni panel, and audiovisual resources. Field trips are made to regional sites of environmental interest. A job search is organized and resumes are prepared with cover letters.

**ENVR - 4413 Environmental Law, 3.00 Credits**

Prerequisite(s): BIOL 2801 with D or better and BIOL 2803 with D or better

Level: Lower

This course is a non-technical overview of environmental law and public policy. Included in the course are laws, regulations and policies governing water pollution, air pollution, solid waste, hazardous waste, global commons, land use, pesticides, energy, and public lands. The social concerns of environmental regulation such as environmental economics, risk assessment and environmental impact statements are also explored.

The conflict/perceived conflict of economic development with environmental protection is particularly stressed. In addition, environmental problems, public policy, administration, politics and philosophy are studied.

**ENVR - 4424 Environmental Chem & Microbiology, 4.00 Credits**

Prerequisite(s): BIOL 2801 with D or better and BIOL 2803 with D or better and ( CHEM 2984 with D or better or CHEM 2124 with D or better )

Level: Lower

Applied Learning-Field Study, Course Fee \$118.00  
This is the "capstone" course for students in the Environmental Technology curriculum. The course includes a survey of the techniques used for sampling and laboratory analysis of soil, water, and microbiological samples. Chemistry topics include a review of inorganic and organic chemicals of environmental concern. Microbiology topics include the biology of microorganisms in soil, water, and waste treatment.

**ENVR - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ENVR - 6102 Community-Economic Redevelopment, 2.00 Credits**

Level: Upper

Liberal Arts and Science

This course is a multidisciplinary overview of redevelopment process. This course will be run as a seminar that will meet in a seminar and discussion format. Understanding of the course topics will equip students with the knowledge of community economic development and regeneration project development. It will impart valuable skills for staff and leadership in consulting firms, municipalities, agencies and non-profits that do community development and community regeneration.

**EPLP - EMERGING PIONEER LDRSHIP PGM****EPLP - 1031 Social Change & Leadership, 1.00 Credit**

Level: Lower

This first leadership development class and mentor-guided experience is designed to assist the student in learning about social change theory and their role in leading productive change. This initial stage of leadership development focuses on individual values. The mentoring relationship will provide the resources necessary to aid students in their individual, group, and community experiential growth and development. This learning experience focuses on the first 3 C's of the Social Change Model of Leadership Development: Consciousness of Self, Congruence, and Commitment. Students will explore consciousness of self, congruence in how to become an ethical leader, and commitment to their passions as a leader.

**EPLP - 2032 Servant Leadership, 2.00 Credits**

Prerequisite(s): EPLP 1031 with D or better

Level: Lower

This second of three Emerging Pioneers Leadership Program development classes is designed to expose students to the next three C's of the Social Change Theory: Collaboration, Common Purpose and Controversy with Civility. The learning takes place in a variety of classroom and team-based settings, focusing on self-identified civic engagement passions that the group shares. Through practical application (i.e., service learning), students gain experience that is directly applicable to employment after college. The course will focus on a greater awareness of community needs and societal issues. Students will work with faculty, student affairs educators, and other students.

**EPLP - 5033 Personal Leadership & Citizens, 3.00 Credits**

Prerequisite(s): EPLP 1031 with D or better and EPLP 2032 with D or better

Level: Upper

Applied Learning-Creative Work

The third of three Emerging Pioneers Leadership development classes seeks to address the last C of the Social Change Theory - Citizenship and Personal Leadership within the Society/Community. This capstone level experience creates the opportunity for students to engage in the concepts of active citizenship and leading positive change within their own community. Students learn about and apply these concepts by experiencing local government in action and by engaging in a local community challenge within the context of a small group.

**FDSR - FOOD SERVICE**

**FDSR - 1143 Menu Planning, 3.00 Credits**

Level: Lower

This is an introductory course that will teach proper service protocol, dining room etiquette, ordering and use of point of sales systems. As the semester progresses, other topics will include: basic principles of menu planning with emphasis on classical menu patterns; menu formats and relationship of the menu to the complete operation of a food service establishment, and pricing of basic menu items.

**FDSR - 4900 Directed Study, 3.00 TO 9.00 Credits**

Level: Lower

A student who has successfully completed three semesters of Food Service courses may arrange for three, five, or nine credit hours of directed study to provide an opportunity to continue study in a subject area of special interest. Directed study may be conducted by a student only through an arrangement with the Food Service Instructional Staff who are to direct such a study. The student will submit a plan acceptable to the instructional staff and will confer regularly regarding his or her progress.

**FILM - FILM STUDIES**

**FILM - 3113 History of Italian Cinema, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

This course provides an in-depth study of the history of Italian Cinema from its beginnings in the first decade of the 20th Century until the present. Students will study the various social, political, technological, and artistic influences on Italian Cinema throughout its history.

**FNAT - FINE ARTS**

**FNAT - 1013 Art Appreciation, 3.00 Credits**

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

Art Appreciation will introduce the student to the meaning of what Art is and is about. Special emphasis is placed on open discussion to create an awareness of why men and women have valued the arts which have become a driving force as they developed and became civilized. Students will see how the arts are really part of their daily lives by reading, viewing slides and works of art, and by creating. Writing is continued in assignments related to readings, class discussions, and lectures.

**FNAT - 1023 Introduction to Theatre, 3.00 Credits**

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

The primary objective of this course is to develop knowledge and appreciation of theatre arts. This will be done through a study of theatrical traditions and dramatic literature from classical theatre to the contemporary.

Writing is continued in assignments related to readings, class discussions, and lectures.

**FNAT - 1133 Surv of Art Hist:Ancnt Grk Art, 3.00 Credits**

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

Art is the highest expression of a culture. Political, historical and social changes are the "heart of art". Works of art are a reflection of the ages in which they are produced and are often used as a "tool" to carry messages. This course will consider the development of art through the centuries and how it affected today's arts, with a focus on the main artistic movements starting with Ancient Greece through the Baroque period in Italy. Guided tours will help students to experience first-hand the main artistic expressions in Campania and Rome.

**FNAT - 1303 Architectural History I, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better \*

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

This is a survey course of the origin and development of historically notable architecture throughout the world from the 10th century BCE to 1900. From the settlement of Catal Huyuk in ancient Anatolia (now Turkey) in the Neolithic Era through Eclecticism, the era of stylistic revivals in the late 19th century, the students will be exposed to a wide variety of buildings, as well as introduced to the corresponding cultures and religions.

**FNAT - 1313 Art History, 3.00 Credits**

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

Art History is a comprehensive survey course which views the visual arts as a humanistic discipline.

Students will see the condition of our western tradition as encountered from the magic of caveman to the complexities of the twentieth century. Emphasis will be placed on the variety of purposes for which art has been produced. Writing is continued in assignments related to readings, class discussions, and lectures.

**FNAT - 2333 Survey of Design, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

Students will be introduced to basic design principles, theories, historical periods, disciplines, practices, and technologies. The areas of conceptual development, styles, materials, patterns, structures, and relationships in design will be examined. Major disciplines and fields in design will be considered, compared, and evaluated. The course will focus on how design influences architecture, industry, graphic and visual communication, digital media, print media, and culture. Students will evaluate design by reading, writing, researching, speaking about, and analyzing concepts related to the discipline.

**FNAT - 2423 3D Design/Color, 3.00 Credits**

Level: Lower

Gen Ed - The Arts, Liberal Arts and Science

In this course, the student examines relationships between form, structure (response to gravity), process, skill, and intention in regard to three-dimensional visual art making. This inter-relationship dictates that every project incorporate some element of each of these concerns. Emphasis is placed on providing a wide range of experiences through projects which gradually increase in complexity as the student gains skills and awareness.

**FNAT - 2433 Figure and Motion, 3.00 Credits**

Level: Lower  
 Gen Ed - The Arts, Liberal Arts and Science  
 This course builds upon the fundamental skills learned in the Foundations: Form/Space Relationship (DGMA 1413) course through the use of the human model. Proportion, perspectives, plus structural and locomotion dynamics will be studied. Students will focus on the mechanics of motion.

**FNAT - 2443 Intro to Digital Photography, 3.00 Credits**

Level: Lower  
 Gen Ed - The Arts, Liberal Arts and Science  
 Introduction to Digital Photography gives students fundamental skills for effectively recording travel, home, and work experiences. Using digital photography as a tool, students are encouraged to become more careful observers of the people, the landscape, the art, the architecture, and the culture that they encounter in their daily lives. The course concentrates on technical lectures and lab/studio time regarding the basic operation of a digital camera and the processing of images. Students develop an understanding of the elements that combine to create powerful visual images: subject matter, composition, color, and light. Through selected readings, assignments, lab/studio time, and critiques, students produce a written and visual final project for the course. Students are responsible for providing their own cameras, supplies, and image editing software.

**FNAT - 2453 Drawing on Location: Art of Tr, 3.00 Credits**

Level: Lower  
 Applied Learning-Intl/Dom Trvl, Liberal Arts and Science  
 This course is offered to students enrolled at Sant' Anna Institute as part of the study abroad program in Sorrento, Italy. Lectures and field sketching sessions are centered on drawing on location as the best way that a student can have to increase his or her capacity to observe and record reality. Whether it is an object, a tree, a person, or cities and landscapes, sketching from real life is a profound and lasting experience. This form of artistic expression can happen during everyday life while traveling or writing in journals. While drawing, students will learn to select information and highlight details better than they could with a camera. Students will discover Sorrento, Italy, and its region of Campania, visit Naples and surrounding archaeological sites, and record their observations through images and words in a travel sketchbook. Freehand drawing and location drawing as basic and complementary skills are recommended not only among architects, visual artists, animators, and graphic designers, but they are also recommended for disciplines such as archaeology, history, zoology, botany, and geology. Classic drawing exercises, as suggested by authors such as Kimon Nicolaides or Betty Edwards, will help beginners to break the ice with drawing from real life and on location.

**FNAT - 2900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 Gen Ed - The Arts, Liberal Arts and Science  
 The student may contract for one to four hours of independent study through an arrangement with the instructor. The student must submit a plan acceptable to the instructor, and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

**FNAT - 3413 Music of Western Cultures I, 3.00 Credits**

Level: Lower  
 Gen Ed - The Arts, Liberal Arts and Science  
 This course is designed to introduce and familiarize the student with the ethnic musical traditions and diversity in western cultures. The course will emphasize the Latin American, Caribbean, and Polynesian styles of root (hybrid), folk, and traditional forms and will include fundamental concepts of musical theory and form.

**FNAT - 3513 Art History II, 3.00 Credits**

Level: Lower  
 Gen Ed - The Arts, Liberal Arts and Science  
 This course is an introduction to understanding art. You will become aware of the relationship of media, artistic expression and the context of the cultural period which formed the art object. For most students the art of our own times is difficult to understand; for this reason, the main emphasis of the course will be contemporary culture and its interpretation of traditional imagery. Through written critical analysis of visual art issues students will gain experience discussing how art is created and what it means.

**FNAT - 4413 Music of Westn Cultures II NA, 3.00 Credits**

Level: Lower  
 Gen Ed - The Arts, Liberal Arts and Science  
 This course is designed to introduce and familiarize the student with the ethnic diversity within North American music. The course will explore the folk, traditional, jazz, and popular idioms that are found in the United States and Canada. Students will become aware of the intercultural effects within North American music and the influence of music from other global cultures. Students will also be introduced to the modern twentieth century forms, new age (alternative), and global fusion.

**FNAT - 5303 Architectural History II, 3.00 Credits**

Prerequisite(s): FNAT 1303 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 This course addresses the study of the origin and development of modern architecture from the mid-nineteenth century to the present. Lecture topics will proceed chronologically from the early roots of Modernism to the Global Dissemination of Styles in recent times, ending with an examination of current trends in urbanism and sustainable design.

**FRSC - FORENSIC SCIENCE**

**FRSC - 1001 Intro to Fornsc Science Tech I, 1.00 Credit**

Level: Lower  
 Forensic Science 1001 is an introductory expository course designed for forensic science technology majors to complete during their first semester of enrollment in the program. It is the first in a two-semester required sequence (along with FRSC 2001) for forensic science technology majors. Students are introduced to the requirements and expectations for success within the forensic science technology program as well as various technical disciplines and skills commonly brought to bear during a criminal investigation. Students are required to demonstrate written and oral communication skills by completing a project in a topic relevant to the class material.

**FRSC - 1103 Forensic Science Concepts, 3.00 Credits**

Level: Lower

This course provides an overview of forensic science concepts and techniques as they relate to a criminal investigation. Topics covered range from a historical perspective of forensic science within the criminal justice system to specific methodologies often performed by a first responder or crime scene investigator. The proper identification, collection, and preservation of various types of physical evidence is presented. In addition, an introduction to the field and laboratory tests that may be performed on physical evidence is discussed. This course is intended for non-forensic science technology majors. Students cannot receive credit for FRSC 1103 if they are in the Forensic Science or Biological Sciences curricula.

**FRSC - 2001 Intro to Frnsc Science Tech II, 1.00 Credit**

Prerequisite(s): FRSC 1001 with C or better

Level: Lower

Forensic Science 2001 is the continuation of a required two-semester sequence for forensic science technology majors. It is an introductory expository course designed for forensic science technology majors to complete during their second semester of enrollment in the program. Students are introduced to further technical disciplines and skills commonly brought to bear during a criminal investigation as well as current topics relevant to the field of forensic science. Students are required to demonstrate written and oral communication skills by completing a project in a topic relevant to the class material.

**FRSC - 3001 Topics in Forensic Science I, 1.00 Credit**

Prerequisite(s): FRSC 2001 with C or better

Level: Lower

The focus of this course is to explore various topics of concern in the field of forensic science and hold in-class debate style presentations to discuss these topics. Each student participates in one debate style presentation during the semester. Each student is responsible for the introduction of the topic, selecting a point of view to debate regarding the topic, and encouraging the class to offer comments and ask questions. Topics for discussion may be directly related to material discussed during other curriculum coursework or may originate from current media sources, as long as the students have established familiarity with the topics.

**FRSC - 3113 Forensic Pathology, 3.00 Credits**

Prerequisite(s): BIOL 1104 with C or better or BIOL 2303 with C or better or BIOL 1404 with C or better

Level: Lower

This course provides an overview of forensic pathology and the medicolegal death investigation system in the United States. Students will be introduced to the role and jurisdiction of the Medical Examiner as they relate to the determinations of cause, manner, and mechanism of death. Specific patterns of injury, types of deaths referred to the Medical Examiner, postmortem decompositional changes, and special topics of interest in death investigation will be discussed.

**FRSC - 4001 Topics in Forensic Science II, 1.00 Credit**

Prerequisite(s): FRSC 3001 with C or better

Level: Lower

The focus of this course is to expose students to peer-reviewed reference journal articles relevant to the field of forensic science and to expand on topics discussed during other curriculum coursework. The format of the course is reading and discussion, with each student accepting responsibility for serving as a discussion leader on a chosen journal article once during the semester. The discussion leaders' roles are to introduce the article topic, to provide background information about the topic, and to encourage the class to offer comments and ask questions.

**FRSC - 6214 Microscopy and Criminalistics, 4.00 Credits**

Prerequisite(s): CHEM 4524 with C or better

Level: Upper

Applied Learning-Practicum, Course Fee \$53.00

This course is an exploration of the basic theory and practice of traditional criminalistics and microscopic techniques commonly performed in forensic science. Topics covered include: crime scene investigation; evidence collection and handling; microscopic theory and techniques; analysis of trace evidence to include hair, fiber, paint, soil, and glass evidence; analysis of fingerprint evidence; analysis of firearms and ammunition; analysis of gunshot residue evidence; and analysis of impression and toolmark evidence.

**FRSC - 7214 Forensic Chemistry, 4.00 Credits**

Prerequisite(s): FRSC 6214 with C or better and CHEM 6614 with C or better

Level: Upper

Applied Learning-Practicum, Course Fee \$100.00

This course is an exploration of the basic theory and practice of commonly performed examinations on chemical evidence in forensic science. Topics covered include: principles of various chemical and instrumental separation techniques; sampling plans and uncertainty in measurements; an introduction to quality control and quality assurance concepts; principles and techniques of controlled substance examinations; principles and techniques of forensic toxicology; principles and techniques of fire debris and explosive evidence examinations; and principles and techniques of material analysis to include inks, dyes, colors, colorants and polymers.

**FRSC - 8111 Forensic Science Tech Capstone, 1.00 Credit**

Prerequisite(s): FRSC 7214 with C or better

Corequisite(s): FRSC 7214 with C or better

Level: Upper

Applied Learning-Creative Work

This course is intended for students to complete during the eighth and final semester of their enrollment in the forensic science technology program. It is to be taken concurrently with FRSC 8113. The course is designed to prepare the student to enter the workforce and/or continue their education at the graduate level. Students complete a capstone project requiring the analysis of physical evidence in a simulated casework setting. Students also apply the fundamentals of proper forensic laboratory report writing by producing a professional quality laboratory report suitable for admission into a court of law that communicates their findings. In addition, students are required to prepare and deliver expert witness testimony in a simulated mock courtroom setting.

**FRSC - 8113 Forensic Scie Tech Prof Prepar, 3.00 Credits**

Prerequisite(s): FRSC 7214 with C or better

Corequisite(s): FRSC 7214 with C or better

Level: Upper

This course is intended for students to complete during the eighth and final semester of their enrollment in the forensic science technology program. It is to be taken concurrently with FRSC 8111. The course is designed to prepare the student to enter the workforce and/or continue their education at the graduate level. Students learn the details of topics such as resume and cover letter preparation as well as job interview success. The importance of ethical behavior in the field of forensic science is discussed through both theoretical and applicative presentations. Quality control, quality assurance, and standard operating procedures are presented as well as a debate on current issues and legal decisions challenging the validity of scientific testing procedures commonly performed in forensic laboratories. The course culminates with a curriculum cumulative final examination.

**FRSC - 8213 Forensic Biology, 3.00 Credits**

Prerequisite(s): FRSC 7214 with C or better

Level: Upper

Applied Learning-Practicum

This course is an exploration of the basic theory and practice of commonly performed examinations on biological evidence in forensic science. Topics covered include: principles and techniques of serological examinations to include identification of blood and other body fluids, species determinations, and enzymatic analysis; blood spatter evidence interpretation and crime scene reconstruction; principles and techniques of forensic DNA examinations to include polymerase chain reaction; short tandem repeat profiling, and an introduction to Y-STR and mitochondrial DNA; and introductory principles and techniques of forensic pathology, anthropology, and entomology.

**FRSC - 8803 Forensic Sci Tech Sr Resch Pjt, 3.00 Credits**

Prerequisite(s): BIOL 8823 with C or better

Level: Upper

Applied Learning-Creative Work, Course Fee \$47.00

This course is intended for students to complete during the eighth and final semester of their enrollment in the forensic science technology program. Students are required to complete an approved laboratory-based research project in an area of special interest in forensic science technology or a related physical science. The student will submit a plan for research acceptable to the course instructor and the director of the forensic science technology program. The student and course instructor will confer on a regular basis regarding the progress of study and research. The student is required to prepare a formal scientific paper and/or give a formal oral presentation in an appropriate setting upon completion of the research project.

**FRSC - 8813 Forensic Scien Tech Internship, 3.00 Credits**

Prerequisite(s): FRSC 6614 with C or better and FRSC

6214 with C or better

Level: Upper

Applied Learning-Internship

This course is intended for students in their final year of the four-year Forensic Science Technology curriculum. Students are required to complete a supervised internship at an approved off-campus site. Students will work under the supervision of a qualified Forensic Science Administrator, Forensic Scientist, or other qualified personnel to whom they are assigned. Students will also receive college faculty consultation. The internship is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. This internship consists of 120 hours, which can be completed on a full-time basis (40 hours/week for three weeks) or on a part-time basis over an extended period of time (e.g. 8 hours/week for 15 weeks). All students will be required to give a formal presentation to the campus community following completion of the internship.

**FRSC - 8900 Directed Study, 1.00 TO 6.00 Credits**

Prerequisite(s): CHEM 6614 with C or better

Level: Upper

This course is designed to allow students to pursue advanced work in an area of special interest or obtain extended internship opportunities in Forensic Science Technology. A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor, to the Forensic Science Technology Program director, and to the department chair. The instructor and student will confer regularly regarding the progress of the study.

**FSMA - FINANCIAL SERVICES MANAG**

**FSMA - 5003 Investment Planning, 3.00 Credits**

Prerequisite(s): BUAD 4133 with D or better and BUAD

4203 with D or better

Level: Upper

This course teaches the student how to prudently plan investments to take maximum advantage of opportunities as they arise. Prudent planning includes the ability to relate the present changing economic environment to investment prices and determining if those prices are related to traditional fundamentals of value. The student will also be able to construct portfolios and analyze the social impact of investment choices. Tax implications of various choices will also be discussed.

**FSMA - 5103 Tax Planning, 3.00 Credits**

Prerequisite(s): ACCT 3453 with D or better

Level: Upper

This course covers tax-planning considerations for both individuals and businesses. The students will analyze current tax laws and the steps involved in managing one's tax liability by using IRS regulations as part of an overall investment strategy. A final project will be required. The students will be given a set of facts and an overall objective. They must then research the applicable tax laws, recommend a course of action, and defend that course of action with the supporting IRS regulations. An oral and written presentation of the student's project will be required.

**FSMA - 6003 Employee Benefit Planning, 3.00 Credits**

Prerequisite(s): BUAD 4203 with D or better  
 Level: Upper  
 This course will enable the student to evaluate employee benefits from the employer's and employee's perspective and articulate the regulations and compliance necessary to maintain employee benefit plans. The course will focus on group benefits, fringe benefits and retirement plans and will require case studies and team projects to synthesize the knowledge acquired in the course.

**FSMA - 7023 Estate Planning, 3.00 Credits**

Prerequisite(s): BUAD 3043 with D or better or BUAD 7023 with D or better  
 Level: Upper  
 This course is designed to expose students to the estate planning process. It explores the many issues to consider when assisting people to enhance and maintain their financial welfare. Emphasis is not only on the arrangements for the disposition of property at death, but also on steps that can be taken to increase overall family wealth and security while still alive. Topics include, but are not limited to wills, trusts, property ownership, future interests, long term care planning, fraudulent conveyances, as well as gift and estate taxation.

**FSMA - 7103 Money & Banking, 3.00 Credits**

Prerequisite(s): ECON 1013 with D or better and ECON 2023 with D or better  
 Level: Upper  
 This course is an exploration of the role and importance of money in effective monetary policy as a solution for inflation and unemployment. The operation, function, and structure of the banking system and the functions of the central banking system will be the focus. The role of monetary theories, money management, and monetary policy will also be studied. The theoretical foundations of commercial and central banking will be discussed within the context of general economic activity.

**FSMA - 7123 Persnl Finan Planning Capstone, 3.00 Credits**

Prerequisite(s): BUAD 4203 with D or better and BUAD 4193 with D or better and BUAD 5033 with D or better \* and FSMA 7023 with D or better \* and FSMA 5003 with D or better and FSMA 5103 with D or better \*  
 Level: Upper  
 Applied Learning-Other  
 This course focuses on the application of the knowledge base acquired in the prerequisite courses as part of the financial planning process. Emphasis will be on the analysis of data, critical thinking with regard to the client's circumstances, the presentation of information and the subsequent recommendations to a client. The interrelationship of all planning areas in the construction of a comprehensive plan will be highlighted. Assignments, presentations, quizzes, and other evaluations will be used to hone the student's analytical, presentation, and financial planning skills.

**FSMA - 8112 Financial Planning Internship, 12.00 Credits**

Level: Upper  
 Applied Learning-Internship, Pass/Fail  
 Students complete 15 weeks of supervised field work in a selected financial service provider setting. The student must be engaged in bona fide financial planning work in at least one of the six core areas of investment planning, tax planning, estate planning, retirement planning, employee benefit planning, or insurance/risk management. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of financial services and/or financial planning in an organization.

**GEOL - GEOLOGY**

**GEOL - 1133 Introduction to Geology, 3.00 Credits**

Level: Lower  
 Applied Learning-Intl/Dom Trvl, Liberal Arts and Science  
 The course is an introduction to the science of geology. In particular, the main types of rocks are analyzed with an emphasis on genetic processes and in relationship to plate tectonics theory. This basic knowledge will provide a background to understand and study the main geological risks, such as volcanoes, earthquakes, floods and landslides. Specific examples from the Apennines mountain chain and Campanian plain will be examined to contextualize these topics in the Italian environment. In addition, a significant aim of this course is for students to gain a conscious relationship with the environment. The Campania region is an ideal place for experiential learning via site visits, with the opportunity for students to witness a wide range of geological features. The evaluation for the course will include midterm and final written exams, a presentation and graphical exercises.

**GEOL - 1233 Volcanology, 3.00 Credits**

Level: Lower  
 Applied Learning-Intl/Dom Trvl, Liberal Arts and Science  
 The course is an introduction to the main elements of geological sciences including stratigraphy laws, the main types of rocks, and an understanding of faults and folds. These elements will be used to understand Plate Tectonics theory. Using this theory, different kinds of volcanoes will be analyzed, examining different magmatic compositions, igneous and pyroclastic rocks and their geodynamic environments. The role of geologic and geomorphologic processes will be analyzed in reference to volcanic risk. This course will also study landslides in volcanic soils (the case of Sarno mounts) and groundwater flow in volcanic aquifers and exploitation of thermal waters (the case of Ischia).

**GLST - GLOBAL STUDIES**

**GLST - 2113 Global Perspectives:Spcl Topic, 3.00 Credits**

Level: Lower  
 This course will introduce the students to the important role of general education and the intersection with their lives. Students will investigate their own values and ethical decision making. Students will consider the extent to which values shape behavior and ethical decisions. The student will recognize potentially different perspectives on a variety of topics as they evaluate other non-Western cultures. Through the exploration of various non-Western cultures, the course will assist students in developing a greater awareness of, and sensitivity about, social and cultural issues on both a local and global level. Through a collection of readings, discussion, personal reflection, writing, and research, students will learn skills to think critically about their social world and broaden their awareness and understanding of cultural and social diversity.

**HIST - HISTORY**

**HIST - 1113 Hist of West Civil Since 1648, 3.00 Credits**

Level: Lower  
 Gen Ed - Western Civilization, Liberal Arts and Science  
 This course provides an introduction to the political, military, intellectual, cultural, technological, religious, and economic features of Western Civilization from the early modern period to the twenty-first century. It also considers the relationship between Europe and the United States, and between Europe and the wider world. Finally, the course discusses contemporary Europe.

**HIST - 1123 History of the Mafia, 3.00 Credits**

Level: Lower

Liberal Arts and Science

The course examines the history of the Mafia from its origins to the present day. How the Mafia works and has succeeded as well as approaches, including those by civil society organizations, to combat the Mafia. Attention is paid to examples of Mafia enterprises, its past and present role in politics, and its evolution from a regional organization to one with an international reach. A research project, with both a paper and an oral presentation, is required.

**HIST - 1143 Surv of American History I, 3.00 Credits**

Level: Lower

Gen Ed - American History, Liberal Arts and Science

This course is an introductory survey of American history from the early Native Americans and European colonization through the Civil War and Reconstruction. Topics include native cultures, European heritage, the colonial experience, revolution and the new republic. Emphasis will be placed on the formation of the constitution, reform movements and political compromises. Special attention will be paid to the common institutions in American society and their affects on different groups.

**HIST - 1333 Mediterranean Culture & Histry, 3.00 Credits**

Level: Lower

Liberal Arts and Science

This introductory course examines the historical, cultural and religious evolution of the peoples surrounding the Mediterranean Sea. The main topics covered are the region's ancient civilizations (Greece, Rome, Germanics, and Byzantines); its major religions (Judaism, Christianity, Islam); the relationships between and among the Mediterranean countries; the various Mediterranean family forms; and the regional challenges and opportunities created by globalization.

**HIST - 2153 Surv of American History II, 3.00 Credits**

Level: Lower

Gen Ed - American History, Liberal Arts and Science

This is an introductory survey of American History from the Civil War and Reconstruction to the present. Topics include western migration, the impact of industrialization and urbanization, the rise of organized labor and the rise of the United States as a world power. The course will cover the social, political, cultural and economic life of the people of the United States, with a special focus on unity and diversity during the 19th and 20th centuries

**HIST - 3003 World History I, 3.00 Credits**

Level: Lower

Gen Ed - Other World Civ, Liberal Arts and Science

This course is designed to give the student a broad outline of world history. The students will study civilizations from the earliest humans through the classical world and beyond to the age of cross-cultural interaction and trade in the early 1500 CE. The student will be exposed to the traditions and cultures of the world to aid in weaving the story of human civilization. Early civilizations covered in the course include Mesopotamia, Indus, Chinese, Persian, Greek, Roman, Mesoamerican, European, as well as Islamic. Artistic and intellectual achievements and technological breakthroughs will be discussed throughout the course.

**HIST - 5133 Africa and the West, 3.00 Credits**

Prerequisite(s): HIST 1113 with D or better

Level: Upper

Gen Ed - Other World Civ, Liberal Arts and Science

This course will introduce students to the relationship between Western countries and sub-Saharan Africa over the last five centuries and today. Particular attention will be paid to the political, economic, and cultural links established between Europe and Africa, including the imperialist occupation and exploitation of Africa by Europeans. Historical topics covered will include the slave trade; European exploration of Africa; the diaspora of Africans in the West, and of Europeans in Africa; racial attitudes; patterns of economic development and impoverishment; the political evolution of European colonial regimes in Africa; and the process of decolonization, including its political, economic, and social consequences. Contemporary topics covered will include political instability and poverty in Africa; the AIDS crisis; the legacy of colonialism and white settlement; the democratization of African political systems; and competing approaches to African development.

**HIST - 6133 The World at War: 20th Century, 3.00 Credits**

Prerequisite(s): HIST 1113 with D or better or PLSC 1053 with D or better

Level: Upper

Liberal Arts and Science

This class surveys global military history during the 20th century, with particular emphasis on World War I, World War II, and the Cold War. It examines the origins of major and minor conflicts; the political, social, and economic context of modern warfare; changes in strategy, tactics, logistics, intelligence, battlefield technology, and other salient features of warfare; the contributions of political leaders and major military commanders; and the effects of modern warfare on soldiers and civilians. This class will feature student presentations and a research paper.

**HLTH - HEALTH TECHNOLOGY**

**HLTH - 1013 Essentials of Exercise Physiol, 3.00 Credits**

Level: Lower

Gen Ed - Natural Sciences, Liberal Arts and Science

This is an internet-based course intended for both science and non-science majors covering the basic study of exercise physiology. Topics include the role of nutrition in energy-producing pathways and human growth and development; nutritional and common pharmacological aids used to support and enhance exercise and athletic performance; study of metabolic production of energy and its application in the human capacity for work; and study of select body systems and the principles of exercise training with resultant physiological adaptations that could be expected from such training. The course concludes with a study of the role of exercise in the maintenance of health and the prevention of disease.

**HLTH - 1101 Intro to Health Sciences, 1.00 Credit**

Level: Lower

This course introduces the student to a broad array of health professions and allied health careers related to the field of study of health sciences. In addition to creating awareness of the career possibilities for the health science major, the course will focus on the typical education requirements, career paths and credentialing requirements of various health professionals. Licensure and scope of practice laws will be considered for select professions, along with the regulating bodies and health service agencies that govern them and establish standards of practice. Contemporary topics in health science will be explored including healthcare systems, economics, insurance, research, ethical considerations and other current issues in healthcare. The course will conclude with the student conducting personal career exploration and related educational planning.

**HLTH - 1113 Biology of Human Sexuality, 3.00 Credits**

Level: Lower

Gen Ed - Natural Sciences, Liberal Arts and Science  
This course studying human sexuality approaches the subject from the perspective of health and the discipline of biology, with attention given to the historical and contemporary perspectives concerning the topic. Reproductive anatomy is examined, along with the physiological response of sexual arousal. The events of fertilization, pregnancy and childbirth are studied along with examples of the contraceptives used to prevent it. Puberty and sexual development is considered and the role of biology is examined in the areas of gender, sexuality, attraction and love. The course concludes with an overview of common sexual difficulties, a study of sexually transmitted diseases and defines the act of rape and sexual assault.

**HLTH - 1313 Nutrition, 3.00 Credits**

Level: Lower

Gen Ed - Natural Sciences, Liberal Arts and Science  
This course is intended for both the science and non-science major. Coverage will include the fundamental biochemical aspects of the essential nutrients and their effects when consumed in less than recommended or excessive amounts. These nutritional facts will help answer some of the questions brought forward concerning the relationship between food and heart disease, weight control, preservatives, cancer, athletic performance, vegetarianism, pregnancy and lactation, just to name a few. Beyond these facts will be the understanding of the non-nutrient characteristics of food as related to culture, family and society. Most importantly, this course will present the tools necessary to properly evaluate the purchase and preparation of nutritious foods via personal assessment.

**HLTH - 5113 Complementary & Altv Medicine, 3.00 Credits**

Prerequisite(s): BIOL 2504 with D or better or BIOL 2214 with D or better

Level: Upper

Liberal Arts and Science  
This internet based course involves the study of complementary and alternative medicine most frequently encountered in contemporary western healthcare. The course will investigate specific disciplines of complementary and alternative medicine, their origins, histories, principles, current scientific evidence for or against them, indications and contraindications for their use, and typical clinical outcomes; along with an understanding of how they are integrated in a modern healthcare system.

**HLTH - 5203 End of Life Dilemmas, 3.00 Credits**

Level: Upper

Liberal Arts and Science

This course is designed to provide the student with thought provoking, informed decision making for end of life care. All people have choices and options about how they will spend their time on earth. It is imperative that these options are thoroughly considered so that individual wishes and desires are planned for and carried out. Complex medical, ethical and legal matters at end of life will be explored. Interventions and therapies such as artificial hydration and nutrition, acute treatment modalities, cardiopulmonary resuscitation, and life support will be examined. Healthcare programs providing end of life care will be investigated, judging cost and quantity of life versus quality of life. Assisted suicide and euthanasia will also be scrutinized and debated.

**HLTH - 5223 Info Systems in Healthcare, 3.00 Credits**

Level: Upper

An internet based course that examines how health information technology impacts healthcare delivery in all settings. This course explores a historical perspective of information technology through current day and beyond. What are the advantages, challenges, laws and regulations related to information systems? How do information systems impact healthcare? Emerging technologies such as electronic health record (EHR), telehealth and mobile applications are explored. The current healthcare landscape will be investigated to determine how healthcare informatics impacts quality outcome measures and private and governmental reimbursement methodology.

**HLTH - 5233 The Culture of Healthcare, 3.00 Credits**

Level: Upper

This course implements a two pronged approach to healthcare as an interface between the biology of health and health outcomes. Students will investigate questions on both the health and care of patients from a cultural perspective. Differences in the physiology and genetics of disease regionally in the U.S. and globally in other countries will be discussed as well as cultural differences in the care of patients and their families.

**HLTH - 5333 Healthcare Law and Ethics, 3.00 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is an introduction to the laws and ethics that affect healthcare decisions, relationships among professionals and patients, and the management aspects of healthcare delivery. It provides students with the knowledge and skills necessary to recognize legal and ethical issues that arise in healthcare practice, to be prepared to evaluate situations that may have legal or ethical implications, to know when to seek legal or ethics committee counsel, and to have an understanding of the implications of healthcare law on their own decision making. By the end of the course, students will have been exposed to many management ideas, theories and applications of healthcare law and ethics. Students will have a working knowledge of pertinent law and ethical procedures and how to apply them in healthcare arena.

**HLTH - 5433 Healthcare Marketing, 3.00 Credits**

Level: Upper  
 Applied Learning-Other  
 This course is designed to provide a fundamental knowledge of the principles of marketing and their particular application in healthcare. The healthcare system poses a variety of marketing challenges due to new laws and policies, fresh innovations, and an increasingly educated health consumer. This course covers the fundamentals of marketing as they are applied across a broad spectrum of healthcare organizations to address these challenges. This course is divided into three key concepts: marketing process, understanding the consumer, and marketing mix. The goal of this course is to provide students with a strong foundation of marketing principals and tools and techniques to develop a marketing plan for any healthcare organization.

**HLTH - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper  
 A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**HLTH - 6113 Diet and Disease, 3.00 Credits**

Prerequisite(s): HLTH 1313 with D or better and ( BIOL 2504 with D or better or BIOL 2214 with D or better )  
 Level: Upper  
 Liberal Arts and Science  
 This internet based course offers an in depth exploration of the cause and effect relationship between diet and common disease processes. This course will examine nutritional epidemiology, nutritional intervention and the research that substantiates both. The relationship of nutrition to common maladies, such as: obesity, diabetes mellitus and cancer, will be compared. Additionally, specific disease processes will be evaluated from a nutritional perspective, including: neurodegenerative, cardiovascular, gastrointestinal, and bone disease. The course will conclude by determining the nutritional and dietary factors necessary for proper healing and recovery.

**HLTH - 8713 Prof Internship Hlth Sciences, 3.00 Credits**

Prerequisite(s): BIOL 8823 with C or better  
 Level: Upper  
 Applied Learning-Internship  
 This course is intended for a student in the final year of the Bachelor of Science in Health Science. A student completes a 3-credit hour (120 hour total) internship at an approved off-campus site. The student works under the guidance of a qualified professional, the onsite Internship Site Supervisor, while receiving college consultation from a Faculty Internship Coordinator. The internship is designed for a student to obtain health science-related research or work experience in theoretical and application-based procedures previously studied. The student submits required reports and evaluations. In addition, the student presents oral and written explanations and defense of the information acquired and applied during the internship.

**HPED - HEALTH & PHYSICAL EDUC**

**HPED - 1031 Volleyball, 1.00 Credit**

Level: Lower  
 To develop the skills of passing, serving, spiking, and blocking.

**HPED - 1111 Health and Wellness, 1.00 Credit**

Level: Lower  
 To provide students with a better understanding of the human body and concepts, attitudes and practices concerning Health and Wellness. This course focuses on all the dimensions of Wellness.

**HPED - 1121 Basketball, 1.00 Credit**

Level: Lower  
 This course is designed to expose the student to the many basketball skills and types of playing.

**HPED - 1131 Indoor Soccer, 1.00 Credit**

Level: Lower  
 To develop skills, knowledge, and proper fitness levels pertaining to soccer.

**HPED - 1171 Aerobics, 1.00 Credit**

Level: Lower  
 Aerobics to music where the student will learn sound lifetime habits of fitness.

**HPED - 1603 Prin of Org PE & Athletics, 3.00 Credits**

Level: Lower  
 A course to provide each student with a workable frame of reference concerning the principles, organization, and philosophical aspects of physical education and athletics.

**HPED - 3003 Coaching Sports, 3.00 Credits**

Level: Lower  
 This course is a lecture course designed to serve as a foundation for future coaching experiences. This course will enhance students' knowledge and understanding of concepts and techniques of coaching and their application to achieving important objectives in working with athletes. The class will help students develop an understanding of coaching philosophy and essential techniques including practice planning, program organization, coaching roles and instruction. This course will combine sport science theory and research with the practical knowledge and methods of expert coaches.

**HPED - 3061 Physical Fitness, 1.00 Credit**

Level: Lower  
 Pass/Fail  
 To learn the basic principles of conditioning. The student will be provided an individualized fitness program designed to improve muscular strength and endurance, cardio-vascular wellness, flexibility, and body composition.

**HPED - 4103 Personal Health, 3.00 Credits**

Level: Lower  
 This course provides students the opportunity to develop sound concepts in health and health-related areas in order to better understand the environment in which they live. Strong emphasis will be placed on current health issues in the area of human sexuality, mental and emotional health, drug and substance abuse, and the development of sound health practices for the individual in today's society.

**HUMN - HUMANITIES**

**HUMN - 2114 Culture of Italy in Context, 4.00 Credits**

Prerequisite(s): COMP 1503 with C or better and ( LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Lower

Gen Ed - Humanities, Liberal Arts and Science

While there are many definitions of "culture", most have in common the characteristic behaviors, values, and beliefs of a group and those items of excellence influenced by those values, beliefs, and behaviors. This course will examine the culture of Italy from the point of view of Americans who are alert to their own country's culture. Through academic and first-hand field experiences, students will search out the values and characteristics perhaps unique to the Italians, make comparisons and contrasts with their own culture, and thereby increase their own intercultural competency. Learning will involve class discussions, lectures, introspective and public writing, workshops, oral presentations, and field trips.

**HUSR - HUMAN SERVICES**

**HUSR - 1074 Practicum in Human Services, 4.00 Credits**

Prerequisite(s): PSYC 1063 with C or better and ( HUSR 2083 with C or better or HUSR 4033 with C or better )

Level: Lower

Applied Learning-Practicum

This senior project course is designed to provide students with supervised work experience in human services agencies. In addition, students participate in a weekly class that combines the principle of small group dynamics with the acquired skills, knowledge and experience that students have obtained from their field experience. Students produce a final project and a portfolio to document learning. Students should consult the Practicum Pre-requisites listed in the Human Services program description section in the college catalog. Civic Engagement Intensive (CEI) sections exist.

**HUSR - 1303 Intro Alcohol & Substnc Abuse, 3.00 Credits**

Level: Lower

This course is intended to provide students with a basic yet comprehensive understanding of substance abuse and dependence. Attention will be given to understanding the effects of alcohol and other drugs on the mind and body, the components of addiction, the concept of alcoholism as a progressive disease, the recovery process, and the effects on society.

**HUSR - 2083 Introduction to Human Services, 3.00 Credits**

Level: Lower

This course is designed to give students an understanding and working knowledge of the human services profession: its goals and objectives, structure and organization, legal and ethical standards and client populations. An emphasis will be placed on the generalist approach to human services.

**HUSR - 4033 Issues in Human Services, 3.00 Credits**

Level: Lower

Major issues related to the field of human services are discussed in this course. Emphasis is placed on the ethical standards within the field of Human Services. Students are expected to develop the necessary skills, values and knowledge to enhance their ability to gain employment and advance within the human service profession.

**HUSR - 5003 Community Organizations, 3.00 Credits**

Prerequisite(s): HUSR 1074 with B or better

Level: Upper

This course is an upper level human services methods course focusing on major theories and methods of community organizing with applications in urban, suburban, transitional and rural communities. It provides a framework for assessment, and intervention with regard to the structures and processes of neighborhoods, communities, and organizations as they influence and are influenced by the many stakeholders in the human services arena. It explores the potential for the use of technology in organizing communities.

**HUSR - 5103 Social Policy & Human Services, 3.00 Credits**

Prerequisite(s): HUSR 1074 with B or better

Level: Upper

This course examines the evolution of American social problems and the response of the social welfare policy systems and programs at the national, state, regional and local levels. A basic framework for comparison with international social welfare systems will also be provided. The course will focus on the following aspects of the social welfare system: the impact of social policy on the delivery of human services, social welfare policy, and the systematic analysis of social welfare policy; understanding of social welfare policy analysis from both historical and current standpoints, and the organization, community and policy practice settings requiring advocacy and policy formulation; comprehension of social welfare policy analysis in the areas of welfare reform, homelessness/housing, poverty, mental health, substance abuse and health care; and individual communication skills in describing, analyzing, synthesizing and presenting a letter to the editor, a letter to a legislator, and a social welfare policy analysis response to a current societal problem. Applications in social welfare advocacy at all levels will be explored.

**HUSR - 5203 Grants Contracts Organ Adv HS, 3.00 Credits**

Level: Upper

Applied Learning-Practicum

This course will provide students with the tools needed to be successful with proposal writing, program and strategic planning, fund raising and institutional advancement. Specific areas to be addressed will include how to identify appropriate funding sources, how to market and organize charitable fundraising events and campaigns, how to complete applications for funding assistance, and how to respond to requests for proposals from public and private resources.

**HUSR - 5213 Case Management Systems, 3.00 Credits**

Prerequisite(s): HUSR 1074 with B or better

Level: Upper

This course in case management will familiarize students with various approaches used by human services professionals to meet the service needs of the client. The use of case management with children and families, elderly, chronically mentally ill, developmental and physically disabled, and those in health care settings will be investigated. Approaches used in crisis management will be compared with those used in chronic conditions. Skills in case management will be demonstrated including networking, goal setting, recording, case monitoring, advocacy, and outcome evaluation. Use of automated data systems and electronic records in case management will be explored.

**HUSR - 5314 Human Serv Field Practic & Sem, 14.00**

**Credits**

Prerequisite(s): ( HUSR 5003 with C or better and HUSR 5103 with C or better and HUSR 5203 with C or better ) or ( HUSR 5003 with C or better and HUSR 5103 with C or better and HUSR 5213 with C or better ) or ( HUSR 5003 with C or better and HUSR 5203 with C or better and HUSR 5213 with C or better ) or ( HUSR 5103 with C or better and HUSR 5203 with C or better and HUSR 5213 with C or better ) and HUSR 1074 with B or better  
Level: Upper

**Applied Learning-Practicum**

This seminar course is taken concurrently with a structured, supervised work experience in a human service agency. Students must successfully complete a minimum of 400 clock hours of work in human services management at an approved human services agency. In addition, students participate in this weekly seminar that synthesizes theoretical knowledge and didactic learning with the acquired skills, knowledge, and experience that the students have obtained through their field experience. The internship may be at distant locations. Faculty supervision and communication may be through various technologies that students must utilize. A complete list of practicum requirements is in Human Services Management program description in the college catalog.

**IDST - INTERDISCIPLINARY STUDIES**

**IDST - 5001 Interdisc Studies Capstone Des, 1.00 Credit**

Prerequisite(s): COMP 1503 with D or better  
Level: Upper

A capstone seminar in which students design an individual project demonstrating their plan for integrating their individual lower level core coursework with their upper level area(s) of concentration. The design phase will include a projection of the concentration(s) of interest along with a 4-semester registration plan, justification, and collection of supporting documentation. Plans must be approved by the student's project supervisor/advisor.

**IDST - 5002 Interdisc Studies Capstone Des, 2.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
Level: Upper

In this semester students investigate the nature of interdisciplinary studies, complete personal assessments and reflect on their strengths and goals. A course-taking plan, based on extensive research and written justification, will be created. A portfolio will be designed to include a projection of their chosen concentration(s) along with a 4-semester registration plan, with justification and a collection of supporting documentation. Students will design an individual project demonstrating a plan for integrating their individual lower level core coursework with their upper level area(s) of concentration choices for completion in IDST 7001. Students will present these designs to the student's project supervisor/advisor.

**IDST - 5900 Directed Study, 1.00 TO 4.00 Credits**

Level: Upper

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study. A capstone such as an interdisciplinary research project will be required.

**IDST - 7001 Interdisc Studies Capstone Prj, 1.00 Credit**

Prerequisite(s): COMP 5703 with D or better and IDST 5002 with D or better

Level: Upper

This capstone course includes both proof of purpose and goals of a student's chosen coursework and an individual project demonstrating the integration of their core area with their areas of concentration. Projects may take a range of forms appropriate to the student's concentration and future goals, e.g. a research essay, demonstration, marketing study, computer program or curriculum design. Projects must be approved by the student's advisor and project supervisors. Students will present their projects to their faculty supervisors and peers at the end of the course.

**IDST - 7002 Interdisc. Studies Capstone Pr, 2.00 Credits**

Prerequisite(s): COMP 5703 with D or better and IDST 5001 with D or better

Level: Upper

A capstone course that includes both proof of purpose and goals of their chosen course-work and an individual project demonstrating their integration of their core area with their areas of concentration. Projects may take a range of forms appropriate to the student's concentration and future goals, e.g. a research essay, demonstration, marketing study, computer program or curriculum design. Projects must be approved by the student's advisor and project supervisors. Students will present their projects to their faculty supervisors and students at the end of the course.

**ITAL - ITALIAN**

**ITAL - 1303 Italian I, 3.00 Credits**

Level: Lower

Gen Ed - Foreign Languages, Liberal Arts and Science  
This course focuses on developing the student's ability to speak, to write, and to read Italian. Additional emphasis is given to learning about Italian culture. Instruction centers on oral communication, written communication, reading for comprehension, and cultural awareness. Writing and speaking are emphasized in assignments related to readings, class discussions, and lectures.

**ITAL - 2303 Italian II, 3.00 Credits**

Prerequisite(s): ITAL 1303 with D or better

Level: Lower

Gen Ed - Foreign Languages, Liberal Arts and Science  
This course focuses on developing the student's ability to understand Italian sentences and frequently used expressions that relate to personal and family information, shopping, local geography, and employment. Oral communication is emphasized in simple tasks that require a direct exchange of information on familiar and routine matters. Writing is emphasized in assignments related to readings, class discussions, and lectures. The course focuses on an intermediate level of reading, speaking, and writing in Italian.

**ITAL - 3303 Italian III, 3.00 Credits**

Prerequisite(s): ITAL 2303 with D or better  
 Level: Lower  
 Liberal Arts and Science  
 This course will focus on developing the student's ability to understand Italian sentences and frequently used expressions that relate to personal and family information, shopping, local geography, and employment. Oral communication will be emphasized in simple tasks that require a direct exchange of information on familiar and routine matters or conversation about personal interests or employment. Writing will be emphasized in assignments related to readings, class discussions, and lectures. The course will focus on an intermediate level of reading, speaking, and writing in Italian.

**ITAL - 4303 Italian IV, 3.00 Credits**

Prerequisite(s): ITAL 3303 with D or better  
 Level: Lower  
 Liberal Arts and Science  
 This intermediate course will focus on developing the student's ability to understand the main ideas found in complex texts in Italian on both concrete and abstract topics; this focus will include technical discussions in the student's field of specialization. The course will also focus on the student's ability to speak with fluency and spontaneity. The students will be able to engage in regular interaction with native speakers and produce clear, detailed text on a wide range of subjects.

**ITAL - 5113 Contemporary Italian Literatur, 3.00 Credits**

Prerequisite(s): ITAL 4303 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 Students will study Italian literature of the 20th century. Students will critically analyze internationally renowned literary texts in the Italian language. Authors include Luigi Pirandello, Filippo Tommaso Marinetti, Gabriele D'Annunzio, Primo Levi, Salvatore Quasimodo, Giuseppe Ungaretti, Eugenio Montale, Pier Paolo Pasolini, Umberto Eco, and others. Students will read from these author's works and engage in a historical, literary, and rhetorical analysis of them while determining techniques of composition. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

**ITAL - 5223 Modern Italian Literature, 3.00 Credits**

Prerequisite(s): ITAL 4303 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 Students will study Italian literature from the 17th to the 19th century. Students will critically analyze internationally renowned literary texts in the Italian language. Authors include Galileo Galilei, Carlo Goldoni, Giuseppe Parini, Ugo Foscolo, Giacomo Leopardi, Alessandro Manzoni, Giovanni Verga, and others. Students will read from these author's works and engage in a historical, literary, and rhetorical analysis of them while determining techniques of composition. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

**ITAL - 5303 Italian V, 3.00 Credits**

Prerequisite(s): ITAL 4303 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 This advanced course will focus on developing the student's ability to understand a wide range of demanding, longer texts and recognize implicit meaning; the students will be able to express themselves fluently and spontaneously and use language flexibly and effectively for social, academic, and professional purposes. The students will be expected to produce clear and detailed text on complex subjects, and they will be expected to show controlled use of organizational patterns, connectors, and cohesive devices.

**ITAL - 5333 Medieval Italian Literature I, 3.00 Credits**

Prerequisite(s): ITAL 4303 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 Dante Alighieri is the most important Italian poet, the father of the Italian language, and the principal figure of Medieval Literature in Europe. This course will examine Dante Alighieri's *La Divina Commedia* (The Divine Comedy) and some of his minor works such as *La Vita Nuova* (The New Life) and *Il Convivio* (The Banquet). Attention will be given to the *Epistola a Cangrande della Scala* (Letter to Cangrande della Scala) which is believed to be Alighieri's letter to his foremost patron. The course will allow students to examine these internationally renowned literary texts in their original language. Students will read from these author's works and engage in a historical, literary, and rhetorical analysis of them while determining techniques of composition. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

**ITAL - 5443 Medieval Italian Literature II, 3.00 Credits**

Prerequisite(s): ITAL 4303 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 Students will study Italian literature from the 14th to the 16th Century. Students will read and critically analyze internationally renowned literary texts in their original language. Authors include Francesco Petrarca (Petrarch), Giovanni Boccaccio, Ludovico Ariosto, Torquato Tasso, Niccolò Machiavelli, and others. Students will read from these author's works and engage in historical, literary, and rhetorical analysis of texts while determining techniques of composition. Students will also learn about the lives and historical context of the authors; they will critically determine how the author's lives influenced the masterpieces that they created. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

**ITAL - 6303 Italian VI, 3.00 Credits**

Prerequisite(s): ITAL 5303 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 This advanced course will enable students to read and write Italian fluently. Students will work with a wide range of spoken and written sources. Students will concentrate on the analysis of texts for argument structure, and they will be expected to summarize and coherently present arguments in oral presentations. Student work will require an advanced level of spontaneity when writing and speaking; students will be expected to precisely differentiate nuances of meaning in complex situations.

**JAPN - JAPANESE**

**JAPN - 1203 Japanese I, 3.00 Credits**

Level: Lower  
 Gen Ed - Foreign Languages, Liberal Arts and Science  
 This course is an introduction to the spoken and written Japanese language and focuses on developing the student's ability to speak, to write, and to read Japanese. Additional emphasis is given to learning about Japanese culture. Instruction centers on oral communication, written communication, reading for comprehension, and cultural awareness. Writing and speaking are emphasized in assignments related to readings, class discussions, and lectures. This course also provides students with the ability to communicate in Japanese in their pursuit of travel, business, academic endeavors, and personal pleasure.

**JAPN - 2203 Japanese II, 3.00 Credits**

Prerequisite(s): JAPN 1203 with C or better  
 Level: Lower  
 Gen Ed - Foreign Languages, Liberal Arts and Science  
 This course is designed as a continuation of JAPN 1203; this course further develops the student's ability to speak, to write, and to read Japanese. Additional emphasis is given to learning about Japanese culture. Instruction centers on oral communication, written communication, reading for comprehension, and cultural awareness. Writing and speaking are emphasized in assignments related to readings, class discussions, and lectures. This course also provides students with the ability to communicate in Japanese in their pursuit of travel, business, academic endeavors, and personal pleasure.

**LITR - LITERATURE**

**LITR - 2033 The Short Story, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 The Short Story introduces the student to the study and appreciation of the short story as an art form. Reading selections will include stories by such masters as Joyce, Lawrence, Faulkner, Hemingway, and O'Connor, as well as recent works by Olson, Paley, and Barthelme. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR - 2343 Children's Literature, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 Children's Literature covers a broad range of literature for children from preschool to age twelve, as they encounter it through the home, the library, and the school. Picture books, the classics, folk and fairy tales, novels, and plays for children are presented in a critical context. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR - 2603 Introduction to Literature, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 This course focuses on literature, thought, and language. Writing is continued in assignments related to readings, class discussions, and lectures. Selections include novels, short stories, poems, and plays.

**LITR - 2703 Sci Fi in the 20th Century, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 Major representative works of science fiction are read and discussed. Works selected contain the major themes present in science fiction in the 20th century. Readings, class discussion, and lectures are the basis for oral reports and written assignments which continue training in composition and encourage a broadening of interest in science and technology. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR - 2813 Introduction to Film, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 This course focuses on film, thought, and language through the viewing and analysis of representative fiction films. Writing is continued in assignments related to film viewing, class discussions, and lectures. From readings and lectures, the student will become acquainted with basic technical terms and film theory, thus facilitating analysis of the more complex aspects of film history and production. Permission of the instructor may supersede prerequisite. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR - 2900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 The student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor, and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR - 2913 Introduction to Poetry, 3.00 Credits**

Prerequisite(s): COMP 1503 with C or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 This course focuses on a survey of the principles of poetry, the literary traditions of poetry, and the critical terminology to understand, to define, and to analyze poetry. Special attention is given to poetry written during the twentieth century. Classroom exercises and discussions emphasize the importance of close literary analysis; writing skills introduced in freshman composition and introduction to literature are reinforced.

**LITR - 3133 Creative Writing:Travel & Expr, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - The Arts, Gen Ed - Humanities, Liberal Arts and Science  
 This course will have students write creative non-fiction, focusing on the experience of travel. Student will read and be exposed to different works of non-fiction (travel writing and instructional, how-to writing), and published fiction (poetry, stories, and novels) revolving around travel. Class readings will also expose students to various writing styles and provide examples of the successes and strategies of other writers. Class time will be spent discussing the writer's craft and the assigned readings, and critiquing student writing in a workshop setting.

**LITR - 3233 Survey of American Lit I, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 This is the first of two courses surveying American literature from the time of the Puritans to the present; it stresses the development of the American voice in literature through the critical study of such authors as Edwards, Franklin, Poe, Whitman, Emerson, Thoreau, Hawthorne, and Melville.

**LITR - 3333 Survey of British Literature I, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 Survey of British Literature I is the first of two courses surveying British literature from the Middle Ages to the present; this course examines literature in the Middle Ages, the Early Modern Period, and the Restoration and eighteenth century. Emphasis is placed on the critical study of works such as Beowulf and authors such as Malory, Chaucer, Julian of Norwich, Spenser, Marlowe, Shakespeare, Milton, Dryden, Defoe, Swift, Pope, Johnson, and Boswell. Writing is emphasized in assignments related to readings, class discussions, and lectures.

**LITR - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**LITR - 5133 Special Topics in Literature, 3.00 Credits**

Prerequisite(s): COMP 1503 with C or better and ( LITR 2603 with C or better or LITR 2033 with C or better or LITR 2343 with C or better or LITR 2503 with C or better or LITR 2603 with C or better or LITR 2703 with C or better or LITR 2813 with C or better or LITR 2900 with C or better or LITR 2903 with C or better or LITR 2913 with C or better or LITR 3233 with C or better or LITR 4333 with C or better or LITR 7003 with C or better )  
 Level: Upper  
 Liberal Arts and Science  
 Students will study selected literature of the past five centuries through the lens of a particular special topic, such as the African-American experience, or Life During Wartime, or Global Colonization, or the Women's Rights Movement, or Political Movements Left and Right, or any topic of special interest to the instructor and relevance to students. Reading from selected literary works, students will apply historical, literary, and rhetorical analyses to determine key elements of composition, argument, historical setting, sociological context, and cultural interpretation. Students will be expected to actively participate and contribute to class discussion. Typical critical approaches to literature include these: the formalist approach or "new criticism", the biographical approach, the psychoanalytic approach including the theories of Freud and Jung, the economic and social class approach, gender-focused criticism, the mythological perspective, the structuralism approach, the deconstructive approach, and the cultural studies perspective. A research paper will be required.

**LITR - 5900 Directed Study, 1.00 TO 4.00 Credits**

Prerequisite(s): COMP 1503 with D or better and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )  
 Level: Upper

Liberal Arts and Science  
 The student may contract for one to four credit hours of independent study through an agreement with the instructor. The student must submit a plan acceptable for the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR - 7003 Literature and Nature, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Upper  
 Gen Ed - Humanities, Liberal Arts and Science  
 This course explores the relationship between humans and the natural world expressed in the literary form of nature writing. The thematic movement from discovery and description to environment, ecology, ecocriticism, and sustainability will be emphasized. Readings will be concentrated in American Literature, but works from other countries and cultures will be included. A variety of literary genres, including poems, journals, nonfiction essays, short stories, travel narratives, and excerpts from novels and nonfiction books will be examined. The purpose of this course is to introduce students to the canon of nature writing and to track this literary movement into emerging texts that examine the political, environmental, and technological themes of ecology and sustainability in contemporary culture. Students will be required to write a substantial research paper that analyzes an issue directly related to their major, and they will present their research at the end of the semester. Short writing exercises and exams will also be required. Class sessions will center on student participation and debate, and discussions and writing strategies will employ principles of sound reasoning, critical thinking, and Information Literacy skills.

**LITR - 7013 Native American Literature, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3133 with D or better or LITR 3233 with D or better or LITR 3333 with D or better or LITR 4333 with D or better or LITR 5133 with D or better or LITR 7003 with D or better )

Level: Upper

Gen Ed - Humanities, Liberal Arts and Science

This course will trace the evolution of Native American literature from oral tradition to written narrative. Students will analyze Native American texts for their narrative techniques, historical and cultural significance, themes, symbols, as well as their place in the American literary tradition. Course texts will include clips of oral storytelling, a selection of Native American myths, documentaries, nonfiction, fiction, and feature films produced by Native Americans. In addition, the course will investigate the myths and realities of reservation education, alcoholism, suicide, the workforce, healthcare, Hollywood portrayals, family structures, and intercultural relations. Students will be required to write a personal reflection paper, research papers on the readings/films, and a revision of one of the essays. Students must demonstrate the ability to write analytically and coherently, in ways appropriate to the discipline, and they must display the ability to revise and improve their writing in both form and content.

**MATH - MATHEMATICS**

**MATH - 1004 Mathematical Concepts\*, 4.00 Credits**

Level: Upper

Quantway 1 Comparison, Remedial

This course will introduce the students to the following topics: order of operations, operations on real numbers, simplifying algebraic expressions, integer exponents, solving linear equations in one variable, graphing linear equations in two variables, and applications such as geometry and modeling. Emphasis is placed on reviewing basic arithmetic skills and elementary algebra topics. Development of arithmetic skills throughout the semester is essential, therefore students will not be allowed to use calculators. Students will work on the development of thinking skills through creative problem solving, writing to explain methods and solutions to problems, and collaborative learning. This is a remedial/developmental course; it will not satisfy any graduation requirements. A grade of C or better is required to register for any subsequent math course.

**MATH - 1014 Algebra Concepts, 4.00 Credits**

Prerequisite(s): MATH 1004 with C\* or better

Level: Lower

Liberal Arts and Science

This course is intended for students who need more preparation to be successful in College Algebra or other courses of that level. Topics covered include: review of first degree equations, systems of equations and inequalities, graphing, polynomials, factoring, radicals and rational exponents, quadratic equations, rational expressions, relations and functions and an introduction to triangle trigonometry. This course prepares students to enter Math 1033 - College Algebra, Math 2124 - Statistical Methods and Analysis, Math 1423 - Explorations in Geometry, Math 1323 - Quantitative Reasoning and Math 2163 - Discrete Mathematics. A grade of C or better is required in Math 1014 to register for these courses. THIS COURSE DOES NOT FULFILL THE GEN-ED MATH REQUIREMENT.

**MATH - 1033 College Algebra, 3.00 Credits**

Prerequisite(s): MATH 1014 with C or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This course includes topics such as polynomials, radicals, exponents, coordinate geometry, rational expressions and equations, and solutions to linear and quadratic equations. Students are introduced to the concept of functions and their graphs. Additional topics may include conic sections, matrices, variation, and nonlinear inequalities. Emphasis will be placed on problem solving. A graphing calculator is required. Students cannot receive credit for MATH 1033 if they have credit for MATH 1054. Students cannot receive credit for MATH 1033 if they have credit for MATH 1063, MATH 1084, or any course for which MATH 1063 or MATH 1084 are prerequisites. A grade of C or better is required to take Math 2043, College Trigonometry.

**MATH - 1034 College Algebra of Functions, 4.00 Credits**

Prerequisite(s): MATH 1014 with C or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This course includes topics such as polynomials, radicals, exponents, coordinate geometry, rational expressions and equations, and solutions to linear and quadratic equations. Students are introduced to the concept of functions and their graphs. Additional topics may include conic sections, matrices, variation, and nonlinear inequalities. Emphasis will be placed on problem solving. A graphing calculator is required. The course is designed to give students additional time above that allotted in MATH 1033 working on mastery of concepts and skills in the student learning outcomes. Students cannot receive credit for MATH 1034 if they have credit for MATH 1033 or for MATH 1054. Students cannot receive credit for MATH 1034 if they have credit for MATH 1063, MATH 1084, or any course for which MATH 1063 or MATH 1084 are prerequisites. A grade of C or better is required to take MATH 2043, College Trigonometry.

**MATH - 1054 Precalculus, 4.00 Credits**

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This course is designed primarily for the student who needs a foundation in algebra and trigonometry for the study of calculus. The concept of function and graphical representation of functions is stressed. Topics covered include: real numbers; algebra of real numbers including equations and inequalities; functions and their graphs including polynomial, rational expressions, logarithmic and exponential, trigonometric; algebra of the trigonometric functions including identities, equations, polar coordinates, complex numbers, systems of equations. Prerequisites: NYS 80 HS Average Math A and B (or Course 1,2,3), plus a 4th year Math, or equivalent.

**MATH - 1063 Technical Calculus I, 3.00 Credits**

Prerequisite(s): ( MATH 1033 with C or better and MATH 2043 with D or better ) or ( MATH 1034 with C or better and MATH 2043 with D or better ) or MATH 1054 with D or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This course includes a review of functions, an introduction to the concept of limits, and a study of the techniques of differentiation and integration of algebraic functions with applications to the various technologies. A graphing calculator is required. Credit for MATH 1063, Technical Calculus I will not be allowed if student receives credit for MATH 1084, Calculus I.

**MATH - 1084 Calculus I, 4.00 Credits**

Prerequisite(s): MATH 2043 with D or better or MATH 1054 with D or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This course is designed for the student intending to continue his/her education in mathematics, science or engineering. The course includes a thorough treatment of limits leading to the Limit definition of the derivative and definite integral. Properties and rules to differentiate and integrate algebraic and transcendental functions and numerous applications of the derivative and integral will be studied. A graphing calculator is required. Students cannot receive credit for both MATH 1063 and MATH 1084.

**MATH - 1104 Quantway I\*, 4.00 Credits**

Level: Lower

Quantway 1, Remedial

Quantway I focuses on math for everyday life. It integrates fluency with numbers, proportional reasoning, data interpretation, algebraic reasoning, models, and communicating quantitative information. Mathematical concepts are investigated through group problems and class discussions based on real-life contexts of citizenship, personal finance, and model literacy. This is a remedial/developmental course; it will not satisfy any graduation requirements. A grade of C or better is required to register for any subsequent math course. The course prepares students to take college level non-STEM courses in mathematics, such as MATH 1014, MATH 1113, or MATH 1123.

**MATH - 1113 Statistical Concepts, 3.00 Credits**

Prerequisite(s): MATH 1004 with C\* or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This is a 3 credit, one-semester course which provides an introduction to and understanding of the basic concepts of statistics. Actual computation will be minimal; computers will be used whenever calculations are necessary. Emphasis will be placed on the meaning of statistical results. Content will include sampling, experiments, measurement, organizing data, and statistical indices. Optional topics include probability, time trends, survey design and basic inference concepts.

**MATH - 1114 Quantway II, 4.00 Credits**

Prerequisite(s): MATH 1104 with C\* or better or MATH 1143 with C or better or MATH 1014 with C or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science, Quantway 2

This course uses mathematical and statistical reasoning in everyday life decision-making. The course integrates percentages, probability, mathematical modeling, and statistical thinking within quantitative literacy. This is achieved through hands-on, collaborative learning with a focus on medical, financial and citizenship real-world examples. A student may not receive credit for MATH 1114 if they have already received credit for MATH 1323.

**MATH - 1123 Statistics I, 3.00 Credits**

Prerequisite(s): MATH 1003 with C\* or better or MATH 1004 with C\* or better or MATH 1104 with C\* or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This course is the first of a two semester sequence in statistics. It covers mainly descriptive techniques such as data collection, organization techniques, measures of center, spread, and position. Other topics covered include: probability, probability distributions (such as normal and binomial distributions), correlation and regression. Students cannot earn credit for MATH 1123 if they have credit for MATH 2124. A grade of C or better is required to take MATH 2133, Statistics II.

**MATH - 1143 Liberal Arts Math I, 3.00 Credits**

Prerequisite(s): MATH 1004 with C\* or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This is a one semester course whose basic objective is to develop an interest and appreciation for Mathematics in students with little background in the subject. Included in the course are topics from the following areas: Problem Solving, Inductive Reasoning, Logic, Sets, Probability, Statistics, Consumer Math, and Geometry. It may also include topics from the following areas: History of Math, Number Systems, Metric, Algebra, Linear Programming, Finite Math, Matrices, Computer Applications.

**MATH - 1204 Statway I\*, 4.00 Credits**

Level: Lower

Remedial, Statway

Statway I is the first course in the two-semester Statway course sequence. The Statway course sequence is recommended for students enrolled in degree programs that require no math beyond college level statistics. Both courses in the sequence, Statway I and Statway II, must be taken to receive credit for college level statistics. Students will use mathematical and statistical tools to explore real-life data in a participatory learning environment. Statway I topics include an introduction to data analysis, statistical studies, sampling, experimental design, descriptive statistics techniques, scatterplots, correlation and regression, modeling data with functions, linear and exponential functions, and probability. This course requires the use of statistical technology. This is a remedial/developmental course; it will not satisfy any graduation requirements. A grade of C or better is required to register for any subsequent math course. After completing this course, students will be able to take Statway II or MATH 1143. Students are not allowed to take MATH 1113 or MATH 1123 after successful completion of Statway I.

**MATH - 1323 Quantitative Reasoning, 3.00 Credits**

Prerequisite(s): MATH 2003 with C or better or MATH 1014 with D or better or MATH 1143 with C or better

Level: Lower

Gen Ed - Math, Liberal Arts and Science

This course is designed for curricula where quantitative reasoning is required. The course content includes critical thinking skills, arithmetic and algebra concepts, statistical concepts, financial concepts, as well as numerical systems and applications. A graphing calculator is required. This is an entry level course and requires three years of high school math equivalent to NYS Course 1, 2, and 3, or Math A and B.

**MATH - 1423 Explorations in Geometry, 3.00 Credits**

Prerequisite(s): MATH 2003 with C or better or MATH 1014 with D or better  
 Level: Lower  
 Applied Learning-Creative Work, Gen Ed - Math, Liberal Arts and Science  
 The content of this course will apply geometrical truths in a variety of contexts, including knots, tessellations and graphical symmetry. In addition, it will cover some principles of Gestalt perceptual properties, the exploration and creation of models of geometric art from other cultures, and any additional material deemed suitable by the instructor. The material will involve experimentation by the student in a geometric forum to discover or verify properties of 2- and 3-dimensional objects and patterns. The software AutoCAD or a similar program for drawing on a computer as well as 2- and 3-dimensional modeling tools will be used extensively to enhance spatial intelligence skills and awareness of properties. Students will learn to analyze designs by identifying their geometric component parts and create designs by combining geometric shapes. They will identify the rules used in creating the design and will create new designs by varying some of those rules.

**MATH - 2043 College Trigonometry, 3.00 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better  
 Level: Lower  
 Gen Ed - Math, Liberal Arts and Science  
 This course is designed for the college student who has demonstrated mastery of algebra skills and techniques. Topics include trigonometric functions and their properties with the study of identities, formulas, equations, and graphs. Also included are the solution of right and oblique triangles using the law of sines and cosines. In addition, time is spent exploring logarithmic and exponential functions. Emphasis is placed on contextual applications and problem solving. A graphing calculator is required. Credit cannot be received for both MATH 2043 and MATH 1054. Students cannot receive credit for MATH 2043 if they have credit for MATH 1063, MATH 1084, or any course for which MATH 1063 or MATH 1084 are prerequisites.

**MATH - 2074 Technical Calculus II, 4.00 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better  
 Level: Lower  
 Gen Ed - Math, Liberal Arts and Science  
 A continuation of MATH 1063 with further study in differentiation and integration of both the algebraic and transcendental functions. Applications will be included in each topic. An introduction to Matrix Algebra may be included. Graphing Calculator required. Student cannot receive credit for MATH 2074 if they have received credit for MATH 1084.

**MATH - 2094 Calculus II, 4.00 Credits**

Prerequisite(s): MATH 1084 with D or better  
 Level: Lower  
 Gen Ed - Math, Liberal Arts and Science  
 This course is designed as a continuation of MATH 1084 with a concentrated study of integration techniques along with applications. Applications include but are not limited to areas, volumes, and arc length. The course involves the methods of integration and applications as they apply to both the algebraic and transcendental functions. Infinite series and Taylor series will be included. A graphing calculator is required. Student cannot receive credit for both MATH 2094 and MATH 2074.

**MATH - 2124 Statistical Methods & Analysis, 4.00 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better  
 Level: Lower  
 Gen Ed - Math, Liberal Arts and Science  
 This is a one-semester (non-calculus based) course which covers descriptive as well as inferential statistics. Included are topics on collecting, organizing, and summarizing data. Other topics include correlation and regression, probability, normal and binomial probability distributions, normal approximation to the binomial, central limit theorem, confidence intervals, hypothesis testing, and nonparametric statistics.

**MATH - 2133 Statistics II, 3.00 Credits**

Prerequisite(s): MATH 1123 with C or better  
 Level: Lower  
 Gen Ed - Math, Liberal Arts and Science  
 A continuation of MATH 1123 emphasizing probability distributions with predictive and inferential aspects of statistics: the normal distribution with applications, central limit theorem, hypothesis testing and estimation as applied to the mean, standard deviation, and proportions. Other topics include normal approximation to binomial, Chi-Square applications, linear regression, correlation, and nonparametric statistics. Use of calculators for analysis and computer statistical packages are utilized.

**MATH - 2163 Discrete Mathematics, 3.00 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better  
 Level: Lower  
 Gen Ed - Math, Liberal Arts and Science  
 This course is designed for Information Technology and Mathematics and Science students. The course will introduce and discuss the following topics: functions, relations, sets, logic, counting methods, methods of proof, network graphs and trees, algorithmic analysis, complexity and computability, and matrices. A graphing calculator is required.

**MATH - 2900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 Liberal Arts and Science  
 A student may contract for from one to four credit hours of independent study in mathematics through an arrangement with an instructor of mathematics. The student and instructor will develop a course of study which must be approved by the department chairperson and the school dean. The instructor and the student will confer regularly regarding the student's progress.

**MATH - 3003 Linear Algebra, 3.00 Credits**

Prerequisite(s): MATH 1084 with C or better or MATH 1063 with C or better  
 Level: Lower  
 Gen Ed - Math, Liberal Arts and Science  
 This course is an introduction to linear algebra. Topics covered include solutions to systems of linear equations, linear independence, matrix algebra, vector spaces, eigenvalues and eigenvectors. Students will learn how to use technology (e.g. calculators, MAPLE, MATLAB, or Mathematica) to perform related tasks.

**MATH - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower  
 Liberal Arts and Science  
 A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

**MATH - 5023 Math Foundations Cryptography, 3.00 Credits**

Prerequisite(s): MATH 1084 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 This course is designed to develop the mathematical skills that a student would need in order to analyze and implement historical and modern day cryptography. Historical cryptography will include discussion of the following ciphers: shift, affine, block, substitution, Vigenere, Playfair, ADFGX, binary and ASCII. Modern day cryptography will include discussion of: DES, AES, RSA and ElGamal public key encryption. Applications of modern day cryptography will include digital signatures and e-commerce. Maple software will be used to perform encryption and decryption. Prerequisite: MATH 1084 or permission from instructor.

**MATH - 6104 Multivariate & Vector Calculus, 4.00 Credits**

Prerequisite(s): MATH 2094 with D or better or MATH 2074 with D or better or MATH 6114 with D or better  
 Level: Upper  
 Gen Ed - Math, Liberal Arts and Science  
 This course is designed as a continuation of Integral Calculus. Topics will include: parametric equations, polar, cylindrical and spherical coordinate systems, vectors and vector valued functions, functions of several variables, partial derivatives and applications, multiple integrals, and vector analysis, including Green's theorem, Stokes' theorem, and Gauss' theorem. The course will include several major projects outside of class.

**MATH - 6114 Differential Equations, 4.00 Credits**

Prerequisite(s): MATH 2094 with D or better or MATH 2074 with D or better or MATH 6104 with D or better  
 Level: Upper  
 Gen Ed - Math, Liberal Arts and Science  
 This is the beginning study of the solution of differential equations with emphasis on both analytic and numerical solutions. Topics include first and second order differential equations and their solutions, series solutions, Laplace transforms, linear equations of higher order, numerical solutions or ordinary differential equations using Euler and Runge-Kutta methods, and the use of Eigenvalue methods to solve linear systems. In addition, this course emphasizes the development of differential equations as mathematical models for a variety of practical applications. The course will include several major projects outside of class.

**MATH - 7113 Economic Analy for Engr Tech, 3.00 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better  
 Level: Upper  
 Gen Ed - Math, Liberal Arts and Science  
 This course covers basic pricing formulas, cost estimation techniques, present economic studies, time-value of money, evaluating a single alternative, comparison and selection among multiple alternatives, and depreciation.

**MATH - 7123 Statistics for Engr Tech & Sci, 3.00 Credits**

Prerequisite(s): MATH 2074 with D or better or MATH 2094 with D or better  
 Level: Upper  
 Gen Ed - Math, Liberal Arts and Science  
 This course offers the theoretical basis for probability and statistics related to engineering applications. Topics include data analysis techniques, correlation and regression, probability, probability distributions, confidence intervals, and hypothesis tests concerning means and standard deviations. Graphing calculators are required. Computer applications may be included.

**MATT - MACHINE TOOL TECHNOLOGY**

**MATT - 1004 Basic Industrial Machining, 4.00 Credits**

Level: Lower  
 Course Fee \$106.00  
 This introductory course is designed to instill safe shop methods and procedures along with the proper and safe use of all equipment associated with Machine Tool Technology. Also incorporated in this introductory course is the proper use of basic measuring tools and hand tools. Students will be instructed in the proper operation of the power saw, drill press and pedestal grinder.

**MATT - 1014 Industrial Machining I, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Students will be instructed in the proper operation of power Basic lathe operations will be presented. The student will demonstrate their proficiencies on this equipment by producing specifically assigned projects.

**MATT - 1024 Industrial Machining II, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed to develop basic skills on the vertical milling machine. Projects will be assigned to allow the student to demonstrate the various skill levels required.

**MATT - 1234 Industrial Machining III, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$106.00  
 The student will be instructed in advanced lathe operations and procedures. These will include precision turning, maintaining closer tolerances, and gage threading with the use of carbide tool cutters. The student will demonstrate the various skills required by producing assigned advanced level projects.

**MATT - 1244 Industrial Machining IV, 4.00 Credits**

Level: Lower  
 The student will be instructed in advanced vertical milling operations and procedures. These will include advanced vertical milling machine set-up (i.e. sine plates and indexing heads) and operations (i.e. dove tail and t-slot cutting). The student will demonstrate the various skills required by producing assigned advanced level projects.

**MATT - 1254 Industrial Machining V, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The student will be instructed in the safe operation of the horizontal milling machine and the surface grinder. The student will demonstrate the various skills required by producing assigned projects.

**MATT - 1713 Reading Engineering Drawings, 3.00 Credits**

Level: Lower  
 The transfer of ideas from the Engineering Department to the manufacturing area is accomplished through the use of Engineering drawings. This course will explain how information is conveyed through the use of ANSI standard drafting procedures and the correct interpretation of that information by the machinist.

**MATT - 1723 Reading Engineering Drawings II, 3.00 Credits**

Level: Lower  
 The transfer of ideas from the Engineering Department to the manufacturing area is accomplished through the use of engineering drawings. This course will be a continuation of MATT 1713 and will explain how advanced information is conveyed through the use of ANSI standard drafting procedures. The correct interpretation of this advanced information will be used by the machinist to produce mechanical parts on the various machine tools in the shop. These major topics will be included: auxiliary views, assembly drawings, weldment drawings, and threads and fasteners.

**MATT - 1913 Machinist Calculations I, 3.00 Credits**

Level: Lower  
 Basic mathematical functions used by the machinist in the performance of their duties will be the subject of this course. Mathematical operations such as manipulation of fractions, decimals and unilaterally converting between the two and into the metric measurement system along with calculating speeds and feeds, tapers and depths of cut will be taught in this course. Successful completion of this course requires a grade of "C" or better.

**MATT - 1923 Machinist Calculations II, 3.00 Credits**

Level: Lower  
 This course is a combination of both basic geometry (both plane and solid) and trigonometry. Both of these branches of mathematics will be trade related and will focus on the math needed by the machinist, CAD drafter, and welder to perform their required tasks. Successful completion of this course requires a grade of "C" or better.

**MATT - 3003 Geometric Dimensioning & Toler, 3.00 Credits**

Level: Lower  
 Geometric Dimensioning and Tolerancing is dimensioning associated with the tolerancing of individual characteristics of a part where permissible variations relate to form, profile, radial relationship to an axis, orientation of one feature to another, and location of features. Applications of all symbols and proper interpretation will be stressed. Application of various principles referenced in the current specification will be presented.

**MATT - 3005 Intro to CNC Machine Program, 5.00 Credits**

Level: Lower  
 Course Fee \$106.00  
 As the most fundamental part of the CNC lathe and its operation, the coordinate grid is covered in detail in this module. Three levels of program preparation are discussed: EIA, APT, and Conversational. Since APT and Conversational languages are normally translated into EIA codes before execution on the machine, a more detailed look at the elements of the EIA coding system is then provided.

**MATT - 3015 CNC Industrial Machining I, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The student will use the horizontal and vertical mill in a safe manner, and will perform various external and internal operations including drilling, power tapping, milling of slots, keyways, boring, laying out bolt circles using x and y coordinates. Students will write step-by-step procedures and will use math formulas to calculate machine time and will draw basic prints for machining purposes.

**MATT - 3025 CNC Industrial Machining II, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The mechanical components of the lathe are explained in this module. The terminology established here is used throughout the balance of the instruction. Because of the variety of turret styles and automatic tool handling mechanisms found on CNC lathes, several configurations are shown along with an explanation of how each operates.

**MATT - 4003 Senior Project, 3.00 Credits**

Level: Lower  
 Applied Learning-Creative Work  
 This course is designed as a capstone project to verify a student's ability in all aspects of machining. The student will be required to identify a need for a new product or improvement on an existing product. After identification, the completion of the project will occur with minimal instructor guidance, which will allow the student to demonstrate their ability to perform independently. Upon completion, the student will demonstrate the functionality of their project in the form of a formal presentation.

**MATT - 4005 CNC Industrial Machining III, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$106.00  
 An industrially accepted CAD/CAM system to generate CNC programs will be used throughout this module. The students will be able to produce full programs and download these in the CNC lathe and mill producing a part. Trouble shooting and correction of program errors will be stressed. Proper fixturing and setup of rough material will be presented.

**MATT - 4015 CNC Industrial Machining IV, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 CNC programs may be refined regardless of mode of generation. Through this module the students will learn to correct flaws and will produce a finished part within the tolerance of the print and be geometrically correct. The concepts of fixturing and manufacturing will be related using geometric dimensioning and tolerancing.

**MATT - 4025 CNC Industrial Machining V, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The student will be required to set up many various complex parts. Students will use all of their recently acquired knowledge for previous courses to complete set-ups in conjunction with programming using canned cycles on the turning and machining centers. The student will be expected to develop the programming for the desired part, download to the proper machine, and produce the desired part. All of these tasks will be performed with minimum supervision.

**MECH - MECHANICAL ENGR TECH**

**MECH - 1203 Materials Science, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$37.00  
 This course is a first semester, freshman level course. It is a broad introductory study of the basic characteristics of engineering materials. The course will emphasize the selection of metals, plastics, ceramics, and composites for mechanical design purposes. The relationships of structure, material properties, and material selection to the design/ manufacturing process will be emphasized. The study will be enhanced by laboratory experience where the student will study mechanical testing equipment as well as chemical, mechanical and heat treatment effects on important material properties. The course will include the study of such areas as corrosion, strength, rigidity, wear resistance, thermal expansion, elasticity and plasticity principles of the common engineering materials. The course includes the use of equipment such as mechanical testing, light microscopes, electron microscopes, metallograph, furnaces and controllers. Data interpretation is also an important emphasis. The students also have substantial preparation work for the weekly labs.

**MECH - 1603 Graphics/CAD, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Graphics/CAD involves the visualization, sketching, and geometric construction of mechanical components. Students will layout and create 2D working industrial drawings that adhere to industry standards. This course will illustrate CAD drawing construction techniques that implement graphical communication through the use of the alphabet of lines, orthographic projection, section views, auxiliary views and the creation of assembly and detail mechanical components. This course will also use the ASME Standard Y14.5M-1994 for Geometric Dimensioning & Tolerancing to facilitate the communication of geometry requirements for associated features on detail components and assemblies.

**MECH - 1663 Manufacturing Processes, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 The basic equipment, processes and services required to produce a product are studied. This course is designed to give the student the knowledge and vocabulary to generally comprehend the complex and inter-related design and manufacturing functions that must be accomplished to produce the end product. The processes covered include the making of iron and steel, casting, plastics production, hot and cold forming, machining, fastening, non-traditional machining, grinding, etc. Equipment covered in the lab include: lathes, grinders, milling machines, band saws, drill presses, precision measurement devices etc. As time or student experience permit, the topic of basic C.N.C. machine operations and programs may be introduced. Safety and proper manufacturing procedures will be emphasized.

**MECH - 2543 Advanced CAD Applications, 3.00 Credits**

Prerequisite(s): MECH 1603 with D or better  
 Level: Lower  
 Advanced CAD is a continuation of the basic drafting standards and techniques facilitated through the course pre-requisite, MECH 1603. Delving into other mechanical drafting disciplines, this course will help students develop additional skill sets required in a variety of other mechanical fields. This course will cover, but not be limited to, machine design, weldments, structural steel, process piping, and pressure vessels. The major emphasis of this course will be the creation of working industrial drawings for fabrication and or successful integration into a mechanical assembly. The following standards will be used: ASME Sec. VIII, Div. 2, Pressure Vessel Code, ASME Y14.5M-Geometric Dimensioning & Tolerancing, ASME B31: Standards of Pressure Piping, ANSI B4.1: Limits and Fits, AISC: Standard Structural Steel Construction.

**MECH - 3124 HVAC Systems, 4.00 Credits**

Level: Lower  
 Applied Learning-Other  
 This course introduces the student to the fundamental principles of heating, ventilation and air conditioning systems. Topics include psychrometric principles and processes, equipment selection, heating and cooling load calculations and heating system principles including forced warm air, hot water, electric and steam systems, and geothermal heating and cooling systems. Weekly laboratory experiences address topics with organized experiments and applied projects.

**MECH - 3203 Computer Aided Manufacturing, 3.00 Credits**

Prerequisite(s): MECH 1603 with D or better  
 Level: Lower  
 This course is a study of Computer Aided Manufacturing (CAM) using software, programming languages and methods to produce Computer Numerical Control (CNC) machining programs. CAD software is used to develop detailed drawings of student projects. Laboratory exercises include programming, machine tool setup and machine operation. Communication between the student laptops and the machine tools using current communication protocol is also studied.

**MECH - 3223 Mechanical Design Principles, 3.00 Credits**

Prerequisite(s): MECH 1603 with D or better or ( MECH 1012 with D or better and MECH 1022 with D or better )  
 Level: Lower  
 Applied Learning-Other  
 This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. The course will include the study of mechanical power systems such as gear trains, belt and chain drives, linkages, clutch-coupling brake components, torque transmission devices, shaft and component design calculations. The techniques of component design will also include the extensive use of online database information, standards and manufacturers specifications. At all times in this class, the design and development for manufacturability will be paramount.

**MECH - 3334 Statics, 4.00 Credits**

Prerequisite(s): ( MATH 1054 with D or better or MATH 2043 with D or better or MATH 1063 with D or better or MATH 1084 with D or better ) and ( PHYS 1024 with D or better or PHYS 1044 with D or better or PHYS 1064 with D or better )

Level: Lower

Applied Learning-Other

This course is a study of introductory mechanics through the application of the principles of statics. Students will focus on the equilibrium of particles and rigid bodies in two and three dimensions. Additional topics will include centroids, centers of gravity, and analysis of structures, friction, area and mass moments of inertia. The course will also emphasize the importance of problem-solving in statics by using algebraic and trigonometric computations.

**MECH - 3643 Manufacturing Management, 3.00 Credits**

Level: Lower

This course supplements the study of manufacturing processes with emphasis on techniques, processes and factors that contribute to manufacturing management decision making. Previous manufacturing process exposure is desirable but not essential. Selected topics to be discussed include: motion and time study, engineering economics, project planning and scheduling, Computer Integrated Manufacturing/Management (CIM), Just in Time manufacturing strategy, design for manufacturability, Statistical Process Control (SPC), Statistical Quality Control (SQC), and other management policies and strategies.

**MECH - 4003 Solid Modeling, 3.00 Credits**

Prerequisite(s): MECH 1603 with D or better or ( MECH 1012 with D or better and MECH 1022 with D or better )

Level: Lower

Applied Learning-Practicum

This course is an introduction to 3D solid modeling techniques utilizing feature-based, constraint-based parametric design. This course encourages the student to visualize parts in the 3D world and have a "design intent" plan for each part in which they will design. This will help in the arrangement of assemblies, parts, features, and dimensions to meet design requirements.

**MECH - 4024 Dynamics, 4.00 Credits**

Prerequisite(s): ( MATH 1063 with D or better or MATH 1084 with D or better ) and ( MECH 2603 with D or better or MECH 3113 with D or better or MECH 3334 with D or better or ENGR 3213 with D or better )

Level: Lower

The course will emphasize applications of material involving the two basic concepts of dynamics, i.e., kinematics and kinetics and will introduce the students to vibrations. The course will include the study of levers, links, slide mechanisms, scotch yoke and the principles of force, torque, velocity, acceleration, inertia and friction. The course will use the principals of Equilibrium, Work-Energy and Impulse-Momentum along with Newton's Second Law to examine a variety of problems.

**MECH - 4224 Mechanical Systems Design, 4.00 Credits**

Prerequisite(s): MECH 3224 with D or better or MECH 3223 with D or better

Level: Lower

Applied Learning-Other

This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. This course will include the study of rigid coupling design and flywheels. Also covered in this class are spring design and selection, bolted and welded joint design, column support and lifting lug design. The techniques of component design will also include extensive use of online database information, standards and manufacturers' specifications, and manufacturing for assembly. At all times in this class, the design and development for manufacturability will be paramount. This class includes several applied laboratory experiences.

**MECH - 4333 CAM II, 3.00 Credits**

Prerequisite(s): MECH 3203 with D or better

Level: Lower

Advanced CAM is a follow-up course to MECH 3204 and MECH 3203 CAM (Computer Aided Manufacturing) and MECH 4003 (Solid Modeling). The course will introduce advanced Computer Aided Manufacturing topics such as APT (Automatically Programmed Tools) programming, additional CNC machine programming, solid modeling and Reverse Engineering Projects using a Coordinate Measurement Machine/System (CMM).

**MECH - 4523 Control System Fundamentals, 3.00 Credits**

Prerequisite(s): MATH 1033 with D or better or MATH 1034 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2003 with D or better or MATH 2074 with D or better or MATH 2094 with D or better or MATH 6114 with D or better

Level: Lower

Applied Learning-Practicum

This course introduces students to the electronic components commonly used to monitor and control mechanical systems. Topics include principles of measurement, instrumentation, data acquisition, and control systems with an emphasis on mechanical engineering technology applications. Students build simulated control systems using switches and both traditional and solid state relays common on modern industrial machines. Safety interlock systems, delay circuits, and motor circuits are designed and wired. Lab projects allow students to experience a variety of design solutions and trouble-shoot electronic control systems.

**MECH - 4554 Computer Aided Mfg Fundamentals, 4.00 Credits**

Level: Lower

This course applies the skills from manufacturing processes and solid modeling to a modern production manufacturing environment. It introduces basic skills in word address programming as well as advanced computer aided manufacturing topics such as automatically programmed tool (APT) programming, computer numeric control machine programming, solid modeling and the use of computer aided design and manufacturing software. Reverse engineering projects using a coordinate measurement machine will also be performed. The course includes a final project where students design and produce a component using modern manufacturing techniques.

**MECH - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

**MECH - 5334 Mechanics of Materials, 4.00 Credits**

Prerequisite(s): MATH 2074 with D or better and MECH 3334 with D or better

Level: Upper

Applied Learning-Practicum, Course Fee \$15.00

This course is a calculus-based study of advanced concepts in Mechanics of Materials. It addresses the behavior of deformable mechanical components when subjected to tension, compression, torsion, flexure/bending or a combination of these loads. Extensive use is made of free body diagrams as well as Mohr's Circle for stress and strain. Experience is gained in the analysis of beam deflection, shafts in torsion, power, column buckling and thin walled pressure vessels. Analysis includes examination of stress concentrations, elastic and inelastic response, residual stresses, indeterminate structures and thermal effects. Superposition, singularity functions and theories of failure are studied. Laboratory experiences include traditional mechanical material testing and computer software applications.

**MECH - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

**MECH - 6334 Fluid Mechanics, 4.00 Credits**

Prerequisite(s): MATH 2074 with D or better

Level: Upper

Applied Learning-Practicum

This course is an introduction to the theory and application of continuum fluid mechanics. Fluid properties and state relations are studied. Incompressible laminar and turbulent flows are investigated using control volume and momentum and energy equations. Navier-Stokes Equations are developed. Flow rate, pipe sizing and minor losses in pipe systems are addressed. Compressible flow and gas dynamics are introduced and include topics in boundary layer theory, Mach number, stagnation properties and shock waves. Turbomachinery, pumps and turbines are included. Weekly laboratory experiences address most of the above topics with applied projects and organized experiments.

**MECH - 6643 Process Engineering & Manufact, 3.00 Credits**

Prerequisite(s): MECH 1663 with D or better and MATH 7123 with D or better \*

Level: Upper

Applied Learning-Practicum

This course emphasizes techniques, processes, and factors that contribute to manufacturing processes and operations decision making. Selected topics to be discussed include: 6 sigma DMAIC, KAIZEN, 5S, work flow and project planning and scheduling. Computer Integrated Manufacturing/Management (CIM), Design for Manufacturing (DFM), Just In Time (JIT) manufacturing strategies, Statistical Process Control (SPC), Statistical Quality Control (SQC), and other potential management policies and strategies. Students will complete a department designated professional project.

**MECH - 7114 Applied Thermodynamics, 4.00 Credits**

Prerequisite(s): MATH 2074 with D or better or MATH 2094 with D or better

Level: Upper

This course covers the basic concepts of thermodynamics including property evaluation of ideal gases and compressible substances. Theory and application of the first and second laws of thermodynamics relating to pumps, compressors, turbines, heat exchangers; power cycles-Carnot, Rankine; refrigeration cycles-vapor compression, heat pump are covered. Problem-solving skills are applied to ideal as well as actual cycles. Basic principles of energy conversion, energy conservation, efficiencies and environmental impacts are explored.

**MECH - 7153 Fluid Power Systems Design, 3.00 Credits**

Prerequisite(s): ( MECH 4523 with D or better or ELET 4143 with D or better or ELET 6143 with D or better ) and ( MECH 2603 with D or better or MECH 3113 with D or better or MECH 3334 with D or better )

Level: Upper

Applied Learning-Practicum

This is an upper level design course for all aspects of fluid power systems. Both hydraulic and pneumatic systems are covered. Topics covered in this class include pneumatic circuits, hydraulic power systems, hydrostatic transmissions, and electro-hydraulic control systems. Emphasis will be placed on system design and hydraulic and pneumatic component specification. The course prepares students to sit for the Hydraulic Specialist industry certification exam hosted by the National Fluid Power Society.

**MECH - 7403 Microfabrication Technology, 3.00 Credits**

Prerequisite(s): ( PHYS 1024 with D or better or PHYS 1044 with D or better ) and ( CHEM 5013 with D or better or ELET 1202 with D or better )

Level: Upper

Applied Learning-Practicum

This course is designed to provide a valuable experience in the areas of microfabrication and MEMS (microelectromechanical systems) technology and respond to calls from industry to provide undergraduate students with more multidisciplinary experiences. The course provides a comprehensive introduction to technology of miniaturization and its application. Methods and tools to create miniature electromechanical architectures are discussed. Students will gain hands-on experience required in standard microfabrication industry and learn basics of design, fabrication, and characterization of MEMS devices. The course is ideal for junior and senior undergraduate students who are looking to perform senior projects in this field, find a career in the microfabrication industry, or pursue graduate studies in MEMS.

**MECH - 7603 Heat Transfer, 3.00 Credits**

Prerequisite(s): MECH 7114 with D or better and MATH 6114 with D or better and MECH 6334 with D or better

Level: Upper

This course is a study of the physical effects of heat transfer phenomena including conduction, convection, and radiation. This will include the concepts of control volume analysis, conversion laws of mass, momentum and energy, steady state and transient conduction, laminar and turbulent convection, and phase change. A wide range of engineering problems will be presented to the students for solution using algebraic, differential and/or finite-difference methods. The heat transfer process will be directly applied in the design and analysis of thermal energy systems.

**MEDR - HEALTH INFO TECH**

**MEDR - 1114 Intro to Health Info Managemnt, 4.00 Credits**

Prerequisite(s): COMP 1503 with C or better \* and ( BIOL 1114 with C or better \* or BIOL 1404 with C or better \* )

Level: Lower

This is a lecture- and lab-based online course that covers the study of health record content, documentation, compliance with regulations and standards; the role of HIM professionals; data retention, storage and retrieval, and destruction; release of information, privacy, confidentiality, and HIPAA; legal and ethical issues related to healthcare documentation; the principles to the practice of HIM; primary and secondary use of data; and healthcare organizations and delivery systems.

**MEDR - 1132 Essentials of Pharmacology, 2.00 Credits**

Prerequisite(s): MEDR 1133 with C or better \*

Level: Lower

This is a lecture-based online course for those entering a health care profession, and it covers the study of basic concepts and terminology associated with medication structure, function, interaction, and administration. Core concepts in pharmacology are introduced, including terminology, consumer safety and drug regulations, sources and bodily effects of drugs, medication preparation, abbreviations and systems of measurements, responsibilities, and principles of drug administration. Students also identify diseases associated with certain medications as well as medications that would be prescribed for certain diseases. Commonly used drugs are organized according to classification, and each classification is described along with characteristics of typical drugs, purpose, side effects, cautions and interactions. Patient education for each category is included.

**MEDR - 1133 Medical Terminology, 3.00 Credits**

Level: Lower

This is a lecture-based course offered in both traditional on-campus and on-line formats that includes the study of body systems and functions, including the structure, meaning, and use of medical terms related to diseases and operations of the human body. Body systems studied include integumentary, musculoskeletal, nervous, sensory organs, endocrine, cardiovascular, respiratory, reproductive, genitourinary, and digestive. Units on psychiatry, psychology and pharmacology (drugs) are also covered. Students also learn how to use research medical information (e.g., such as reputable electronic medical references).

**MEDR - 1223 Hlth Data Mgmt & Hlthcare Stat, 3.00 Credits**

Prerequisite(s): MEDR 1114 with C or better

Level: Lower

This is a lecture and lab-based online course. Topics of study include health data management (data collection, validity, and accuracy), data governance and information governance, analytics and decision support, secondary data sources, clinical indices, databases, and registries. Reporting of data, healthcare report generation, presentation of data, graphic representation, healthcare descriptive statistics (census, percent of occupancy, length of stay, healthcare rates), measures of central tendency (frequency distribution), vital statistics data and rates, research methods, productivity, staffing levels, and budgeting will be covered.

**MEDR - 1234 ICD-10-CM & ICD-10-PCS Coding, 4.00**

**Credits**

Prerequisite(s): MEDR 1114 with C or better and ( BIOL 2214 with C or better \* or BIOL 2504 with C or better \* ) and BIOL 4403 with C or better \* and MEDR 1132 with C or better \*

Level: Lower

This is a lecture- and lab-based online course that includes a study of clinical classification systems (e.g., ICD-10-CM and ICD-10-PCS) and reimbursement methodologies. Topics of study include the use and maintenance of electronic applications and work processes that support clinical classification and coding; assignment of diagnosis and procedure codes using current nomenclature (paper-based coding manuals and encoder software); ensuring the accuracy of diagnostic and procedural groupings (e.g., DRGs, MS-DRGs); interpretation of regulations and coding guidelines; validation of coding accuracy by using clinical information located in the health record; use and maintenance of applications and processes to support other clinical classification and nomenclature systems (e.g., DSM-IV-TR, SNOMED-CT); and use of clinical data for reimbursement and prospective payment systems.

**MEDR - 1244 CPT & HCPCS Level II Coding, 4.00 Credits**

Prerequisite(s): ( MEDR 1114 with C or better and MEDR 1132 with C or better ) and ( BIOL 2214 with C or better \* or BIOL 2504 with C or better \* ) and BIOL 4403 with C or better \*

Level: Lower

This is a lecture- and lab-based online course that includes a study of the CPT and HCPCS level II clinical classification systems and outpatient and physician office reimbursement methodologies. Topics of study include the use and maintenance of electronic applications and work processes that support clinical classification and coding; assignment of procedure codes using current nomenclature; ensuring the accuracy of procedural groupings (e.g., ambulatory payment classifications, Medicare physician fee schedule); interpretation of regulations and coding guidelines; validation of coding accuracy by using clinical information located in the health record; and use of clinical data for reimbursement and prospective payment systems.

**MEDR - 2614 Advanced Coding & Reimbursement, 4.00**

**Credits**

Prerequisite(s): MEDR 1234 with C or better and MEDR 1244 with C or better

Level: Lower

A lecture- and lab-based online course that includes intermediate and advanced study of the ICD-10-CM and ICD-10-PCS (abbreviated as ICD-10-CM/PCS), CPT, and HCPCS level II classification systems. Application-based assignments allow students to demonstrate their mastery of coding conventions, coding principles, and official inpatient and outpatient coding guidelines. Students use inpatient and outpatient (e.g., ambulatory surgery, emergency department, physician office) case studies and patient records to assign codes to diagnosis/procedure statements and generate physician queries. ICD-10-CM, ICD-10-PCS, CPT, and HCPCS level II coding manuals and encoders (e.g., CodeFinder, CodeCorrect.com, Encoder Pro, Quantim) are required. Students generate diagnosis-related groups (DRGs) and ambulatory patient classifications (APCs) for inpatient and outpatient cases, respectively, and complete assignments to master other prospective payment systems (e.g., ambulatory surgical center payments, resource utilization groups, home health resource groups).

**MEDR - 3114 Electronic Health Record Mgmt, 4.00 Credits**

Prerequisite(s): MEDR 1114 with C or better  
 Level: Lower  
 This is a lecture- and lab-based online course that includes the completeness, reliability, accuracy, and validity of electronic health records and electronic secondary data sources according to organizational policies, external regulations and health information management standards. Legal, regulatory, departmental, and organizational policies and procedures for data/information standards for internal and external use, exchange, confidentiality, privacy and security measures, access and disclosure, retention and destruction of patient protect electronic health information. The use of software in the completion of HIM processes. A review of the processes used in the selection and implementation of electronic health information management systems including project management methodologies and vendor/contract management. Health information analytics and report generation technologies to facilitate decision-making and support enterprise-wide decision support for strategic planning, and the current trends and future challenges in health information technology.

**MEDR - 3414 Quality & Legal Aspects of HIM, 4.00 Credits**

Prerequisite(s): MEDR 1114 with C or better \* and MEDR 1223 with C or better \* and ( MEDR 5114 with C or better \* or MEDR 3114 with C or better \* )  
 Level: Lower  
 This is a lecture- and lab-based online course that includes a study of healthcare information requirements and standards, healthcare statistics and research with an emphasis on data quality and integrity; quality management and performance improvement; healthcare delivery systems with an emphasis on external standards, regulations, and initiatives; and healthcare privacy, confidentiality, and legal, and ethical issues.

**MEDR - 4111 Health Informatn Tech Seminar, 1.00 Credit**

Prerequisite(s): MEDR 1114 with C or better and MEDR 1223 with C or better and ( MEDR 5114 with C or better or MEDR 3114 with C or better ) and MEDR 1244 with C or better and MEDR 1234 with C or better and MEDR 3414 with C or better and MEDR 4214 with C or better \* and MEDR 4514 with C or better \* and MEDR 4312 with C or better \*  
 Level: Lower  
 A lecture-based online course that includes content new to the health information management (HIM) profession and to which students did not receive instruction in previous course(s). Examples of such content includes, but is not limited to, new and revised coding classification systems, federal and state statutes (laws) and regulations, information technology initiatives, and so on. Appropriate preparation for taking the Registered Health Information Technology (RHIT) exam is integrated throughout the course, during which students will complete practice exams in HIM content areas and interact with the instructor(s) in discussion board forums to receive clarification about concepts and study techniques. This course should be taken in the student's last semester of study.

**MEDR - 4213 Leadership in Health Info Tech, 3.00 Credits**

Prerequisite(s): MEDR 3414 with C or better and MEDR 4514 with C or better \*  
 Level: Lower  
 This is a lecture-based online health information technology course covering the study of leadership topics specific to health information technology including team leadership; change management; work processes and goals; utilization of data in management roles; labor regulations; resource requisitions; training and development methodology, cultural issues affecting health, healthcare quality, cost, and programs; and policies that support a culture of diversity.

**MEDR - 4214 Insurance&Reimbursmt Processing, 4.00 Credits**

Prerequisite(s): MEDR 1114 with C or better and MEDR 1244 with C or better and MEDR 1234 with C or better  
 Level: Lower  
 This is a lecture- and lab-based online course that includes a study of clinical classification systems, reimbursement methodologies, and financial management. The course includes completion of CMS-1450 (UB-04) and CMS-1500 claims for inpatient, outpatient, emergency department, and physician office encounters as wells as a review of inpatient and outpatient cases to identify issues of fraud and abuse.

**MEDR - 4312 HIM Operations PPE, 2.00 Credits**

Prerequisite(s): MEDR 1114 with C or better and MEDR 1223 with C or better and ( MEDR 5114 with C or better or MEDR 3114 with C or better ) and MEDR 1244 with C or better and MEDR 1234 with C or better and MEDR 4214 with D or better \* and MEDR 4514 with D or better \* and BIOL 1114 with C or better and BIOL 2214 with C or better and BIOL 4403 with C or better and MEDR 3414 with C or better  
 Level: Lower  
 Applied Learning-Practicum, Clinical Liability Insurance  
 This course will provide students with varied opportunities in HIM through a professional practice experience (PPE) that includes supervised practical application at a healthcare facility health information management department. On site at the healthcare facility students will be under the supervision of a qualified Registered Health Information Administrator (RHIA), Registered Health Information Technician (RHIT), or other qualified personnel to whom they are assigned. The PPE is designed to enable students to obtain actual practical experience in theoretical and application-based procedures previously studied. Students will complete a maximum of 80 unpaid hours on site. Students will be required to complete weekly logs, discussion board postings of their experience, and submit a completed student handbook along with a final project at the end of their PPE. If a student is not able to be placed at a healthcare facility, internet-based laboratory projects/ assignments, which are evaluated by college faculty, will be required by the student, to simulate a virtual PPE.

**MEDR - 4322 Coding PPE, 2.00 Credits**

Prerequisite(s): MEDR 1114 with C or better and ( MEDR 3114 with C or better or MEDR 5114 with C or better ) and MEDR 1244 with C or better and MEDR 1234 with C or better and MEDR 4214 with C or better \* and BIOL 1114 with C or better and BIOL 2214 with C or better and BIOL 4403 with C or better

Level: Lower

Applied Learning-Practicum, Clinical Liability Insurance  
This course is designed to provide students with a professional practice experience (PPE) that includes supervised practical application at a healthcare facility health information management department to provide coding opportunities utilizing ICD-10-CM/PCS, CPT and HCPCS level II codes. On site at the healthcare facility students will be under the supervision of a qualified Registered Health Information Administrator (RHIA), Registered Health Information Technician (RHIT), or other qualified personnel to who they are assigned. The PPE is designed to enable students to obtain actual practical experience in theoretical and application-based procedures previously studied. Students will complete a maximum of unpaid 80 hours on site. Students will be required to complete weekly logs, discussion board postings of their experience, and submit a completed student handbook along with a final project at the end of their PPE. If a student is not able to be placed at a healthcare facility, internet-based laboratory projects/ assignments, which are evaluated by college faculty, will be required by the student, to simulate a virtual PPE.

**MEDR - 4514 Alternate Care Hlth Info Mgmt, 4.00 Credits**

Prerequisite(s): MEDR 1114 with C or better \* and MEDR 1223 with C or better \* and ( MEDR 5114 with C or better \* or MEDR 3114 with C or better \* )

Level: Lower

This is a lecture- and lab-based online course that includes a study of health information management (HIM) consulting, cancer registry management, healthcare information requirements and standards in alternate healthcare settings (e.g., behavioral healthcare facilities, correctional facilities, long-term healthcare facilities, etc.), clinical classification systems for alternate health care (e.g., DSM-5, ICD-O-3, SNOMED-CT), alternate healthcare delivery systems, HIM human resources, and HIM financial and resource management.

**MEDR - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower

An internet-based elective course for students interested in advanced work in health information management in an area of special interest. Enrollment is limited in order to allow each student the opportunity to pursue his/her area of special interest.

**MKTG - MARKETING**

**MKTG - 1033 Advertising Principles, 3.00 Credits**

Prerequisite(s): MKTG 2073 with D or better

Level: Lower

Students will learn the uses and power of advertising and how to apply these concepts to daily business. Students will get a basic understanding of advertising concepts and how to apply them to various media. Utilizing good design and marketing techniques, students will analyze and create advertisements for business use.

**MKTG - 1063 Principles of Sales, 3.00 Credits**

Prerequisite(s): MKTG 2073 with D or better

Level: Lower

This course examines the principles and methods of sales with respect to the salesperson, their company, products, and customers. Emphasis is placed on the selling process: prospecting, pre-approach, approach, presentation, trial close, meeting objections, and closing. Students will design and implement an industrial sales presentation.

**MKTG - 2073 Principles of Marketing, 3.00 Credits**

Level: Lower

Applied Learning-Practicum

Principles of Marketing introduces students to the field of marketing. The course emphasizes marketing functions and institutions as they pertain to the product, price, place, and promotion aspects of bringing goods and services to the consumer. Students learn how to evaluate marketplace potential and risk of delivering marketing offerings with meaningful customer value. Students will participate in classroom presentations, discussions, team problem solving and analysis of real-life marketing situations. The creation of a comprehensive marketing plan will be required.

**MKTG - 3153 Web Design & Marketing, 3.00 Credits**

Prerequisite(s): MKTG 2073 with D or better

Level: Lower

The course will examine the uses and power of the Internet, web pages, and e-commerce and the application of these concepts to daily business. Integration of marketing and web design techniques will be utilized in the creation of effective web pages.

**MKTG - 6003 Strategic Marketing, 3.00 Credits**

Level: Upper

Strategic Marketing provides students with an overview of the marketing discipline and a framework that presents marketing as a value creation process. Participants learn how to evaluate marketplace potential and risk from the perspective of the entity's unique ability to develop and deliver goods and services of meaningful customer value. Students participate in classroom presentations, discussions, team problem solving, and in-depth analysis of a series of real-life marketing situations with a diverse range of entities and industries. The course explores the principal concepts and tools of contemporary marketing management, from market segmentation and product positioning to the design of distribution channels and communications strategy, in order to maximize the value delivered to customers. A Strategic Marketing Plan will be required.

**MOTO - MOTORCYCLE/POWER SPORTS**

**MOTO - 1003 Intro to Shop Service Basics, 3.00 Credits**

Level: Lower

Applied Learning-Practicum

This course will familiarize the student with the general operation of a motorcycle and power sports repair facility. Topics will include: typical business operating procedures, safety, tools, equipment, and hazardous materials.

**MOTO - 1005 Basic Electrical Systems, 5.00 Credits**

Level: Lower

Applied Learning-Practicum

This course will introduce the students to electrical fundamentals including circuit designs and circuit calculations. Common electrical components, operation, and testing will also be included.

**MOTO - 1015 Welding & Fabrication, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Course Fee \$129.00  
 This course will familiarize the student with all common welding and fabrication techniques using a variety of equipment including: oxy-acetylene torches, Arc welders, M.I.G. welders, T.I.G. welders, plasma cutters, metal breaks, and metal sheers.

**MOTO - 1025 Brake Systems, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover brake systems used on all types of motorcycles and power sports vehicles. Topics covered include: Component identification, hydraulic principals and component operation including anti-lock brakes; diagnosis and service of brake systems.

**MOTO - 2005 Starting & Charging Systems, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover starting and charging systems used on all types of motorcycles and power sports vehicles. Topics covered include: Starter types, Alternator/ Generator types, system wiring, testing and diagnosis.

**MOTO - 2013 Inspection & Preventative Mntn, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course focuses on NYS vehicle inspection, vehicle maintenance, heating and air conditioning systems.

**MOTO - 2015 Suspension & Steering Systems, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover suspension and steering systems used on all types of motorcycles and power sports vehicles. Topics covered include: Component identification, operation of suspension and steering systems; wheel alignment principals, measurement, and adjustments; diagnosis of steering and suspension concerns; steering and suspension component removal and replacement.

**MOTO - 2035 Fuel & Ignition Systems, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover ignition and fuel systems used on all types of motorcycles and power sports vehicles. Topics covered include: Carburation, fuel injection, magnetos, point ignition, and electronic ignition.

**MOTO - 3003 Diesel Engines, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover diesel engines used on all types of power sports vehicles. Topics covered included: engine operation, fuel systems, diagnosis, and service procedures.

**MOTO - 3005 Two & Four Stroke Engines, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover the air and water cooled two and four stroke engine used on all types of motorcycles and power sports vehicles. Topics covered include: engine operation, diagnosis, and service procedures.

**MOTO - 3015 Transmissions, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover all types of motorcycles and power sport vehicle transmissions. Topics covered include: Transmission types operation, diagnosis, and service procedures.

**MOTO - 3035 Drive Systems, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover all types of motorcycles, power sport, and marine vehicle drive systems. Topics covered include: Drive system types operation, diagnosis, and service procedures.

**MOTO - 4005 Advanced Drivability, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover the use of advanced technologies and procedures to diagnose and repair drivability concerns. Instruction will focus on the use of advanced test equipment to diagnosis concerns in computer controlled systems used on modern motorcycles and power sports vehicles.

**MOTO - 4015 Advanced Electrical, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover the use of advanced technologies and procedures to diagnose and repair electrical concerns. Instruction will focus on the use of advanced test equipment to diagnosis concerns in all electrical systems used on modern motorcycles and power sports vehicles.

**MOTO - 4023 Exhaust & Induction Systems, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover exhaust and induction systems used on all types of motorcycles and power sports vehicles. Topics covered include: exhaust, intake, and forced induction; diagnosis and service.

**MOTO - 4025 Advanced Applications, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course focuses on repair facility management practices. Paperwork processing, employee and customer relations are included.

**NASC - NATURAL SCIENCE**

**NASC - 1001 Astronomy Laboratory, 1.00 Credit**

Level: Lower  
 Liberal Arts and Science  
 This laboratory course is designed to accompany NASC 1003 for the student who wishes a laboratory component to astronomy. It will cover many of the same topics as the astronomy course but using a laboratory setting including the use of a telescope, computers, graphing, and various measuring instruments, and astronomical charts.

**NASC - 1003 Astronomy I, 3.00 Credits**

Level: Lower  
 Gen Ed - Natural Sciences, Liberal Arts and Science  
 This course is an introduction to planetary science and positional astronomy. Topics covered are positional astronomy; synodic and sidereal periods; phases; planetary motion; the nature of science and its application to astronomy; gravity and Kepler's Laws of Planetary Motion; light and telescopes, the physical properties of the planets and other Solar System bodies; the evolution of planets; the evolution of the Solar System; extra-solar planets and life elsewhere in the Universe.

**NASC - 1043 Physical Science Survey, 3.00 Credits**

Level: Lower  
 Gen Ed - Natural Sciences, Liberal Arts and Science  
 This course is a survey of the principles and applications of the physical and earth science. The course covers basic topics in physics, astronomy, geology, meteorology, environmental science and earth science. The nature and practice of science will also be discussed.

**NASC - 2003 Astronomy II, 3.00 Credits**

Level: Lower  
 Gen Ed - Natural Sciences, Liberal Arts and Science  
 This course is designed as a continuation of NASC 1003, Astronomy, or as a separate introduction to stellar evolution and cosmology. It will introduce advanced topics from the fields of astronomy and cosmology. Emphasis will be placed on scientific process and critical thinking. This course is suitable for science majors or as a science elective. Topics to be covered are: star cycles, galactic evolution and cosmology. An optional laboratory course will be offered.

**NURS - NURSING**

**NURS - 1011 NURS Living Learning Comm I, 1.00 Credit**

Level: Lower  
 Pass/Fail  
 Nursing Seminar- Conceptual Skill Building is the beginning foundation of concept based learning in nursing. The course content includes the concepts of critical thinking, observational skills, caring, and recognizing self-development. Emphasis is placed on individual skill building and enhancing self-confidence. The student is also introduced to the development of an individual portfolio to assist in meeting personal goals and to reflect on accomplishments. Engagement in the college culture will be explored through a designated living area in a residence hall, planned tours of college resources, and increased faculty contact during engaging concept-based learning activities. Conceptual skill building and self-development skills will facilitate student transition into a healthy life style and reduce stress while participating in the Associate Degree Nursing program.

**NURS - 1108 Nursing I, 8.00 Credits**

Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance, Course Fee \$17.00  
 Nursing I is the foundation course in the nursing curriculum. Its content represents commonalities of knowledge and skills considered fundamental to subsequent nursing courses. Emphasis is placed on basic needs of an individual and how these vary, depending on their physical and emotional state and level of development. The student is introduced to the nursing process with an emphasis on assessment and planning. The student develops beginning skills in assisting patients with major health concerns to meet their basic needs. Areas of concentration include but are not limited to: legal/ethical responsibilities of the nurse, concepts of mental health, therapeutic communication and asepsis principles are incorporated throughout the course. The development of basic nursing skills begins in a structured campus lab setting and continues in the clinical lab.

**NURS - 2001 Seminar in Nursing II, 1.00 Credit**

Level: Lower  
 Clinical Liability Insurance  
 This course is designed to familiarize students with the expectations of the nursing program. It is an elective course to be taken by interested students the semester before their first nursing course. The objectives focus on an overview of the philosophy of nursing, theoretical and practical applications of nursing process concepts, and roles of the nurse. Classroom discussions, observations of actual nursing classes and field trips are planned to enhance the student's awareness of the expectations of the nursing program.

**NURS - 2011 NURS Living Learning Com II, 1.00 Credit**

Level: Lower  
 Pass/Fail  
 This course is the expansion of Nursing Seminar-Conceptual Skill Building I, which enhances concept based learning in nursing. Its content represents concepts of critical thinking, observational, listening, and psychomotor skills. Emphasis is placed on individual self-development, caring and team skill building. The students will develop an individual portfolio to assist in meeting personal goals and reflection of accomplishments. Engagement in the college culture will be explored through participation in campus events, presentations, and through off site cultural engagement. The students will implement stress reduction exercises. Conceptual skill building, self-development skills, and team building will promote student transition into a healthy life style and reduce stress while participating in the Nursing Program.

**NURS - 2201 Trans to Assoc Degree Nursing, 1.00 Credit**

Level: Lower  
 This course orients the student to the philosophy, objectives and curriculum design of the Nursing Program and focuses on the nursing process, therapeutic communication, nursing skills and computation competency. This course is required for the transfer student who successfully challenges or receives transfer credit for Nursing 1109 or Nursing 2209 and seeks advanced placement in the Nursing Program.

**NURS - 2208 Nursing II, 8.00 Credits**

Prerequisite(s): NURS 1108 with C or better or NURS 1109 with C or better  
 Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance, Course Fee \$14.00  
 In Nursing II, the student uses the nursing process to assess, plan, implement, and evaluate nursing care to meet basic needs of clients with major health concerns. Health problems are studied in depth with emphasis on client education, and disease prevention. Areas of concentration include: crisis, maternal-child health, the surgical experience, diabetes, and caring for individuals with respiratory, cardiovascular and gastrointestinal problems. The campus lab continues to be used for the acquisition, practice, and evaluation of technical skills. In the clinical area, the student cares for clients whose conditions are relatively stable and predictable. Observational experiences include rotations to obstetrics, operating and recovery rooms. The student uses a variety of methods to acquire competence in learning objectives and demonstrates increased responsibility for learning.

**NURS - 3310 Nursing III, 10.00 Credits**

Prerequisite(s): ( NURS 2208 with C or better or NURS 2209 with C or better ) and ( BIOL 4254 with C+ or better \* or BIOL 5254 with C+ or better \* )

Level: Lower

Applied Learning-Clinical Plcm, Clinical Liability Insurance, Course Fee \$23.00

In Nursing III, the student applies the nursing process to assess/analyze, plan, implement, and evaluate nursing care for two or more clients with chronic and/or critical health concerns. The student further develops their role as a teacher by formulating and implementing teaching based upon a client's individual needs. Major health concerns include but are not limited to: psychiatric, blood disorders, hepatic problems, immunological, musculoskeletal disorders, cancer, genitourinary, gynecological problems, neurological disorders, and acute cardiac problems. The student considers some of the major health problems of children. The student begins to care for clients in more complex situations in the clinical setting incorporating therapeutic verbal and nonverbal communication skills.

**NURS - 4001 Decision-Making in Nursing, 1.00 Credit**

Prerequisite(s): NURS 3311 with C+ or better

Corequisite(s): NURS 3311 with C+ or better

Level: Lower

This one credit elective course focuses on decision making in nursing using evidence based practice as guidelines to assist the graduate in nursing practice. The primary focus of the course will be prioritization, evaluation of care relative to quality improvement, delegation, and performance based evaluation. National Council Licensure Examination for Registered Nurses (NCLEX-RN) test plan and administrative processes are emphasized throughout the course. Stress reduction techniques are integrated throughout the course to enhance coping mechanisms. Employment seeking strategies are also incorporated into the course to augment professional transition into the professional workforce of nursing.

**NURS - 4410 Nursing IV, 10.00 Credits**

Prerequisite(s): ( NURS 3311 with C+ or better or NURS 3310 with C+ or better ) and ( BIOL 4254 with C+ or better or BIOL 5254 with C+ or better )

Level: Lower

Applied Learning-Clinical Plcm, Clinical Liability Insurance, Course Fee \$12.00

In Nursing IV, the student increases skills in applying the nursing process to a group of clients with chronic and/or critical health problems. The student develops his/her professional role as a leader and manager and is prepared for the transition from student to graduate. Nursing IV involves the student in specialty areas such as the Emergency Department, Intensive Care Unit and Community Agencies. Major health areas which are investigated include, but are not limited to: Endocrine, Neurology, Cardiac, Respiratory, Obstetrical and Trauma Emergencies. To develop the role as a professional, the student participates in a group leader rotation. Clinical experiences include a variety of settings. A pediatric experience and a two day preceptorship are included. Students continue to focus on prevention and health education in the clinical and community setting. In the clinical lab, the student cares for a group of clients with more critical and complex situations.

**NURS - 5003 Ethical Issues in Health Care, 3.00 Credits**

Prerequisite(s): NURS 2209 with C or better or NURS 2208 with C or better

Level: Upper

This course examines ethical positions arising from the advancement of modern medicine. Emphasis is placed on ethical theories and principles that guide decision-making in healthcare. Critical reasoning skills are used to analyze ethical issues and to help students understand how to make action oriented decisions for controversial healthcare questions. Aspects of inquiry and ways of knowing are explored, relative to selected ethical dilemmas or issues.

**NURS - 5023 Contemporary Nursing, 3.00 Credits**

Prerequisite(s): NURS 2209 with C or better or NURS 2208 with C or better

Level: Upper

This course focuses on issues and trends in nursing and healthcare delivery to achieve a broad professional perspective for the expanded role of the baccalaureate prepared nurse. Selected issues and concepts will also be analyzed with depth to determine the impact on rural healthcare delivery. The course also focuses on principles related to critical reasoning and decision-making processes to help the student to better understand the challenges and opportunities in the political, social, and healthcare environment. In addition, issues related to workforce and workplace policy development, advancement of the profession, and advocacy will be addressed. Lastly, the concept of social justice will be explored relative to underserved and/or vulnerable populations. Students will present information on the importance of continuing education in nursing.

**NURS - 6003 Nursing Leadership/Management, 3.00 Credits**

Prerequisite(s): NURS 5003 with C or better and NURS 8003 with C or better

Level: Upper

Applied Learning-Clinical Plcm, Clinical Liability Insurance  
This nursing course focuses on the development of decision-making knowledge and skills for the nurse leader. The principles of management and leadership are addressed in the course. Course content includes role concepts, change theory, fiscal management, organizational structure, conflict resolution, impact of unionization, quality control, and performance appraisal. In addition, evidence-based leadership and decision-making for public policy are explored in the course. Lastly, applied learning will be implemented with an in-person immersion with a nursing leader to explore the nurse leadership role.

**NURS - 6413 Health Assmt & Promotion Across, 3.00 Credits**

Prerequisite(s): NURS 2209 with C or better or NURS 2208 with C or better

Level: Upper

This course focuses on a wholistic approach to health assessment and promotion across the life span. The course builds on previously acquired knowledge and skills to allow a student to complete a comprehensive health assessment. Technological aspects for health assessment and promotion are addressed with the use of simulation where appropriate. Socio-cultural influences, growth and development, and gender are concepts integrated in the course. Students will be required to produce and present a health promotion plan.

**NURS - 7003 Nursing Research, 3.00 Credits**

Prerequisite(s): ( MATH 1123 with C or better or MATH 2124 with C or better ) and ( NURS 2209 with C or better or NURS 2208 with C or better ) and NURS 5003 with C or better \*

Level: Upper

This course provides the student with the opportunity to examine the role of the nurse in the generation and application of research in the healthcare domain. The course focuses on the study and analysis of research in nursing practice to optimize client outcomes. Course content includes discussion of problem formulation; identification of variables; research design and methodology; data collection and analysis; and interpretation of findings. In addition, the course will focus on how theory and research relate to evidence-based practice. The steps of the research process will have sufficient depth covered to allow for a beginning appreciation of scholarly inquiry and evaluation of selected nursing research studies. Student groups will present a topical research literature review.

**NURS - 7004 Population Focused Care in Com, 4.00 Credits**

Level: Upper

Applied Learning-Field Study, Clinical Liability Insurance Current RN licensure is required for this course. This course focuses on the role of the nurse in the evaluation of current public health issues and population-focused health care delivery. Key public health concepts and frameworks will be examined from an evidenced based perspective. Principles of social justice and public health policy will be discussed as they interrelate with a variety of populations, with an emphasis on specific needs of rural communities. A forty-five hour preceptor guided community health immersion experience will provide an opportunity for the student to utilize the public health nursing model to participate in community assessment, identify resources, plan, execute and evaluate a primary health prevention/promotion project.

**NURS - 7023 The History, Image & Culture Nsg, 3.00 Credits**

Prerequisite(s): NURS 5003 with C or better and NURS 8003 with C or better

Level: Upper

This course is designed to provide an overview of the history of nursing and nursing images as they relate to nursing culture and the American health care system and society. Using historical research methods, students will explore fundamental principles for critiquing historical studies or narratives. The course will address issues of class, race, gender, and societal values as possible influences on the development of the nursing profession and nursing culture. By the end of the course, students will be able to describe the impact of historical, societal and cultural influences on modern nursing.

**NURS - 7033 Healthy Aging in Rural Areas, 3.00 Credits**

Prerequisite(s): NURS 5003 with C or better and NURS 8003 with C or better

Level: Upper

This course focuses on the healthcare of elders including the unique aspects of aging across the adult lifespan. Elders and their needs are framed from a physical, psychological, social, cultural and spiritual perspective and within a family and community environment. Emphasis in the course is on health maintenance, prevention, and promotion as well as maintaining function and preventing disability in the elderly. The student will offer a presentation addressing contemporary nursing and healthcare issues affecting elders in rural areas.

**NURS - 8003 Informatics & Tech App in Hlthcare, 3.00 Credits**

Prerequisite(s): NURS 2209 with C or better or NURS 2208 with C or better

Level: Upper

This course will focus on informatics and technology applications in the healthcare setting. The course covers the use of information systems and technologies such as telehealth, electronic health record (EHR), distance and e-learning, use of secondary data, and databases. In addition, the course will explore the use of portable and personal devices such as smart phones, tablets, laptop and other mobile platforms in the healthcare setting. The course will also address the integration of topics related to legal, ethical, and policy issues affecting information management and technology in healthcare delivery. Finally, the course will explore information technology systems as they relate to workflow and redesign in various healthcare settings to improve client outcomes.

**NURS - 8013 Professional Capstone, 3.00 Credits**

Prerequisite(s): NURS 5003 with C or better and NURS 6413 with C or better and NURS 7003 with C or better

Level: Upper

Applied Learning-Creative Work

Current RN licensure is required for this course. This capstone course continues to expand and explore content to prepare the student for an autonomous role as a baccalaureate-prepared practitioner in health care. Course activities help the student identify a health care need in a rural setting to design and implement a project to address the selected concern. In addition, the course content allows the student to further develop a personal philosophy through the culminating socialization process to the expanded and autonomous role.

**NURS - 8043 Politics & Economics in Nursin, 3.00 Credits**

Prerequisite(s): NURS 5003 with C or better and NURS 8003 with C or better

Level: Upper

This course is designed to provide the student with a knowledge base and develop skills in influencing policy in today's changing health care environment. The course focuses on the politics of health policy in terms of legislative and executive processes at the local, state, and federal level. The course also explores economic, social, ethical and political factors of healthcare delivery systems. In addition, political aspects are explored relative to individuals or groups of importance, including special interest groups, lobbyists, the press, elected officials, legislative staff, and public agencies. Students will produce an analysis of healthcare systems and policies of elected countries, compared to the U.S. healthcare system and industry.

**PHIL - PHILOSOPHY**

**PHIL - 1073 Problems of Philosophy, 3.00 Credits**

Level: Lower

Gen Ed - Humanities, Liberal Arts and Science

Problems in Philosophy examines some of the fundamental questions, controversial issues, and major problems faced by people in relationship to the world. It also focuses on some of the methods for inquiry and problem-solving that people have devised to make their world more comprehensible. The course is designed, through readings and class discussions, to promote critical thinking and to develop effective techniques of systematic inquiry.

**PHIL - 2013 Critical Thinking, 3.00 Credits**

Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 This course has a three part structure: 1. Logic. At root, critical thinking is the ability to reason; to think logically. Students will learn core concepts such as validity, soundness, logical form, and informal fallacies. 2. Applied Argument Construction. Students will learn to construct and critique ordinary and scientific arguments, both in written and oral form, using the logical principles learned in the Logic component of the course. 3. Alternative Reasoning Methods. Students will be encouraged to identify and examine arguments based on cultural background, gender, religious convictions, requirements of classical logic. Students will be encouraged to identify and examine such arguments. The purpose of this examination is not to validate or endorse alternative reasoning methods, but to encourage students to talk with each other about the difference and similarities in the ways they make judgments and other factors. Writing is continued in assignments related to readings, class discussions, and lectures.

**PHIL - 2173 Ethics, 3.00 Credits**

Level: Lower  
 Gen Ed - Humanities, Liberal Arts and Science  
 Ethics is a course designed to inquire into the nature of values and how we acquire them. It studies some major ethical systems derived from such values that have been used to evaluate man's conduct. It encourages students to discuss theories as applied to existing moral dilemmas. Writing is continued in assignments related to readings, class discussions, and lectures.

**PHYS - PHYSICS**

**PHYS - 1014 Introductory Physics, 4.00 Credits**

Level: Lower  
 This course is appropriate for students lacking a strong math and science background and is designed to develop physical concepts in the classroom in a highly interactive laboratory. The laboratory portion of the course will include traditional and conceptual physics experiments, computer work and time devoted to physics problem solving. Considerable attention is paid to problem solving and the development of problem analysis skills.

**PHYS - 1024 General Physics I, 4.00 Credits**

Level: Lower  
 Gen Ed - Natural Sciences, Liberal Arts and Science  
 This is the first semester of a one-year course designed for students in Engineering Technology. The course covers the physics of motion. The topics covered include: conversion of units and dimensional analysis, vectors, linear and rotational kinematics, Newton's Laws of Motion and the application of these laws to problems, equilibrium, friction, work and energy, power, momentum, circular motion and the dynamics of rotational momentum. The course includes laboratory work covering some of these topics.

**PHYS - 1044 College Physics I, 4.00 Credits**

Prerequisite(s): MATH 1033 with D or better or MATH 1034 with D or better or MATH 1054 with D or better or MATH 1084 with D or better  
 Level: Lower  
 Applied Learning-Other, Gen Ed - Natural Sciences, Liberal Arts and Science  
 This is the first semester course of a two-semester physics sequence, which is appropriate for Liberal Arts students or technical students who plan to pursue a four year degree in the biological sciences. In this course, students will learn how to explain natural phenomena both qualitatively and quantitatively. Problem solving skills are emphasized. Topics include: motion, force, energy, collisions, rotational motion, and fluids. Students will do some open-ended labs where they will create a model of the experiment, design and run the experiment.

**PHYS - 1064 Physics for Engr & Science I, 4.00 Credits**

Prerequisite(s): MATH 1084 with D or better  
 Level: Lower  
 Applied Learning-Other, Gen Ed - Natural Sciences, Liberal Arts and Science  
 This course is the first of two calculus-based courses intended to cover elementary classical physics for those students who are planning to transfer into a four-year program in engineering, mathematics, or one of the natural sciences. The topics covered include: measurements, vectors, kinematics, dynamics, work and energy, impulse and momentum, rotational kinematics and dynamics, including energy and momentum principles, for single and multiple particle systems including rigid bodies. In addition the laboratory component of this course will be used to expose students to activities that will require them to apply the knowledge they have learned to design experiments, collect and analyze appropriate data and then interpret the results in such a way as to demonstrate their understanding of the concepts being covered.

**PHYS - 2023 General Physics II, 3.00 Credits**

Prerequisite(s): PHYS 1024 with D or better  
 Level: Lower  
 Gen Ed - Natural Sciences, Liberal Arts and Science  
 This course is a continuation of PHYS 1024. Topics covered include: wave motion, sound, electrostatics, current, electricity, electric circuits, magnetic effects, light and illumination, reflection, refraction, mirrors, thin lenses, dispersion, interference, and diffraction. Laboratory work is also included covering most of these topics.

**PHYS - 2044 College Physics II, 4.00 Credits**

Prerequisite(s): PHYS 1044 with D or better  
 Level: Lower  
 Applied Learning-Other, Gen Ed - Natural Sciences, Liberal Arts and Science  
 This is a continuation of PHYS 1044. It is appropriate for a Liberal Arts or technical student who plans to complete a four-year degree. The topics covered include: simple harmonic motion, waves, heat, light, electricity and magnetism. Problem solving is stressed. The course includes a weekly lab covering the topics listed for this course and a comprehensive final. Hands-on lab activities require students to design experiments, make appropriate measurements, perform data analysis, and discuss the results to reinforce their understanding of the subject matter.

**PHYS - 2064 Physics for Engr & Sci II, 4.00 Credits**

Prerequisite(s): PHYS 1064 with D or better and MATH 1084 with D or better

Level: Lower

Applied Learning-Other, Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of PHYS 1064. Topics include: wave motion, simple harmonic motion, electricity, circuit analysis, magnetism and ray optics. In addition, structured physics labs will require: hands-on collection of data, analysis of data (including error analysis) with a spreadsheet, a formal written report and an evaluation of the lab report. A comprehensive final exam will be given.

**PHYS - 2900 Directed Study, 1.00 TO 5.00 Credits**

Level: Lower

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**PHYS - 8013 Modern Physics, 3.00 Credits**

Prerequisite(s): ( PHYS 2023 with D or better or PHYS 2044 with D or better or PHYS 2064 with D or better ) and ( MATH 2094 with D or better or MATH 2074 with D or better )

Level: Upper

Applied Learning-Other, Gen Ed - Natural Sciences, Liberal Arts and Science

This is a one-semester course for liberal arts students or technical students. This course provides students with information about the discoveries made, ideas and concepts advanced, and the knowledge gained in physics since 1900. Topics include: special theory of relativity, relativistic calculation, modern experiments, atomic structure, matter waves, quantum mechanics, and quantum theory of hydrogen. Hands-on lab activities require students to make appropriate measurements, perform data analysis, and discuss the results to reinforce their understanding of the subject matter.

**PLSC - POLITICAL SCIENCE**

**PLSC - 1043 American Government, 3.00 Credits**

Level: Lower

Gen Ed - American History, Gen Ed - Social Sciences, Liberal Arts and Science

This course provides an introduction to American government. Students will examine the basic framework and institutions of government, including the U.S. Constitution and branches of government. The development and historical growth of government will be discussed as well as the effect of government on diverse social groups. Emphasis will also be on national policies regarding economy, foreign relations, natural resources, and various moral/ethical issues, including civil rights and individual liberties.

**PLSC - 1053 International Relations, 3.00 Credits**

Level: Lower

Gen Ed - Other World Civ, Liberal Arts and Science

This course examines the dynamics of the nation-state and the interrelationship among states. Attention will be given to the position of the United States as a world power in the past, present, and future. Topics will include the history of international relations; U.S. foreign policy and security challenges; the problems faced by less developed countries; international organizations; "globalization" and the dynamics of the world economy; and regional and national perspectives. An emphasis will be placed on current events and areas of conflict around the world.

**PSYC - PSYCHOLOGY**

**PSYC - 1013 General Psychology, 3.00 Credits**

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science

The major emphasis of this course is on the scientific study of the behavioral and mental processes of human beings. Both the biological structure of the human organism and the effect of the environment upon behavior are studied. The major areas of psychological study, including research methods, sensation and perception, learning theories, and cognitive processes are surveyed.

**PSYC - 1023 Human Development, 3.00 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science

This course is designed to introduce students to the basic concepts and principles of physical, cognitive, and psychosocial development at each major stage of life - from conception until old age. Major theories are explained and fully integrated throughout the human life span

**PSYC - 1033 Human Relations, 3.00 Credits**

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science

This course covers the problems of human adjustment using the psychoanalytic, social-learning, and humanistic perspectives. The course also focuses on stress, its effects and its management. The third area of study concerns interpersonal and social aspects of adjustment.

**PSYC - 1063 Basic Helping Skills, 3.00 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Applied Learning-Practicum, Gen Ed - Social Sciences, Liberal Arts and Science

This course is designed to assist the student in developing the helping skills necessary to conduct a productive, helping session. Helping models, ethical considerations, and interview methods will be examined, particularly as they apply to the human services field.

**PSYC - 2033 Adolescent Development, 3.00 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Liberal Arts and Science

Adolescent Development is an introduction to the physical, cognitive, and social changes which occur between puberty and young adulthood. Contemporary issues of gender, sexuality, morality, and education are discussed. Psychological theories and developmental stages of life will be explored by the student and applied to adolescent behavior.

**PSYC - 2093 Abnormal Psychology, 3.00 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science

The major emphasis of this course is the understanding of the symptoms, etiology, diagnostic classification, and theories pertaining to psychopathology. Special attention is paid to the medical model, the psychological model, and the behaviorist model as they apply to the causes and treatment of the behavioral disorders. Newer developments in therapy which treat mental disorders as problems of living rather than specific diseases are analyzed.

**PSYC - 2900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 Liberal Arts and Science  
 This course allows students who have successfully completed a previous course in psychology to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

**PSYC - 5013 Counseling Theory, 3.00 Credits**

Prerequisite(s): PSYC 1063 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 This course provides students with an overview of historical and contemporary psychological approaches to helping. Topics will include theories of counseling, cultural issues, professional concerns and ethical standards of the field. The course will also address issues related to the historical and theoretical bases of crisis intervention.

**PSYC - 5093 Health Psychology, 3.00 Credits**

Prerequisite(s): PSYC 1013 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 In this course, students will study various health determinants, the impact of socio-economic and cultural influences on health-related behaviors, the physiology of stress and effective ways to manage or reduce its negative consequences and how to evaluate research in health related fields. In addition, students will critically examine global health concerns from a health systems and health policy perspective. Topics such as the global impact of disease, theories of health-related behavior change, stress, coping, communicable and chronic diseases including cancer, cardiovascular disease, HIV, chronic pain management and the placebo effect will be covered. Strategies for individual and community health advocacy will also be discussed.

**PSYC - 5103 Industrial/Organizational Psychology, 3.00 Credits**

Prerequisite(s): PSYC 1013 with D or better  
 Level: Upper  
 Gen Ed - Social Sciences, Liberal Arts and Science  
 Industrial/Organizational Psychology is an advanced course which applies the principles of psychology to the workplace. The focus of the course is on such topics as scientific management, human relations, motivation, group dynamics, and personnel selection. Students will learn about performance appraisal, leadership skills, labor-management relations, and organizational communication. Other topics for discussion include employment discrimination, sexual harassment, and the abuse of drugs.

**PSYC - 6103 Family & Intimate Rel Violence, 3.00 Credits**

Prerequisite(s): SOCI 1163 with D or better or PSYC 1013 with D or better or HUSR 2083 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 The course will provide a systemic examination of family and intimate relationship violence throughout the lifespan. The course will include discussion of the causes and types of violence, reporting procedures and legal remedies associated with this type of violence. It will also examine intervention and prevention programs that are available to the victims, perpetrators and others affected by it. While the course focuses mainly on the violence in the U.S., family and intimate relationship violence in other cultures will be explored. Students will be expected to prepare a research-based paper or presentation on current literature related to family and intimate relationship violence.

**PSYC - 7003 Working w/Diverse Populations, 3.00 Credits**

Prerequisite(s): PSYC 1013 with D or better  
 Level: Upper  
 This course will examine and promote understanding, sensitivity, awareness, and knowledge of human diversity. Patterns and trends in victimization and victim-blaming will be examined, particularly as they relate to high-risk groups that are often hidden in or forgotten by society (the homeless, persons living with mental disorders, veterans, those suffering from dementia, addicts, etc.). Emphasis will be placed on the psychological aspects of the individuals and groups, as well as the professional responsibilities and skills that are critical to working with these vulnerable populations.

**PSYC - 7103 The Psychology of Killers, 3.00 Credits**

Prerequisite(s): PSYC 1013 with C or better  
 Level: Upper  
 This course examines the psychological factors that are unique to mass murderers and serial killers. This course will examine what accounts for that violent rage that is unleashed against other human beings who are simply in the wrong place at the wrong time. To what extent might lethal forms of violence be caused by genetics or neurological deformities, a history of childhood neglect and abuse, or a socialization of hatred toward others? At what point in the psychological evolution of a killer might that person be considered "criminally insane?" Using a case study approach drawn from readings, film, and television, students will explore the "dark side" of human psychology in order to understand why these killers kill.

**RADT - RADIOLOGIC TECHNOLOGY**

**RADT - 1003 Radiation Physics, 3.00 Credits**

Level: Lower  
 This course is designed to provide a basic knowledge of the principles of physics as it pertains to radiation especially ionizing radiation used in the clinical setting. Fundamental physics principles, units, measurements, atomic structure, and types/properties of radiation are emphasized, in particular ionizing radiation. Other topics presented include the fundamental X-ray circuit components as well as X-ray production by the X-ray tube.

**RADT - 1004 Fundamentals of Radiologic Sci, 4.00 Credits**

Level: Lower  
 This course is designed to provide a general overview of the study of radiologic science and the role it serves in the health care delivery system. Several key topics in imaging including introductory principles of radiography, basic radiation protection, discipline terminology, radiology specialties and careers in the profession will be explored. The course will also include a dialogue of medical legal ethics and the radiographer's role in making ethical decisions. Patient care topics including transfer techniques, patient history and vital signs, infection control, sterile techniques, medical emergencies and basic pharmacology will be presented. Finally, cultural awareness and the radiographer's role in a multicultural health care setting will be discussed.

**RADT - 2003 Radiobiological Protection, 3.00 Credits**

Prerequisite(s): RADT 1003 with C or better  
 Level: Lower  
 This course provides the characteristics of ionizing radiation and the biological effects that radiation produces in human tissues. Principles of ionizing radiation including basic interactions of radiation and matter, radiation quantities, units and dose limits for exposure, radiation protection for patients and employees as well as radiation monitoring devices are all discussed. In addition emphasis will be placed upon biological interactions with radiation, early and late effects of ionizing radiation on tissue, and radiation pathology.

**RADT - 2013 Radiographic Exposure & Qualit, 3.00 Credits**

Prerequisite(s): RADT 1004 with C or better and RADT 1003 with C or better and RADT 2014 with C or better \*  
 Level: Lower  
 This course is designed to provide fundamental principles of radiographic exposure. These principles include the radiographic factors; density, contrast, recorded detail and distortion that affect and influence the radiographic image and the technique compensation necessary to produce a diagnostic image as these factors change. Digital image acquisition and film screen imaging as well as film processing are also discussed. The fundamental criteria of image analysis and evaluation of quality diagnostic imaging are emphasized.

**RADT - 2014 Radiographic Procedures I, 4.00 Credits**

Prerequisite(s): RADT 1003 with C or better and RADT 2013 with C or better \*  
 Level: Lower  
 Applied Learning-Practicum  
 This course provides the theoretical basis for performing radiographic procedures with specific patient positioning instruction in the laboratory. The examination protocols and imaging evaluation for the thoracic cavity, abdominal cavity, upper extremities and lower extremities will be introduced. The laboratory setting will reinforce the theoretical foundation of the lecture through demonstration, role playing and skill practice in the laboratory. Image analysis will be included and require problem solving and critical thinking skills to evaluate diagnostic quality of the images obtained in the laboratory.

**RADT - 2041 Radiology Clinical I, 1.00 Credit**

Prerequisite(s): RADT 1003 with C or better and RADT 2014 with C or better \* and RADT 2003 with C or better \* and RADT 2013 with C or better \*  
 Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance  
 This course is designed to provide an introduction to the radiology department and patient care routines. The students will develop the basic skills necessary for a professional healthcare worker and will achieve competency in required diagnostic procedures established for the Radiologic Technology Program. Performance assessment in the clinical setting will provide the foundation to build clinical skills necessary to be successful in the field. This clinical experience consists of 120 hours, which will be completed 8 hours per week for 15 weeks.

**RADT - 2044 Radiology Clinical II, 4.00 Credits**

Prerequisite(s): RADT 2003 with C or better and RADT 2014 with C or better and RADT 2041 with C or better  
 Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance  
 This course allows for the continued progression of skills in the clinical setting. Procedural competence and the acquisition of additional proficiencies in radiography is the focus of this clinical experience. Continued assessment of learning and proficiency is conducted using summative competencies and intermediate level learning objectives during the clinical rotation. This clinical experience consists of 480 hours, which will be completed 40 hours per week for 12 weeks.

**RADT - 3014 Radiographic Procedures II, 4.00 Credits**

Prerequisite(s): RADT 2014 with C or better and RADT 2013 with C or better  
 Level: Lower  
 Applied Learning-Practicum  
 This course provides the theoretical basis for performing radiographic procedures with specific patient positioning instruction in the laboratory. The examination protocols and imaging evaluation for fluoroscopy, the skull, special views of the upper extremities and lower extremities, special views of the spine, bone surveys, arthrograms, pediatric and geriatric procedures, and trauma radiography will be introduced. The laboratory setting will reinforce the theoretical foundation of the lecture through demonstration, role playing and skill practice. Image analysis will be included and require problem solving and critical thinking skills to evaluate diagnostic quality of the images obtained in the laboratory.

**RADT - 3023 Diagnostic Imaging I, 3.00 Credits**

Prerequisite(s): RADT 2014 with C or better and RADT 3043 with C or better \*  
 Level: Lower  
 This course provides an overview of the specialized imaging system of computed tomography (CT) including sectional anatomy. Essential concepts of tomography and CT including multi-slice spiral CT will allow for proficiency in performing and understanding this advanced imaging technology. Basic CT protocols will be presented along with corresponding cross sectional anatomy to enhance learning of this advanced imaging modality. This course will allow for completion of specific CT examination competencies during the clinical experience.

**RADT - 3043 Radiology Clinical III, 3.00 Credits**

Prerequisite(s): RADT 2044 with C or better and RADT 3014 with C or better \*  
 Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance  
 This course provides ongoing experience in the radiology department clinical setting allowing implementation of advanced learning objectives and skills. This course allows for continued progression of skills in the clinical setting. Procedural competence and the acquisition of additional proficiencies in radiography is the focus. Continued assessment of learning and proficiency is conducted using summative competencies and advanced level learning objectives. This clinical experience consists of 360 hours, which will be completed 24 hours per week for 15 weeks.

**RADT - 4003 Intro to Adv Diagnostic Imagin, 3.00 Credits**

Prerequisite(s): RADT 3023 with C or better and RADT 4023 with C or better \*

Level: Lower

This course introduces the many advanced imaging modalities that are included in the radiology department. Computer tomography (CT) and its operation is discussed along with department archival systems and digital medical image storage. The course then introduces basic mechanisms of image acquisition, basic operating principles and applications for the advanced imaging modalities of magnetic resonance imaging (MRI), nuclear medicine, positron emission tomography (PET) and single-photon emission computed tomography (SPECT) imaging, ultrasound, radiation therapy and interventional radiography including arteriograms, cardiac angiography and venograms.

**RADT - 4013 Prof Development in Imaging Sc, 3.00 Credits**

Level: Lower

This course is an overview of the radiographer's continued professional development. The course is designed to encourage active participation in professional organizations and a development of lifelong learning. The course will culminate in a senior research project and presentation on a topic within the field of radiologic science and imaging.

**RADT - 4023 Diagnostic Imaging II, 3.00 Credits**

Prerequisite(s): RADT 3023 with C or better and RADT 3043 with C or better

Level: Lower

This course provides an overview of the functional imaging equipment components, operational principles and clinical applications of conventional and digital fluoroscopy systems. Emphasis will be given to dynamic imaging of various body systems and its use in advanced interventional procedures. Imaging system quality assurance and quality control procedures are also introduced as each relates to imaging equipment and patient safety.

**RADT - 4043 Radiology Clinical IV, 3.00 Credits**

Prerequisite(s): RADT 3014 with C or better and RADT 3023 with C or better and RADT 3043 with C or better

Level: Lower

Applied Learning-Clinical Plcm, Clinical Liability Insurance  
This course is designed to allow for expanded experience in radiology by implementing advanced proficiencies in the clinical setting. Various imaging modalities will be introduced and experienced including computed tomography (CT) scanning, special procedures, magnetic resonance imaging (MRI), nuclear medicine and ultrasound. Procedural competencies and characteristics of an entry-level radiographer will be demonstrated at the conclusion of this final clinical experience as documented by the terminal competencies and mastery level objectives. This clinical experience will consist of 360 hours, which will be completed 24 hours per week for 15 weeks.

**RADT - 4900 Directed Study, 1.00 Credit**

Prerequisite(s): RADT 3043 with D or better

Level: Lower

This course is an elective course designed to allow students to pursue advanced work in radiologic technology or obtain extended clinical opportunities. A student may contract for one credit hour of independent study through an arrangement with the clinical coordinator, who agrees to direct such a study. Enrollment is limited by clinical site participation.

**SOCI - SOCIOLOGY**

**SOCI - 1163 General Sociology, 3.00 Credits**

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science  
Sociology is the scientific study of society and social groups. This introductory course discusses the research methods, basic concepts, theories and perspectives used by sociologists. Among the topics covered are culture, socialization, social structure, deviance, social stratification, diversity, globalization, minority groups, gender, and selected social institutions.

**SOCI - 1183 Contemporary Social Problems, 3.00 Credits**

Prerequisite(s): SOCI 1163 with D or better

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science  
The purpose of this course is to acquaint the student with a broad spectrum of social problems within contemporary United States. The factors causing social and cultural problems will be emphasized. Students are required to conduct research and analyze a specific social problem and create new policy to deal with the social problem. Students will discuss and critically analyze social policies that address social topics discussed in class.

**SOCI - 1193 Marriage & Family Acrs Wrld Clt, 3.00 Credits**

Level: Lower

Gen Ed - Other World Civ, Gen Ed - Social Sciences, Liberal Arts and Science

This course provides a cross-cultural perspective on marriage and family while giving students the opportunity to explore similarities and differences in marriage and family practices. Specific cultures will be examined to enhance student understanding of cultural and environmental influences on beliefs, values and practices relating to kinship patterns.

**SOCI - 1223 Power, Privilege, & Difference, 3.00 Credits**

Prerequisite(s): SOCI 1163 with D or better

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science  
This course examines the social forces at work directing the distribution of power and privilege in American society. Using a sociological perspective, students learn about the multiple hierarchies defined by class, race/ethnicity, gender, and sexuality and the consequences of one's location in them. Students will learn intersectionality theory and its application to the study of inequality; that "difference" is socially constructed in systems of privilege to create "otherness," and, in turn, prejudice and discrimination.

**SOCI - 1243 Criminology, 3.00 Credits**

Prerequisite(s): SOCI 1163 with D or better

Level: Lower

Gen Ed - Social Sciences, Liberal Arts and Science  
The course introduces the study of crime, criminal behavior, and the justice system. Included in this study is the process of making laws, breaking laws, and society's reaction to the breaking of laws. Students will be introduced to theories of crime as demonstrated in the current policies of crime and punishment. In addition, there will be an overview of the criminal justice system: law enforcement, the courts, and corrections.

**SOCI - 5023 Research Methods, 3.00 Credits**

Prerequisite(s): MATH 1123 with D or better or MATH 1113 with D or better or MATH 2124 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 This upper-level course focuses on the how and why of doing research in the social and behavioral sciences, including evaluation research. The research techniques used by human services practitioners and social and behavioral scientists are emphasized including correlational and experimental methods. Ethical ways to conduct research and to build knowledge through research are examined. Writing in professional formatting style is stressed, as is understanding the parts of a journal article, the methods utilized within those professional journal articles, and how research is disseminated at professional conferences.

**SOCI - 5213 Science, Technology & Society, 3.00 Credits**

Prerequisite(s): HIST 1113 with D or better or HIST 1143 with D or better or HIST 2153 with D or better or PLSC 1043 with D or better or SOCI 1163 with D or better  
 Level: Upper  
 Gen Ed - Social Sciences, Liberal Arts and Science  
 This course is a survey of the growth of science and technology and their impact upon society as a whole with primary emphasis upon the United States. Major concentration is on the period since the mid-nineteenth century emphasizing the intellectual climate leading to and resulting from scientific and technological changes and the influence of these developments upon industry, government, education, agriculture, ecology and other areas.

**SOCI - 5233 Gerontology-Sociology of Aging, 3.00 Credits**

Level: Upper  
 Liberal Arts and Science  
 This course provides an overview of the sociological, psychological, physical and cultural aspects of the aging process. It will review demographic trends, theories and contemporary issues for this population. The course will also provide students with the opportunity to explore their views and attitudes on aging.

**SOCI - 6003 Juvenile Justice Admin, 3.00 Credits**

Prerequisite(s): CJUS 1003 with C or better  
 Level: Upper  
 This course examines the evolution of the juvenile justice system and the transformation of the juvenile court within the United States. This course is an analysis of the juvenile justice system in the United States - its components and functions. Students will evaluate the adjudication of juveniles and application of legal precedent established by the U.S. Supreme Court that results in social policy. Students evaluate ethical decision making and diversity in the adjudication and treatment of juveniles. The United States system and the systems of other countries are also compared. Students will apply course findings to a case study in a significant written document for final evaluation.

**SOCI - 8003 Terrorism, 3.00 Credits**

Prerequisite(s): SOCI 1183 with D or better  
 Level: Upper  
 This course examines the phenomena of international and domestic terrorism from the historical and criminological perspectives. The course evaluates historical and political viewpoints and examines the changing trends in security and justice. Students will examine ethical issues including an analysis of diversity factors and policy issues for consideration. This terrorism course provides a critical analysis of leadership styles required to alleviate fears of civil liberties erosion and public safety. The course will culminate with a research project.

**SONO - SONOGRAPHY**

**SONO - 1003 Fundamentals Sonography/Pt Care, 3.00 Credits**

Level: Lower  
 This course is designed to provide a general overview of the study of diagnostic medical sonography and the role it serves in the health care delivery system. Several key topics in imaging including introductory principles of sonography, discipline terminology, sonography specialties and careers in the profession will be explored. The course will also include a dialogue of medical legal ethics and the sonographer's role in making ethical decisions. Patient care topics including transfer techniques, patient history and vital signs, infection control, sterile techniques, medical emergencies and basic pharmacology will be presented. Finally, cultural awareness and the sonographer's role in a multicultural health care setting will be discussed.

**SONO - 2003 Sectional Anatomy, 3.00 Credits**

Level: Lower  
 This course is designed to provide the tools necessary to understand basic sectional anatomy of the human body. Emphasis is placed on imaging correlation to human cadaver cross-sections. Sectional anatomy of the abdomen, male and female pelvis, neck, thorax, head and fetal anatomy will be reviewed. In addition, vascular anatomy will also be discussed.

**SONO - 2013 US Physics and Instrument I, 3.00 Credits**

Level: Lower  
 This course is designed to provide a practical understanding of the principles of ultrasound physics and sonographic instrumentation as it pertains to diagnostic medical sonography and its use in the clinical setting. Topics include the properties of sound waves, interactions of sound waves, ultrasound instrumentation and functions of the components of processing, scan converter displays, image and display techniques, film and methods of permanent image recording, ultrasound transducers, operating standards, equipment calibration, resolution, gray scale photography and film critique. In addition, sonographic artifacts will be analyzed.

**SONO - 2024 Sonographic Procedures I, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides the theoretical basis for performing sonographic procedures with specific patient scanning instruction in the laboratory. The examination protocols and imaging evaluation for the abdominal organs, pelvic cavity and organs and superficial/small parts such as thyroid will be introduced. The laboratory setting will reinforce the theoretical foundation of the lecture through demonstration, role playing and skill practice in the laboratory. Sonographic image analysis will be included and require problem solving and critical thinking skills to evaluate diagnostic quality of the images obtained in the laboratory.

**SONO - 3013 US Physics & Instrument II, 3.00 Credits**

Prerequisite(s): SONO 2013 with D or better  
 Level: Lower  
 This course is a continuation of SONO 2013 and is designed to provide a practical understanding of the principles of ultrasound physics and sonographic instrumentation as it pertains to diagnostic medical sonography and its use in the clinical setting. Topics include the properties of sound waves, interactions of sound waves, ultrasound instrumentation and functions of the components of processing, scan converter displays, image and display techniques, film and methods of permanent image recording, ultrasound transducers, operating standards, equipment calibration, resolution, gray scale photography and film critique. Additionally, Doppler physics and applications along with sonographic artifacts discussed and practiced.

**SONO - 3016 Sonography Clinical I, 6.00 Credits**

Prerequisite(s): SONO 2024 with C+ or better  
 Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance  
 This course allows for the continued progression of skills in the clinical setting. Procedural competence and the acquisition of additional proficiencies in diagnostic medical sonography are the focus of this clinical experience. Continued assessment of learning and proficiency is conducted using summative competencies and initial and intermediate level learning objectives during the clinical rotation. This clinical experience consists of 480 hours, which will be completed 40 hours per week for 12 weeks.

**SONO - 3024 Sonography Clinical II, 4.00 Credits**

Prerequisite(s): SONO 3016 with C+ or better  
 Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance  
 This course allows for the continued progression of skills in the clinical setting. Procedural competence and the acquisition of additional proficiencies in diagnostic medical sonography are the focus of this clinical experience. Continued assessment of learning and proficiency is conducted using summative competencies and advanced and mastery level learning objectives during the clinical rotation. This clinical experience consists of 360 hours, which will be completed 40 hours per week for 9 weeks.

**SONO - 3034 Sonographic Procedures II, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides the theoretical basis for performing sonographic procedures with specific patient scanning instruction in the laboratory. The examination protocols and imaging evaluation for the female pelvic organs; First, Second and Third Trimester Obstetrical; Carotid, Peripheral Arterial and Venous Vascular Scanning will be introduced. The laboratory setting will reinforce the theoretical foundation of the lecture through demonstration, role playing and skill practice in the laboratory. Sonographic image analysis will be included and require problem solving and critical thinking skills to evaluate diagnostic quality of the images obtained in the laboratory.

**SONO - 4003 Professional Dev in Sonography, 3.00 Credits**

Level: Lower  
 This course is an overview of the radiographer's continued professional development. The course is designed to encourage active participation in professional organizations and a development of lifelong learning. The course will culminate in a senior research project and presentation on a topic within the field of radiologic science and imaging. Students will be expected to prepare for the Registry Exam(s).

**SONO - 4024 Sonography Clinical III, 4.00 Credits**

Prerequisite(s): SONO 3024 with C+ or better  
 Level: Lower  
 Applied Learning-Clinical Plcm, Clinical Liability Insurance  
 This course allows for the continued progression of skills in the clinical setting. Procedural competence and the acquisition of additional proficiencies in diagnostic medical sonography is the focus of this clinical experience. Continued assessment of learning and proficiency is conducted using summative competencies and advanced and mastery level learning objectives during the clinical rotation. This clinical experience consists of 360 hours, which will be completed 40 hours per week for 9 weeks.

**SONO - 4034 Sonographic Procedures III, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides the theoretical basis for performing sonographic procedures with specific patient scanning instruction in the laboratory. The examination protocols and imaging evaluation for the Breast; Thyroid; Scrotum; Musculoskeletal; GI Tract; Interventional and Pediatric Scanning will be introduced. The laboratory setting will reinforce the theoretical foundation of the lecture through demonstration, role playing and skill practice in the laboratory. Sonographic image analysis will be included and require problem solving and critical thinking skills to evaluate diagnostic quality of the images obtained in the laboratory.

**SONO - 4900 Directed Study, 1.00 Credit**

Prerequisite(s): SONO 3024 with D or better  
 Level: Lower  
 This course is an elective course designed to allow students to pursue advanced work in sonography or obtain extended clinical opportunities. A student may contract for one credit hour of independent study through an arrangement with the clinical coordinator, who agrees to direct such a study. Enrollment is limited by clinical site participation.

**SPAN - SPANISH**

**SPAN - 1203 Spanish I, 3.00 Credits**

Level: Lower  
 Gen Ed - Foreign Languages, Liberal Arts and Science  
 This course focuses on developing the student's ability to speak, to write, and to read Spanish. Additional emphasis is given to learning about the diverse cultures of the Spanish-speaking world. Instruction centers on oral communication, grammar (especially formation of verbs), and cultural awareness. Writing is continued in assignments related to readings, class discussions, and lectures.

**SPAN - 2203 Spanish II, 3.00 Credits**

Prerequisite(s): SPAN 1203 with D or better  
 Level: Lower  
 Gen Ed - Foreign Languages, Liberal Arts and Science  
 This second semester course is designed to suit the needs of persons who wish to learn to communicate orally in the Spanish language for purposes of travel, business, personal pleasure, and academia environment. The student's listening, speaking, reading and writing skills in Spanish will be further developed.

**SPAN - 4900 Directed Study, 1.00 TO 6.00 Credits**

Level: Lower  
 A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**SPCH - SPEECH**

**SPCH - 1083 Effective Speaking, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better  
 Level: Lower  
 Gen Ed - BC-COMP1503/SPCH1083, Gen Ed - BC-COMP3503/SPCH1083, Liberal Arts and Science  
 This course deals with preparing, presenting, and critiquing the basic speech types: reporting, demonstration, and argumentation. Special attention is given to collecting, selecting, and arranging of material; to presenting and delivering; and to active listening and critical evaluating. The course stresses principles of intrapersonal and interpersonal communication and provides a basis for the understanding of speech through utilizing various media. The course is designed to help students obtain the speaking skills with which to respond to various oral communication situations encountered throughout college and in professional, civic, and social areas before and after graduation. Students will be required to deliver presentations to a live audience of mature adults in both traditional and online classes.

**SPCH - 5083 Communication in the Workplace, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better and SPCH 1083 with D or better  
 Level: Upper  
 Gen Ed - BC-COMP1503/SPCH5083, Gen Ed - BC-COMP3503/SPCH5083, Liberal Arts and Science  
 The class is designed to give students the opportunity to obtain the communications skills encountered throughout college and his or her personal and professional life. Special attention is given to the theory of organizational communication, basic communication skills, interpersonal communication, employer-employee relations, group communication, and presentational speaking.

**SPCH - 6083 Interpersonal Communication, 3.00 Credits**

Prerequisite(s): SPCH 1083 with D or better  
 Level: Upper  
 Liberal Arts and Science  
 This course will cover the study and application of the techniques involved in effective interpersonal communication. Text, lecture, and outside reading will cover the theories and concepts of verbal, vocal, nonverbal, and listening as they relate to communicating in interpersonal contexts. Specifically, the course will address such topics as validation, listening, self-disclosure, conflict resolution, problem solving strategies, and electronic communication. Class participation, group participation, public speaking, and scholarly writing are required of all students.

**SPMG - SPORT MANAGEMENT**

**SPMG - 1123 Intro to Sports Management, 3.00 Credits**

Level: Lower  
 This course is an investigation of the scope of the sport industry, which is a growing major business enterprise in the United States and in much of the world. The various functions of effective management, and the skills, attributes and roles required of the sport manager are discussed. Attention will be focused on how the managerial process relates to sport organizations and the products they provide. Students become acquainted with career opportunities in the sport management field. The course is designed to provide an overview of sports administration with an emphasis on management principles and career opportunities. Course content will include lectures, guest speakers, and group discussions.

**SPMG - 2003 Sport in Society, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better  
 Level: Lower  
 This course provides an in-depth examination of sport in society, particularly in the United States. A review of the role of sport participants, spectators, and the media on society is included. Various organizational levels of sporting opportunity and sporting behavior, including sport ethics, resulting from the influence of society will be covered.

**SPMG - 2013 Sport in Europe Soc Study Abrd, 3.00 Credits**

Level: Lower  
 This course provides an in-depth examination of sport in society, globalization of sporting culture, and an understanding of the European model of sport. A review of the role of sport participants, spectators, and media on society is included. Various organizational levels of sporting opportunity and sporting behavior, including sport ethics, resulting from the influence of society will be covered. Within this course, students may partake in a study abroad opportunity in Europe.

**SPMG - 3001 Field Experience I, 1.00 Credit**

Prerequisite(s): SPMG 1123 with D or better  
 Level: Lower  
 Applied Learning-Internship, Pass/Fail  
 This course encompasses a semester of supervised, hands-on experience working in the field of sport management. A minimum of 45 hours of work throughout the semester is required.

**SPMG - 3013 Sport Communication, 3.00 Credits**

Prerequisite(s): COMP 1503 with D or better and BUAD 2033 with D or better and SPMG 1123 with D or better  
Level: Lower

This course is an introduction to the study of policies and procedures utilized in dealing with communication issues occurring within the sports industry, including print and electronic media, the internal and external constituencies to be served, and the development of specific forms of communication approaches. Heavy emphasis will be placed on the practical as opposed to the theoretical, as well as, a thorough understanding of the unique aspects of communication in sport.

**SPMG - 4001 Field Experience II, 1.00 Credit**

Prerequisite(s): SPMG 1123 with D or better and SPMG 3001 with D or better  
Level: Lower

Applied Learning-Internship, Pass/Fail  
This course encompasses a semester of supervised, hands-on experience working in the field of sport management. A minimum of 45 hours of work throughout the semester is required. At the end of this internship the student will produce a four-page paper outlining their evaluation of their career future.

**SPMG - 4003 Sport Law, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and ( BUAD 3043 with D or better or BUAD 7023 with D or better )  
Level: Lower

This course is designed to expose students to the legal environment within which sport management professionals function. It focuses on sport's relationship with government agencies (public law issues) as well as with other businesses, consumers, suppliers, etc., (private law issues). It is intended to better equip the sport business manager for decision making by exploring the legal issues involved in contracts, torts, business organizations, employment law, risk management, intellectual property law and Constitutional Law. Legislation specifically related to sport will be highlighted. A variety of specific problems for the business of sport, found within the law will be examined and analyzed through case briefs and studies, research projects and advocacy exercises. Students will have an opportunity to explore law-related topics of particular interest to themselves with oral presentations to the class.

**SPMG - 4123 Sport Facility Management, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better  
Level: Lower

This course investigates the elements, issues, and problems that shape the planning and management of sport facilities and events. Similarities and differences of facility types, reasons for development, terminology, types of events held, service contracts, financial operations, marketing and economic impacts are some of the issues covered. Building revenues from the sport facility, even services, and financing sources are all critical to the successful management of the multi-million dollar facilities that house today's major sport events. Course content will include lectures, guest speakers, and group discussions.

**SPMG - 5003 Sport Business and Finance, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and ACCT 1124 with D or better  
Level: Upper

This course is a focus on business topics as they relate to the fiscal and budgetary control of public and private sport organizations, leagues, and facilities. Topics include sources of funding and revenue, the implementation and use of an economic impact analysis, and a review of budgeting and financial statements.

**SPMG - 5013 Sport Communication, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and COMP 1503 with D or better and BUAD 2033 with D or better  
Level: Upper

This course focuses on the policies and procedures utilized in dealing with communication issues occurring within the sports industry, including print and electronic media, the internal and external constituencies to be served, and the development of specific forms of communication approaches. Heavy emphasis will be placed on the practical as opposed to the theoretical, as well as a thorough understanding of the unique aspects of communication in sport.

**SPMG - 6003 Sport Marketing, 3.00 Credits**

Prerequisite(s): MKTG 2073 with D or better  
Level: Upper

This course is designed to be an examination of the unique nature of Sport Marketing. This course will examine the elements of the marketing mix from that perspective. Major topics include an overview of the sport market, the critical nature of market research and market segmentation, developing an understanding of the special nature of the sport product, pricing within sport marketing, the role of promotion in the sport market, and the theory of "place" in sport. Students will be responsible for designing, implementing and evaluating a sport marketing research plan.

**SPMG - 6013 Licensing and Endorsements, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and SPMG 6003 with D or better  
Level: Upper

This course covers the details involved in the development of a corporate licensing program, as well as the licensing of intellectual property from corporations. The student will be exposed to the necessary details of becoming a licensee or licensor. Product value, agreements, endorsements, royalties, enforcement, and legal issues will all be included.

**SPMG - 6023 Event Promotion and Sales, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and SPMG 4123 with D or better  
Level: Upper

This course is a comprehensive review of the skills and tasks required to successfully sell a sporting event to the consumer. Creating an effective sales culture, examining incentives for sport consumers, sales management and servicing, and the role of technology in sport promotion and sales are included. Additionally, this course explores sales training, the art of ticket sales, customer retention, branding, and sales risk management.

**SPMG - 6033 Sponsorship, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and SPMG 6003 with D or better  
Level: Upper

This course is a study of corporate sponsorships. Topics will include acquisition, service, sponsor and property objectives, rights, negotiations, sponsorship evaluations, contracts, proposals, and presentations.

**SPMG - 6043 Sport Law, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and ( BUAD 3043 with D or better or BUAD 7023 with D or better )  
Level: Upper

This course is designed to expose students to the legal environment within which sport management professionals function. It focuses on sport's relationship with government agencies (public law issues) as well as with other businesses, consumers, suppliers, etc., (private law issues). It is intended to better equip the sport business manager for decision making by exploring the legal issues involved in contracts, torts, business organizations, employment law, risk management, intellectual property law and Constitutional Law. Legislation specifically related to sport will be highlighted. A variety of specific problems for the business of sport, found within the law will be examined and analyzed through case briefs and studies, research projects and advocacy exercises. Students will have an opportunity to explore law related topics of particular interest to themselves with oral presentations to the class.

**SPMG - 7001 Pre-Internship Seminar, 1.00 Credit**

Prerequisite(s): SPMG 1123 with D or better  
Level: Upper

This course is a focus on the development, analysis, and pursuit of internship and career goals. Emphasis is placed on the development of a professional portfolio, including cover letters, resumes, and basic interviewing techniques. Related issues, professional ethics, and etiquette will be explored.

**SPMG - 7013 Sport Management Capstone, 3.00 Credits**

Level: Upper  
Applied Learning-Creative Work

This course is designed to expand knowledge and understanding of large-scale events and sport organizations through concentrated research that culminates in a senior research project. This course is designed with a two-part focus. The first half of the course will emphasize Sport Management scholarly research through a review of literature. The second half of the course is focused on a hands-on learning approach and application of scholarly research. This culminates in a capstone project, providing unique and innovative solutions to a sport organization.

**SPMG - 7023 Strategic Mgmt in Sport Organtn, 3.00 Credits**

Prerequisite(s): SPMG 1123 with D or better and BUAD 3153 with D or better  
Level: Upper

This course is a study of the administrative structure of sport organizations including those operating at a local, national, and international level. Emphasis will be placed on existing structures and how best to function within each to accomplish objectives.

**SPMG - 8112 Internship, 12.00 Credits**

Level: Upper  
Applied Learning-Internship, Pass/Fail

A work experience designed to assist the student in making the transition from the classroom to a segment of the sport management field. The internship permits a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity as a pre-professional in sport management. Students will complete supervised field work in a sport management segment, that segment to be determined mutually by the Internship Coordinator and the student. Each student will have a planned program of educational objectives approved by the student, Site Supervisor, and Internship Coordinator. A written paper, and a public, oral presentation, along with a journal of work activities and experiences, will be required. The final grade will be determined by the Internship Coordinator and the Site Supervisor.

**TMGT - TECHNOLOGY MANAGEMENT**

**TMGT - 5900 Directed Study, 1.00 TO 6.00 Credits**

Level: Upper  
Pass/Fail

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**TMGT - 7003 Managing Tech & Innovation Cap, 3.00 Credits**

Prerequisite(s): TMGT 7153 with D or better or BUAD 3153 with D or better

Level: Upper  
Applied Learning-Practicum  
This course is an application of theoretical approaches to technology management and innovation applied through running a simulated business. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include technology innovation, the assessment of technology and the importance of technology forecasts. Students will learn how to manage innovation strategy, technological evolution, and organizational context for technology management. Additional topics will also include strategic actions required by business, developing a firm's organizational innovation capabilities, creating and implementing a development strategy, new product development, and challenges to managing innovation.

**TMGT - 7153 Principles of Management, 3.00 Credits**

Level: Upper  
This course deals with understanding management concepts and functions of encouraging employee's enthusiasm and creativity; finding shared vision, norms, and values, sharing information and power; and encouraging teamwork and participation. The concepts of planning, organizing, leading, and controlling are explored to show how these basic principles can be used to create a healthy and thriving environment in today's global environment of business and technology.

**TMGT - 8006 Technology Management Internsh, 6.00 Credits**

Level: Upper  
 Applied Learning-Internship, Pass/Fail  
 This internship is designed to assist the student in making the transition from the classroom to industry. This integration of work allows a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity in a management situation as a pre-professional supervisor or manager. Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under the direct supervision of an owner, manager, or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as the Internship Coordinator. Written reports, weekly journals of work activities and experiences, and self and supervisor evaluations are required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

**TMGT - 8103 Technology Management Internsh, 3.00 Credits**

Level: Upper  
 Applied Learning-Internship  
 This internship is designed to assist the student in making the transition from the classroom to industry. This integration of work allows a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity in a management situation as a pre-professional supervisor or manager. Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under the direct supervision of an owner, manager, or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as the Internship Coordinator. Written reports, weekly journals of work activities and experiences, and self and supervisor evaluations are required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

**TMGT - 8106 Technology Management Internsh, 6.00 Credits**

Level: Upper  
 Applied Learning-Internship, Pass/Fail  
 This internship is designed to assist the student in making the transition from the classroom to industry. This integration of work allows a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity in a management situation as a pre-professional supervisor or manager. Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under the direct supervision of an owner, manager, or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as the Internship Coordinator. Written reports, weekly journals of work activities and experiences, and self and supervisor evaluations are required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

**TMGT - 8109 Technology Management Internsh, 9.00 Credits**

Level: Upper  
 Applied Learning-Internship  
 This internship is designed to assist the student in making the transition from the classroom to industry. This integration of work allows a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity in a management situation as a pre-professional supervisor or manager. Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under the direct supervision of an owner, manager, or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as the Internship Coordinator. Written reports, weekly journals of work activities and experiences, and self and supervisor evaluations are required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

**TMGT - 8112 Tech Management Internship, 12.00 Credits**

Level: Upper  
 Applied Learning-Internship, Pass/Fail  
 This internship is designed to assist the student in making the transition from the classroom to industry. This integration of work allows a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity in a management situation as a pre-professional supervisor or manager. Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of education experiences under the direct supervision of an owner, manager or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as Internship Coordinator. Written and oral reports, along with a journal of work activities and experiences, will be required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

**VETS - VETERINARY TECHNOLOGY**

**VETS - 1002 Applied Veterinary Med Term, 2.00 Credits**

Level: Lower  
 This course is designed to introduce Veterinary Technology students to the animal and procedural terminology they will need to understand during their studies. Students will be expected to learn the acronyms and abbreviations commonly used in the field of Veterinary Medicine. Basic animal anatomic terminology and veterinary equipment identification will be taught, as well as the basic calculations that will be required in veterinary technology course work. Students will also be given an overview of the expectations of the profession, college experience and will be given an introduction to the services available at the Student Success Center.

**VETS - 1203 Intro to Veterinary Technology, 3.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$33.00  
 The course introduces the student to the terminology and specialization of the Veterinary Technology Curriculum. The nature of professional and ethical practices will be explored. Breeds and strains of domesticated animals will be studied and the student will be introduced to the basic concepts of animal behavior. The nature and form of medicines and the calculation of dose and dosages will be studied. The small animal handling laboratories will be held on site using animals from the local SPCA and Humane Society. A kennel assignment will be performed as a required part of the class.

**VETS - 1214 Anatomy & Physlgy of Animals I, 4.00 Credits**

Level: Lower  
 Applied Learning-Other, Liberal Arts and Science  
 This course is an organ systems approach to the study of anatomy and physiology using Domestic and Exotic animal species as the primary model. The course provides a functional integration of basic science and clinical information as it relates to the normal healthy animal in an integrated lecture and laboratory approach. Prosected animal specimen both fresh and preserved, as well as skeletons and models will be utilized in the laboratory to allow applied reinforcement of concepts presented in the lecture. Histologic slides, kodachromes and radiographs will be utilized to enhance organ recognition through multiple formats and give the student a better understanding of organ function. The students will explore in greater depth and detail the course materials through questions and discussions fostered by the development of group Power Point presentations on topics that are related to the organ systems studied.

**VETS - 2014 Anatmy & Physlgy of Animals II, 4.00 Credits**

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better  
 Level: Lower  
 Applied Learning-Other, Liberal Arts and Science  
 Anatomy and Physiology of Animals II is a continuation of the study of anatomy and physiology which began using the organ system in VETS 1214 - Anatomy and Physiology of Animals I. This course uses Domestic and Exotic animal species as the models on which we complete the discussion of the normal anatomy and physiologic function of animals. The course provides a functional integration of basic science and clinical information as it relates to the healthy animal in an integrated lecture and laboratory approach. Histological slides, kodachromes, and radiographs will also be utilized to enhance organ recognition and understanding of organ function. The students will explore in greater depth and detail the course materials through questions and discussions fostered by the development of group Power Point presentations on topics that are related to organ system studied.

**VETS - 2104 Pathophysiology of An Disease, 4.00 Credits**

Prerequisite(s): VETS 1214 with D or better and VETS 2014 with C or better  
 Level: Lower  
 Pathophysiology of Animal Disease is a course which provides a multidisciplinary approach to the understanding of basic science and clinical information as it relates to health and disease in domestic animals. Utilizing a body systems approach, students will receive in-depth exposure to the most common diseases of domestic animals. They will build on their foundation in anatomy and physiology from previous courses to learn how disease affects normal anatomy and physiology. They will learn their role in the diagnosis, management, and prevention of disease in domestic animals.

**VETS - 2333 Domestic Animal Behavior, 3.00 Credits**

Level: Lower  
 This course is designed to further develop an understanding of domestic animal behavior for students in the Veterinary Technology Program. It will help the student to work as a veterinary technician with a strong understanding of the behaviors they see and to help educate clients when behavior issues arise. In addition to the text the students will be viewing videos and images of domestic animal behavior. This course may include interactions with live domestic animals (primarily dogs and cats) and behavior modification related to handling issues that commonly arise in the clinic (nail trimming, blood draws, etc.).

**VETS - 3003 Animal Health Care, 3.00 Credits**

Prerequisite(s): VETS 1203 with C or better and ( VETS 1214 with D or better or ANSC 2114 with C or better )  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$33.00  
 This course is designed to give first year students intensive animal handling skills and familiarity with basic procedures such as injections, venipuncture, bandaging, and dosage and fluid therapy calculations. Students will also develop skills to perform proficient physical examination of animals. Common outpatient diagnostic tests used for eye, ear, and skin disease will be mastered. Urinalysis and collection of urine samples will be practiced and students will also learn how to measure packed cell volumes and plasma protein levels in blood samples. Dentistry prophylaxis, recognition of dental abnormalities, and dental charting using both anatomic and Triadan systems will also be covered thoroughly. Students will also visit the local Humane Society to perform technician-related duties.

**VETS - 3004 Anesthesia & Surgical Nursing, 4.00 Credits**

Prerequisite(s): VETS 2014 with C or better and VETS 3003 with C or better and VETS 3023 with C or better  
 Level: Lower  
 Applied Learning-Practicum, Course Fee \$33.00  
 This course is designed to prepare the second year Veterinary Technology student to become the individual who can induce, maintain and recover small animal surgical patients. The student will also prepare the animals for surgery and assist in the surgical procedures. Upon course completion, the student will possess an understanding of all procedures done in vet practice with anesthesia and surgical nursing.

**VETS - 3013 Animal Parasitology, 3.00 Credits**

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better

Level: Lower

Applied Learning-Practicum, Course Fee \$33.00

Parasitology is a multidisciplinary approach to the study of internal and external parasites of companion, exotic and farm animals. This course will integrate the student's knowledge of anatomy and pharmacology while providing the student the opportunity to understand life cycles, diagnostic protocol, control and treatment of the most common internal and external parasites. The course will also develop the students' understanding of how to appropriately provide both verbal and written communications for the client concerning management, prevention and potential zoonosis of the common parasites. The laboratory will emphasize the common techniques used to identify the parasites of companion, laboratory and farm animals.

**VETS - 3022 Intro to Anesthesia & Surg Nsg, 2.00 Credits**

Prerequisite(s): VETS 2014 with C or better and VETS 3003 with C or better and VETS 3013 with C or better

Level: Lower

This course will provide the student the opportunity to gain an initial understanding of the principles of veterinary anesthesia and veterinary surgical nursing. The students will be introduced to the currently used veterinary anesthetic drugs and their effect on the animal by utilizing their knowledge of the normal anatomy, physiology as a basis for understanding. In the laboratory the student will be given an introduction to the technical skills needed to preanesthetize, anesthetize, maintain and recover the animal patient, by utilizing current appropriate anesthetic agents, equipment, and protocols. The student will also learn to use critical thinking skills in gaining an understanding of how anesthetic monitoring equipment will be used to evaluate the surgical patient during the anesthetic period. The students will also be introduced to surgical nursing skills including preoperative management of surgical patients, assisting veterinary surgeons, prepping surgical patients, learning and practicing aseptic techniques, IV fluid support, analgesia, and providing postoperative patient and incision care. The dog and the cat will be the surgical patients providing educational support in this course. Students will also perform pre- and postoperative assessments of surgical patients outside of class time as well as one week of assigned kennel duty.

**VETS - 3023 Radiography, 3.00 Credits**

Prerequisite(s): VETS 1214 with D or better and VETS 2014 with C or better

Level: Lower

Applied Learning-Practicum

In this course students will examine body systems using radiographic, endoscopic, and ultrasound procedures to evaluate animals for the diagnosis and prognosis of trauma or disease. The course integrates the production of the radiograph and its clinical use as it relates to the evaluation of healthy and diseased animals. In the laboratory, students will utilize animal models, inanimate objects, and living animals to perfect their understanding of patient positioning, radiographic exposures, and film developing techniques. Emphasis is placed on safely producing diagnostic quality radiographs using both conventional and digital radiographic techniques, as well as providing the basic skills in the set up and operation of an ultrasound unit. The veterinary endoscope will also be used in the laboratory setting.

**VETS - 3024 Clinical Laboratory Techniques, 4.00 Credits**

Prerequisite(s): VETS 2014 with C or better and BIOL 5254 with C or better or VETS 3012 with D or better \*

Level: Lower

Applied Learning-Field Study, Course Fee \$69.00

This course introduces laboratory techniques performed in veterinary offices and clinics. Examination and testing of blood, feces, urine, and exudates are performed for diagnostic and prognostic purposes. Lectures deal with testing theories and relevance to animal health and disease. Laboratories develop skills necessary to maintain a safe laboratory working environment, institute quality control programs, collect, process, store, and transport clinical biological specimens. Major emphasis of the course is development of skills necessary to operate and maintain clinical analyzers, accurately perform laboratory tests, interpret, and report laboratory results on clinical specimens.

**VETS - 3204 Farm Animal Management, 4.00 Credits**

Level: Lower

Applied Learning-Practicum, Course Fee \$33.00

This course is designed to provide the student insight into the behavior, care and management of farm animals. Dairy cattle, horses, sheep, swine, goats and other animals will be discussed. Emphasis will be placed on the practical aspects of veterinary nursing such as proper handling, restraint, evaluation, medication, treatment, and examination procedures that apply to farm animal species. Characteristics of the major breeds, terminology, disease control measures, housing, and basic management practices will also be covered. Additional farm experiences outside of regularly scheduled classes will be required for successful completion of this course.

**VETS - 4002 Advanced Animal Health Care, 2.00 Credits**

Prerequisite(s): VETS 3003 with D or better

Level: Upper

Applied Learning-Practicum

This course will serve two functions. The first is to introduce concepts in veterinary critical care and advanced medical and surgical cases including advanced diagnostics, treatment options, and long term and follow-up animal care. The second is to serve as both a review of classroom material provided throughout the Veterinary Technology curriculum and as a preparation for actual cases and client communication requirements in a veterinary practice.

**VETS - 4103 Laboratory Animal and Exotics, 3.00 Credits**

Prerequisite(s): VETS 1203 with D or better and VETS 2014 with D or better and VETS 3003 with D or better

Level: Lower

Applied Learning-Practicum, Course Fee \$33.00

This course is designed to provide the student with basic knowledge and understanding of research facilities and their function. Students will be instructed in the care and handling of small animals used in the research laboratory. Emphasis will be placed on species differences, housing requirements, nutrition, reproduction, health, sanitation, and laboratory techniques applied in animal research and pharmaceutical facilities. Animal handling, observation and management time will be provided in the laboratory time as well as during assigned vivarium duty. In addition an exotic animal section has been added to familiarize the students with the care and identification of common exotic species. (Exotics in this case will not include dogs or cats or species commonly found on farms.)

**VETS - 4202 Small Animal Nutrition, 2.00 Credits**

Prerequisite(s): VETS 1203 with C or better  
 Level: Lower  
 This is an introductory course for students accepted in the veterinary technology program, providing identification and function of nutrients, understanding pet food labels, and applications for wellness, life stage, and therapeutic nutrition (prescription food) for dogs and cats. The course will utilize an interactive Internet connection in the classroom.

**VETS - 4302 Pharmacology for the Vet Techn, 2.00 Credits**

Prerequisite(s): VETS 2013 with C or better or VETS 2104 with C or better  
 Level: Lower  
 This course will review and consolidate information on pharmacology that is touched upon in other Veterinary Technology courses and add additional topics in pharmacology to provide the student with a comprehensive and organized overview of veterinary pharmacology.

**VETS - 4900 Directed Study, 1.00 TO 4.00 Credits**

Level: Lower  
 A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**WELD - WELDING**

**WELD - 1104 Intro Shielded Metal Arc Weldg, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides the student with an introduction to shielded metal arc welding, welding safety and power sources. Through hands-on technical training, the student will develop the skills necessary to make quality fillet welds on mild steel using the shielded metal arc welding process in all positions and on varying plate thickness.

**WELD - 1204 SMAW I, Carbon Arc Cutting & Goug, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides the student with a thorough technical understanding of shielded metal arc welding (SMAW), carbon arc cutting, welding and cutting safety, power sources, and electrodes. Through hands-on technical training, the student will develop skills necessary to make quality groove welds on mild steel, in all positions and on varying plate thickness. Carbon arc skills will include cutting and gouging of mild steel.

**WELD - 1723 Welders Calculations I, 3.00 Credits**

Level: Lower  
 Basic mathematical functions used by the welder in the performance of their duties will be the subject of this course. Mathematical operations such as manipulation of fractions, decimals and unilaterally converting between the two and into the metric measurement system along with calculating perimeter, volumes, weight and bend calculations will be taught in this course. This mathematics course will be trade related and will focus on the math needed by the welder to perform their required tasks. All of the math topics taught in this course are trade related. This course is designed to meet the daily needs of welders. This course is not intended for a general math audience.

**WELD - 1724 Gas Widng/Cutng & Plasma Cutng, 4.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$112.00  
 This course is designed to teach the student the fundamental skills of oxy-fuel and plasma processes used in industry. Major topics include principles of operation, component identification, equipment set up, minor repairs, process variables, and manual and automatic performance exercises. Laboratory exercises emphasize technique and skill development.

**WELD - 1728 ArcWidng, Crbn Arc Ctng Gaugng, 8.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides the student with a thorough technical understanding of shielded metal arc welding, carbon arc cutting, welding and cutting safety, power sources, and electrodes. Hands-on technical training will develop skills necessary to make quality arc welds on mild steel, in all positions and on varying plate thickness. Carbon arc skills will include cutting, gouging, and weld washing of mild steel.

**WELD - 1733 Weld Mltirgy, Blpnt Rdng, Insp, Ts, 3.00 Credits**

Level: Lower  
 This course provides the student with a thorough technical understanding of blueprint reading for welders, and welding trades, symbol interpretation and application. The welding symbol and its meaning will be stressed through-out the course. Students will also learn methods of inspection, and practical application and interpretation of welding code.

**WELD - 2715 Shld Mtl Arc & Flx Crd Arc Wid, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$112.00  
 This course is designed to provide instruction on those welding processes used in industry that are in high demand including flux cored arc welding and shielded metal arc welding. All processes, positions, and joint types studied will be in accordance with American Welding Society specifications. Students will be active in the American Welding Society.

**WELD - 2725 Gas Metal Arc Welding, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course is designed to provide instruction on those welding processes used in industry that are in high demand including flux cored arc welding and shielded metal arc welding. All processes, positions, and joint types studied will be in accordance with American Welding Society specifications. Students will be active in the American Welding Society.

**WELD - 2733 Tolerancing & Working Drawings, 3.00 Credits**

Level: Lower  
 This course is designed for the welding student to understand the typical working drawing and any tolerances that may apply. These tolerances include unilateral, bilateral and geometric tolerances. The importance of accuracy and proper orientation of weldments will be stressed. This application will address all possible tolerancing and drawing applications the student will need to be effective as an industrial welder.

**WELD - 2735 Gas Tungsten Arc Welding I, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course provides the student with a thorough technical understanding of gas tungsten arc welding, welding safety, arc characteristics and welder certification. Hands-on technical training will develop skills necessary to make quality gas tungsten arc welds on mild steel, stainless steel, and aluminum using both direct and alternating current. Certification documentation for the student will be performed for all welding processes with special attention placed on code conformance and welding procedure development.

**WELD - 3005 SMAW II, Codes/ Insp Basic CNC, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$112.00  
 This course covers safety standards, CNC machine set-up and operation, programming, theory, practice and performance of Shielded Metal Arc Welding (SMAW II). Students will learn and apply OSHA standards and correct CNC machine operation. CNC programming and SMAW II theory will also be covered. Students will be performing and variety of fillet and groove welds. All position qualification testing will prepare students for welder certification testing.

**WELD - 3015 GMAW II, FCAW II, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will cover the practice and proper use of protective clothing, equipment, and hand tools for the safe use of constant voltage welding equipment. Students will learn to work with different shielding gas mixtures, make adjustments and repairs to equipment according to manufacturer's recommendations. Proper set up, operation and theory will qualify the student for certification in gas metal arc welding of steel, stainless and aluminum in the short arc, spray and globular modes of metal transfer. Qualification testing will also be performed in outer shield and inner shield flux cored arc welding.

**WELD - 3025 GTAW II Comp of Materials, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 Students will learn setup and operating procedures, gas cylinder handling, flow meter and torch operations for welding aluminum, carbon and stainless steel pipe, tube and plate. The course will also cover the various methods of testing and inspection of welds. All position qualification testing will prepare students for welder certification testing.

**WELD - 3813 Metlgy, Code, Cert, Insp & Tst, 3.00 Credits**

Level: Lower  
 This course will cover the principles related to the welding metallurgy, the properties of metals, and the residual stress and distortion caused by the welding process. Locate the essential information for codes and standards pertaining to the industry and work assignments for the materials used. Students will be able to perform inspections of cut surfaces of prepared metals (pre-welding) and inspect, as well as test welds during and post welding.

**WELD - 4013 Senior Project, 3.00 Credits**

Level: Lower  
 Applied Learning-Creative Work  
 This course is designed as a capstone project to verify a student's ability in all aspects of welding. The student will be required to identify a need for a new product or improvement on an existing product. After identification, the completion of the project will occur with minimal instructor guidance. This will allow the student to demonstrate their ability to perform independently. Upon completion, the student will demonstrate the functionality of their project in the form of a formal presentation. This will be a functional model of the student's own design.

**WELD - 4425 GMAW III, FCAW III, SAW, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum, Course Fee \$112.00  
 This course will involve the safety inspections of the MIG welding equipment and its accessories. Student will be capable of making minor repairs to this equipment and accessories. This will also include the changing of wire electrodes and cable liners. Students will learn the troubleshooting of welding equipment problems, how to recognize them, and the correct procedures in the use of the equipment. As before, setup and safe operation would be taught for both short circuit welding and for the pulsed spray transfer methods of welding. Students will perform welds on both carbon steel pipe and aluminum pipe. Using flux cored electrode, the student will be instructed in the use of self-shielding and gas shielding methods of filler transfer. Students will learn each method of welding as well as combinations of each.

**WELD - 4435 SMAW III, GTAW III, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course involves the safety inspections of welding equipment and accessories. Student will be able to make external repairs to the equipment and accessories. Setup the components and accessories for a complete shielded metal arc welding system. Setup and operate the SMAW equipment for alloy pipe. Execute corrective actions to repair surface flaws on welds and base metals. Perform an unlimited thickness performance qualification test on carbon steel pipe. Perform a limited thickness performance qualification test on carbon steel and 300 series stainless steel pipe using stainless steel electrodes. Refinement will be made to student capabilities in SMAW, GTAW, and GMAW using various materials. Pipe welding using a variety of processes will be stressed. All instruction shall lead toward student certification for Level II AWS certification.

**WELD - 4445 Welding Fabrication, 5.00 Credits**

Level: Lower  
 Applied Learning-Practicum  
 This course will be conducted as though the student were employed in an actual work environment. The student will perform all necessary work in the fabrication of various parts. Safe and proper set up and use of appropriate equipment for various applications will be expected. Along with the setup and use of equipment, the student will be required to generate and apply weld process sheets and inspect each weld using industrially accepted inspection processes. The student will be observed in performing various duties common in industry today, as well as applications of any certifications, codes, and standards that must be met for qualifications. The student must also interpret destructive and non-destructive test results, as well as perform bend, penetrant and magnetic particle testing. They will perform visual examination and complete inspection records and reports.

**WELD - 4900 Directed Study, 1.00 TO 5.00 Credits**

Level: Lower

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**WGST - WOMEN AND GENDER STUDIES**

**WGST - 1003 Intro to Women/Gender Studies, 3.00 Credits**

Level: Lower

Liberal Arts and Science

This course explores critical questions about the meaning and role of gender in society. The course will expose the students to diverse values, perspectives and backgrounds relating to gender sexuality. Cultural and societal constructs and influences will be examined as they relate to gender. The course will focus on how gender, sex, race, sexual orientation, class and age influence individual attitudes and society's views.

## **SUNY Distinguished Professor**

### **SUNY Distinguished Professor**

**ANIKO V. CONSTANTINE** (1974) - SUNY Distinguished Teaching Professor, English and Humanities  
BA - Hartwick College  
MA, PhD - University of Illinois  
SUNY Chancellor's Award for Excellence in Teaching, 1979-80

