


BENJAMIN FRANKLIN
INSTITUTE OF TECHNOLOGY

YOUR PATHWAY TO SUCCESS

2018/2019 COURSE CATALOG

www.bfit.edu






Catalog 2018-2019

Information, Policies, Programs,
Courses, and Faculty of the
Benjamin Franklin Institute of Technology

41 Berkeley Street
Boston, Massachusetts 02116

Telephone: 617.423.4630

Fax: 617.482.3706

Web: http://www.bfit.edu

The BENJAMIN FRANKLIN INSTITUTE OF TECHNOLOGY reserves the right, in its sole judgment, to make changes of any nature in its programs, calendar, or academic schedule whenever it is deemed necessary or desirable, including changes in course content, the rescheduling of classes with or without extending the academic term, canceling of scheduled classes and other academic activities, in any such case giving such notice thereof as is reasonably practicable under the circumstances. This catalog contains current information regarding the calendar, admission, degree requirements, fees, regulations, and course offerings. The policy of BFIT is to give advance notice of change, whenever possible, to permit adjustment. However, BFIT reserves the right to make changes at anytime when it is deemed advisable. Requests for the college's audited financial statements should be directed to the President's Office at 617-588-1369.

Equal Opportunity Policy

Benjamin Franklin Institute of Technology policy prohibits discrimination on the basis of race, creed, color, religion, national origin, ancestry, sex, age, marital status, veteran status, political belief or affiliation, criminal record (applications only), CORI check results, mental or physical disability, pregnancy, retaliation, sexual harassment, sexual orientation, gender identity or expression and genetic information and any other class of individuals protected from discrimination under state and federal law. This policy extends to all rights, privileges, programs, and activities including admission, employment, financial assistance, and educational programs.

Inquiries concerning the application of these laws to BENJAMIN FRANKLIN INSTITUTE OF TECHNOLOGY should be addressed to the Equal Employment Opportunity/Affirmative Action Officer, who is the Human Resources Director, 41 Berkeley Street, Boston, MA 02116.

Family Educational Rights and Privacy Policy

BFIT complies with the Family Educational Rights and Privacy Act, also known as the Buckley Amendment. This act protects the rights of the student in matters of access to and release of information contained in the student's records. Questions regarding this policy should be referred to the Registrar's Office.

Table of Contents

Profile

Type of School:	Private college
Founded:	1908 under the provisions of the will of Benjamin Franklin
Enrollment:	Approximately 500 day and evening students
President:	Anthony Benoit
Accreditation:	New England Association of Schools and Colleges (NEASC)
	National Automotive Technicians Education Foundation (NATEF)
	Commission on Opticianry Accreditation (COA)
Degrees:	Bachelor of Science
	Associate of Science
	Certificate of Proficiency
Programs:	Automotive Technology, A.S.
	Automotive Technology, Certificate
	Automotive Management, B.S.
	Biomedical Engineering Technology, A.S.
	Computer Engineering Technology, A.S.
	Computer Technology, A.S.
	Construction Management, A.S.
	Electrical Technology, A.S.
	Electrical Engineering, B.S.
	Electronic Engineering Technology, A.S.
	Electronic Engineering Technology – Robotics Track, A.S.
	Health Information Technology, A.S.
	Health Information Technology, B.S.
	Heating, Ventilation, Air Conditioning & Refrigeration, Certificate
	Mechanical Engineering Technology, A.S.
	Mechanical Engineering Technology, B.S.
	Opticianry, A.S.
	Technology Business and Management, A.S.

Student Profile:	Ethnic Origin	Percentage
	Asian	7.4%
	Black, Non-Hispanic	28.3%
	Hispanic/Latino	23.3%
	Multi-Ethnic	3.7%
	Native American	0.4%
	Other/Non-Disclosed	6.3%
	Non-Resident Alien	0.2%
	Pacific Islander	0.7%
	White, Non-Hispanic	29.8%
	Gender Identity	Percentage
	Male	89.8%
	Female	10.2%

Students Receiving Pell Grants:	66.7%
Tuition:	Associate Degree Programs $16,950 per year
	Certificate Programs $16,950 per year
	Bachelor's Programs $18,190 per year
Financial Aid:	Federal, State and institutional aid available
Location:	Boston's South End neighborhood

Accreditation

New England Association of Schools and Colleges (NEASC)

Benjamin Franklin Institute of Technology is accredited by the New England Association of Schools and Colleges, a non-governmental, nationally recognized organization that accredits institutions of higher education.

Accreditation of an institution by the New England Association of Schools and Colleges indicates that it meets or exceeds criteria for the assessment of institutional quality, periodically applied through a rigorous review process. An accredited school or college is one that has the resources necessary to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future.

Accreditation by the New England Association is not partial, but applies to the institution as a whole. As such, it is not a guarantee of the quality of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding the status of an institution's accreditation by the New England Association of Schools and Colleges should be directed to: Commission on Institutions of Higher Education; New England Association of Schools and Colleges, Inc.; 3 Burlington Woods Drive, Suite 100, Burlington, MA 01803-4514; 781-425-7700; https://cihe.neasc.org.

National Automotive Technicians Education Foundation (NATEF)

The Automotive Technology program at Benjamin Franklin Institute of Technology is accredited by the National Automotive Technicians Education Foundation, an independent, non-profit organization with a single mission: To evaluate technician training programs against standards developed by the automotive industry and recommend qualifying programs for NATEF accreditation.

National Automotive Technicians Education Foundation; 101 Blue Seal Drive, SE, Suite 101; Leesburg, VA 20175; (703) 669-6650; Fax: (703) 669-6125; http://www.natef.org

Commission on Opticianry Accreditation (COA)

The Opticianry program at Benjamin Franklin Institute of Technology is accredited by the Commission on Opticianry Accreditation.

The Commission on Opticianry Accreditation (COA), a not-for-profit agency, accredits Opticianry education in the United States.

The mission of the Commission on Opticianry Accreditation is to foster excellence in opticianry education by setting standards, assessing educational effectiveness, and identifying those academic programs that meet the standards, in order to aid programs to produce competent graduates who will provide professional services to the public.

Scope of accreditation: COA accredits two-year Opticianry degree programs and one-year ophthalmic laboratory technology certificate programs in the United States and Canada that are sponsored by post-secondary institutions accredited by agencies recognized by the Department of Education or CHEA.

Recognition: The COA is recognized by the Council on Higher Education Accreditation (CHEA, http://www.chea.org/). Commission on Opticianry Accreditation; PO Box 592; Canton, NY, 13617; (703) 468-0566; http://www.coaccreditation.com/

Student Complaints

The State of Massachusetts allows students the right to make a formal complaint to The Massachusetts Board of Higher Education and they attempt to provide an avenue for informal resolution of matters concerning institutions. They cannot require an institution to take any specific action in a matter and cannot provide legal advice. However, once filed the college will be asked to follow the complaint process.

Complaint Process

The Board of Higher Education receives and refers complaints/inquiries to the specific college for clarification and response. The college's Board of Trustees has responsibility for establishing and enforcing policies necessary for the management of the institution under its authority. The management will review the complaint and investigate each matter and will meet with the student.

Public Record

Under most circumstances, the text of the complaint/inquiry will be considered a public record, a copy of which is available to any member of the public upon request. However, identifying information (e.g., name, address, phone number, etc.) will not be disclosed. Furthermore, no part of the complaint/inquiry will be discussed in response to a request that asks specifically for a complaint/inquiry submitted by an individual.

Massachusetts Department of Higher Education
Legal Office - Complaint Processing
75 Pleasant Street
Malden, MA 02148

(617)-994-6963 T
(617)-727-0955 F

To submit a complaint, visit http://www.mass.edu/forstufam/complaints/complaints.asp

A Message from the President

Welcome to Benjamin Franklin Institute of Technology (BFIT)!

College is a big step on the path to success in life, and choosing the right one can speed your progress along that path. I encourage you to consider accessibility, affordability, programs, and success rate when deciding where you will invest your time and money.

A good choice is a college that provides job-ready skills that employers are looking for. BFIT prepares its students for work and connects them to good paying jobs. After completing a certificate or degree, graduates are equipped with technical savvy and 21st century skills like communication, critical thinking, diagnostic problem solving, professionalism, and teamwork. They are ready to keep learning on the job or in future higher education. We are plugged in to our community, providing support in and out of the classroom and giving students opportunities to get connected through service learning, internships, guest speakers, career fairs, and more.

We have hands-on education in a range of technology fields, from biomedical devices to zero-emission vehicles, CNC machines to contact lenses. We work with the companies who hire in these fields to keep our content current and to keep you competitive.

Our people are dedicated to helping you achieve your educational goals, and we have the systems that can make it happen.

This catalog tells about our courses, programs, and policies. It has information on financial aid and student services and identifies our faculty and other staff. It's one resource to guide you as you begin your journey at this college and continue your education here.

Since 1908, BFIT has helped thousands put their commitment, effort, and talent into action as technicians, small-business owners, and citizens. We continue to pursue this goal of excellence by helping you be your best.

Sincerely,

Anthony Benoit,

President

2018-2019 Academic Calendar

Fall Semester 2018

Labor Day (No Classes)	Monday, September 3, 2018
Orientation Day Two	Tuesday, September 4, 2018
Classes Begin	Wednesday, September 5, 2018
Add/Drop/Incomplete Deadline	Tuesday, September 18, 2018
Columbus Day (No Classes)	Monday, October 8, 2018
Monday Schedule	Tuesday, October 9, 2018
Mid Term Ends	Tuesday, October 23, 2018
Veteran's Day – Observed	Monday, November 12, 2018
Withdrawal Deadline	Friday, November 9, 2018
Registration Begins	Monday, November 19, 2018
Thanksgiving (No Classes)	Wednesday-Friday, November 21-23, 2018
Classes End	Tuesday, December 18, 2018
Winter Recess	December 19, 2018 – January 21, 2019

Spring Semester 2019

Check In Day	Tuesday, January 22, 2019
Classes Begin	Tuesday, January 22, 2019
Add/Drop/Incomplete Deadline	Monday, February 4, 2019
President's Day (No Classes)	Monday, February 18, 2019
Monday Schedule	Wednesday, February 20, 2019
Mid Term Ends	Friday, March 8, 2019
Spring Break	Monday, March 11 – Friday, March 15, 2019
Withdrawal Deadline	Thursday, April 4, 2019
Summer Registration Begins	Tuesday, April 16, 2019
Fall Registration Begins	Tuesday, April 16, 2019
Patriots Day (No Classes)	Monday, April 15, 2019
Monday Schedule	Tuesday, April 16, 2019
Classes End	Wednesday, May 8, 2019
Graduation	Saturday, May 18, 2019

Summer Session I: 7 week session May 14 – July 2, 2019

Classes Begin	Tuesday, May 14, 2019
Add/Drop/Incomplete Deadline	Monday, May 20, 2019
Memorial Day (No Classes)	Monday, May 27, 2019
Monday Schedule	Tuesday, May 28, 2019
Withdrawal Deadline	Monday, June 17, 2019
Session I Ends	Tuesday, July 2, 2019

Summer Session II: 7 week session July 15 – August 30, 2019

Classes Begin	Monday, July 15, 2019
Add/Drop/Incomplete Deadline	Friday, July 19, 2019
Withdrawal Deadline	Thursday, August 15, 2019
Classes End	Friday, August 30, 2019

Policies and Disclaimers

Equal Opportunity Policy

Benjamin Franklin Institute of Technology policy prohibits discrimination on the basis of race, creed, color, religion, national origin, ancestry, sex, age, marital status, veteran status, political belief or affiliation, criminal record (applications only), CORI check results, mental or physical disability, pregnancy, retaliation, sexual harassment, sexual orientation, gender identity or expression and genetic information and any other class of individuals protected from discrimination under state and federal law.

This policy extends to all rights, privileges, programs, and activities, including admission, employment, financial assistance, and educational programs, and is required by federal law including Title IX of the Educational Amendments of 1972, and section 504 of the Rehabilitation Act of 1973, and the regulations thereunder. Inquiries concerning the application of these laws to Benjamin Franklin Institute of Technology should be addressed to the Equal Employment Opportunities/Affirmative Action Officer, who is the Human Resources Director at 41 Berkeley Street, Boston, MA 02116.

Family Educational Rights and Privacy Policy

Benjamin Franklin Institute of Technology complies with the federal Family Educational Rights and Privacy Act. This law protects the rights of the student in matters of access to, and release of, information contained in the student's educational records. For more information refer to the full policy in this catalog.

Changes to this Catalog

The information in the electronic version of this catalog was current as of October 25, 2017. Benjamin Franklin Institute of Technology reserves the right to update, modify, and change calendars, degree requirements, course offerings, course descriptions, regulations, tuition and fees, and other information as necessary. The college will endeavor to provide timely notice of these changes to the persons affected. An updated version of this catalog can be found online at www.bfit.edu.

History and Mission

History

Benjamin Franklin Institute of Technology is a two-year college with a rich history built on tradition and innovation. One of the oldest technical colleges in New England, BFIT owes its existence to Benjamin Franklin, who in the 1789 codicil to his will bequeathed a gift to help educate "the inhabitants of the Town of Boston." His desire was to equip young people with quality technical skills, believing that "good apprentices are most likely to make good citizens."

In 1906, aided by an additional gift from the industrialist Andrew Carnegie and land donated by the city of Boston, the managers of the Franklin Fund decided that a technical college would best accomplish Franklin's original purpose.

Benjamin Franklin Institute of Technology opened its doors to students in 1908. Since then, BFIT has graduated more than 85,000 students, all of whom have benefited from its unique approach to technical education. BFIT remains

Dr. Franklin's living legacy to Boston.

A more extensive history of BFIT can be found on our website at www.bfit.edu.

Mission Statement

Benjamin Franklin Institute of Technology is an affordable, urban college serving the Boston region and committed to student success and career readiness in technology fields. Through personalized support, hands-on learning, and industry-informed curricula, BFIT prepares graduates for work, life-long learning, and citizenship.

Institutional Values

We value our diverse community and the fostering of a supportive learning environment. We are committed to creating opportunity by working closely with industry and community partners to prepare our students for lifelong learning in an increasingly interdependent world. Our academic programs and co-curricular efforts reflect our commitment to the fundamental principles of an educated person. We value the following skills and attributes and actively promote their development through college-wide initiatives, so that each student:

- Possesses the technical skills to enter the workforce or go on to further education
- Demonstrates professionalism through leadership, a strong work ethic, and teamwork
- Communicates effectively both professionally and personally
- Utilizes critical thinking and various approaches to problem solving
- Possesses the lifelong skills to locate, evaluate and use information effectively
- Understands the impact of sustainable development
- Is globally and ethically responsible and civically engaged

Governance

Benjamin Franklin Institute of Technology is governed by an independent Board of Trustees reflective of the Boston area citizenry, as desired by Benjamin Franklin in his original bequest to the City of Boston. The Board presently has 17 members in addition to its ex-officio members, the Mayor of Boston, and the President of the college.

As well, the Board is aided by the continued service of its Trustees Emeriti, distinguished former members of the Board who continue their participation in many aspects of the college governance.

The Board of Trustees meets on a quarterly basis at the college. In between the Trustee meetings of the full Board, an elected Executive Committee serves in the Board's stead for needed decision-making and guidance.

Each Trustee is asked to serve on at least two Board committees. These committees convene and engage with the college during their own committee meetings, taking advantage of the specific skills possessed by the individual Trustees. Committees include Finance & Investment, Audit, Facilities & IT, Strategic Planning & Marketing, Development & Industry Partnerships, Academic, and Governance.

Four members of the Trustees are elected as officers of the Board during the Annual Meeting. These are the Chair, Vice Chair, Treasurer and Clerk. Membership of the Executive Committee and other committees is also determined at the June meeting.

The President of the college is a voting member of the Board and is responsible for the management and implementation of the policies and directives of the Board. He has a strong consultative relationship with the Chair, the Executive Committee and other Trustees. The President also manages the daily operation of the college along with

an Administrative Council that consists of his management team, the comprising the college's Chief Financial Officer, the Dean of Academic Affairs, the Dean of Student Affairs, the Dean of Recruitment, the Director of Career Services & Industry Partnerships, the Director of Human Resources, the Director of Marketing, Director of Public Relations, and the Chief Development Officer.

Shared Governance

The academic department chairs meet regularly with the Dean of Academic Affairs. The faculty is involved in curriculum matters, personnel matters, and faculty development through four standing committees:

- A faculty academic advisory committee (FAAC) advises on academic and curriculum matters.
- A faculty development committee (FDC) promotes professional development and in-service training.
- A faculty promotion committee (FPC) reviews faculty portfolios for academic promotion.

Facilities

The college includes laboratory, classroom, student, and office space on its three-acre campus in the South End neighborhood of Boston. The campus centers on the Franklin Union building, an historic 1908 structure designed specifically for technical education.

For its approximately 550 students, BFIT provides 12 general classrooms, 30 specialized laboratories, a library, an Academic Success Center, an 800 seat auditorium, a student lounge, a veteran resource center, and a college store.

The central place on campus is the historic, high-ceilinged lobby where students study, talk, and meet with their teachers.

Laboratories

Since effective technical education focuses on experimentation and hands-on work, BFIT's facilities center on these 30 labs:

- Alternative Energy Lab
- Alternative Fuels Vehicles Lab
- Automotive Brakes Lab I
- Automotive Engines Lab I
- Automotive Repair Lab
- Automotive Transmissions Lab
- Automotive Electric Lab
- Automotive Diagnostics Lab
- Automotive Chassis Lab
- Building Technology Design Lab
- Computer Networking Lab
- Computer Programming Labs (3)
- Computer Diagnostics Lab
- Computer Aided Design (CAD) Labs (2)
- Electrical Electro-Mechanical Lab
- Electrical Photovoltaic & Renewable Energy Lab
- Electrical Wiring Methods Lab
- Electrical Engineering and Electronics Labs (2)
- HVAC&R Labs (3)
- Mechanical Engineering Technology Lab
- Opticianry Labs (3)
- Physics Lab

Admissions Procedure and Criteria

Application Deadlines

Applications are reviewed on a rolling basis. The priority deadline for the Fall semester is May 1 and for the Spring semester it is December 1.

Admission Requirements

Because the intensity of the studies at Benjamin Franklin Institute of Technology varies from program to program, the level of high school preparation for admission varies accordingly.

- Applicants to the associate degree programs in electrical technology and engineering technologies (electronic, biomedical, computer, and mechanical) should have completed in high school: four full-year courses in English, at least four years in mathematics through Algebra II and/or up to pre-calculus, and at least one course in science.
- Applicants to the associate degree programs in automotive, computer technology, construction management, health information technology, opticianry, and technology business and management, should have completed in high school: four full-year courses in English, at least three years in mathematics, and at least one course in science.
- Applicants to the certificate programs in automotive, HVAC&R and practical electricity should have undertaken high school courses that reflect satisfactory development of basic English, mathematics, and science or technical skills.
- Applicants to the automotive technology program must have correctable vision and hearing, an ability to stand for long periods, the ability to lift 30 pounds, and, for continuation into the second year of the program, a valid driver's license. These requirements stem from the machinery, repair equipment, and running engines encountered in the automotive laboratories and shops.
- Applicants to the Bachelor of Science degree programs who have already earned a qualifying Associate of Science degree from BFIT or another accredited college must have a minimum average of "C" in each English Composition course. Applicants should be aware of the terms of articulation agreements with other two-year colleges. Failure to meet all of the terms as outlined in the articulation agreement may result in additional coursework prior to matriculation in the Bachelor of Science programs.
- Applicants to the Bachelor of Science degree in Electrical Engineering (BSEE) must have completed in high school: four full-year courses In English, four years in mathematics through pre-calculus or statistics, three years in science, and meet all standards to complete high school requirements. Students should have a minimum of 2.5 average GPA in math to gain admission directly into the BSEE program.

How to Apply for Admission

All applicants must complete the Application for Admission, available in paper or online at www.bfit.edu. Students may also submit the Common Application which can be obtained online at www.commonapp.org. Students who complete the common application must submit a $25 processing fee along with the common application. Official high school or secondary school records or transcripts, or official GED/HiSET scores, must be submitted before the application can be processed. High school guidance counselors or records offices may send official copies of transcripts to BFIT. Students may be asked to schedule a formal interview as part of the admissions process.*

In addition, students may need to submit one letter of recommendation from a teacher, high school guidance counselor, or an employer based on the transcripts submitted. This request will be from the assigned admissions counselor. Upon enrollment, students must submit a final high school or secondary school transcript that states their graduation date and immunization records as mandated by the Commonwealth of Massachusetts.

*Interviews are not required of all students, but are strongly encouraged. Students that do not possess a history of academic strength as demonstrated through their academic records may be required to have an interview with an admissions staff member prior to an admissions decision being rendered.

Applications are processed on a rolling basis, with applicants notified of their admission status shortly after all required documents have been received. All offers of conditional admission require the applicant's successful completion of the items listed in his or her acceptance letter. Official final secondary school transcripts are required in order to complete an applicant's file and initiate the registration process.

Standardized Testing

BFIT is test optional, however, applicants are strongly encouraged to take the Scholastic Aptitude Test (SAT) of the College Board or the American College Testing (ACT) Assessment.

Our CEEB code is 3394. Official test scores should be submitted to the Admissions Office if available to help support the strength of a student's application materials.

Once students are accepted to the college, they will be asked to take BFIT's placement assessment to determine their level of proficiency in English and mathematics so that they are appropriately scheduled for classes during their first semester of enrollment.

Applicants who are native speakers of other languages must demonstrate English proficiency for entrance to all programs.

Tuition Deposit

All students who are offered admission to BFIT will be required to submit a $100 tuition deposit to secure their spot in the entering class. Students that are requesting on-campus housing must submit an additional $150 housing deposit to secure housing. Tuition and house deposits are non-refundable after May 1st.

September Admission

Applications for all programs are accepted for September enrollment.

January Admission

Applicants for January enrollment are considered for admission on a program-by-program basis as not all programs may be available for students to start during the January semester.

Transfer Students and Advanced Standing Credit

Students who have completed studies at another accredited college or university and wish to enroll at BFIT must meet all entrance requirements. They must also submit an official transcript of their academic record from all colleges previously attended. Official final secondary school transcripts or equivalent are required in order to complete an applicant's file and initiate the registration process. Prospective students that have earned an associate degree from a regionally accredited college or university will only need to supply college transcripts with their application for admission. The college also awards advanced standing credit to students from select high schools where articulation agreements exist. For a complete listing of the high school advanced standing articulation agreements, visit the college's Admissions webpage.

Credit will be awarded for work completed at other accredited colleges that is equivalent in content and credit hours to BFIT courses and in which at least a grade of "C" was earned. The Dean of Academic Affairs must approve all requests for advanced standing credit on recommendation of the appropriate Department Chair. Transfer students must complete at least 51% of their program's courses at BFIT.

Advanced Placement Credit

Students who have taken Advanced Placement classes and have taken the AP Exam offered through the college Board may be eligible for advanced standing credit.

For a complete list of AP Exams and scores eligible for college-level credit, please visit the college's Registrar webpage.

Placement Policy

Students admitted to BFIT are required to take a placement assessment. This assessment is used by the college's placement committee to determine a student's skill level in a specific subject matter and determine the most appropriate place for them to begin at BFIT. Students take the placement exam for mathematics and English.

The math assessment consists of two adaptive sections (Arithmetic and Algebra) which are taken via an online service called Accuplacer. Students who have taken an ESL course before, or who are non-native English speakers, are also required to take an ESL reading test via Accuplacer. Incoming students take two separate placement exams using Accuplacer that test their reading and writing skills and are placed in the appropriate beginner English composition courses based on their results. An additional diagnostic writing test may take place at the beginning of their semester to ensure proper placement.

After all placement sessions, students will have a brief academic consultation with a placement proctor. The proctor will discuss where students were placed and what classes they will be taking, from their first semester to their last. Students are encouraged to study online using Accuplacer practice tests and other free online services as recommended by an admissions counselor.

Students who have Advanced Placement (AP) credit or have earned college credits in English and/or mathematics may be exempt from taking the placement assessment. (Please see the AP policy, college credit transfer policy, and speak with an admissions counselor for more details.)

Students who would like accommodations for placement testing should tell their admission counselor when they sign up for testing. They will also need to provide clinical documentation of any disability to the Learning Specialist before their test date. Admissions will contact the Placement Coordinator and the Learning Specialist ahead of time to see if appropriate accommodations can be arranged.

Typical accommodations include providing a separate testing site and/or providing a reader. Students requesting the use of a calculator are encouraged to take the test without one; the placement coordinator will take their request into consideration when analyzing the results. Students may have the option of retesting with a calculator at a later date. Placement testing is untimed, so students can return if they need additional time to complete the assessment.

Readmission Policy

Students who have voluntarily left or been dismissed from Benjamin Franklin Institute of Technology for at least one semester and desire to reenter the program must complete the reentry form and receive the approval of the Dean of Students. The reentry form is available online, from the Admissions Office, or from the Registrar's Office. Reentry will be granted on a space-available basis and is not guaranteed. Any prior balance owed to the college must be paid in full before reentry will be considered.

If the student has been away from the college for at least three semesters, the student must apply for readmission with the admissions office and be subject to the admission and programmatic requirements of the current catalog.

PROCEDURE

Benjamin Franklin Institute of Technology will employ two different enrollment statuses to students who are readmitted to the college, depending upon the length of absence.

Reentered – This status will be employed if a student misses at least one or two complete semesters of classes. Students who withdraw mid-term and register for classes the following term will remain classified as Continuing Students.

Students who desire to reenter Benjamin Franklin Institute of Technology should be directed to the Registrar's Office to complete the readmission form which can be found on the college's Registrar webpage. The Registrar's Office will review the student's academic standing and will then register the student for courses where appropriate. If a student is not in good academic standing, the Registrar's Office will refer the student to the appropriate offices before registering the student for courses. The registrar will assign this student with the enrollment status of "reentered."

Reenrolled – This status will be employed for a student who has missed three or more complete semesters of classes.

Students seeking to reenroll after missing three or more complete semesters should be directed to the admissions

department. Admissions will direct the student through the admissions process. During this process, the admissions counselor, in consultation with the Registrar's Office, will review the academic standing of the student before rendering an admissions decision. Upon acceptance and subsequent enrollment, the Registrar will update the student's status to Reenrolled.

Students reentering the program will continue to be counted in the cohort to which they initially entered.

In the event of a question, the Registrar shall be the final determiner as to whether a student is classified as a reentered or reenrolled status.

Part-Time Students

Part-time students may enroll in courses for which they meet all prerequisites and should follow the same procedures as students seeking regular admission. Students taking fewer than 12 semester hours are considered part-time and pay tuition according to the semester hour rate. Part-time students may be eligible for federal and state financial aid programs and should apply for financial aid each year to determine eligibility.

Summer Session

For students needing additional instruction in algebra, language skills development, or ESL (based on the results of the placement assessment), BFIT provides academic skills-building summer courses. Selected technical courses are also available in the summer. Inquiries concerning summer study should be directed to the Office of Admissions.

International Applicant Information

FALL SEMESTER (SEPTEMBER)

Priority Deadline: May 1

SPRING SEMESTER (JANUARY)

Priority Deadline: October 1

REQUIREMENTS FOR ADMISSION

International applicants must submit to the Office of Admissions: secondary-school educational records or transcripts, accompanied by certified English translations as necessary. Documents should include year of secondary school graduation, courses undertaken, and grades earned in each course, as well as exam results. Applicants who have taken external examinations, such as the GCE "O" and "A" levels, or the International Baccalaureate, should submit the results in support of their application.

The agency listed below provides evaluations of educational credentials and course-by-course reports for students educated at foreign secondary schools, colleges, or universities.

Center for Educational Documentation
P.O. Box 170116
Boston, MA 02117

Telephone: (617) 338-7171
Fax: (617) 338-7101

Web: http://www.cedevaluations.com

BFIT, not the agency, determines the final decision for the acceptance of transfer credit. If accepted, students must pay the required $100 USD tuition deposit before the Certificate of Eligibility for Non-immigrant Student Status, form I-20 can be issued.

APPLICATION PROCEDURE

- Complete the BFIT Application for Admission.
- Pay $50 USD application fee. Students may also pay by credit card online at our website www.bfit.edu. This fee is non-refundable.
- Submit a transcript (with certified English translation, if needed) of secondary school records and relevant examination scores. Transfer students should also submit university transcripts and course descriptions.
- Submit evidence of English proficiency through the Test of English as a Foreign Language (TOEFL), , The International English Language Testing System (IELTS) exam, or completion of English language proficiency from one of the college's certified language partner organizations. An updated list of English language partner organizations can be found on the college's Admissions webpage.
- Submit a completed Financial Declaration Form and a current bank statement (within 6 months) and letter of support from sponsor that demonstrates available funding that is greater than or equivalent to one-year of tuition and housing costs.
- International students seeking to bring dependents (defined as a spouse or child under the age of 21) must demonstrate additional funding for each dependent.

ENGLISH LANGUAGE PROFICIENCY

All applicants must demonstrate fluency in English. Completing at least one of the following may do this:

- Submitting official test scores of the TOEFL administered by the college Entrance Examination Board.
- Submitting official test scores of the IELTS.
- Certificate of completion of English as a Second Language program from a recognized language institute.

FINANCIAL DOCUMENTATION

All international students are expected to have sufficient funds available to cover all academic and living expenses for the duration of their stay in the U.S. International applicants are required to provide BFIT with a financial statement showing proof of ability to pay these costs for the first year of study. BFIT has estimated that $37,400 USD should be sufficient to cover first-year expenses, including tuition, room and board, books, and fees.

WHEN TO APPLY

Applications and all supporting material should be submitted no later than three months prior to the intended date of enrollment to allow an appropriate amount of time for the student to obtain their visa to study in the U.S.

FORM I-20

BFIT issues the Form I-20 only after payment of the $100 (U.S.) tuition deposit. All fees and deposits are non-refundable.

FINANCIAL AID POLICY FOR INTERNATIONAL STUDENTS

BFIT does not offer financial assistance to international students. Students are advised to investigate sources of financial aid in their own countries such as family funds, government agencies, civic organizations, industry, or lending institutions.

INTERNATIONAL STUDENT ADVISING

Once enrolled, all international students are required to meet with the International Student Advisor at the beginning of each semester. Additional meetings may need to be scheduled to review new federal regulations or if the student is having academic difficulties.

Tuition Costs and Financial Aid

Tuition for the 2018-2019 academic year is $16,950 for Associate Degree and certificate programs and $18,190 for the Bachelor Degree programs. All students are charged an annual technology fee of $600.

Per credit cost at BFIT is $707 for Associate Degree and certificate programs and $758 for the Bachelor of Science programs.

Students enrolled in 12-21 credits are charged the full-time tuition rate. Students that are enrolled in 11 credits or less are charged at the per credit rate. Students enrolled in more than 21 credits are charged an overload fee for each credit over 21 at the per credit rate.

Through its financial aid programs, BFIT has made it possible for thousands of students to afford the cost of their education. The Financial Aid section of this catalog describes the process of applying for aid.

Tuition and other fees are due before each semester begins. For the fall semester, tuition and fees are payable by August 1; for the spring semester, they are payable by December 1, May 1; for the summer semester. Payment plans are available. Please contact the Student Accounts Office for information.

Non-degree seeking students who are not actively enrolled in a degree program may audit a course. The audit rate is $250 per credit.

Tuition Deposit

A tuition deposit of $100 is required to secure your spot in the incoming class. This tuition deposit is not refundable after May 1 and is applied toward the first semester tuition bill. For applicants offered admission, the deposit is payable by May 1 or within 14 days of notification of acceptance after May 1. Requests for tuition deposit refunds before May 1 should be made in writing to the Dean of Recruitment. Students who intend on staying in college sponsored housing will be required to submit a $150 housing deposit to confirm a bed space is available.

Application Fee (Non-refundable Fee)

An application fee of $25 must accompany each application for admission to BFIT for students who apply using the common application. For International Students the application fee is $50.

Health Insurance Plan (Non-refundable Fee)

Under the provisions of Chapter 23, Section 22, of the 1988 Massachusetts Health Security Act, effective September 1, 1989, each institution of higher education must require all full- and part-time students to participate in the student health insurance program or provide evidence of participation in a health insurance program with comparable coverage. For this purpose, part-time students are defined as those participating in at least 75% of the academic requirements for full-time students. The charge for the school's health insurance for 2018-2019 is $1,664. This fee will be charged to all students and will be removed only if a waiver form, showing comparable coverage, is submitted. The waiver deadline for Fall 2018 is September 22, 2018 and for Spring 2019 enrollees the deadline is February 2, 2019. This fee covers a full year and cannot be refunded due to withdrawal. For students who already have comparable medical coverage, a waiver form is available on our website that must be completed in order to be excluded from the college's insurance plan.

Books, Supplies, and Equipment

Students supply their own textbooks and other materials. Special tool kits are also required for the Automotive Technology, Electrical Technology, Computer Technology, Health Information Technology and HVAC&R programs. See the financial aid section of this catalog for more detailed information on prices.

Withdrawals and Refunds

All students who wish to withdraw from the college are required to notify the college in Registrar in writing of their intent to do so. The college has two recognized categories of withdrawn students, Official Withdrawals and Unofficial Withdrawals. Absence from class does not reduce a student's financial obligation nor guarantee that a final grade will not be recorded.

OFFICIAL WITHDRAWALS:

Students who find it necessary to withdraw completely from Benjamin Franklin Institute of Technology must file an Official Withdrawal Form with the Registrar within a few days of withdrawal. The official form can be found on the web site at www.bfit.edu/academics/registrar/forms

Upon receipt of the Official Withdrawal form the Registrar's Office will notify the Office of Financial Aid that a student has withdrawn and is subject to a return to Title IV calculation and the institutions refund policy. The date on which such notice is received from the student will be considered the effective date of withdrawal. Students failing to file an Official Withdrawal Form will be provided a refund consistent with Federal regulations and will be considered an unofficial withdrawal.

UNOFFICIAL WITHDRAWALS:

Students who fail to provide official notice will be monitored and withdrawn from the college after 14 days of non-attendance. BFIT will make a determination on the on the 15th day after 14 consecutive days of non-attendance if a student intends to continue in classes or be withdrawn from the college as an unofficial withdrawal. The college identifies the last date of attendance as the last date of academic activity at the college.

Upon receipt of the Unofficial Withdrawal form the Registrar's Office will notify the Office of Financial Aid that a student has been withdrawn and is subject to a return to Title IV calculation and the institutions refund policy.

All other students are refunded according to the following schedule:

WITHDRAWAL NOTICE FILED*:	AMOUNT OF REFUND
During the first week of classes	100%
During the second week of classes	80%
During the third week of classes	70%
During the fourth week of classes	70%
During the fifth week of classes	60%
During the sixth week of classes	50%
During the seventh week of classes	50%
During the eighth week of classes	40%
During the ninth week of classes	30%
After the ninth week of classes	0%

For summer sessions the following schedule applies:

WITHDRAWAL NOTICE FILED*:	AMOUNT OF REFUND
During the first week of classes	100%
During the second week of classes	70%
During the third week of classes	50%
During the fourth week of classes	30%
After the fourth week of classes	0%

* Housing Charges will follow the tuition refund policy. Please see the Assistant Dean of Students to officially withdraw from housing. Students that had to purchase their tools in the beginning of the semester through the college will qualify for a tool fee refund if they return the tools in good condition within 20 days from their date of withdrawal, the program director will evaluate the tools and make the determination to accept the tools back for refund.

Tool Refund Policy

Students that had to purchase their tools in the beginning of the semester through the college and wish to return tools may qualify for partial tool fee refund based on the following guidelines:

- The tools need to be returned in perfect condition, including keys to the tool box, within 20 days from their date of withdrawal recorded in the student's file.
- Tools need to be inspected by the department chair for approval of a partial refund, including condition and/or missing tools.
- The refund amount for the tools will follow the federal title IV refund policy which will calculate starting at the date when the semester begins and the official date of withdrawal recorded in the student's record.
- All tools need to be picked up by the students within one business week (5 days) of the time of withdrawal or graduation. If the student does not pick up their tools within this timeframe, students will forfeit their tools, which will now become property of the college and will not be refunded.

Return of Institutional Aid Policy

Institutional Aid includes all grants and scholarships awarded by BFIT will be refunded under the following policy. Students that officially withdraw from the college at any point during an enrollment term will follow the federal title IV refund calculation. BFIT will attempt to bring students balance to zero or as close to zero as possible. No refund will be issued to the student if institutional aid created a credit balance on a student account. Upon receipt of the Official Withdrawal Form, BFIT's Financial Aid Office will make the required adjustments and a final bill will be mailed to the student. Payment is expected within 30 days of official date of withdrawal.

Return of Title IV Federal Student Aid Policy

The law specifies how Benjamin Franklin Institute of Technology must determine the amount of Title IV program assistance that you earn if you withdraw from school. The Title IV programs that are covered by this law are: Federal Pell Grants, Iraq and Afghanistan Service Grants, Direct Loans, Direct PLUS Loans, and Federal Supplemental Educational Opportunity Grants (FSEOGs).

Though your aid is posted to your account at the start of each period, you earn the funds as you complete the period. If you withdraw during your payment period, the amount of Title IV program assistance that you have earned up to that point is determined by a specific formula. If you received (or your school or parent received on your behalf) less assistance than the amount that you earned, you may be able to receive those additional funds. If you received more assistance than you earned, the excess funds must be returned by the school and/or you. Funds are returned in the following order: Unsubsidized Direct Loan, Subsidized Direct Loan, Direct PLUS Loan, Pell Grant, and FSEOG under federal guidelines. The college will return the excess funds to the department of education within 45 days as set by federal guidelines.

The amount of assistance that you have earned is determined on a pro-rated basis. For example, if you completed 30% of your payment period, you earn 30% of the assistance you were originally scheduled to receive. Once you have completed more than 60% of the payment period, you earn all the assistance that you were scheduled to receive for that period. If you did not receive all of the funds that you earned, you may be due a post-withdrawal disbursement. If your post-withdrawal disbursement includes loan funds, your school must get your permission before it can disburse them. You may choose to decline some or all of the loan funds so that you don't incur additional debt. Your school may automatically use all or a portion of your post-withdrawal disbursement of grant funds for tuition, fees, and room and board charges (as contracted with the school). The school needs your permission to use the post-withdrawal grant disbursement for all other school charges. Students and Parents will be notified in writing of their eligibly and must respond with 45 days in order to have the post withdrawal disbursement credited to the student account. If you do not give your permission the college will not disburse any additional funding. However, it may be in your best interest to allow the school to disburse the funds to reduce your unpaid balances at the school.

There are some Title IV funds that you were scheduled to receive that cannot be disbursed to you once you withdraw because of other eligibility requirements. For example, if you are a first-time, first-year undergraduate student and you have not completed the first 30 days of your program before you withdraw, you will not receive any Direct Loan funds that you would have received had you remained enrolled past the 30th day.

If you receive (or your school or parent receive on your behalf) excess Title IV program funds that must be returned, your school must return a portion of the excess equal to the lesser of:

1. your institutional charges multiplied by the unearned percentage of your funds, or
2. the entire amount of excess funds.

The school must return this amount even if it didn't keep this amount of your Title IV program funds.

If your school is not required to return all of the excess funds, you must return the remaining amount.

Any loan funds that you must return, you (or your parent for a Direct PLUS Loan) repay in accordance with the terms of the promissory note. That is, you make scheduled payments to the holder of the loan over a period of time.

Any amount of unearned grant funds that you must return is called an overpayment. The maximum amount of a grant overpayment that you must repay is half of the grant funds you received or were scheduled to receive. You do not have to repay a grant overpayment if the original amount of the overpayment is $50 or less. You must make arrangements with your school or the Department of Education to return the unearned grant funds.

The requirements for Title IV program funds when you withdraw are separate from any refund policy that your school may have. Therefore, you may still owe funds to the school to cover unpaid institutional charges. Your school may also charge you for any Title IV program funds that the school was required to return. If you don't already know your school's refund policy, you should ask your school for a copy. Your school can also provide you with the requirements and procedures for officially withdrawing from school.

If you have questions about your Title IV program funds, you can call the Office of Financial Aid at 617-588-1368. TTY users may call 1-800-730-8913. Information is also available on Student Financial Services on the web at www.bfit.edu/admissions---aid/student-financial-services.

Payment of Fees

Students with delinquent accounts may be prohibited from attending class until the matter is cleared through the Student Accounts Office.

Graduation regalia will be withheld from any student with a balance exceeding $200. Diplomas, transcripts, and grade reports will not be accessible until the entire balance has been paid.

Payment Plans

Various payment plan options are available. Students should contact the Student Accounts Office for information by calling 617-588-1298.

Address Change

Students are required to report all address changes to the Registrar's Office. Failure to do this will prevent important material, such as grade reports or registration forms, from reaching the students.

Financial Aid

A BFIT education is one of the most important investments you will ever make. We realize that financing this investment is a primary concern for you and your family. Here we show you how the BFIT experience can be affordable for any family.

BFIT offers financial aid to eligible students to assist with financing your education. In order to be considered for need-based financial aid, a Free Application for Federal Student Aid (FAFSA) must be submitted each academic year. Award amounts vary and depend on your demonstrated financial need. Financial Need is determined by subtracting the Expected Family Contribution (EFC), from the Institution's Cost of Attendance (COA), as determined by the Financial Aid Office.

The estimated cost of attendance for an associate's degree for the 2018/2019 academic year is:

	OFF-CAMPUS COMMUTER	ON-CAMPUS RESIDENTS
Tuition	$16,950	$16,950
Health Insurance	$ 1,664	$ 1,664
Technology Fee	$ 600	$ 600
Transportation	$ 600	$ 600
Housing (Triple)		$13,500
Total	$19,814	$33,314

For Bachelor's degree programs please increase your tuition cost to $18,190.

Certain majors have to purchase additional tools or supplies. Tools and supplies are required for students in Automotive Technology, Computer Technology, Electrical Technology, Health Information Technology, HVAC&R programs, and emporium math courses. To facilitate the ease of purchase of tools/supplies for students in these programs, the college has arranged for the cost of tools to be added to student invoices.

By doing so, students are able to utilize financial aid funds to pay for the expense of tools and textbooks directly. The fees associated with the programs are as follow:

- Automotive Technology first year students are billed $2,460 for tools and $250 for an automotive textbook. Second year students are billed an additional $2,200 for second year tools.
- Electrical Technology and Practical Electricity first year students are billed $500 for tools and $600 for electrical textbooks. Computer Technology and Health Information Technology first year students are billed $65.
- HVAC&R students will be billed $750 for the tools.

Please note that tool pricing is subject to change based upon the pricing that the college receives from our tool vendors.

Textbooks included above are for select major courses only. Students will be responsible for purchasing any additional textbooks or other materials required of courses.

Students that already have the required tools needed for each of the programs listed above should contact the department chair to waive the tool fee from their student account statement. Waivers must be completed by the end of the first week of the semester. Students who wish to waive the tool fee must have their tools' quality approved, and in classes, during the first week of the semester. Other programs at the college may require tools and/or materials that will not be included on student account statments.

Beyond tuition, health insurance, housing, and tools, students should account for additional expenses including books (estimated $450 per semester), off-campus housing expenses, transportation and any additional personal items that will aid them in their studies as they plan for their enrollment at the college. Estimates of these expenses are calculated by the financial aid office to determine a student's cost of attendance when establishing a student's financial need and, subsequently, said student's financial aid package.

About 90% of our students receive some type of financial assistance. At BFIT, we combine federal, state and institutional aid programs to compile a financial aid package that is designed to help every family be able to financially afford a BFIT education.

Note: BFIT cannot guarantee that we will meet your need in full. Financial aid is contingent on the timeliness of your application, federal regulations, and the availability of funds.

Full-time students will be considered for all of the financial aid programs that BFIT administers, after receipt of a valid FAFSA. Student financial aid packages may be a combination of federal and state grants, and student loans.. These awards will be contingent upon demonstrated financial need and the availability of funds.

Application Procedure

In order to apply for Federal and State financial aid, the FAFSA (Free Application for Federal Student Aid) needs to be completed. BFIT requires a supplemental form to be completed upon admissions into a program. Financial aid awards are not renewed automatically. The FAFSA must be completed every academic year.

STEP 1

Go to FAFSA on the Web at: ***www.fafsa.ed.gov***

Parent/s and students must create an FSA ID and password to electronically sign the FAFSA. The FSA ID is a separate application that needs to be completed before a FAFSA is completed. Visit www.fsaid.ed.gov to apply for your FSA ID and password. Follow the instructions on the website.

List BFIT as one of the schools to receive your FAFSA by including our school code, ***002151***.

Sign the FAFSA electronically by using a Federal FSA ID and password, or by mailing the signed signature page to the federal processors(The signature page is available for printing at the end of the FAFSA application.).

STEP 2

Applicants should receive a Federal Student Aid Report (SAR) from the federal processors 3-4 days after the FAFSA has been filed. The SAR indicates the Expected Family Contribution (EFC), which is used to determine eligibility for federal and state financial aid. It also lists the information recorded on the FAFSA. We will receive your information electronically from the federal processor. If BFIT is not listed, please call the federal processor at 1-800-433-3243, or use your FSA ID to make a correction at ***www.fafsa.ed.gov***.

STEP 3

Follow up with our office. We may need to request further documentation from you and/or your family.

If further information is needed, a written notification will go out to you in the mail. It is the student's responsibility to respond promptly to this document request within 30 business days. We are not able to continue the processing of your financial aid application if the requested documents are not provided. Failure to meet this deadline could jeopardize your ability to retain the awards listed.

STEP 4

An Award Package will arrive in the mail once we have completed reviewing your application. Students who are missing documents will receive a tentative award letter, a finalized award will not be available until all documents are received and reviewed by the Office of Financial Aid.

In order to decline any portion of the award, a signed copy of the award letter indicating what is being declined should be returned to the Office of Financial Aid. For more information, please contact us at financialaid@bfit.edu or 617-588-1368.

Types of Financial Aid

INSTITUTIONAL AID*

We understand that scholarships play an important role in making a college education affordable. Committed to our mission that finances should not keep a student from an education, we recognize students for the potential that each brings to Benjamin Franklin Institute of Technology. However, Institutional funding does not cover student refunds and solely covers the cost of tuition, college sponsored housing, books, and tools. We offer various scholarships including:

- The Benjamin Franklin Scholarship ranges up to $5,000 per academic year and is awarded to students who demonstrate academic potential but may not have the opportunity to realize that potential before reaching BFIT.
- The Trustee's Scholarship ranges up to $5,000 per academic year and is awarded to students who demonstrated outstanding academic accomplishments while in high school.
- The Franklin Assistance Grant ranges up to $5,000 per academic year and is awarded to students that demonstrate financial need.
- The Women in Technology Scholarship ranges up to $5,000 per academic year and is awarded to female students that demonstrate academic achievement and leadership potential.
- The Essilor Scholar is awarded to Opticianry students based upon financial need and academic potential.

*Institutional aid will be adjusted if third party payment is received that covers students tuition costs.

THIRD SEMESTER GRANT

A reality of American higher education is that not all students are prepared for college-level courses when they begin their postsecondary careers. In order to help prepare students for college-level coursework, Benjamin Franklin Institute of Technology offers students the opportunity to take developmental courses during their first semester of study. In order to compensate for tuition expended to take developmental courses, the college offers a special tuition grant for students that successfully complete their developmental courses and continue to make satisfactory academic progress through their first semester in college-level courses.

The tuition-free Third Semester allows students to become college-ready without losing valuable time and incurring additional tuition costs. BFIT sees it as a reward for remaining committed to success as a student, and it is a helpful tool for students to persist to graduation.

To qualify for the Third Semester Grants students must:

- Apply for financial aid by completing the Free Application for Federal Student Aid (FAFSA)
- Maintain satisfactory academic progress (as defined in the College Catalog)
- Successfully complete developmental course(s) in a one-semester period and enroll in their major courses during the next two semesters
- Successfully complete their first semester in college-level courses and be eligible to enroll for second semester courses on-time as outlined in the charts below

The charts outline how students proceed through their developmental courses and into their college-level courses.

Students entering the college during the fall semester:

Fall 2018	***Spring 2019***	***Summer 2019***	***Fall 2019***
Incoming Freshmen -Department of Academic Development Course	*First Semester of Courses in Student's Major*	*"Third Semester"* *Second Semester of Courses in Student's Major*	*Students Enter Sophomore Year*
Incoming, freshmen students take needed developmental math and English courses as well as Introduction to Professional Communications, a college level public speaking course to prepare for their major.	First semester of courses toward a degree in student's selected majors.	Students take a "third semester" during the year - a second semester of courses toward a degree in their selected major. Qualified students will receive a grant to cover the cost of tuition associated with their third semester of study.	On track to graduate with their class in selected major within two years.

Students entering the college during the spring semester:

Spring 2019	***Summer 2019***	***Fall 2019***	***Spring 2020***
Incoming Freshmen -Department of Academic Development Courses	*2nd Developmental Math Course for Engineering Technology majors*	*First Semester of Courses in Student's Major*	*"Third Semester" Second Semester of Courses in Student's Major*
Incoming, freshmen students take needed developmental math and English courses as well as Introduction to Professional Communications, a college level public speaking course to prepare for their major.	Students that are enrolled in engineering technology programs that need to take MA105 prior to the fall semester will be expected to complete this course during the summer term to remain in sequence.	First semester of technical courses towards a degree in freshmen students' selected majors.	Freshmen students take a "third semester" during the year - a second semester of technical courses towards a degree in their selected major. Qualified students will receive a grant to cover the cost of tuition associated with their third semester of study.

Additional expenses including room, board, transportation, textbooks and tools are not grant funded for the third semester. Third Semester grants do not cover the cost of tuition for students to retake courses from prior semesters. Should individual circumstances arise due to course sequencing or scheduling, the Registrar and Director of Financial Aid shall determine if a student is eligible for the Third Semester grant.

FEDERAL AID

The Federal Pell Grant* provides awards ranging from $650 to $6095 per academic year for exceptionally needy applicants enrolled full time. The Pell Grant is funded by the Federal Government and is determined based on the information provided on the FAFSA and enrollment status provided. Students have a Pell Grant life-time eligibility limit of 12 semesters or the equivalent.

The Federal Supplemental Educational Opportunity Grant (SEOG)* provides awards ranging from $1000-$2000 and is awarded to students who qualify for the Federal Pell Grant. SEOG is funded by the federal government and will be awarded on a first-come, first-served basis and is subject to the availability of funds.

The Federal Work Study program is sponsored by the federal government and provides jobs for undergraduate students that demonstrate financial need. Students may also choose to work off-campus in one of our community service positions. Students are responsible for finding a qualifying job, and, as they work, they will complete time sheets and will receive a pay check for the number of hours worked. Most students work between 5 and 10 hours per week, and their earnings are intended to cover educationally related expenses. Unlike other financial aid or scholarship awards, work study does not reduce your tuition bill; students will receive a pay check. Work study awards do not require repayment.

* Due to changes in Federal Regulations, the Pell Grant and/or SEOG amounts and/or eligibility criteria are subject to change.

STATE AID

State grants are based on financial need and may be offered to eligible students. The Department of Education in each state determines a student's eligibility for these awards. Many states have application deadlines, which can be found at the FAFSA web site. The State of Massachusetts awards grants to eligible students who meet residency and

financial criteria. Students must also have a valid FAFSA on file by May 1 of each year. These grants range in amounts from $600 to $1600. The level of funding is contingent upon fund availability and is subject to change by the State of Massachusetts.

The Massachusetts Gilbert Grant is awarded to full-time students who meet the criteria of the Massachusetts State Grant. Award amounts range from $200 to $2,500 per academic year. The Gilbert Grant is contingent upon fund availability.

LOANS

There are many loan options available to help finance a BFIT education.

Direct Subsidized Loans are available to undergraduate students with financial need. The U.S. Department of Education pays the interest on a Direct Subsidized Loan until 6 months after you leave school.

Direct Unsubsidized Loans are available to undergraduate; there is no requirement to demonstrate financial need. You are responsible for paying the interest on a Direct Unsubsidized Loan during all periods. If you choose not to pay the interest while you are in school and during grace periods and deferment or forbearance periods, your interest will accrue and be capitalized.

Deferment You can receive a deferment for certain defined periods. A deferment is a temporary suspension of loan payments for specific situations such as re-enrollment in school, unemployment, or economic hardship. You don't have to pay interest on the loan during deferment if you have a Federal Direct Subsidized Stafford Loan. If you have a Federal Direct Unsubsidized Stafford Loan, you're responsible for the interest during deferment. If you don't pay the interest as it accrues (accumulates), it will be capitalized (added to the loan principal), and the amount you have to pay in the future will be higher. You have to apply for a deferment to your loan servicer (the organization that handles your loan), and you must continue to make payments until you've been notified your deferment has been granted. Otherwise, you could become delinquent or go into default.

Forbearance Forbearance is a temporary postponement or reduction of payments for a period of time because you are experiencing financial difficulty. You can receive forbearance if you're not eligible for a deferment. Unlike deferment, whether your loans are Subsidized or Unsubsidized, interest accrues, and you're responsible for repaying it. Your loan holder can grant forbearance in intervals of up to 12 months at a time for up to 3 years. You have to apply to your loan

servicer for forbearance, and you must continue to make payments until you've been notified your forbearance has been granted. For more information about Federal Direct Student Loans, contact the U.S. Department of Education's Direct Loan Customer Service Department at 800-848-0979 or:Direct Loan Servicing Center, Borrower Services DepartmentPO Box 5609Greenville, TX 75403-5609

In order for students to borrow from the Direct Stafford Loan program, students must file a FAFSA form, complete a Master Promissory Note and successfully complete loan entrance counseling. To be eligible for them the student needs to be enrolled at least half time. Direct Stafford Loans have a fixed interest rate and minimal origination fee. For 2018-2019 academic year interest rates and fees please visit our website. The annual limits that a student can borrow are listed below.

Academic Status	Dependent Student	Independent
Freshman	$5,500	$9,500
Sophomore	$6,500	$10,500
Junior	$7,500	$12,500
Senior	$7,500	$12,500

There are two types of Loans: subsidized and unsubsidized. The subsidized loan program requires that the student demonstrate financial need. The advantage of the subsidized loan is that the government pays the interest on the loan while the student is enrolled at least half-time and during the six month grace period. Interest subsidy during the six month grace period is eliminated for loans made after July 1, 2019. This means interest accrued during those six months will be payable by the student. For the 2018-2019 academic year, a new borrower, on or after July 1, 2019, becomes ineligible to receive additional Direct Subsidized loans if the period during which the student has received such loans exceeds 150% of the published length of the student's educational program. The student also becomes responsible for accruing interest during all periods as of the date the student exceeds the 150% limit.

Under the unsubsidized program, students can borrow even if they have no demonstrated need; however, the interest that accrues during enrollment is the student's responsibility. While in school, interest only payments may be made, but are not required. If interest is not paid while in school, the interest is capitalized (added to the original loan amount) once repayment begins. When a student graduates or withdraws from school, the Stafford loan goes into a six month repayment grace period. The average student loan debt for our students upon graduation is $12,000. Students are required to complete Exit Loan Counseling upon leaving the college or dropping below half-time enrollment.

PARENT LOANS

The parent loan program described below allows creditworthy parents to borrow up to the entire cost of attendance, less any awarded financial aid. The applicant must meet eligibility requirements outlined in the application materials. Unlike student loans, repayment on parent loans begins 60 days after the final disbursement of loan funds to the school for that academic year. Parents may request a deferment from their lender while the student is enrolled in school at least half time.

Federal Direct PLUS Loan: The Federal Direct Parent Loan for Undergraduate Students (PLUS) allows parents to borrow on behalf of their dependent students. Eligibility for this loan is not based on financial need but does require a credit check. Parents may borrow up to the cost of attendance minus any financial aid.

The loan has a fixed interest rate of 6.84%. There is a maximum repayment period of 10 years, with a minimum monthly payment of $50. An origination fee not to exceed 4% is subtracted from the requested loan amount. In the case that a parent is not approved for a Plus loan, the student may be eligible for an additional Unsubsidized Stafford Loan.

ALTERNATIVE STUDENT LOANS

Many families supplement their college financing plan with private educational loans. Private loans are available from a variety of sources and provide additional funding when the other types of aid do not cover costs. These loans are not guaranteed by the federal government but by private financial institutions. Interest rates on these loans are typically

higher than federal loans but lower than personal loans. Student borrowers will need a creditworthy co-signer to borrow an alternative loan. For more information about these loans, please contact the Office of Financial Aid at 617-588-1368 or via email atfinancialaid@bfit.edu.

PRIVATE SOURCES

Applicants are urged to seek additional aid from their own community. Many towns and cities have civic organizations, businesses or religous organizations, which may offer scholarships on the basis of need or academic merit. Labor unions and corporations are often good sources of scholarship assistance to children of employees. Applicants should consult their high school guidance counselors or local libraries for additional information. An excellent source for information on financial aid is the Higher Education Information Center at the Boston Public Library at Copley Square.

VETERANS' BENEFITS AND MASSACHUSETTS REHAB

Other sources of student aid are veterans benefits for veterans, widows of veterans, and children of deceased or disabled veterans. Students with certain physical or emotional disabilities may seek aid from the State Rehabilitation Commission in their area.

Those who qualify for benefits under any Veteran Bill or Massachusetts Rehab must contact the Registrar's Office at the beginning of the school year concerning the processing of the necessary forms. Students are asked to provide a certificate of eligibility from the VA Administration for processing. Forms should be filed as soon as possible after being accepted to BFIT.

ENTRANCE COUNSELING

All students taking out Direct Subsidized Loans or Direct Unsubsidized Loans are required to complete entrance counseling sessions at www.studentloans.ed.gov. A student will use the FSA ID and password to access the system. Borrowers will learn topics including what a Direct loan is, how the loan process works, about how to manage educational expenses, and other financial resources to consider to help pay for college.

EXIT COUNSELING

Exit counseling is similar to the entrance counseling you received when you first completed your master promissory note. Students will use the FSA ID and password to access the system. This learning opportunity provides information about your rights and responsibilities as a borrower, including information about various repayment plans and deferment or forbearance options that may be available to you if you are unable to make a payment

Student Affairs

The Division of Student Affairs is led by the Dean of Students and is made up of Advising and Student Success, Athletics, Campus Activities, Counseling, Disability Support Services, Residence Life, Security, Student Conduct, and Student Life. The department coordinates services and activities for students outside of the classroom, including academic support, student organizations, campus events, and extracurricular activities. The department is dedicated to the holistic support of students through efforts that enhance academic, social and personal growth.

Academic Success Center

The Academic Success Center (ASC), staffed by faculty and success coaches, coordinates academic support for students. It offers free drop-in tutoring throughout the year for all BFIT students, Monday through Friday from 7am-5pm. All our tutors are BFIT faculty. The ASC houses tutoring for Math, Physics, English and Computer Technology, with tutoring for major courses available in labs.

The ASC has a professional atmosphere and is equipped with WiFi connected computers. Specialized tutoring requests can be made through the Office of Student Success. The Learning Specialist is available to meet with students who have additional learning needs and/or want to request accommodations. In addition, the Learning Specialist can help students with academic success skills, such as organization, time management, and test preparation.

Advising and Student Success

The Office of Advising and Student Success provides general information on advising, registration, referral resources for students with documented disabilities, and coordinates college wide academic success initiatives including tutoring and workshops related to time management and study skills.

Each student is assigned a faculty or staff member who serves as their advisor. Advisors maintain close contact with students to support their success and encourage several meetings between advisor and advisee each semester.

Advisors offer student support through assessment of strengths and challenges review of academic progress, help with registration for future semesters, and suggestions for career preparation and success. Students who are struggling academically are encouraged to seek help by meeting with their advisor and asking for assistance through the various academic support services.

Athletics

The college offers NJCAA Division III Varsity Basketball each academic year, playing in the winter season. The Chargers compete against teams from the New England region and have the opportunity to qualify for post-season play at the regional and national levels per NJCAA rules and regulations. To meet eligibility requirements, students must be full-time (12 or more credits) and maintain the standards set forth by the NJCAA and BFIT. Teams will compete in the NJCAA Division III intercollegiate competition.

Campus Activities and Student Life

The Campus Activities Office is the central location for student organizations and student events at Benjamin Franklin Institute of Technology. With a commitment to leadership and holistic student development, the office strives to engage students in a formative and social environment that compliments students' academic experience while preparing them for leadership within their careers. Through a commitment to leadership, team work, and civic engagement, the college looks to foster the development of skills that our students can utilize long after graduation.

Career Services and Industry Partnerships

The Department of Career Services and Industry Partnerships (CSIP) has the dual mission of providing students and graduates with the tools necessary to start and advance in their careers as well as building and maintaining close ties with industry. By fostering relationships with industry partners, CSIP helps to ensure that our programs remain relevant to workforce needs and identify employment opportunities for our students. The department also coordinates and oversees student internship opportunities, promotes employment opportunities, and supports students in transferring to four-year programs after graduation.

CSIP routinely invites employers to recruit on campus. Throughout the year, many companies visit our campus to meet with students, hosting lunch & learns to build awareness about opportunities within their company. The department hosts an annual Fall Job & Internship Fair to promote awareness among students about job opportunities and internships during college. In the spring, CSIP hosts an annual Career Fair for industry recruiters to meet with and interview prospective graduates for employment and internship opportunities.

CSIP staff run the Career Success Seminar as well as mini Career Success Workshops for all students during their final year at the college. These seminars and workshops cover career-readiness topics with a goal of preparing students with the tools necessary to search for and secure employment in their field of study post-graduation.

Counseling Services

Our Director of Student Wellness and Support has one main goal—to have students be successful in classes. We recognize sometimes stress outside the classroom impacts success in the classroom. In an effort to support students, we provide one-on-one meetings to help identify stressors and strategies to manage things that might interfere with academic success. We also have an on-site food pantry and can provide referrals to community support programs for students in need. Students dealing with personal challenges are encouraged to visit the Director of Student Wellness and Support, a Success Coach or the Dean of Students. BFIT places high priority on making available to students every opportunity possible for personal and professional growth.

Success Boston

The Success Boston Initiative was developed in 2008 by The Boston Foundation to provide additional support for Boston Public School (BPS) graduates throughout their post-secondary education with the goal of helping these students earn a college credential. The initiative, funded by the Corporation for National and Community Service, was expanded in October 2014 to increase the number of BPS students served from 300 to 1,000 annually. Success Coaches from local community based organizations, such as Boston Private Industry Council (PIC), Sociedad Latina, Freedom House, Hyde Square Task Force and College Bound Dorchester partner with BFIT to provide additional support to program participants. Support for participants includes personal support, financial aid workshops, career and life planning, and guidance on how to better use the existing academic supports on campus. Success Boston Coaches and the Student Success Team at BFIT meet twice monthly to discuss challenges and concerns related to students in the Success Boston program and to collaborate on recruitment and retention efforts.

Disability Support Services

Benjamin Franklin Institute of Technology is dedicated to extending all available services and support systems to everyone, without regard to race, color, national origin, religion, sex, age, disability, sexual orientation, veteran or disabled veteran status. Toward the goal of providing an equal and unbiased education, the college is prepared to take every possible step to allow students access to its services and to provide the broadest possible opportunity for participation at BFIT.

Students with disabilities who may desire accommodations should make every effort to submit documentation to the Assistant Director of Student Success as early as possible prior to their first semester at the college.

All information regarding the disabilities is treated confidentially.

For reasonable and timely accommodations, accepted students with documented disabilities should follow these steps prior to enrolling at the college:

1. Submit clinical documentation that contains specific recommendations to the Learning Specialist. It is most helpful if a licensed psychologist or educational specialist has completed the evaluation within the last three years. Individual Education Plans or notes from special education teachers or tutors can be helpful forms of documentation only if they include disability diagnosis and specific recommendations for accommodations.

   If updated testing or evaluation is necessary, it is the student's responsibility to make those arrangements.

2. Schedule an appointment to meet with the Assistant Director of Student Success to discuss challenges associated with their disabilities, the services provided at BFIT, and to determine what, if any, services the student wants or needs. If it is determined that accommodations are needed, the student completes a confidential accommodation request form describing the accommodations needed.

3. Students are encouraged to contact instructors to let them know about the disability and the types of accommodations required and present the accommodation request form during the first week of classes. The Learning Specialist, the student and the instructor sign the accommodation request; the student and instructor each receive an electronic copy and the original request form will be kept on file in the office of the Learning Specialist.

When requesting extended time for test taking, completing papers or take-home assignments, students should remind instructors at least two weeks prior to the due date. The instructors need sufficient time to make alternative arrangements.

New Student Orientation

Your first steps at BFIT will be at New Student Orientation, where you will meet classmates, the Student Success team and other important members of the BFIT community. You will have the opportunity to attend Financial Literacy and Career Services workshops, learn about the support services available to you at BFIT and gain tips on how to be successful.

Residence Life

Benjamin Franklin Institute of Technology offers limited housing through a relationship with Fisher College at the Stuart Street Hostel in the historic Theater District of downtown Boston. The Stuart Street Hostel is located near the CitiWang Theater and the Wilbur Theater, and is only a 10-15 minute walk to BFIT campus.

The Resident Director lives on site throughout the academic year. They will conduct bi-monthly meetings at the residence hall to assist students with the transition to college, build community, and create social opportunities through educational and social programming. Residence Life staff will review and enforce all policies of BFIT, Fisher College, and the Stuart Street Hostel.

Student Code of Conduct

Benjamin Franklin Institute of Technology (BFIT) has a rich tradition in which all members of the community teach and learn in an environment conducive to intellectual and moral development. All members of the BFIT community must take responsibility for their actions and be willing to accept the consequences of their conduct.

The college has a set of regulations, not meant to limit a student's freedom, but to ensure the well-being and rights of all community members. Students are required to conduct themselves in a manner reflecting favorably on the college. Failure to comply with student regulations will lead to disciplinary action and may lead to separation from the college.

INTERPRETATION OF REGULATIONS

The purpose of publishing the conduct policy is to give students general notice of prohibited behavior. This code is not written with the specificity of a criminal statute.

INHERENT AUTHORITY

The college reserves the right to take necessary and appropriate action to protect the safety and well-being of the campus community. Such action may include pursuing conduct action for any violation of state or federal law, on or off-campus, or any behavior that affects the college's educational interests.

REPORTING ACTS OF MISCONDUCT

Any student, faculty, or staff member may report actions and behaviors that affect the well-being and rights of all community members. To ensure a safe and comfortable learning and working environment for all, the college supports a see-something, say-something philosophy, without fear of retaliation. Students, or faculty and staff, should report any incidents or concerns to BFIT Security (security@bfit.edu) at 617-588-1355, or to the Assistant Dean of Students. An official incident report form is available on the college's student conduct website.

DISCIPLINARY ACTION WHILE CRIMINAL CHARGES ARE PENDING

Students may be accountable both to civil authorities and to the college for acts that constitute violations of law and of this code. Disciplinary action at the college will normally proceed during the pendency of criminal proceedings, and will not be subject to challenge on the ground that criminal charges involving the same incident have been dismissed or reduced.

INTERIM SUSPENSION

The Assistant Dean of Students (or designee) may suspend a student from the college for an interim period pending disciplinary or criminal proceedings, or medical evaluation.

A. The Dean of Academic Affairs, along with the faculty of the suspended student,will be informed regarding an interim removal of a student from class during a disciplinary investigation.

B. The interim suspension shall become immediately effective without prior notice whenever there is evidence that the continued presence of the student at the college poses a substantial and immediate threat to themself or to others, or to the stability and continuance of normal college functions.

C. A student suspended on an interim basis shall be given a prompt opportunity to appear personally before a conduct hearing officer in order to resolve the incident.

STANDARDS OF CLASSROOM BEHAVIOR

The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited or unlawful acts that result in disruption of a class may be directed by the faculty member to leave the class for the remainder of the class period. Longer suspensions from a class, or dismissal on conduct behavior grounds, must be consulted with the Assistant Dean of Students, Dean of Students, and the Dean of Academic Affairs.

ZERO TOLERANCE

The college supports a zero tolerance policy against any violent action or threat of violent action toward a student, faculty, staff member, or to the institution as a whole. Students are expected to engage in appropriate conversations and use appropriate language at all times. Interpretation of language in regards to threats of violence will be at the discretion of the Assistant Dean of Students, or designated professional staff members.

It is a student's responsibility to be familiar with the full list of prohibited conduct and the student conduct process, which are available in the Student Handbook and Planner as well as on the BFIT Student Conduct website.

Student Rights and Responsibilities

Alcohol and Drug Policy

The college supports a zero tolerance policy for the use, possession or intent to distribute alcohol or drugs on the BFIT The college supports a zero tolerance policy for the use, possession or intent to distribute alcohol or drugs on the BFIT campus or within BFIT housing premises. These offenses are serious in nature and will result in sanctions that may include suspension from the campus housing and/or expulsion from the college.

Regardless of age, there will be no use, possession or distribution of alcoholic beverages on campus or in campus provided housing. Persons 21 years or older will have the responsibility of conducting themselves in a professional manner at all times. While the college does not have jurisdiction outside of college property or at the campus housing premises, any student that appears intoxicated upon entering either of these buildings will be in violation and subject to sanctions.

Knowingly being in the presence of someone using, possessing or having the intent to distribute alcohol or drugs is prohibited. Although Massachusetts state law permits the use of medical marijuana, i.e., use by persons possessing lawfully issued medical marijuana cards; and recreational marijuana for those 21 years or older, universities are still subject to the Drug-Free Workplace Act of 1988 and the Drug-Free Schools and Communities Act Amendment of 1989 which prohibits marijuana use, possession, and/or cultivation at educational institutions and on the premises of other recipients of federal funds.

Please refer to the Student Code of Conduct for specific violations of the Alcohol and Drug policies. For information regarding support with alcohol or drug use please visit http://www.bfit.edu/student-services/resources-and-forms.

Bias-related Violence, Harassment, or Intimidation Policy

It is the goal of Benjamin Franklin Institute of Technology to maintain an environment free of violence, intimidation and harassment. Bias-related behavior based on race, religion, gender, age, ethnicity, national origin, physical appearance, disability or sexual orientation assaults the dignity and worth of the individual and will not be tolerated. Indeed, victimization will be actively opposed.

We expect that all members of this community will treat each other with dignity and respect, and that all members of the community will assume the responsibility of appropriately confronting acts of bias-related violence, intimidation and harassment which may occur. This policy statement identifies a non-exhaustive list of examples of behavior that are unacceptable and outlines the procedures for handling violations.

DEFINITION

Bias-related violence, intimidation and harassment is defined as verbal, written or physical conduct which is based on race, religion, gender, age, ethnicity, national origin, physical appearance, disability or sexual orientation. In addition, such conduct inevitably has the effect of unreasonably interfering with an individual's academic, co-curricular, social or work-related participation in the college community. Bias-related violence, intimidation and harassment exists, for example, when:

1. Behavior is intended to intimidate, insult or stigmatize an individual or group;
2. Use is made of provocative words or nonverbal symbols which, by virtue of their form, are commonly understood to convey direct and visceral hatred or contempt for human beings; or
3. An act of violence is committed in connection with a bias.

Nothing in this definition should be construed as an abrogation of freedom of expression. However, protected freedom of expression ends when prohibited bias-related violence, intimidation or harassment begins.

Campus Tobacco and Smoking Policy

Benjamin Franklin Institute of Technology supports findings from the Surgeon General that tobacco use in any form, active or passive, is a significant health hazard. As a result, BFIT institutes a Campus Tobacco and Smoking Policy to support a safe and healthy learning and working environment.

For the purpose of this policy, the college defines 'tobacco' to include any lighted cigarette (tobacco, clove), cigars, pipes, hookah, or any other smoking products including e-cigarettes and vapor cigarette devices, and any smokeless, spit or spitless, dissolvable, or inhaled tobacco products, including but not limited to dip, chew, or snuff, in any form.

The policy applies to all students, employees, and visitors, with no exceptions. Smoking is allowed only in the designated area at BFIT (picnic area on the corner of Appleton and Tremont Street), where signage is posted, and never inside the facility. In addition, to lessen the effects of second-hand smoke, individuals smoking outside of college buildings are prohibited from smoking within 25 feet from exterior entrances, the plaza, operable windows or outdoor air-intakes, regardless if the smoking is on or off the college campus, including BFIT housing.

Fire Safety Policy

In case of fire in the building, the nearest college fire alarm box will be sounded immediately and Campus Safety will be notified as to the location of the fire.

Fire alarm boxes are located throughout the college campus. Upon hearing the alarm, faculty, staff, and students are required to immediately exit the building. Once outside the building, evacuation coordinators will direct occupants to designated areas. Students should remain on the sidewalk, away from the building, until notified. Unauthorized re-entry into a building during an evacuation is not permitted. Violators of this policy are subject to disciplinary action.

Alarm Systems: Smoke detectors and sprinkler systems must not be covered or blocked. Tampering with any component of the smoke detection system or sprinkler system is prohibited. Nothing may be attached to wiring, smoke detectors, and/or sprinkler system components. Violators will be charged for repair and/or replacement of any detection device with possible disciplinary action.

Evacuation: College officials reserve the right to evacuate any building or facility for emergency reasons. Noncompliance or failure to cooperate with faculty and staff during an emergency, real or drill, will result in disciplinary action.

Fire Doors: Fire doors must not be propped open or disabled.

Hazing Policy

THE HAZING ACT, MASSACHUSETTS GENERAL LAWS, CHAPTER 269, SECTIONS 17 THROUGH 19

This is a true copy of sections 17, 18, and 19 of the Crimes Against Public Peace to be provided to each BFIT student in accordance with the law.

Section 17. Whoever is a principal organizer or participant in the crime of hazing, as defined herein, shall be punished by a fine of not more than three thousand dollars or by imprisonment in a house of correction for not more than one year, or both such fine and imprisonment.

The term "hazing" as used in this section and in sections eighteen and nineteen, shall mean any conduct or method of initiation into any student organization, whether on public or private property, which willfully or recklessly endangers the physical or mental health of any student or other person. Such conduct shall include whipping, beating, branding, forced calisthenics, exposure to the weather, forced consumption of any food, liquor, beverage, drug or other substance, or any other brutal treatment or forced physical activity which is likely to adversely affect the physical health or safety of any such student or other person, or which subjects such student or other person to extreme mental stress, including extended deprivation of sleep or rest or extended isolation.

Notwithstanding any other provisions of this section to the contrary, consent shall not be available as a defense to any prosecution under this action.

Section 18. Whoever knows that another person is the victim of hazing as defined in section seventeen and is at the scene of such crime shall, to the extent that such person can do so without danger or peril to himself or others, report such crime to an appropriate law enforcement official as soon as reasonably practicable. Whoever fails to report such crime shall be punished by a fine of not more than one thousand dollars.

Section 19. Each institution of secondary education and each public and private institution of post secondary education shall issue to every student group, student team or student organization which is part of such institution or is recognized by the institution or permitted by the institution to use its name or facilities or is known by the institution to exist as an unaffiliated student group, student team or student organization, a copy of this section and sections

seventeen and eighteen; provided, however, that an institution's compliance with this section's requirements that an institution issue copies of this section and sections seventeen and eighteen to unaffiliated student groups, teams or organizations shall not constitute evidence of the institution's recognition or endorsement of said unaffiliated student groups, teams or organizations.

Each such group, team or organization shall distribute a copy of this section and sections seventeen and eighteen to each of its members, plebes, pledges or applicants for membership. It shall be the duty of each such group, team or organization, acting through its designated officer, to deliver annually, to the institution an attested acknowledgement stating that such group, team or organization has received a copy of this section and said sections seventeen and eighteen, that each of its members, plebes, pledges, or applicants has received a copy of sections seventeen and eighteen, and that such group, team or organization understands and agrees to comply with the provisions of this section and sections seventeen and eighteen.

Each institution of secondary education and each public or private institution of post secondary education shall, at least annually, before or at the start of enrollment, deliver to each person who enrolls as a full time student in such institution a copy of this section and sections seventeen and eighteen.

Each institution of secondary education and each public or private institution of post secondary education shall file, at least annually, a report with the board of higher education and in the case of secondary institutions, the board

of education, certifying that such institution has complied with its responsibility to inform student groups, teams or organizations and to notify each full time student enrolled by it of the provisions of this section and sections seventeen and eighteen and also certifying that said institution has adopted a disciplinary policy with regard to the organizers and participants of hazing, and that such policy has been set forth with appropriate emphasis in the student handbook or similar means of communicating the institution's policies to its students. The board of higher education and, in the case of secondary institutions, the board of education shall promulgate regulations governing the content and frequency of such reports, and shall forthwith report to the attorney general any such institution which fails to make such report.

DISCIPLINARY POLICY WITH REGARD TO THE ORGANIZERS AND PARTICIPANTS OF HAZING

The Hazing Act requires the college to have a disciplinary policy for the organizers and participants of hazing, and to set it forth with appropriate emphasis in the student handbook or similar means of communicating the institution's policies to its students.

The college procedures concerning the initiation of conduct proceedings are contained within the Student Code of Conduct and available on the college website.

Organizing or participating in hazing shall be deemed misconduct and charges will be filed in writing to the Assistant Dean of Students or Dean of Students. Such charges will be considered "extraordinary circumstances" and the student(s) concerned may be placed on interim suspension, effective immediately, pending further investigation of the case.

When it is determined in accordance with the Student Code of Conduct that a charged party was an organizer or participant in hazing under the meaning of the law, the sanctions recommend by the hearing board shall be limited to restitution, suspension or expulsion.

Information Technology and Computer Use Policy

This policy governs computer and network usage for faculty, staff and students at BFIT. As a user of these resources, you are responsible for reading and understanding the following documented information. This documented information protects the consumers of computing resources, computing hardware and networks, and system administrators. (Contact the IT Services office if you have any questions.)

RIGHTS AND RESPONSIBILITIES

Computers and networks can provide access to resources on and off campus as well as the ability to communicate with others worldwide. Such open access is a privilege and requires that individual users act responsibility. Users must respect the rights of other users, respect the integrity of the systems and related physical resources, and observe all relevant laws, regulations, and contractual obligations. Since electronic information is volatile and easily reproduced, users must exercise care in acknowledging and respecting the work of others through strict adherence to software licensing agreements and copyright laws.

Misuse of computing, networking or information resources may result in the loss of computing and/or networking access. Additionally, misuse can be prosecuted under applicable BFIT or campus policies, procedures, or collective bargaining agreements.

Illegal production of software and other intellectual property protected by U.S. copyright law is subject to civil damages and criminal punishment including fines and imprisonment.

The Benjamin Franklin Institute of Technology supports the policy of EDUCOM on Software and Intellectual Rights, which states, "Respect for intellectual labor and creativity is vital to academic discourse and enterprise. This principle applies to works of authors and publishers in all media. It encompasses respect for the right to acknowledgement, right to privacy, and the right to determine the form, manner, and terms of publication and distribution. Because electronic information is volatile and easily reproduced, respect for the work and personal expression of others is especially critical in computer environments. Violations of authorial integrity, including plagiarism, invasion of privacy, unauthorized access, and trade secrets and copyright violations may be grounds for sanctions against members of the academic community."

Other organizations operating computing and network facilities that are reachable via the Institute may have their own policies governing the use of those resources. When accessing remote resources, users are responsible for obeying both the policies set forth in this documented information and the policies of the other organizations.

NO EXPECTATION OF PRIVACY

Students have access to computers and the Internet to assist them in the educational process. Students should have no expectation of privacy in anything they create, store, send or receive using BFIT's computer equipment.

The computer network is the property of BFIT and may be used only for educational purposes.

WAIVER OF PRIVACY RIGHTS

Students expressly waive any right of privacy in anything they create, store, send and receive, when using BFIT computer equipment or Internet access. Students consent to allow BFIT personnel access to and review of all materials created, stored, sent or received by students through any BFIT network or Internet connection.

MONITORING OF COMPUTER AND INTERNET USAGE

BFIT has the right to monitor and log any and all aspects of its computer system including, but not limited to, monitoring Internet sites visited by students, monitoring chats and newsgroups, monitoring file downloads and all communications sent and received by students.

BLOCKING SITES WITH INAPPROPRIATE CONTENT

BFIT has the right to utilize software that makes it possible to identify and block access to Internet sites containing sexually explicit or other material deemed inappropriate in this setting.

FRIVOLOUS USE

Computer resources are not unlimited. Network bandwidth and storage capacity have finite limits, and all students connected to the network have a responsibility to conserve these resources. As such, students must not deliberately perform acts that waste computer resources. These acts include, but are not limited to, sending mass mailing or chain letters, spending excessive amounts of time on the Internet, playing games, engaging in on-line chat groups, uploading or downloading large files, accessing streaming audio and/or video files, or otherwise creating unnecessary loads on network traffic associated with non-education-related uses of the Internet.

EXISTING LEGAL CONTEXT

All existing laws (federal and state) and college regulations and policies apply, including not only those laws and regulations that are specific to computers and networks, but also those that may apply generally to personal conduct and harassment.

Users do not own accounts on BFIT computers, but are granted the privilege of exclusive use. Under the Electronic Communications Privacy Act of 1986 (Title 18 USC, section 2510 et seq.), users are entitled to privacy regarding information contained on these accounts. This act, however, allows system administrators or other college employees to access user files in the normal course of their employment, when necessary to protect the integrity of computer systems or the rights or property of the college. For example, system administrators may examine or make copies of files that are suspected of misuse or that have been corrupted or damaged. User files may be subject to search by law enforcement, which may be used as evidence in a court of law. In addition, student files on college computer facilities are considered "educational records" under the Family Educational Rights and Privacy Act of 1974 (Title 20 U.S.C. section 1232[g]).

VIOLATIONS

Please see the Student Code of Conduct, Prohibited Conduct section #22, a-q for a listing of all Information Technology and Computer Use violations.

ENFORCEMENT

Minor infractions of this policy, when accidental, such as consuming excessive resources or overloading computer systems, are generally resolved informally by the unit administering the accounts or network.

This may be done through electronic mail or in-person discussion and education.

Repeated minor infractions or misconduct that is more serious may result in referral to the Student Conduct system, in which the student may face temporary or permanent loss of computer access privileges or the modification of those privileges. More serious violations include, but are not limited to, the unauthorized use of computer resources, attempts to steal passwords or data, unauthorized use or copying of licensed software, repeated harassment, or threatening behavior.

In addition, offenders may be referred to their sponsoring advisor, department, employer, or other appropriate college office for further disciplinary action.

Adapted with permission from the University of California, Davis, Computer and Network Use Policy.

Missing Student Policy

The Benjamin Franklin Institute of Technology takes student health and safety seriously and considers it with utmost importance. The staff of BFIT will make all efforts to communicate with appropriate persons in a timely manner regarding a student's health and safety. The following policy and procedure has been placed into effect to support any student living in BFIT housing, who based on facts and circumstances known to the college, are determined to be missing.

The enacted policy is in accordance with Section 485 of the Higher Education Act (HEA), which states that every institution of higher education that provides on-campus housing must provide a missing student notification policy for those students residing in on-campus housing.

REPORTING A SUSPECTED MISSING STUDENT

Anyone who suspects a student to be missing should report their concern to the Residence Life staff or designated Student Affairs professionals (as noted below). All reports made to the college will be followed up with an immediate investigation once a student has been missing for 24 hours. Depending on the circumstances presented to college officials, parents of a missing student will be notified. In the event that parental notification is necessary, the Dean of Studentsor designee will place the call.

A suspected missing person should be reported to any of the following staff members by calling the college's main line during standard business hours at 617-423-4630 and using the automated directory to reach:

- Dean of Students
- Assistant Dean of Students
- BFIT Security

During evening, overnight, and weekend hours, reports of a missing student should be made to the Assistant Director of Student Life by calling 617-315-5843.

The following information will be collected and documented when it is reported to a staff member:

- Name and directory information of suspected missing person
- Name and relationship of person reporting the suspected missing person
- Contact information (cell phone, email, address) of the person reporting
- Date, time, location the suspected missing person was last seen
- Any known extracurricular, off-campus visits (friends, family) or work commitments of the suspected missing person
- Cell phone number of the suspected missing person

DETERMINING A MISSING STUDENT

Once a student has been reported as missing, staff members may participate in any or all of the following procedures to make contact with the suspected missing student:

- Administratively key into the student's residence hall room (refer to the keying in policy located in the student handbook)
- Call and text the student's cell phone (or other numbers posted in CAMS)
- Check other possible public locations (library, off-campus gym, etc)
- Contact student's roommate (if applicable) and floor-mates to create a timeline of the last known whereabouts of the missing student (date, time, location, activities)
- Contact student's faculty members
- Contact student's emergency contact
- Contact any off-campus friends
- Check any social media websites (Facebook, Instagram, Twitter, etc)

INVOLVING LOCAL LAW ENFORCEMENT AGENCIES

Once all information has been collected regarding the suspected missing student and a timely and appropriate investigation has taken place by college officials, the Dean of Students and/or designee will make contact with the Boston Police Department. Once the information is reported to the Boston Police Department, the Dean of Students will continue to act as the spokesperson to the family and concerned reporter regarding the missing student.

Residence Life, Student Affairs, and Security will assist any local law enforcement agencies with the investigation upon request by providing all necessary and appropriate information on the student and by using any of the procedures and the resources listed above to assist in the investigation that are legally permissible.

Campus SaVE Act

Policy Concerning Sexual Assault, Domestic Violence, Dating Violence, and Stalking

INTRODUCTION

Benjamin Franklin Institute of Technology is committed to providing a safe learning and working environment.

In compliance with federal law, specifically the Jeanne Clery Act (Clery Act) and the Campus Sexual Violence Elimination Act (SaVE Act), Benjamin Franklin Institute of Technology has adopted policies and procedures to prevent and respond to incidents of sexual assault, domestic violence, dating violence, and stalking. These guidelines apply to all members of the BFIT community (students, faculty, and staff) as well as contractors and visitors.

Benjamin Franklin Institute of Technology will not tolerate sexual assault, domestic violence, dating violence, or stalking, as defined in this Policy, in any form. Such acts of violence are prohibited by BFIT policy, as well as state and federal laws. Individuals who the college determines more likely than not engaged in these types of behaviors are subject to penalties up to and including dismissal or separation from BFIT, regardless of whether they are also facing criminal or civil charges in a court of law.

SEXUAL ASSAULT, DOMESTIC VIOLENCE, DATING VIOLENCE, AND STALKING

- Sexual Assault refers to any sexual act directed against another person, forcibly and/or against the person's will; or not forcibly or against the person's will where the survivor is incapable of giving consent, as well as incest or statutory rape.
- Domestic Violence includes felony or misdemeanor crimes of violence committed by:
    - A current of former spouse or intimate partner of the survivor;
    - A person with whom the survivor shares a child in common;
    - A person who is or was residing in the same household as the survivor; or
    - Any person against someone who is protected from that person's acts under the domestic or family violence laws of the jurisdiction.
- Dating Violence refers to violence committed by a person who is or has been in a social relationship of a romantic or intimate nature with the survivor.
- Stalking occurs when an individual engages in a course of conduct directed at a specific person that would cause a reasonable person to fear for his or her safety or the safety of others, or suffer substantial emotional distress.

REPORTING AN INCIDENT

Benjamin Franklin Institute of Technology encourages any member of the BFIT community who has experienced sexual assault, domestic violence, dating violence, or stalking, or knows of another member of the community who has experienced sexual assault, domestic violence, dating violence, or stalking to report the incident to the college.

If a BFIT student, faculty or staff member, visitor, or contractor has experienced a sexual assault, domestic violence, dating violence, or stalking, they should immediately report the incident to BFIT Security at x1355 from an on-campus telephone, or 617-588-1355 from an off-campus telephone.

Individuals who are on campus can also make an in-person report to the Security staff. Security will assist all members of the BFIT community by assessing the incident, advising the survivor on how he or she can seek legal protection, and making the survivor aware of medical, counseling, and other support services. If a reported incident did not occur on campus, BFIT Security can assist the survivor in notifying the local police department with jurisdiction over the crime. In case of an emergency or ongoing threat, a survivor should get to a safe location and call 911. Calling 911 will put you in touch with local police.

Students who have experienced a sexual assault, domestic violence, dating violence, or stalking may also report an incident to the Assistant Dean of Students (U113 or by calling 617-588-1336) or to the Dean of Students(U112 or by calling 617-588-1343) or to the college's Title IX Coordinator, at 617-588-1318.

Employees who have experienced a sexual assault, domestic violence, dating violence, or stalking may also report an incident to the Director of Human Resources, Kendall Building, 2nd floor, 617-588-1302.

These offices will provide survivors of sexual assault, domestic violence, dating violence, and stalking with information about available support services and resources, and also assist any survivor in notifying law enforcement, including the local police, if the survivor elects to do so.

Survivors are not required to report to area law enforcement in order to receive assistance from or pursue any options within Benjamin Franklin Institute of Technology.

Reporting sexual assault, domestic violence, dating violence, and stalking to the police (including Benjamin Franklin Institute of Technology Security) does not commit the survivor to further legal action. However, the earlier an incident is reported, the easier it will be for the police to investigate, if the survivor decides to proceed with criminal charges.

WRITTEN NOTIFICATION OF RIGHT AND OPTIONS

Any student or employee who reports an incident of sexual assault, domestic violence, dating violence, or stalking, whether the incident occurred on or off campus, shall receive a written explanation of their rights and options as provided for under this policy.

These rights and options include the right(s) of a survivor to:

A. Go to court, and to file a domestic abuse complaint requesting an order restraining your attacker from abusing you, and/or an order directing your attacker to leave your household, building, school, college, or workplace;

B. Seek a criminal complaint for threats, assault and battery, or other related offenses;

C. Seek medical treatment (the police will arrange transportation for you to the nearest hospital or otherwise assist you in obtaining medical treatment if you wish);

D. Request the police remain at the scene until your safety is otherwise ensured;

E. Request that a police officer assist you by arranging transportation or by taking you to a safe place, such as a shelter or a family or friend's residence; and

F. Obtain a copy of the police incident report at no cost from the police department.

PROCEDURES SURVIVORS SHOULD FOLLOW

If an incident of sexual assault, domestic assault, dating violence, or stalking occurs, it is important to preserve evidence so that successful criminal prosecution remains an option.

The survivor of a sexual assault should not wash, shower or bathe, douche, brush teeth, comb hair, or change clothes prior to a medical exam or treatment. If a survivor has removed the clothing he or she was wearing during the assault prior to seeking medical treatment, that clothing should be placed in a brown paper, not plastic, bag and brought to the hospital when treatment is sought. If the survivor is still wearing the clothes that he or she was wearing during an assault, he or she should bring a change of clothes with him or her to the hospital so that the clothes containing possible evidence can be preserved and examined for evidence of the crime.

Evidence of violence, such as bruising or other visible injuries, following an incident of sexual assault, or domestic or dating violence, should be documented by taking a photograph. Evidence of stalking, including any communications such as written notes, email, voice mail, or other electronic communications sent by the stalker, should be saved and not altered in any way.

ON CAMPUS AND OFF CAMPUS RESOURCES

Benjamin Franklin Institute of Technology and the City of Boston offer other important resources to the survivors of sexual assault, domestic assault, dating violence, or stalking, including medical treatment, counseling services, and advocacy that survivors may wish to utilize.

The following BFIT employees and on campus offices can assist members of the BFIT community in considering their options and navigating through any resources or recourse they may elect to pursue.

A survivor need not formally report an incident of sexual assault, domestic violence, dating violence, or stalking to law enforcement or Benjamin Franklin Institute of Technology in order to access the following resources:

SEXUAL ASSAULT RESPONSE TEAM MEMBERS:

Jackie Cornog, Dean of Students
617-588-1343

Brett Wellman, Assistant Dean of Students
617-588-1336

BENJAMIN FRANKLIN INSTITUTE OF TECHNOLOGY DEPARTMENTS:

Dean of Students Office, Union Building, U112
617-588-1343

Student Life Office, Union Building, U113
617-588-1336

Human Resources Office, Kendall Building, 2nd Floor
617-588-1302

BFIT Security, Union Building, Lobby
617-588-1355

Title IX Coordinator, Union Building U113 Kendall 2nd Floor
617-588-1315

OFF-CAMPUS RESOURCES AVAILABLE

BFIT Employee Assistance Program: 877-757-7587

Boston Area Rape Crisis Center: 617-492-7273

Gay & Lesbian Helpline: 617-267-9001

Safe Link (24-hour Domestic Violence multilingual hotline):
877-785-2020 MA Office for Victim Assistance (www.mass.gov/mova): 617-586-1340

MA Coalition Against Sexual Assault and Domestic Violence (www.janedoe.org):
617-248-0922 National Sexual Assault Hotline: 800-656-4673

ACCOMMODATIONS

Regardless of whether a student or employee reports an incident of sexual assault, domestic violence, dating violence, or stalking to law enforcement or pursues any formal action, if they report such an incident to the college, Benjamin Franklin Institute of Technology is committed to providing them as safe a learning or working environment as possible. Upon request, Benjamin Franklin Institute of Technology will make any reasonably available change to a survivor's academic, living, transportation, and working situation. When a reported incident of abuse involves more than one member of the BFIT community, the college's Title IX Coordinator, Dean of Students, or Benjamin Franklin Institute of Technology Security Department may also issue an institutional No Contact order, prohibiting the individuals from contacting one another, either on or off campus. Students may contact the Dean of Students'office (Union Building, U112, 617-588-1343) for assistance, and employees may contact the Office of Human Resources (Kendall Building, 2nd floor, 617-588-1302) for assistance.

Security officers will advise survivors of a reported incident of sexual assault, domestic violence, dating violence, or stalking about how to seek a restraining order from a criminal court that directs the accused to refrain from abuse and to leave the survivor's household, building, school, college, or workplace.

Benjamin Franklin Institute of Technology is committed to ensuring that orders of protection issued by courts are fully upheld on all college-owned, used, and controlled property as well as properties immediately adjacent to Benjamin Franklin Institute of Technology. Therefore, if any member of the BFIT community obtains an order of protection or restraining order, he or she should promptly inform BFIT Security and the Dean of Student's Office and provide the Dean of Students with a copy of that order, so that the college can enforce it. Benjamin Franklin Institute of Technology is also committed to protecting survivors from any further harm, and if the Benjamin Franklin Institute of Technology Dean of Students determines that an individual's presence on campus poses a danger to one or more members of the college community, the Dean can issue an institutional No Contact or No Trespass Order barring that individual from BFIT property.

SURVIVOR CONFIDENTIALITY

Benjamin Franklin Institute of Technology recognizes the sensitive nature of sexual assault, domestic violence, dating violence, and stalking incidents. We are committed to protecting the privacy of individuals who report incidents of abuse, to the extent that doing so is permitted by law and consistent with the college's need to protect the safety of the community. Different BFIT officials and personnel are able to offer varying levels of privacy protections to survivors.

BFIT requires all college employees to share with the college's Title IX Coordinator information they learn concerning a report of sexual assault, or an incident of domestic or dating violence, or stalking, so that the Title IX Coordinator can investigate the incidents, track trends (including possible multiple reports involving the same assailant) and determine whether steps are needed to ensure the safety of the community. It is the survivor's choice whether he or she wishes to participate in the investigation; however, the college may proceed with an investigation without the survivor's participation if there is a concern for the safety of other members of the community.

Reports made to the BFIT Security will be shared with the Title IX Coordinator in all cases, and may also be made public (maintaining the survivor's anonymity) and shared with the accused in cases where criminal prosecution is pursued. Reports received by the college concerning the abuse of a minor or juvenile must be reported to state

officials in compliance with state law requiring mandatory reporting of child abuse. All members of the BFIT community are required by college policy to report any instances of known child abuse or neglect to BFIT Security, and BFIT Security will in turn report such information to the appropriate state authorities.

Reports of sexual assault, domestic or dating violence, or stalking, which are shared with BFIT's members of the Sexual Assault Response Team, the Title IX Coordinator, or other college officials, will be treated with the greatest degree of respect and privacy possible while still fulfilling BFIT's obligation to investigate and effectively respond to the report. Every effort will be made to limit the scope of information shared to keep it to a minimum of detail, and only when absolutely necessary. It is the survivor's choice whether to participate in the investigation; however, the college may proceed with the investigation without the survivor's participation if there is a potential threat to other members of the community.

A survivor's ability to speak in confidence and with confidentiality may be essential to his or her recovery. Benjamin Franklin Institute of Technology thus expects employees to treat information they learn concerning incidents of reported sexual assault, domestic violence, dating violence, and stalking with as much respect and as much privacy as possible. College employees must share such information only with those college officials who must be informed of the information pursuant to college policy. Failure by a Benjamin Franklin Institute of Technology employee to maintain privacy in accordance with Benjamin Franklin Institute of Technology policy will be grounds for discipline.

While federal law requires Benjamin Franklin Institute of Technology to include certain reported incidents of sexual assault, domestic violence, dating violence, and stalking among its annual campus crime statistics, such information will be reported in a manner that does not permit identification of survivors.

BENJAMIN FRANKLIN INSTITUTE OF TECHNOLOGY EDUCATIONAL PROGRAMS

Benjamin Franklin Institute of Technology is committed to increasing the awareness of and prevention of violence. Benjamin Franklin Institute of Technology makes continued efforts to provide students and employees with education programming, and strategies intended to prevent rape, acquaintance rape, sexual assault, domestic violence, dating violence, and stalking before they occur.

To address the issue of sexual assaults, domestic violence, dating violence, and stalking in a college environment, Benjamin Franklin Institute of Technology offers practical guidance for risk reduction, violence prevention, and bystander intervention.

- Personal Safety Workshops – In an effort to educate the BFIT community about safety, Benjamin Franklin Institute of Technology provides opportunities for all members of the community to learn about safety precautions. Student Life staff conduct awareness workshops for BFIT community members on a wide variety of subjects including but not limited to alcohol awareness, the definition of consent and sexual assault, and wellness.
- New Student Orientation – New student orientation programs addressing active bystander awareness, support services, medical amnesty, wellness, and personal safety are delivered by members of Student Life to first year and transfer students.
- Crime Bulletins and Alerts – The Benjamin Franklin Institute of Technology Dean of Students Office periodically distributes crime bulletins or alerts to inform members of the BFIT community about incidents of crime in the areas surrounding the college that may pose an imminent threat of harm to members of the community. Bulletins and alerts are also circulated at times, not in response to a specific incident, but as general reminders to community members about measures that members of the community can take to enhance personal and property security.
- New Employee Orientation – All new employees receive training on Sexual Harassment and Title IX through the Office of Human Resources.

CONDUCT PROCEEDINGS

Benjamin Franklin Institute of Technology strictly prohibits all acts of sexual assault, domestic violence, dating violence, and stalking. In addition to facing criminal investigation and prosecution, students, employees, and other affiliates may also face action by Benjamin Franklin Institute of Technology. When students or employees are accused of having engaged in sexual assault, domestic violence, dating violence, or stalking, the college may, depending on the facts alleged, issue interim safety measures prior to the resolution of the charges. Such interim safety measures might include issuing No Contact orders between the parties, altering an individual's work or class schedule or a student's housing assignment, placing an employee accused of misconduct on administrative leave, or placing a student accused of misconduct on an interim suspension.

BFIT's Title IX Coordinator will oversee all investigations of allegations of gender-based violence. Employees who are found responsible for having committed such a violation could face termination of employment, and students who are found responsible for having committed such a violation may face disciplinary probation, deferred suspension, suspension from college housing, dismissal from college housing, suspension from the college, or dismissal from the college. In addition, Benjamin Franklin Institute of Technology may issue No Contact Orders and No Trespass Orders to those found responsible.

If a Title IX investigation concludes that evidence exists which suggests a student more likely than not engaged in sexual assault, domestic violence, dating violence, or stalking, the matter will be referred to the Dean of Students'office for adjudication pursuant to the Student Code of Conduct. The Office of Human Resources will handle any incidents involving employees and college affiliates who are found by the college to have engaged in behavior that violates college policy, including but not limited to sexual assault, domestic violence, dating violence, or stalking.

All conduct proceedings, whether the conduct is reported to have occurred on or off campus, shall provide a prompt, fair, and impartial investigation and resolution.

Benjamin Franklin Institute of Technology seeks to investigate and adjudicate any official complaints of sexual abuse, domestic violence, dating violence, or stalking that are filed with the college within sixty (60) days of receipt of that complaint, unless mitigating circumstances require the extension of time frames beyond sixty (60) days.

Such circumstances may include the complexity of the allegations, the number of witnesses involved, the availability of the parties or witnesses, the effect of a concurrent criminal investigation, college breaks or vacations that occur during the pendency of an investigation, or other unforeseen circumstances. In these matters the complainant and the respondent shall be notified, provided an explanation, and given information about the amount of additional time required.

In all investigatory and adjudication proceedings conducted by the college concerning charges of sexual misconduct, domestic violence, dating violence, or stalking, including any related meetings or hearings, both the complainant and the respondent will be afforded the same process rights, including equal opportunities to have others present. This includes the right to be accompanied by an advisor of their choice. Both the complainant and respondent will also be afforded an equal opportunity to introduce evidence and identify witnesses.

When a student is accused of any violation of the student conduct code, including but not limited to charges that he or she engaged in sexual assault, domestic or dating violence, or stalking, the charges will be decided using the preponderance of evidence standard, which means that it is more likely than not that the reported misconduct

occurred. The Title IX Coordinator and the Dean of Students (or designee) have discretion to decide whether sufficient evidence warrants referring charges of misconduct against a student to a Student Conduct Board. Full information about the Student Conduct Board process can be found in the Student Handbook.

When the Title IX Coordinator completes an investigation and/or when a Board issues a decision, both the complainant and the respondent shall simultaneously be informed in writing within 2 business days of the outcome of the investigative or adjudicative proceeding. Both the complainant and respondent will be given the same procedures and timeframe to appeal the outcome of the proceeding, both parties will receive the same process rights if an appeal is granted, and the parties will both receive timely notice when the outcome becomes final. Disclosure of the outcome shall be made to both parties unconditionally, and each shall be free to share or not share the details with any third parties. Full information about the appeals process can be found in the Student Handbook.

For additional information about employee conduct please consult the Employee Handbook.

Sexual and Other Unlawful Harassment Policy

LEGAL BASIS

Title VII of the 1964 Civil Rights Act

Title IX of the 1972 Educational Amendments

Governor's Executive Order 200, as amended by Executive Order 240

POLICY

Sexual and other unlawful harassment of a student, an employee, or any other person at the Benjamin Franklin Institute of Technology (BFIT) is impermissible and intolerable. Sexual harassment is a form of sex discrimination and a violation of Title VII of the Civil Rights Act of 1964 and Title IX of the Educational Amendments of 1972. It is against the policies of BFIT for any member of the student body, administration, faculty or staff to harass sexually or in other forms another person at BFIT.

OVERVIEW

It is the goal of the Benjamin Franklin Institute of Technology to promote a college and workplace environment that is free of sexual harassment and other unlawful harassment based on race, sex, sexual orientation, religion, ethnic or national origin, age, criminal record (applications only), mental illness, physical disability, and genetics. Sexual harassment or other unlawful harassment of students or employees occurring in the school and workplace (collectively "Unlawful Harassment") or in other settings in which employees may find themselves in connection with their employment is unlawful and will not be tolerated by this organization. Further, any retaliation against an individual who has complained about Unlawful Harassment or retaliation against individuals for cooperating with an investigation of an Unlawful Harassment complaint is similarly unlawful and will not be tolerated.

To achieve our goal of providing a college and workplace free from Unlawful Harassment, the conduct that is described in this policy will not be tolerated. We have provided a procedure by which inappropriate conduct will be dealt with, should it be encountered by a student, an employee, or any other person at the Benjamin Franklin Institute of Technology.

Because the Benjamin Franklin Institute of Technology takes allegations of Unlawful Harassment seriously, we will respond promptly to complaints of Unlawful Harassment. Where it is determined that such inappropriate conduct has occurred, we will act promptly to eliminate the conduct and impose appropriate corrective action as is necessary, up to and including termination.

DEFINITION OF SEXUAL OR OTHER UNLAWFUL HARASSMENT:

Generally speaking, Unlawful Harassment consists of a student, employee, or other individual treating another person at the Benjamin Franklin Institute of Technology in a disparate or unequal fashion on the basis of race, color, religious creed, national origin, ancestry, sex, age, veteran status, criminal record (applications only), handicap (disability), pregnancy, mental illness, retaliation, sexual harassment, sexual orientation, and genetics.

Such treatment includes retaliating against an employee for protecting his or her right against such unequal treatment.

In Massachusetts, the legal definition for sexual harassment is this: "sexual harassment" means sexual advances, requests for sexual favors, and verbal or physical conduct of a sexual nature when:

(a) submission to or rejection of such advances, requests or conduct is made either explicitly or implicitly a term or condition of employment or as a basis for employment decisions, also known as "Quid Pro Quo;" or,

(b) such advances, requests or conduct have the purpose or effect of unreasonably interfering with an individual's work performance by creating an intimidating, hostile, humiliating or sexually offensive educational or work environment – also known as a "Hostile Work Environment."

Under these definitions, "Quid Pro Quo" involves direct or implied requests by a supervisor or other person of authority for sexual favors in exchange for actual or promised job benefits such as favorable reviews, salary increases, promotions, increased benefits, or continued employment.

The legal definition of sexual harassment is broad.

In addition to the above examples, other sexually-oriented conduct, whether it is intended or not, that is unwelcome and has the effect of creating a "Hostile Work Environment," where the college or work place environment that is offensive, intimidating, or humiliating to male or female workers may also constitute sexual harassment.

While it is not possible to list all those additional circumstances that may constitute sexual harassment, the following are some examples of conduct that if unwelcome, may constitute sexual harassment depending upon the totality of the circumstances including the severity of the conduct and its pervasiveness:

- Unwelcome sexual advances -- whether they involve physical touching or not;
- Sexual epithets, jokes, written or oral references to sexual conduct, gossip regarding one's sex life; comment on an individual's body, comment about an individual's sexual activity, deficiencies, or prowess;
- Displaying sexually suggestive objects, pictures, and cartoons;
- Sending sexually-inappropriate email or displaying Internet pornography or "pop-ups;"
- Unwelcome leering, whistling, brushing against the body, sexual gestures, suggestive or insulting comments;

- Provocative attire;
- Sending suggestive or obscene notes, cards or invitations;
- Inquiries into one's sexual experiences; and,
- Discussion of one's sexual activities

All students and employees should take special note that, as stated above, retaliation against an individual who has complained about sexual or other unlawful harassment, and retaliation against individuals for cooperating with an investigation of a sexual or another harassment complaint is unlawful and will not be tolerated by this organization.

BFIT students or personnel who are found to be harassing another person shall be subject to appropriate disciplinary action. Violations of this policy by faculty, administrators, staff or students will lead to disciplinary action, up to and including suspension, expulsion or termination.

Grievance Procedures:

INFORMAL GRIEVANCE PROCEDURE

The informal process will encourage individuals who believe that BFIT's Equal Employment Opportunity/ Affirmative Action Policy and/or Sexual Harassment Policy has been breached, to discuss the concern or breach with any involved BFIT official who may be helpful in resolving the matter, including the Dean of Students, Assistant Dean of Students,, Academic Advisor, Supervisor, Dean of Academic Affairs, Human Resource Director, etc.

The purpose of the informal grievance process is to allow for any misunderstanding to be aired and resolved and to provide an opportunity for the aggrieved individual and the alleged perpetrator to attempt to resolve the concern prior to the formal grievance process. The aggrieved individual should use this process to clarify the problem, seek counsel for himself or herself, and decide on a course of action.

A student shall initiate the informal grievance process by informing the Dean of Students. The individual initiating the complaint must do so within twenty (20) calendar days from the date s/he knew or should have known of the alleged discriminatory action. Within seven (7) calendar days of the initial complaint, the individual, the Dean of Student Services, and other involved persons, shall meet to discuss the complaint with the intention of finding a satisfactory solution. Within seven (7) calendar days from the date of discussion, the Dean of Student Services shall offer the proposed initial resolution to the individual in writing. Every effort is made to resolve the complaint informally at this level.

FORMAL GRIEVANCE AND HEARING PROCEDURE

If the initial resolution does not resolve the complaint to the satisfaction of the student, they, within seven (7) calendar days from the date the resolution was offered, may initiate the formal grievance procedure by filing a grievance in writing with BFIT's Equal Employment Opportunity/Affirmative Action Officer, who is the Human Resource Director.

This office is located on the 2nd floor of the Kendall Building.

The grievance shall contain a statement of all known facts pertaining to the alleged violation and shall be filed with the EEO/AA Officer.

Within seven (7) calendar days from the date the formal grievance is filed, the EEO/AA Officer shall attempt to resolve the complaint through discussion with the complainant, the Dean of Students, and other involved persons.

Social Networking and Online Responsibility Policy

Benjamin Franklin Institute of Technology understands the popularity and usefulness of social networking sites and supports their use by students provided that:

- No offensive or inappropriate pictures are posted;
- No offensive or inappropriate comments are posted;
- Any information placed on the website(s) does not violate college, student athlete, or the student code of conduct;
- Inappropriate photos and/or comments posted on these sites do not depict team-related or college-identifiable activities (including wearing/using team uniforms or gear inappropriately).

Students must remember that they are representatives of Benjamin Franklin Institute of Technology. Please keep the following in mind as you participate on social networking websites:

- Before participating in any online community, understand that anything posted online may be available to anyone in the world. Any text or photo placed online may become the property of the site(s) and may be completely out of your control the moment it is placed online - even if you limit access to your site.
- You should not post any information, photos or other items online that could embarrass you, your family, your student club or organization, your team, or athletics at Benjamin Franklin Institute of Technology. This includes information that may be posted by others on your page.
- Never post your home address, local address, phone number(s), birth date or other personal information. You could be a target of predators.
- Student Affairs administrators may monitor these web sites.
- Student-athletes could face discipline and even dismissal for violations of team, department, college and/or NJCAA policies.

Law enforcement agencies may monitor these websites regularly as may potential employers and internship supervisors as a way of screening applicants. In addition, many college programs and scholarship committees also search these sites to screen candidates. BFIT student athletes and student leaders should be very careful when using online social networking sites and keep in mind that sanctions may be imposed, including the loss of your eligibility to participate on teams or in organizations, if these sites are used improperly or depict inappropriate, embarrassing or dangerous behaviors.

Academic Affairs

The Benjamin Franklin Institute of Technology offers a range of technical programs that lead to a variety of careers and further educational opportunities.

They range from one-year certificates in automotive technology, practical electricity, and HVAC&R to two-year academic degrees in industrial and engineering technologies, to four-year degree programs in mechanical engineering technology and electrical engineering, with a focus on the electric power industry.

All of our programs provide hands-on laboratory work combined with classroom technical concepts and a strong general education component.

Academic Departments

Automotive Technology offers an associate in automotive technology, through an array of courses in engines, electricity, emissions, alternative fuels, brakes, steering, suspension, air conditioning, transmissions diagnosis, and repair.

Construction Management offers an associate degree with a background of technical and organizational skills that apply to construction projects from conception to completion. Students will study the skills necessary to manage resources, time, cost and quality with an emphasis on team building.

Computer Technology offers four degree programs: an associate degree in computer engineering technology that provides a solid basis for transfer to a four-year engineering technology degree program; an associate degree in computer technology that prepares students for work in a variety of roles as IT support specialists, with an Audiovisual Technology track option that prepares students for work installing, configuring, and servicing audiovisual equipment, electronics, and conducting facilities design; and an associate and bachelor degree in health information technology that prepares students for a variety of opportunities in the healthcare industry focusing on electronic health record systems.

Electrical Engineering offers a bachelor of science degree in electrical engineering, with a special emphasis on the electric power industry.

Electrical Technology offers an associate degree in electrical technology and a certificate in practical electricity, both of which provide classroom hours and hands-on training in electrical design and layout and instruction in the National Electrical Code. Successful completion of these programs fulfill the Massachusetts Board of State Examiners of Electricians academic requirements towards Journeyman Electrician licensure by providing 600 hours of classroom instruction.

Electronic Engineering Technology offers an associate degree program in electronic engineering technology, which prepares students for work in industry, as well as for transfer to bachelor degree programs in electronics, business, computers, or engineering. The Automation/Robotics option within the department allows students to choose courses that teach motors, sensors, controls, automation, and ladder logic instead of Calculus and University Physics. This track prepares students to work with automated systems or in the field of robotics. The department also offers an associate degree program in biomedical engineering technology (also known as medical electronics or health engineering technology), which prepares students to work as Biomedical Technicians in a hospital or industry setting. Opportunities to pursue advanced degrees in electrical engineering or Health IT after completing a program in the department are available.

Eye Health Technology provides an associate degree in Opticianry offering a wide range of technical courses such as Ophthalmic Design and Contact Lens theory to prepare individuals for a career as an optician.

Heating, Ventilation, Air Conditioning & Refrigeration is a nine-month certificate program that prepares graduates for employment as HVAC&R technicians.

Humanities and Social Sciences provides a range of courses in composition, communication, and the social sciences that provide general education to enable and complement the technical courses.

Mathematics and Physics teaches the concepts that underlie all of the technical specialties of the college, offering mathematics courses that emphasize theory and applications, as well as classroom and laboratory physics.

Mechanical Engineering Technology prepares graduates for immediate employment as technicians and for further study in engineering technology.

Technology Business and Management prepares graduates to assist with external and internal customer service, financial analysis, marketing and the management of technical products and processes.

Lufkin Memorial Library

The Lufkin Memorial Library provides the information and resources necessary to meet the needs of the college's educational programs. In support of this mission, the library offers collections, services and programming that facilitate effective use of information and acquisition of information literacy skills. The library provides information and instruction in multiple formats to meet these needs and embraces appropriate technologies to enhance research and learning.

The Lufkin Library, located on the first floor of the BFIT Union Building in Room U108, has access to over 100,000 electronic books, and 26 online databases with access to full-text magazines and other resources. The library is open 60+ hours per week and a reference librarian is on-duty at all times. A secure wireless internet connection is accessible in the library. The Lufkin Library is a member of the Massachusetts Library System, a state-supported collaborative that fosters cooperation, communication, innovation, and sharing among member libraries of all types.

For further information on library services, please visit our webpage: ***http://www.bfit.edu/Academics/Library***

Academic Policies

GRADING SYSTEM

The grading system employs the five letters and corresponding values defined below:

GRADE		GRADE WEIGHT
A	Superior	4.00
A-		3.67
B+		3.33
B	Above Average	3.00
B-		2.67
C+		2.33
C	Average	2.00
C-		1.67
D+		1.33
D	Below Average	1.00
F	Failure	0.00
I	Incomplete	0.00
W	Withdraw	0.00
WF	Withdraw-Failed	0.00

Developmental courses will be graded on the following scale:

AA	Superior	4.00
BB	Above Average	3.00
CC	Average	2.00
FF	Failure	0.00
I	Incomplete	0.00
W	Withdraw	0.00
WF	Withdraw-Failed	0.00

These courses will not be factored into a Student's Cumulative GPA or count toward maximum time frame. Students may not receive financial aid for more than thirty attempted developmental credits.

CALCULATING GRADE POINT AVERAGE (GPA)

The GPA demonstrates the level of success in college studies. It is based on the earned grade (the weight of each is shown above) and the number of credit hours (see individual course descriptions for credit hour details) for each course. To calculate the GPA, multiply the earned grade weight of each course by its assigned credit hour(s). The sum of these is then divided by the sum of the total semester credit hours for the courses included in the calculation. The result is the GPA.

DISTRIBUTION OF GRADES

All midterm and final grade reports are accessed through the Canvas learning management system unless other arrangements are made.

Dean's List

The Dean's List comprises those students who have a term GPA of 3.5 or higher, have no current grade below C, and have successfully completed a minimum of 12 credit hours during the semester.

Attendance Policy

Students of the Benjamin Franklin Institute of Technology are expected to attend all classes. Attendance is taken at each class meeting and absences become a part of students' records. The college recognizes that occasions may arise that prevent students from attending class.

If this occurs, a student should talk to the instructor as soon as possible to determine any missed work. It is important for students to understand that they are responsible for any work missed and that missed classes and/or work can seriously harm grades.

As a guide for students who wish to avoid failing grades, the college has established a fixed number of hours a student might be able to miss in a class before falling into the danger of failing for lack of attendance. These fixed hours are determined by multiplying the total credit hours for the course by two. Once a student has exceeded this maximum in any class, that student may be strongly advised to withdraw from the course. BFIT will make a determination on the 15th day after 14 consecutive days of non attendance whether a student intends to continue in classes or should be withdrawn from the college. Some courses and programs may have additional consequences for missing class time. Look closely at course syllabi and other documents that will spell out these policies. For additional information regarding the college's official/unofficial withdrawal policy please refer to pages 16-17.

Add/Drop Period

After a student is pre-registered, course changes can be made through the Add/Drop period. For 15-week courses, this period lasts through the second week of classes and for 7-week courses, the Add/Drop period ends after the first week of classes. A student must attend at least one class session of each course before the end of the add/drop period to remain on the course roster. Please refer to the Academic Calendar for specific dates. All course changes must be made through the Registrar's Office. No change will be made after this period except through the written consent of the appropriate instructor.

Incomplete Grades

The incomplete (I) grade is appropriate in cases where students have made a good faith effort to finish a course on time but have not done so due to factors out of their control. This grade is reserved for cases where the unfinished work can be clearly identified and completed within a short period of time. This agreement must be made between both the student and instructor before grades are submitted at the end of the semester. To assign the incomplete grade the instructor must send an e-mail to the Dean of Academic Affairs with a copy to the Registrar's office stating the student's name, the course name, the student's current grade in the course, and the reason for the request. Attach to the message a completion plan that meets the following semesters add/drop deadline, approved by the instructor and the student, that includes a list of work still required with a brief description of when and how it will be completed. The incomplete must be made up before the add/drop deadline of the following semester or it will be changed to an F (failure). Any request for extension beyond the add/drop period must be made in writing to the Instructor and the Dean of Academic Affairs before the end of the deadline and the Registrar should be notified if an extension is granted.

Course Withdrawal

A student may withdraw from a course through the tenth (10th) week of class and receive a grade of "W" (withdrawal) recorded on the official transcript. After the tenth (10th) week, a grade of WF will be applied.

In seven (7) week sessions, a withdrawal after the fourth (4th) week will result in a grade of WF.

Co-requisites and Pre-requisites

There are courses that provide foundational information required for successful continuation of a program.

Co-requisites are courses that must be taken at the same time as another required course. Pre-requisites are courses that must be taken before continuing on to further course work.

Transcript Policy

- For each official transcript requested, the fee will be $8 (regular service up to 5 business days)
- Same day service will be available for $15 (student must come into office to pick up transcript)
- Express delivery service will be available via USPS for $40

Satisfactory Academic Progress Policy

BFIT monitors Satisfactory Academic Progress (SAP) to ensure the successful and timely completion of students' academic careers. SAP is measured through evaluating the credits attempted and completed as well as the term and cumulative Grade Point Average (CGPA) of each student. The U.S. Department of Education requires all students that receive financial aid make progress toward their program of study. The Registrar's Office will evaluate students at the conclusion of each semester to determine if Satisfactory Academic Progress is being made. Students who leave the college and subsequently return will be evaluated for SAP before financial aid is offered, regardless of the term in which they return to BFIT.

Satisfactory Academic Progress

SAP Standards are based on both qualitative and quantitative measurements.

- Cumulative Grade Point Average (CGPA) is the qualitative measurement for SAP. Students must maintain a minimum CGPA based on the number of credits attempted as noted below.

  If a student repeats a course, the lower grade is replaced by the higher grade when calculating the CGPA. The lower grade will remain on the transcript and continue to be reflected in the term GPA. Once a credit is earned for a course, financial aid will only be available for a student to retake said course one time. Students retaking courses where credit has not been earned may be eligible for financial aid. Instances when students may need to retake a course in which they have already earned credits include the need to improve their CGPA for graduation eligibility or if there is a requisite minimum passing grade before the student can progress to the next level of course sequence in his/her program. For students who have changed major, only courses applying to the new program will be calculated in the CGPA.

- Completion Rate is one part of the quantitative measurements for SAP. Degree-seeking students with less than 40 credits attempted are required to successfully complete 50% of all attempted course work in their current degree program each semester. Degree-seeking students with 40 or more credits attempted are required to successfully complete 67% of all attempted course work in their current degree program each semester. Any course in which a student is enrolled after the regular add/drop period is considered an attempted course. A passing grade is considered to be successful completion of a course. Failure, withdrawal after the drop deadline, or an Incomplete (I) grade in a class constitutes an attempted course which is not successfully completed. Each repeated course work attempt counts towards the credits attempted. Developmental credit and transfer credit will count towards both credits attempted and credits earned. For students who have changed major, only credits attempted and earned which are applied to the new program count towards the completion rate.

	Credits Attempted	Minimum CGPA	Minimum Completion Rate
Associate/Bachelor Degree	1 to 19	1.7	50%
	20 to 39	1.9	50%
	40 or more	2.0	67%
Certificate Programs	1 to 14	2.0	50%
	15 or more	2.0	67%

NOTE: Students attempting at least 9 credits in a semester who fail to earn a Term GPA of at least 1.0 will be considered as not making Satisfactory Academic Progress

- Maximum Time Frame is the second part of the quantitative measurement for SAP. Students must complete their program within 150% of the program length. This is measured in terms of credits attempted and earned. For example, a 60 credit hour degree must be completed without attempting more than 90 credits. Students exceeding the maximum time frame will be ineligible for additional financial aid. Transfer credits are counted in the total number of credits attempted. Developmental courses are excluded. Students reaching Maximum Time Frame lose all access to Financial Aid.

SAP REVIEW

At the end of each semester, the Registrar's Office will review each student's academic record to ensure that the student is meeting Satisfactory Academic Progress.

All students are categorized in three SAP groups:

Good Standing, Academic Warning, and Academic Suspension.

If an Associate or Bachelor seeking student fails to meet satisfactory academic progress for one semester, he or she will be placed on Academic Warning and notified by letter to their permanent address. Certificate students will be placed on Academic Suspension. A student on Academic Warning retains their financial aid for an additional semester. Academic Warning means that students are no longer meeting the college's academic progress requirements.

These students are required to attend a student success workshop and meet with their advisor within the first week of the semester to create an academic success plan.

It is required that these students meet regularly with their academic advisor to assess the academic success plan and regularly utilize tutoring services. Students on warning may elect to participate in a semester long seminar that focuses on improving their academic performance.

A student who fails to make Satisfactory Academic Progress for two consecutive semesters or whose CGPA falls below 1.0 will be placed on Academic Suspension and notified by letter to their permanent address.

A student placed on Academic Suspension will lose financial aid eligibility and if he or she is registered for classes in the next semester, those classes will be dropped. A student placed on Academic Suspension has the right to appeal the suspension. If a student's appeal is accepted, that student's academic status will be changed to Probation. In addition, a student must also appeal to the Financial Aid Office to restore financial aid eligibility.

SUSPENSION APPEAL:

Appeal requests should be emailed as soon as possible after notification is received to the Dean of Student Affairs. Appeals submitted once the semester has begun might not be considered. Grounds for appeal include the student's documented illness, the death or serious illness of an immediate family member, or other unusual circumstances. Documentation may be requested, depending on the nature of the appeal.

Once the appeal is filed, it will be preliminarily reviewed by the Dean of Student Affairs who may schedule an appointment with the appealing student. The Dean will then convene the SAP Appeal Committee to consider the request and render a decision about the student's ability to subsequently enroll. A member of the SAP Appeal Committee will contact the student with the committee's decision and any necessary actions that the student will need to take prior to matriculating. If a student's appeal is accepted, that student's academic status will be changed to Probation. Students on probation should promptly appeal to the Director of Financial Aid for financial aid eligibility.

DISMISSAL:

If a student fails to make Satisfactory Academic Progress at the end of the probationary semester or if he or she fails to maintain the conditions and benchmarks agreed upon in the academic plan, that student will be Dismissed from the college. Students who have been dismissed from the college shall be able to appeal their dismissal to the Dean of Student Affairs after the period of time designated by the Satisfactory Academic Progress Appeal Committee (not including summer terms).

Family Educational Rights and Privacy Act

BFIT maintains the confidentiality of student educational records and protects the student's right of access to those records in accordance with the Family Educational Rights and Privacy Act (FERPA) of 1974 (P.L. 93-380) as amended (P.L. 93-568) (also known as the Buckley/Pell Amendment).

FERPA affords students certain rights with respect to their educational records. They are:

- The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.
- 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. Students to whom the rights have transferred are "eligible students."
- Students have the right to inspect and review the student's education records maintained by the school. Schools are not required to provide copies of records unless, for reasons such as great distance, it is impossible for parents or eligible students to review the records. Schools may charge a fee for copies.
- Students have the right to request that a school correct records which they believe to be inaccurate or misleading. If the school decides not to amend the record, the student then has the right to a formal hearing. After the hearing, if the school still decides not to amend the record, the student has the right to place a statement with the record, setting forth his or her view about the contested information.
- Generally, schools must have written permission from the student in order to release any information from a student's education record. However, FERPA allows schools to disclose those records, without consent, to the following parties or under the following conditions (34 CFR § 99.31):
  - School officials with legitimate educational interest;
  - Other schools to which a student is transferring;
  - Specified officials for audit or evaluation purposes;
  - Appropriate parties in connection with financial aid to a student;
  - Organizations conducting certain studies for or on behalf of the school;
  - Accrediting organizations;
  - To comply with a judicial order or lawfully issued subpoena;
  - Appropriate officials in cases of health and safety emergencies; and
  - State and local authorities, within a juvenile justice system, pursuant to specific State law.

BFIT may disclose, without consent, "directory" information such as a student's name, address, telephone number, e-mail, date and place of birth, honors and awards, and dates of attendance. However, schools must tell students about directory information and allow students a reasonable amount of time to request that the school not disclose directory information about them. Students should contact the Registrar if they do not want their directory information released. Schools must notify students annually of their rights under FERPA. The actual means of notification (special letter, student handbook, or newspaper article) is left to the discretion of each school.

For additional information or technical assistance, you may call (202) 260-3887 (voice). Individuals who use TDD may call the Federal Information Relay Service at 1-800-877-8339.

Or you may contact us at the following address:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-5920
http://www.ed.gov/policy/gen/guid/fpco/index.html

Academic Honesty

Academic dishonesty is a serious issue. Honesty in all academic work is expected of every student at all times. This means each individual does his or her own work without assistance from other sources on any assignment or exam unless otherwise directed by the instructor. You are unable to learn what you need to know if you do not do your own work.

A violation of academic honesty can include but not be limited to:

- Plagiarism
- Falsifying documents
- Submitting the same assignment in multiple classes
- Copying or sharing work from another student
- Aiding and abetting cheating
- Using any form of technology, i.e. cell phones, laptops, student S: drive, etc, as a tool for academic dishonesty

It is the responsibility of each student to understand BFIT's expectations for academic honesty and to seek help in understanding the policy if necessary.

BFIT instructors are obligated to investigate concerns regarding plagiarism when a student's in-class work differs significantly from his/her outside work. For example, an investigation may occur when one paper is noticeably different in fluency, style or syntax from others by the student; and/or, a paper obviously uses sources which are not cited or which are improperly acknowledged; and/or, work (papers, labs, exams) is submitted at a level of understanding and insight beyond that which a student has typically exhibited in his/her work.

To preserve the college's reputation and integrity, cases of academic dishonesty will be reported and students may face disciplinary action. Documentation of alleged violations, proceedings, and any resulting sanctions will be kept on file in the office of the Assistant Dean of Student Affairs until a student has graduated from the college. This file may be utilized in the event of any further infraction of institutional rules or policies.

With any suspected act of dishonesty, the instructor will provide documentation of the incident and any supporting evidence to the Assistant Dean of Student Affairs. Students will be contacted by the Assistant Dean of Student Affairs to discuss the incident and methods of prevention for the future. Based on the student's conduct history, the Assistant Dean of Student Affairs may refer the case to the Student Conduct Board.

The range of sanctions and the procedures followed are outlined below; however, implementation of sanctions will lie with the Hearing Officer or Student Conduct Board and may be adjusted. Faculty may be solicited for further information as well as appearing before the Student Conduct Board.

PROCEDURES AND SANCTIONING

A first violation of academic honesty will result in a meeting with the Assistant Dean of Student Affairs and may result in a failing grade for the assignment as well as an educational component to allow the student to learn from the process.

Educational sanctions may include online modules, research or reflection essays, meeting with the Director of Student Success, or other means to educate oneself or others on academic honesty.

A second violation of the academic honesty policy, whether this be in the same or a different course, will result in a meeting with the Assistant Dean of Student Affairs or the Student Conduct Board, and may result in a grade of F for the final course grade. Due to the repeat nature of the incident, the student may be subject to increased sanctioning including academic probation for a minimum of one semester and increased educational sanctions.

A third violation of the academic honesty policy will result in an automatic F for the course in which the infraction occurred and may include further disciplinary action including suspension or expulsion from the college. All documentation and evidence will be placed in the student's file and, in this case, may become a permanent record regardless of the student's graduation status at the college. A mandatory meeting will take place with the Dean of Academic Affairs and the student will have the opportunity to bring one member of the college's faculty or staff to serve as a support person. The support person will have the opportunity to speak on the student's behalf at the student's request.

**Note: If suspension is part of the sanction for a 3rd offense and a student is found responsible for another incident of Academic Honesty upon returning to the college, this may be grounds for automatic expulsion.*

Students will receive written notification within one week after meeting with a Hearing Officer or the Student Conduct Board.

Appeal Process

To initiate the appeal process, students will submit their appeal, electronically, in writing to the Dean of Student Affairs (or designee). Appeals must be received within five (5) class days of the date of the outcome of the conduct meeting.

A student should submit a formal and well written appeal:

- To appeal a "responsible" decision for one or all violations from the original verdict
- To appeal the level sanctioning from the original hearing body

It is up to the student(s) appealing to be persuasive and professional in their appeal letter. Appeal arguments should detail any information that was not available at the time of the original conduct meeting, as well as any additional information that is provided by witnesses or character references.

The decision to proceed with the appeal submitted is up to the discretion of the Dean of Student Affairs and/or designee. If the decision is to proceed, then every effort will be made to schedule an appeal meeting within five (5) class days.

Within 48 hours of submission, students will be notified if their appeal meets the above criteria and will be scheduled for an appeal meeting or if their appeal does not meet the criteria and is denied.

Since the appeal officer is never an eyewitness, he/she may never have absolute proof of what really happened. The best the appeal officer/panel can do is to be persuaded of what probably happened. The preponderance of evidence is used to base a decision during the conduct system and can be defined as – the lowest level of proof which typically means more likely than not.

Since the original Conduct Officer has ruled on responsibility based on a preponderance of the evidence, the appeal is not a re-hearing of the original case. Instead, the student has the opportunity to present any new information which supports the reason for the appeal, including new information that was not previously available, information regarding excessive or inappropriate sanctions, information to prove the finding was not supported by the evidence, and/or information regarding procedural errors. The appeal officer will then render a decision based on the information provided.

The decision by the appeal officer will be based on any of the following criteria:

- Procedural error
- Finding not supported by the evidence
- Excessive or inappropriate sanction
- New evidence not previously available

The Appeal Officer may make the following decisions:

- Uphold previous decision/sanctioning
- Revise previous decision/sanctioning
- Overturn previous decision/sanctioning
- Refer the case back to the original Hearing Officer for a rehearing (in case of procedural errors)

The appeal may never increase any sanctions or add charges. Students should be aware that any outcome of the appeal is final.

Students will be notified of the outcome of their appeal in writing within 48 hours of their appeal meeting. Students should be aware that during the appeal process, all sanctions and limitations are in effect unless otherwise noted.

**Note: if multiple violations of academic honesty occur within a timeframe prior to required meetings*

taking place, the violations will be still be treated as individual occurrences and subject to disciplinary action as outlined above.

Change of Major

All changes of major are handled during the registration process by the Advisor, Registrar's Office, and student. If the advisor and student come to an agreement, the Registrar will be notified and will process the official change.

Transfer of Credit

Students who wish to take courses at other colleges to satisfy requirements in their programs at BFIT must:

- Obtain course descriptions from the prospective school.
- Receive endorsement from the appropriate Department Chair or Registrar at BFIT.
- If approval is given, the student must earn a grade of C or better in the course and provide an official transcript of this grade to the Registrar. Please note: The grade you receive will not be reflected in your grade point average at BFIT.

Graduation Requirements

Students in good standing who satisfy the following minimum requirements will be recommended by the faculty for graduation:

- A student must obtain a minimum GPA of 2.00 in all the credit bearing courses in a student's major as defined by the course catalog as reflected on the Student's Degree Audit.
- Earn a cumulative grade point average of 2.00 or better

Degree seeking students who have no more than two requirements left to graduate may participate in the annual graduation ceremony provided they meet the requirements for graduation listed above. Students with three requirements left may appeal to the Registrar's Office. Students in certificate programs who complete all of their requirements by the end of the summer semester will be allowed to participate in the graduation ceremony.

Students earning a grade point average of 3.5 or higher qualify for honors distinctions. Such honors are determined by a student's cumulative grade point average once all required coursework is complete and is awarded in the following categories:

- Cum Laude: 3.50-3.74 cumulative grade point average
- Magna cum Laude: 3.75-3.89 cumulative grade point average
- Summa cum Laude: 3.90-4.00 cumulative grade point average

Petition to Graduate

Students who plan to graduate must inform the Registrar of their intention by filing a petition to graduate form at least four weeks before the commencement date. This form can be obtained from the Registrar's Office and requires various signatures. Potential graduates will need to complete Financial Aid exit counseling and clear any college balance.

The Registrar's Office then verifies that all individual program requirements have been met and that the student is qualified to graduate.

Automotive Technology (AS)

The automotive industry offers exciting and rewarding careers for people who have an interest in diagnosing and repairing mechanical components and computer/electrical circuitry.

Additionally, these careers contribute significantly to a cleaner environment and the safety of the general public. This industry is not limited to automobiles, as it covers a broad spectrum that includes marine, heavy-duty trucks, off-road equipment, recreational vehicles and stationary power plants.

Graduates of the Automotive Technology program are prepared for employment in the automotive industry as technicians, machinists, unit specialists, emission and performance diagnosticians, department managers, and manufacturer's representatives.

The college enhances opportunities for employment through close association with dealerships and independent repair facilities throughout Massachusetts. Successful completion of this program provides the student with an Associate of Science degree and the opportunity to continue in the Bachelor of Science program in Automotive Management.

The Automotive Department strongly endorses Automotive Service Excellence (ASE) Certification. All of the Automotive Faculty are ASE Certified, and we encourage our students to take these tests for national certification, as they are ready.

Curriculum

In keeping with the college's mission, the objectives of this Associate of Science program are to provide a theory-based automotive education, supported by practical experience that meets the college's history of high academic standards. Additionally, these standards allow graduates to improve themselves personally, economically and socially, and to provide a foundation for lifelong learning. Degree requirements are further supported by general education components, including proficiency in oral and written communication, math, and physics.

The majority of this two-year program is devoted to automotive technical specialties, including actual work on live vehicles in the student Automotive Training Center.

In addition to the mechanical technologies, the program is complemented by the study of mathematics, physics, humanities, and social sciences. Humanities, social sciences, and English courses comprise part of the curriculum to ensure that the graduates possess broader social visions and effective communication skills.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Special Admission Requirements for Automotive Technology Program

Due to the unique environment of automotive laboratories and repair facilities with regard to the safe operation of machinery, repair equipment, running engines, etc., the following is required of applicants to the Automotive Program:

- Correctable vision and hearing
- Ability to stand on one's feet for long periods
- Ability to lift 30 pounds
- For continuation into the second year of the program involving the Automotive Training Center, students are required to have a valid driver's license
- Students are required to purchase first-year and second-year tool sets

Facilities

The Automotive Department maintains laboratories for the study of automotive electricity, internal combustion engines, automatic and manual transmissions, chassis and brakes, hybrid and alternate fuels, engine performance as well as an eleven-bay working laboratory and a Drivability Clinic equipped with state-of-the-art equipment. Additionally, the college serves as an MA Certified Emissions Repair Facility.

Outcomes

Upon successful completion of the Associate Degree in Automotive Technology, the graduate will be able to:

- Demonstrate diagnostic strategies, using electronic/mechanical principles, to effectively repair vehicle management systems in accordance with manufacturers, State and Federal guidelines.
- Demonstrate, through practical example, written and verbal presentation, an understanding of automotive industry safety, emerging technologies, economics, government regulations and business models.
- Demonstrate an understanding of the internal combustion engine by utilizing diagnostic strategies that effectively repair an internal combustion engine.
- Understand DC electricity and demonstrate diagnostic repair strategies for automotive electrical components and systems that effectively repair electrical components.
- Utilize mathematical calculations, principles, and formulae to perform a variety of tasks related to automotive system repair.
- Effectively diagnose, repair, and adjust various subsystems, including: suspensions, brakes, transmissions, heating and air conditioning, and lighting systems.
- Identify and repair safety-related issues relative to automotive vehicles that concern the operator, passengers and general public.
- Demonstrate the proficient use of scan tools and other diagnostics test equipment that will aid in repairing the customers complaint with precision accuracy.
- Demonstrate specific techniques to determine the different failures between gasoline, diesel, hybrid and electric vehicles and understanding necessary repairs.

Faculty

David E. Protano, Chair

Instructor Staff: Richard E. Cadotte, James Dellot, Joseph Golden, Anthony Oliveri, Joseph O'Neil, Jose Ortiz, Scott Ouellette, Donald Tuff

Degree Requirements: Automotive Technology (AS) 72 Credits

TECHNOLOGY COURSES: 50 CREDITS

Course #	Course	Credits	Lecture	Lab
AT134	Automotive Brake Systems	4	3	3
AT150	Automotive Engines	4	3	3
AT170	Electricity & Electronics	4	3	3
AT173	Automotive Electrical Systems	4	3	3
AT234	Automotive Chassis and Suspension	3	2	3
AT241	Manual Transmissions	2	1	2
AT244	Automatic Transmissions	2	1	2
AT 252	Air Conditioning	3	2	2
AT253	Automotive Lab I	4	0	8
AT254	Automotive Lab II	4	0	8
AT255	Alternative Fuels	2	1	2
AT 259	Introduction to Automotive Safety and Technology	3	2	2
AT271	Engine Performance I	4	4	0
AT274	Engine Performance II	4	4	0
AT282	Service Advising	3	3	0

GENERAL EDUCATION COURSES: 22 CREDITS

Course #	Course	Credits	Lecture	Lab
EN129/130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
MA105	Technical Math I	3	3	0
MA106	Technical Math II	3	3	0
PH102	Physics	3	3	0
SK200	Career Success Seminar	1	0	0

Typical Course Sequence for Automotive Technology (AS)

SEMESTER 1

- AT150 Automotive Engines
- AT170 Electricity & Electronics
- AT259 Introduction to Automotive Safety and Technology
- EN129/130 College Composition I
- MA105 Technical Math I

SEMESTER 2

- AT134 Automotive Brake Systems
- AT173 Automotive Electrical Systems
- EN140 College Composition II
- MA106 Technical Math II
- PH102 Physics

SEMESTER 3

- AT234 Automotive Chassis and Suspension
- AT241 Manual Transmissions
- AT253 Automotive Lab I
- AT255 Alternative Fuels
- AT271 Engine Performance I
- HU/SS Elective

SEMESTER 4

- AT244 Automatic Transmissions
- AT252 Air Conditioning
- AT254 Automotive Lab II
- AT274 Engine Performance II
- AT282 Service Advising
- HU/SS Elective
- SK200 Career Success Seminar

Automotive Management (BS)

Graduates of this program can establish mid- and upper-level management careers throughout the automotive and related industries. BFIT enhances employment opportunities through close association with Boston area dealerships, as well as national manufacturers such as Audi, BMW, Chrysler, Ford, General Motors, Honda, Nissan, Subaru, Toyota and Volkswagen.

The Automotive Department endorses ASE Certification. All members of the Automotive Faculty are ASE Certified Automobile Technicians.

Curriculum

The objectives of the Bachelor program, which build upon those of the Associate Degree, are to provide advanced-level education for management employment by combining practical, technical and academic experience for career progression.

This Bachelor Degree program devotes over one-third of the courses to technical or technically related studies, approximately one-quarter to business and management studies, one-fifth to mathematics and science, and one-fifth to communications/social sciences and the humanities.

Humanities, social science and English courses comprise part of the curriculum to ensure that graduates possess broader social visions and effective communication skills.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule.

Special Admission Requirements for the Bachelor of Science Program

In order to qualify for this program, students must have either graduated from the BFIT Automotive Technology Associate Degree program or another accredited automotive associate degree program, and achieved an average grade of "C" in English composition courses.

Facilities

The Automotive Department maintains up-to-date laboratories for support of its theory-based courses. Students utilize modern computer laboratories, as well as receive hands-on automotive experience in a well equipped eleven-bay working laboratory, and a Drivability Clinic outfitted with the industry's latest diagnostic tools. Additionally, the college serves as an MA Certified Emissions Repair Facility.

Outcomes

Upon completion of the Bachelor of Science degree in Automotive Technology, students will have expanded on associate degree outcomes and should have competency in the following:

- Demonstrate a mastery of electronic principles, as applicable to engine management and emissions systems; demonstrate logical diagnostic strategies, and effectively repair these systems in accordance with manufacturer's procedures.
- Present written and verbal reports, as well as electronic presentations commensurate with management level standards.
- Demonstrate an understanding of the synergies among accounting, human relations, organization, finance, marketing and sales as related to managing a profit center or business section.
- Demonstrate an understanding of the laws and regulations relating to safety and the environments within the automotive industry.
- Demonstrate an understanding of the dynamic nature of the automotive industry with national and international economies by participating in a Capstone Project.

Faculty

David E. Protano, Chair

Donald L. Tuff, Bachelor Program Coordinator

Instructor Staff: Sharon Bonk, Richard E. Cadotte, James Dellot, Joseph Golden, Ed Mackness, Scott Ouellette, Andrew Wong

Degree Requirements: Automotive Management (BS) 134 Credits

ASSOCIATE DEGREE: 71 CREDITS

TECHNICAL COURSES: 22 CREDITS

Course #	Course	Credits	Lecture	Lab
AT373	Advanced Engine Performance	3	2	2
AT474	Enhanced Emissions and Drivability	3	3	0
AT481	Automotive Marketing	3	3	0
AT482	Vehicle Appraisal	3	3	0
AT483	Computers in Auto Industry	3	2	2
AT485	Senior Seminar I	1	0	2
AT494	Service Management	3	3	0
AT495	Senior Seminar II	3	3	0

GENERAL EDUCATION COURSES: 41 CREDITS

Course #	Course	Credits	Lecture	Lab
BS311	Microeconomics	3	3	0
BS312	Advanced Concepts in Information Literacy	3	3	0
BS324	Managing Organizations	3	3	0
BS332	Financial Accounting	3	3	0
BS334	Business Law & Legislation	3	3	0
BS431	Management Accounting	3	3	0
BS432	Human Resources Management	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
MA265	Finite Mathematics	3	3	0
MA270	Statistics	3	3	0
SK400	Career Success Seminar	1	0	0
TS310	General Chemistry	4	3	3

Typical Course Sequence for Automotive Management (BS)

JUNIOR YEAR
SEMESTER 1

AT373 Advanced Engine Performance
BS311 Microeconomics
BS312 Advanced Concepts in Information Literacy
MA265 Finite Mathematics
TS310 General Chemistry

JUNIOR YEAR
SEMESTER 2

BS324 Managing Organizations
BS332 Financial Accounting
BS334 Business Law & Legislation
EN320 Technical Communications
MA270 Statistics

SENIOR YEAR
SEMESTER 1

AT483 Computers in Auto Industry
AT485 Senior Seminar I
AT494 Service Management
BS431 Management Accounting
BS432 Human Resources Management
HU/SS Elective

SENIOR YEAR
SEMESTER 2

AT474 Enhanced Emissions and Drivability
AT481 Automotive Marketing
AT482 Vehicle Appraisal
AT495 Senior Seminar II
HU/SS Elective
SK400 Career Success Seminar

Automotive Technology (Certificate)

The Automotive Technology Department also offers a certificate program in automotive technology. The certificate program prepares students for entry level positions in the Automotive Technology field and contains 8 essential courses. Normally, the program can be completed in 1 year. This program follows all federal regulations regarding gainful employment. Credits from this certificate program may be applied toward an associate degree in the Automotive Technology at BFIT.

- Demonstrate diagnostic strategies, using electronic/mechanical principles, to effectively repair vehicle management systems in accordance with manufacturers, State and Federal guidelines.
- Demonstrate through practical examples and written and verbal presentation, an understanding of automotive industry safety, emerging technologies, economics, government regulations and business models.
- Demonstrate an understanding of the internal combustion engine by utilizing diagnostic strategies that effectively repair an internal combustion engine.
- Understand DC electricity and demonstrate diagnostic repair strategies for automotive electrical components and systems that effectively repair electrical components.
- Utilize mathematical calculations, principles, and formulae to perform a variety of tasks related to automotive system repair.
- Identify and repair safety-related issues, relative to automotive vehicles, that concern the operator, passengers and general public.

Faculty

David E. Protano, Chair

Instructor Staff: Richard E. Cadotte, James Dellot, Joseph Golden, Joe O'Neil, Tim Ornellas, Jose Ortiz, Scott Ouellette

Degree Requirements: Automotive Technology (Certificate) 29 Credits

TECHNOLOGY COURSES: 29 CREDITS

Course #	Course	Credits	Lecture	Lab
AT134	Automotive Brake Systems	4	3	3
AT150	Automotive Engines	4	3	3
AT170	Electricity & Electronics	4	3	3
AT173	Automotive Electrical Systems	4	3	3
AT234	Automotive Chassis and Suspension	3	2	3
AT252	Air Conditioning	3	2	2
AT256	Automotive Lab-Certificate	3	0	6
AT271	Engine Performance I	4	4	0

Typical Course Sequence for Automotive Technology Certificate

SEMESTER 1

AT134 Automotive Brake Systems

AT150 Automotive Engines

AT170 Automotive Electricity and Electronics

SEMESTER 2

AT173 Automotive Electrical Systems

AT234 Automotive Chassis and Suspension

AT252 Air Conditioning

AT271 Engine Performance I

SEMESTER 3

AT256 Automotive Lab-Certificate

Construction Management (AS)

An associate degree in Construction Management provides graduates with a background of technical and organizational skills that apply to construction projects from conception to completion. Construction Management students study the skills necessary to manage resources, time, cost and quality with emphasis on team building. Students will also refine their ability to communicate, establish a foundation in math and science, and develop analytical and informational skills. Experiential components will be included to enhance the job-readiness of graduates and to build student engagement with the program.

The program includes technical courses in building technology and construction management and a general education core. The building technology courses provide familiarity with the vocabulary of building and a thorough introduction to the techniques of the building industry. These courses provide familiarity with the vocabulary of building and a thorough introduction to the techniques of the building industry. The courses establish a foundation in construction graphics, construction methods and material technologies, statics and strength of materials, sustainable building technologies and environmental systems.

The construction management courses develop the variety of skill areas that support a successful construction firm. These are taught by BTD full time faculty and selected adjuncts.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their fnal semester.

Outcomes

Upon successful completion of the associate degree in CM, the graduate will be able to:

- Apply knowledge in planning, budgeting, and scheduling of labor, materials and equipment.
- Apply quality standards in construction.
- Communicate in speech and in writing.
- Estimate job costs and requirements for construction projects.
- Identify construction project objectives and assist in their execution.
- Identify elements of sustainability in buildings and construction and explain their costs and benefits.
- Oversee project safety.
- Read and revise construction documents as a communication tool, including CAD files.
- Select contractors, sub-contractors and set project performance goals.
- Use knowledge of construction and management principles and practices to support continued learning.
- Work ethically and responsibly in the construction industry.
- Work on teams to solve management and technical problems.

Faculty

Leslie Tuplin, Program Coordinator

Instructor Staff: David Polson

Degree Requirements: Construction Management (AS) 67 Credits

TECHNOLOGY COURSES: 40 CREDITS

Course #	Course	Credits	Lecture	Lab
CM100	Building Construction Graphics	3	2	2
CM110	Construction Management I	3	3	0
CM120	Introduction to CAD	3	1	4
CM130	Construction Estimating	3	3	0
CM145	Heavy Construction	3	3	0
CM160	Building Materials and Applications	4	3	2
CM210	Construction Management II	3	3	0
CM220	Sustainable Building Technologies	3	3	0
CM240	Environmental Systems	4	3	2
CM250	Construction Surveying	4	4	1
CM260	Project Scheduling	3	3	0
CM280	Statics & Strength of Materials	4	4	1

GENERAL EDUCATION COURSES: 27 CREDIT HOURS

Course #	Course	Credits	Lecture	Lab
EN129/130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
MA105	Technical Mathematics I	3	3	0
MA115	Plane and Solid Geometry	4	4	0
MA120	College Algebra and Trigonometry	3	3	0
PH212	Physics I	3	3	0
PH215	Physics Lab I	1	0	2
SK200	Career Success Seminar	1	0	0

Typical Course Sequence for Construction Management

SEMESTER 1

CM100 Building Construction Graphics

CM110 Construction Management I

CM120 Introduction to CAD

EN129/130 College Composition I

MA105 Technical Math I

SEMESTER 2

CM130 Construction Estimating

CM145 Heavy Construction

CM160 Building Materials and Applications

EN140 College Composition II

MA120 College Algebra and Trigonometry

SEMESTER 3

CM220 Sustainable Building Technologies

CM260 Project Scheduling

HU/SS Elective

MA115 Plane and Solid Geometry

PH212 Physics I

PH215 Physics Lab I

SK200 Career Success Seminar

SEMESTER 4

CM210 Construction Management II

CM240 Environmental Systems

CM250 Construction Surveying

CM280 Statics & Strength of Materials

HU/SS Elective

Computer Technology (AS)

The Computer Technology AS program provides students with the knowledge and training for a range of positions in information and computer technology based on the specific course selections of the student. A core curriculum is taken by all students in the program, consisting of courses in database management, networking, computer programming and system administration. The remainder of the curriculum consists of technical electives from key areas of modern computer technology. Students may further their studies in computer programming or system administration, or study PC repair or web development. A specialized track in Audiovisual Technology (AVT) includes courses in audiovisual equipment installation, electronics, and facilities design. All graduates leave the program prepared for positions as computer support specialists, junior network technicians and entry-level database administrators. In addition, depending on the choice of technical electives completed, graduates are qualified for entry-level positions as PC repair technicians, junior system administrators, entry-level computer programmers, or web developers. Students in the AVT track graduate with the knowledge and skills necessary for positions in the growing field of converged IT and AV systems. Students wishing to continue their education after graduation are encouraged to transfer directly to year 3 of the Bachelor of Science program in Health Information Technology at BFIT, or continue at another four-year BS program in networking, computer science or system administration.

The Computer Technology department facilities include more than 72 computer workstations in four classroom laboratory settings, virtual and "sandboxed" environments equipped with servers, workstations and networking equipment for hands-on server administration and data communications courses, and a computer diagnostics laboratory.

All computer rooms are equipped with up-to-date software and multi-boot capability, where necessary, to provide all students with hands-on computer programming, installation, server administration and networking capabilities for their learning. The computer diagnostics laboratory provides the students with the necessary equipment to perform hardware and software troubleshooting. The AVT track within CT focuses on preparing students for success in the growing Audiovisual Technology area.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Outcomes

Upon successful completion of the Associate Degree in Computer Technology, all graduates will be able to:

- Design and develop entry-level database application systems.
- Create, edit, and manipulate spreadsheets and charts to solve various problems.
- Provide beginner-level computer programming.
- Employ hardware/software knowledge to configure, install and maintain computer and network systems.
- Manage and maintain enterprise database application systems.
- Administer computer and network services and security.
- Apply and integrate the basic knowledge attained in server, networking, computer programming, mobile and database technologies to develop business solutions.
- Install, maintain, upgrade and manage Windows-based computer and related server and network systems.
- Understand and apply the fundamental knowledge of mathematics to solving of computer related problems.
- Effectively communicate technical observations, results, issues, and successes, in both oral and written form.
- Effectively communicate technical observations, results, issues, and successes, in both oral and written form.
- Continue education toward a BS degree in four-year computer technology and related programs.
- Recognize the need for, and develop the ability to engage in, lifelong learning.
- Understand professional, ethical, and social responsibilities.

In addition to the above, upon successful completion of the technical electives of the Associate Degree in Computer Technology and depending on which electives have been completed, graduates will be able to do the following:

- Install, maintain, upgrade and manage Linux-based computer and related server and network systems.
- Provide intermediate-level computer programming.
- Develop basic mobile applications using Android.
- Understand mathematics, through calculus, and possess the ability to apply this knowledge to solve computer related problems.
- Design and develop websites using contemporary web design software.
- Design and develop websites using HTML, XHTML, style sheets, animation, and client scripting.
- Install, configure and troubleshoot audio and video equipment hardware and software.
- Manage audio and video hardware on a Local Area Network using vendor specific software.
- Design an audiovisual installation using CAD software.
- Successfully pass the AVIXA-Certified Technology Specialist exam.
- Troubleshoot and repair common PC problems.
- Successfully pass the CompTIA A+ Essentials (220-901) and Practical Application (220-902) certification exams.

Faculty

Chair: Dr. Gerald Elysee
Program Coordinator: David Tavilla
Instructor staff: Richard Azzi, Temitayo Banjo, Alec Belanger, Margaret Goodwin, Dr. Marianne Lepp, Eddy Pierre-Jules

Degree Requirements: Computer Technology (AS) 63 Credits

TECHNICAL COURSES: 41 CREDITS

TECHNOLOGY ELECTIVE OPTIONS (33-44 CREDITS, 11 CLASSES)

Course #	Course	Credits	Lecture	Lab
AV110	Intro to AV Technology	3	2	2
AV132	AV Installation	4	3	2
AV154	AV Applications	4	3	2
AV235	Facilities Design	4	3	2
AV257	Networked AV Systems	4	3	2
AV279	CTS Exam Preparation	3	3	0
CT119	Business Applications	3	2	2
CT121	Web Design I	3	2	2
CT122	Web Design II	3	3	0
CT134	Introduction to Operating Systems	3	2	2
CT143	Introduction to Programming Logic and C++	4	3	2
CT144	C++ Programming	4	3	2
CT145	Intro to Apps Programming	4	3	2
CT146	Intro to Game Programming with Java	4	3	2
CT211	Website Management	4	3	2
CT212	PC Maintenance and Management I	3	1	4
CT213	PC Maintenance and Management II	3	1	4
CT221	Enterprise Database Management	3	2	2
CT231	Linux System Administration	3	2	2
CT233	Windows System Administration	3	2	2
CT245	Intro to Mobile Development with Android	4	3	2
CT247	Intermediate Java	4	3	2
CT249	Survey of Contemporary Programming Languages	4	3	2
CT267	Networking II	4	3	2
CM100	Building Construction Graphics	3	2	2
CM110	Construction Management I	3	3	0
CM130	Construction Estimating	3	3	0
EE101	Intro to Electro-Mechanical Systems	3	2	2
ME105	CAD with SolidWorks	3	2	2
ME106	Advanced CAD with SolidWorks	3	2	2
SK120	Success in Computer Technology			

NETWORKING ELECTIVES (8 CREDITS)

Course #	*Course*	*Credits*	*Lecture*	*Lab*
CT265	Networking I	4	3	2
CT267	Networking II	4	3	2
CT365	Network Security	4	3	2
AV257	Networked AV Systems	4	3	2

GENERAL EDUCATION COURSES: 21 CREDITS

CORE GENERAL EDUCATION COURSES (13 CREDITS)

Course #	*Course*	*Credits*	*Lecture*	*Lab*
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
EN320	Technical Communication	3	3	0
HU/SS	Humanities/Social Science Requirement	3	3	0
SK200	Career Success Seminar	1	0	0

MATH ELECTIVE OPTIONS (6 CREDITS)

Course #	*Course*	*Credits*	*Lecture*	*Lab*
MA105	Technical Mathematics	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0
MA270	Elementary Statistics	3	3	0

GENERAL ELECTIVE OPTION (3 CREDITS)

Course #	*Course*	*Credits*	*Lecture*	*Lab*
CT	Technical Elective	3/4	1/2/3	2/4
HU/SS	Social Science Elective	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0
MA270	Statistics	3	3	0

Typical Course Sequence for Computer Technology--General Track (AS)

YEAR 1 SEMESTER 1
CT119 Business Applications
CT134 Intro to Windows Operating System
CT CT143 or CT146
EN130 College Composition I
MA MA105 or MA120 or MA240

YEAR 1 SEMESTER 2
CT/AV CT121 or CT144 or AV110
CT221 Enterprise Database Management
CT233 Windows System Administration
EN140 College Composition II
MA MA120 or MA130 or MA250

YEAR 2 SEMESTER 3
CT CT122 or CT143 or CT146
CT CT212 or CT231 or AV110 or AV154
CT265 Networking I
EN320 Technical Communication
MA/SS Math/Social Science Elective
SK200 Career Seminar

YEAR 2 SEMESTER 4
CT/AV CT121 or CT144 or AV110
CT CT211 or CT365
CT CT213 or CT249
CT/AV CT267 or AV257
HU/SS Social Science Elective

Typical Course Sequence for Computer Technology--Audiovisual Track (AS)

YEAR 1 SEMESTER 1
AV110 Intro to AV Technology
CT134 Intro to Windows Operating System
EN130 College Composition I
MA MA105 or MA120 or MA240
ME105 Intro to CAD with SolidWorks

YEAR 1 SEMESTER 2
AV132 AV Installation
CT249 Contemporary Programming Languages
EE101 Intro to Electro-Mechanical Systems
EN140 College Composition II
MA MA120 or MA130 or MA250

YEAR 2 SEMESTER 3
AV154 AV Applications
CT/CM CT/CM Elective
CT265 Networking I
EN320 Technical Communication
HU/SS Elective
SK200 Career Success Seminar

YEAR 2 SEMESTER 4
AV235 Facilities Design
AV257 Networked AV Systems
AV279 CTS Exam Preparation
CT/CM CT/CM Elective
SS/HU Social Science Elective

Computer Engineering Technology (AS)

The Computer Engineering Technology program provides students with the knowledge and skills necessary for computer industry positions that address both computer hardware and software. Students are prepared for entry-level positions that may involve the testing, troubleshooting, repairing or installation of a variety of computer and networked systems. Other positions may include assisting engineers in the design and building of computer systems. Graduates of this program are well prepared to continue their education in Bachelor of Science in Computer Engineering Technology programs.

Curriculum

The curriculum is structured to provide a broad undergraduate education with students taking courses in each of the recognized areas of computer concepts and architecture, processors, network systems, digital circuits, analog circuits, and electronic principles. A strong foundation in physics and mathematics through calculus is provided so as to provide the student with a strong engineering foundation. The student's education is rounded off with an emphasis in the humanities, English, and social sciences, which allow students to develop their written and oral presentation skills, promoting lifelong learning.

The curricula of many four-year college programs in Computer Engineering Technology are the same as their Electronic Engineering Technology programs during the first two years of study and are strongly hardware and electronics centered. Therefore, the curriculum of this Computer Engineering technology program mirrors our Electronic Engineering Technology program, except for two networking courses. Prospective students interested in this program should also examine the Electronic Engineering Technology program description in this catalog for additional description of the curriculum.

The Computer Technology department facilities include more than 72 computer workstations in four classroom laboratory settings, virtual and "sandboxed" environments equipped with servers, workstations and networking equipment for hands-on server administration and data communications courses, and a computer diagnostics laboratory.

All computer rooms are equipped with up-to-date software and multi-boot capability, where necessary, to provide all students with hands-on computer programming, installation, server administration and networking capabilities for their learning. The computer diagnostics laboratory provides the students with the necessary equipment to perform hardware and software troubleshooting.

The electronics department laboratory is equipped to provide students ample and meaningful hands-on experience in breadboarding, testing, schematic capture, and simulation of analog and digital circuits. Students will typically spend four hours a week in the laboratory, confirming that the lecture material works in real life and is not unproven theory. Students follow the laboratory experiment with a report where the results are analyzed and discussed. In the laboratory, the students learn how to use standard test equipment to build circuits, create schematics, and test circuits using standard laboratory test equipment.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Outcomes

Upon successful completion of the Associate Degree in Computer Engineering Technology, the graduate will be able to:

- Analyze or troubleshoot in three major electronic engineering areas: Analog Circuits, Digital Circuits, and Processors.
- Recognize and apply fundamental knowledge of mathematics, especially algebra and trigonometry.
- Conduct experiments in teams, building or breadboarding, using basic test equipment and tools to measure performance, and to critically analyze and interpret data.
- Effectively communicate technical observations, results, issues, and successes or negotiate a change in design or procedure.
- Effectively discuss and communicate computer architecture, networking and electronics concepts.
- Apply computer skills to prepare technical documents or analyze data: using applications for word processing, spreadsheets, simple programming, schematic capture, and simulation.
- Read manuals and schematics and identify components on a printed wiring board.
- Apply proper laboratory procedures.

Faculty

EE designated courses are taught by faculty identified in the Electronic Engineering Technology program description, while CT designated courses are taught by faculty identified in the Computer Technology program description.

Degree Requirements for Computer Engineering Technology (AS) 74 Credits

TECHNOLOGY COURSES: 39 CREDITS

Course #	Course	Credits	Lecture	Lab
CT143	Intro to C++ Programming	4	3	2
CT265	Networking I	4	3	2
CT267	Networking II	4	3	2
EE101	Intro. to Electro-Mechanical Systems	3	2	2
EE110	DC Circuits	4	3	2
EE113	AC Circuits	4	3	2
EE122	Electronics I	4	3	2
EE131	Digital Principles	4	3	2
EE223	Electronics II	4	3	2
EE240	Embedded Processors	4	3	2

GENERAL EDUCATION COURSES: 35 CREDITS

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0

MA250	Calculus II	4	4	0
PH215	Physics Lab I	1	0	2
PH222	University Physics I	3	3	0
PH223	University Physics II	3	3	0
PH225	Physics Lab II	1	0	2
SK135	Success in Electronics			
SK200	Career Success Seminar	1	0	0

Typical Course Sequence for Computer Engineering Technology (AS)

YEAR 1	SEMESTER 1
EE101	Intro. to Electro-Mechanical Systems
EE110	DC Circuits
EE131	Digital Principles
EN130	College Composition I
MA120	College Algebra and Trigonometry
YEAR 1	SEMESTER 2
CT143	Intro to C++ Programming
EE113	AC Circuits
EE122	Electronics I
EN140	College Composition II
MA130	Pre-Calculus
YEAR 2	SEMESTER 3
CT265	Networking I
EE223	Electronics II
EN320	Technical Communications
MA240	Calculus I
PH215	Physics Lab I
PH222	University Physics I
YEAR 2	SEMESTER 4
CT267	Networking II
EE240	Embedded Processors
HU/SS	Elective
MA250	Calculus II
PH223	University Physics II
PH225	Physics Lab II
SK200	Career Seminar

Health Information Technology (AS)

Health Information Technology (HIT) is improving outcomes and reducing costs in 21st century medicine. Doctors have more information available sooner when making critical decisions about treatment, and patients are better able to understand and participate in those decisions. HIT is the hardware and software, policies, and procedures that make possible the storage, retrieval, availability, and security of information essential to healthcare.

The old fashioned paper chart has been replaced by the electronic health records (EHR); however, usability and interoperability challenges remain. The HIT program prepares graduates to manage the health databases that keep EHR's up-to-date and secure. HIT grads know the guidelines and practices for these systems and have the ability to operate within industry-wide regulations and standards for healthcare information. HIT focuses on the interaction of healthcare information with storage and retrieval systems. Such systems must be designed, built and maintained to insure the reliability and security of patient records. These managers oversee the technological system and must keep up with current computer and software technology as well as legislative requirements. The program is based on an interdisciplinary curriculum that is aligned with the multiple skillsets hiring organizations are looking for. With this in mind, students are taught not only technology skills, but also critical thinking skills, communication (oral and written), facilitation, teamwork skills, as well as a solid knowledge of the medical language, regulations, and practices.

The application of computer technology to healthcare information gives this program an interdisciplinary flavor that will appeal not only to first-time college students, but also to adults with credits or experience in related fields.

Curriculum

The Associate of Science (AS) degree in Health Information Technology (HIT) provides graduates with healthcare-related knowledge and skills grounded in knowledge from computer technology. Students will also refine their ability to communicate, establish a foundation in math and science, and develop civic and ethical awareness. The program includes three groups of coursework: healthcare, computer technology, and general education. The coursework is all drawn from BFIT's bachelor's program in HIT.

The healthcare group of courses provides a foundation in healthcare systems and vocabulary, health information technology, and information security. The computer technology courses provide sufficient exposure and training to give graduates a strong foundation in the information technology that supports healthcare systems. These courses include instruction in the fundamentals of operating systems, computer programming, database management and networking. General education courses provide a foundation in communications, critical thinking, mathematics, and science for learning and practice in health information technology and will also provide substantial development of the institutional values we expect in all BFIT graduates. The Associate in Science in Health Information Technology prepares graduates for immediate employment in technical support for healthcare providers and others who rely on HIT systems. For students interested in additional training and education, the AS in HIT can serve as excellent preparation for transfer to a Bachelor of Science program in Health Information Technology or Health Information Management.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Facilities

The Computer Technology department facilities include more than 72 computer workstations in four classroom laboratory settings, virtual and "sandboxed" environments equipped with servers, workstations and networking equipment for hands-on server administration and data communications courses, and a computer diagnostics laboratory.

All computer rooms are equipped with up-to-date software and multi-boot capability, where necessary, to provide all students with hands-on computer programming, installation, server administration and networking capabilities for their learning. The computer diagnostics laboratory provides the students with the necessary equipment to perform hardware and software troubleshooting.

Outcomes

Upon successful completion of the Associate Degree in HIT, the graduate will be able to:

- Design and develop entry-level database application systems.
- Create, edit, and manipulate spreadsheets and charts to solve various problems.
- Install, maintain, upgrade and manage Windows-based operating systems.
- Design and develop websites using contemporary web design software.
- Apply and integrate the basic knowledge attained in networking, computer programming, web and database technologies to support healthcare information solutions.
- Apply knowledge of healthcare concepts and terminology to assist users of computerized information storage and retrieval systems.
- Effectively communicate technical observations, results, issues, and successes, in both speaking and writing.
- Explain the importance of HIT concepts such as meaningful use, health information exchange, and clinical decision support.
- Observe administrative, legal, and medical constraints and rules in the implementation and use of HIT systems.
- Provide entry-level computer programming and scripting to maintain and improve HIT systems.
- Recognize the need for and develop the ability to engage in lifelong learning.
- Support the administration of computer, network and web services and security.
- Understand mathematics at the level of college algebra and pre-calculus and apply this knowledge to solve HIT related problems.
- Understand professional, ethical, and social responsibilities.
- Use scientific knowledge, including basic principles of physiology, to guide work in HIT.

Faculty

Chair: Dr. Gerald Elysee

Instructor staff: Karen Newkirk, Dr. Marianne Lepp, Richard Azzi, Afshan Kirmani

Degree Requirements for Health Information Technology (AS) 67 Credits

TECHNICAL COURSES: 39 CREDITS

CORE TECHNICAL COURSES (23 CREDITS)

Course #	Course	Credits	Lecture	Lab
CT221	Enterprise Database Management	3	2	2
CT265	Networking I	4	3	2
HI130	Introduction to Health Information Technology	4	3	2
HI210	Electronic Health Records Implementation	4	3	2
HI310	Medical Coding, Classification and Communication	4	3	2
HI330	Introduction to Healthcare Databases	4	3	2

TECHNICAL ELECTIVES (12-16 CREDITS, 4 CLASSES)

Course #	Course	Credits	Lecture	Lab
AV257	Intro to Networked AV Systems	4	3	2
CT119	Business Applications	3	2	2
CT121	Web Design I	3	2	2
CT122	Web Design II	3	2	2
CT134	Intro to Windows Operating Systems	3	2	2
CT143	Intro to C++ Programming	4	3	2
CT144	Intermediate C++	4	3	2
CT146	Intro to Java Programming	4	3	2
CT211	Web Site Management	3	3	2
CT212	PC Maintenance and Repair I	3	1	4
CT213	PC Maintenance and Repair II	3	1	4
CT231	Linux System Administration	3	2	2
CT249	Contemporary Programming Languages	4	3	2
CT365	Network Security	4	3	2

NETWORKING ELECTIVE (4 CREDITS)

Course #	Course	Credits	Lecture	Lab
AV257	Networked AV Systems	4	3	2
CT267	Networking II	4	3	2
CT365	Network Security	4	3	2

GENERAL EDUCATION COURSES: 27-29 CREDITS

CORE GENERAL EDUCATION COURSES (22 CREDITS)

Course #	Course	Credits	Lecture	Lab
SS110	Intro to US Healthcare	3	3	0
TS120	Medical Terminology	3	3	0
TS240	Human Anatomy and Physiology	3	2	2
TS242	Pathophysiology and Pharmacology	3	2	2
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
HU/SS	Humanities/Social Science Requirement	3	3	0
SK100	Success in HT			
SK200	Career Success Seminar	1	0	0

MATH REQUIREMENT OPTIONS (6 CREDITS)

Course #	Course	Credits	Lecture	Lab
MA105	Technical Mathematics	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0
MA270	Statistics	3	3	0

Typical Course Sequence for Health Information Technology (AS)

YEAR 1	SEMESTER 1
CT119	Business Applications
CT134	Intro to Windows Operating System
EN130	College Composition I
MA120	College Algebra and Trigonometry
SS110	Intro to US Healthcare

YEAR 1	SEMESTER 2
CT221	Enterprise Database Management
HI130	Intro to Health IT
EN140	College Composition II
MA130	Pre-Calculus
TS120	Medical Terminology

YEAR 2	SEMESTER 3
CT265	Networking I
CT	CT Elective
HI330	Intro to Healthcare Databases
HU/SS	Social Science Elective
TS240	Human Anatomy & Physiology

YEAR 2	SEMESTER 4
CT	CT Elective
CT365	Network Security
HI210	Electronic Health Records Implementation
HI310	Medical Coding, Classification and Communication
TS242	Pathophysiology & Pharmacology
SK200	Career Success Seminar

Health Information Technology (BS)

Health Information Technology (HIT) is improving outcomes and reducing costs in 21st century medicine. Doctors have more information available sooner when making critical decisions about treatment, and patients are better able to understand and participate in those decisions. HIT is the hardware and software, policies, and procedures that make possible the storage, retrieval, availability, and security of information essential to healthcare. The Bachelor of Science in Health Information Technology program prepares graduates to work as information technicians at physicians' practices, healthcare agencies, and hospitals, or at the companies that create health information systems and keep them running.

The old fashioned paper chart has been replaced by the electronic health record (EHR); however, usability and interoperability challenges remain. The HIT program prepares graduates to manage the health databases that keep EHR's up-to-date and secure. HIT grads know the guidelines and practices for these systems and have the ability to operate within industry-wide regulations and standards for healthcare information. HIT focuses on the interaction of healthcare information with storage and retrieval systems. Such systems must be designed, built and maintained to insure the reliability and security of patient records. These managers oversee the technological system and must keep up with current computer and software technology as well as legislative requirements. The program is based on an interdisciplinary curriculum that is aligned with the multiple skillsets hiring organizations are looking for. With this in mind, students are taught not only technology skills, but also critical thinking skills, communication (oral and written), management (people and projects), facilitation, teamwork skills, as well as a solid knowledge of the medical language, regulations, and practices.

The application of computer technology to healthcare information gives this program an interdisciplinary flavor that will appeal not only to first-time college students, but also to adults with credits or experience in related fields. Transfer students are welcome from associate degree programs at BFIT and other colleges.

Curriculum

Students in the program receive in-depth instruction in both healthcare and the latest information technology to support the healthcare industries. Courses in healthcare include introduction to healthcare systems, medical terminology, medical coding and classification, healthcare compliance and contemporary ethical and legal issues. Courses in computer technology focus on hands-on training in use of health databases, networking and information security. As part of the senior year, students will complete a workplace internship at a local medical facility, and a capstone project where they will engage in problem-based learning to tackle a challenge drawn from industry.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule.

Facilities

The Computer Technology department facilities include more than 72 computer workstations in four classroom laboratory settings, virtual and "sandboxed" environments equipped with servers, workstations and networking equipment for hands-on server administration and data communications courses, and a computer diagnostics laboratory.

All computer rooms are equipped with up-to-date software and multi-boot capability, where necessary, to provide all students with hands-on computer programming, installation, server administration and networking capabilities for their learning. The computer diagnostics laboratory provides the students with the necessary equipment to perform hardware and software troubleshooting.

Outcomes

Upon successful completion of the Bachelor's Degree in HIT, the graduate will be able to:

- Design and develop entry-level database application systems.
- Create, edit, and manipulate spreadsheets and charts to solve various problems.
- Install, maintain, upgrade and manage Windows-based operating systems.
- Design and develop websites using contemporary web design software.
- Administer computer, network and web services and security.
- Apply and integrate the basic knowledge attained in networking, computer programming, scripting, web and database technologies to develop healthcare information solutions.
- Apply knowledge of healthcare concepts and terminology to the creation and maintenance of computerized information storage and retrieval systems.
- Apply HIT communication standards, such as the HL7 messaging standard, to improve and maintain the interoperability of health information systems.
- Effectively communicate technical observations, results, issues, and successes, in both speaking and writing.
- Explain the importance of HIT concepts such as meaningful use, health information exchange, and clinical decision support.
- Observe administrative, legal, and medical constraints and rules in the implementation and use of HIT systems.
- Provide entry-level computer programming and scripting to maintain and improve HIT systems.
- Recognize the need for and develop the ability to engage in lifelong learning.
- Understand mathematics, including statistics, and apply this knowledge to solve HIT related problems.
- Evaluate different HIT solutions, and as part of a capstone project, recommend the best one(s) that can effectively address identified problems facing the healthcare industry.
- Understand professional, ethical, and social responsibilities.
- Use scientific knowledge, including basic principles of physiology, to guide work in HIT.
- Understand the duties and responsibilities assigned to Health IT specialists in a real-world healthcare setting.

Faculty

Chair: Dr. Gerald Elysee

Instructor staff: Karen Newkirk, Dr. Marianne Lepp, Richard Azzi, Cheryl L. Dorsey, Andrew R. Wong

Typical Degree Requirements for Health Information Technology (BS) 132 Credits

TECHICAL COURSES: 85 CREDITS

CORE TECHNICAL COURSES (52 CREDITS)

Course #	Course	Credits	Lecture	Lab
HI130	Introduction to Health Information Technology	4	3	2
HI210	Electronic Health Records Implementation	4	3	2
HI310	Medical Coding, Classification and Communication	4	3	2
HI330	Introduction to Healthcare Databases	4	3	2
HI410	Topics in Health IT Employment Readiness	4	3	2
HI430	Health Information Systems Integration	3	3	0
HI445	Professional Experience (Practicum)	4	3	2
HI490	Capstone Project	4	3	2
CT265	Networking I	4	3	2
CT365	Network Security	4	3	2
BS324	Managing Organizations	3	3	0
BS432	Human Resource Management	3	3	0

DATABASE TECHNICAL ELECTIVE (3 CREDITS)

Course #	Course	Credits	Lecture	Lab
CT119	Business Applications	3	2	2
CT221	Enterprise Database Management	3	2	2

NETWORKING ELECTIVES (4 CREDITS)

Course #	Course	Credits	Lecture	Lab
CT267	Networking II	4	3	2
AV257	Networked AV Systems*	4	3	2

* AV110--Intro to AV Technology is a prerequisite and must be completed prior to enrolling in this course. See CT/AV Elective options below.

TECHNICAL ELECTIVES (33 CREDITS)

Course #	Course	Credits	Lecture	Lab
CT119	Business Applications	3	2	2
CT121	Web Design I	3	2	2
CT122	Web Design II	3	2	2
CT134	Intro to Windows Operating System	3	2	2
CT143	Intro to C++ Programming	4	3	2
CT144	Intermediate C++	4	3	2
CT146	Intro to Java Programming	4	3	2
CT211	Web Site Management	3	3	2
CT212	PC Maintenance and Repair I	3	1	4
CT213	PC Maintenance and Repair II	3	1	4

Course #	Course	Credits	Lecture	Lab
CT221	Enterprise Database Management	3	2	2
CT231	Linux System Administration	3	2	2
CT233	Windows System Administration	3	2	2
CT245	Intro to Mobile Development with Android	4	3	2
CT249	Contemporary Programming Languages	4	3	2
CT275	Topics in IT Employment Readiness	3	1	4
CT365	Network Security	4	3	2
AV110	Intro to AV Technology	3	2	2
AV257	Networked AV Systems	4	3	2

GENERAL EDUCATION COURSES: 46 CREDITS — CORE GENERAL EDUCATION COURSES (32 CREDITS)

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
EN320	Technical Communication	3	3	0
TS120	Medical Terminology	3	3	0
TS240	Human Anatomy and Physiology	3	2	2
TS242	Pathophysiology and Pharmacology	3	2	2
SS110	Intro to US Healthcare	3	3	0
SS330	Legal and Ethical Issues in HIT	3	3	0
SS335	Current Issues in Healthcare	3	3	0
MA270	Elementary Statistics	3	3	0
MA290	Topics in Healthcare Statistics	1	0	2
SK135	Success in HIT			
SK400	Career Success Seminar			

MATH REQUIREMENT (6 CREDITS)

Course #	Course	Credits	Lecture	Lab
MA105	Technical Mathematics	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0

GENERAL EDUCATION ELECTIVES (9 CREDITS)

Course #	Course	Credits	Lecture	Lab
SS	Social Science Elective 1	3	3	0
SS	Social Science Elective 2	3	3	0
SS	Social Science Elective 3	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0

Typical Course Sequence for Health Information Technology (BS): 4 Year Option

YEAR 1	SEMESTER 1
CT119	Business Applications
CT134	Intro to Windows Operating System
SS110	Intro to US Healthcare
EN130	College Composition I
MA120	College Algebra and Trigonometry
YEAR 1	SEMESTER 2
CT221	Enterprise Database Management
EN140	College Composition II
HI130	Intro to Health IT
TS120	Medical Terminology
MA130	Pre-Calculus
YEAR 2	SEMESTER 3
CT/AV	CT/AV Elective
CT265	Networking I
HI330	Intro to Healthcare Databases
HU/SS	Social Science Elective
TS240	Human Anatomy & Physiology
YEAR 2	SEMESTER 4
CT/AV	CT/AV Elective
CT	CT267 or AV257
HI210	Electronic Health Records Implementation
HI310	Medical Coding, Classification and Communication
TS242	Pathophysiology & Pharmacology
YEAR 3	SEMESTER 5
CT	CT122 or CT146
CT	CT212 or CT231
EN320	Technical Communication
HU/SS/MA	General Education Elective
SS335	Current Issues in Healthcare
YEAR 3	SEMESTER 6
BS324	Managing Organizations
CT	CT144 or CT249
CT	CT211 or CT213
CT233	Windows System Administration
SS330	Legal and Ethical Issues in Health IT
YEAR 4	SEMESTER 7
BS432	Personnel Management
CT	CT231 or CT212
HI430	Healthcare Compliance
HU/SS/MA	General Education Elective
MA270/290	Elementary Statistics/Health Statistics
SK400	Career Success Seminar
YEAR 4	SEMESTER 8
CT/AV	CT/AV Elective
CT365	Network Security
HI410	Health Information Systems Integration
HI445	Professional Experience
HI490	Capstone Project

Typical Course Sequence for Health Information Technology (BS): Transfer from AS in Technology

YEAR 3	SEMESTER 5
HI130	Intro to Health Information Technology
HU/SS/MA	General Education Elective
SS110	Intro to US Healthcare
TS120	Medical Terminology
TS240	Human Anatomy & Physiology
YEAR 3	SEMESTER 6
CT/MA/SS	General Elective*
HI210	Electronic Health Records Implementation
HI310	Medical Coding, Classification and Communication
SS330	Legal and Ethical Issues in Health IT
TS242	Pathophysiology & Pharmacology
YEAR 4	SEMESTER 7
BS432	Human Resource Management
HI430	Healthcare Compliance
HI 330	Intro to Healthcare Databases
MA270	Elementary Statistics
SS335	Current Issues in Healthcare
SK400	Career Success Seminar
YEAR 4	SEMESTER 8
BS324	Managing Organizations
CT365	Network Security
HI410	Health Information Systems Integration
HI445	Professional Experience
HI490	Capstone Project

* Students who have not completed CT265 upon entering the program are required to take this course during this time. Eligible students may elect to take MA240 and MA250. Students who have not taken CT119 or CT221 should take one of these classes at this time.

Typical Course Sequence for Health Information Technology (BS): Transfer from AS or BS in Health

YEAR 3	SEMESTER 5
HI130	Intro to Health Information Technology
CT134	Intro to Windows Operating System
MA120	Algebra and Trigonometry
CT119	Business Applications
CT265	Networking I
BS432	Human Resource Management
MA270	Elementary Statistics
YEAR 3	SEMESTER 6
HI210	Electronic Health Records Implementation
SS330	Legal and Ethical Issues in Health IT
MA130	Pre-Calculus
HI310	Medical Coding, Classification and Communication
CT	CT267 or AV257
YEAR 4	SEMESTER 7
HI430	Healthcare Compliance
HI330	Intro to Healthcare Databases
SS335	Current Issues in Healthcare
SK400	Career Success Seminar
YEAR 4	SEMESTER 8
CT365	Network Security
HI410	Health Information Systems Integration
BS324	Managing Organizations
HI445	Professional Experience
HI490	Capstone Project

Electrical Engineering (BS)

The bachelor's degree program in Electrical Engineering provides the needed knowledge and skills for graduates to enter careers in the field of electrical engineering or to enroll in a graduate program in electrical engineering. In addition, graduates will be able to make contributions to industry and to the field of electrical engineering.

The program places special emphasis on electric power due to the unique opportunities for those entering the power industry today, and the huge changes in the industry arising from green technologies. The emergence of a smart grid that detects and responds quickly to local power usage will afford opportunities for electrical engineering graduates with knowledge of electric power fundamentals.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule.

Outcomes

Upon successful completion of the Bachelor's Degree in Electrical Engineering, all graduates will have:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for, and an ability to engage in life-long learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Faculty

Chair: Dr. Lisa Shatz

Instructor staff: Dr. Craig Christensen, Dr. Greg Sonek, Dr. Mostapha Ziad, Dr. Chathan Cooke

Degree Requirements: Electrical Engineering (BS) 121 Credits

TECHNICAL COURSES: 69 CREDITS

Course #	Course	Credits	Lecture	Lab
ECE101	Digital Electronics	4	3	2
ECE105	Circuit Theory I	4	3	2
ECE205	Circuit Theory II	4	3	2
ECE206	Solid State Devices	4	3	2
ECE225	Linear Systems with Differential Equations	4	3	2
ECE307	Power Systems I	4	4	0
ECE308	Power Systems II	4	4	0

ECE325	Statistics for Engineers	4	3	2
ECE335	Control Systems	4	3	2
ECE403	Electromagnetic Theory	4	3	2

Course #	***Course***	***Credits***	***Lecture***	***Lab***
ECE410	Communication Systems	4	3	2
ECE414	Engineering Senior Project I	1	1	0
ECE415	Engineering Senior Project	4	3	2
ECE430	Digital Signal Processing	4	3	2
ECEE02	ECE elective	4	3	2
ENS103	Intro to Engineering	4	3	2
ENS202	Engineering Technical Communications	4	3	2
ENS333	Computer Programming for Engineers	4	3	2

ECE ELECTIVE OPTIONS (4 CREDITS)

Course #	***Course***	***Credits***	***Lecture***	***Lab***
ECE306	Solid State Devices and Circuits II	4	3	2
ECE309	Labview and Electric Circuits and Machines	4	3	2
ECE390	Data & Computer Communications	4	3	2

GENERAL EDUCATION COURSES: 52 CREDITS

Course #	***Course***	***Credits***	***Lecture***	***Lab***
GE01	General Elective	4	4	0
MA240	Calculus I	3	3	0
MA250	Calculus II	4	4	0
MA260	Multivariable Calculus	4	4	0
PH222	University Physics I	3	3	0
PH215	Physics Lab I	1	0	2
PH223	University Physics II	3	3	0
PH225	Physics Lab II	1	0	2
TS310	Chemistry or Biology	4	3	2
BS311	Microeconomics	3	3	0
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
HU/SS	HU/SS Elective	3	3	0
HU/SS	HU/SS Elective	3	3	0
HU/SS	HU/SS Elective	3	3	0
HU/SS	HU/SS Elective	3	3	0
SK400	Career Success Seminar			
SS265	Exploring Ethical Issues	3	3	0

GENERAL ELECTIVE OPTIONS (4 CREDITS)

Course #	***Course***	***Credits***	***Lecture***	***Lab***
MA130	Pre-Calculus	3	3	0
ECE01	ECE Elective	4	3	2

Typical Course Sequence for Electrical Engineering (BS)

YEAR 1 SEMESTER 1
EN130 College Composition I
MA130 Pre-Calculus
ENS103 Intro to Engineering
ECE101 Digital Electronics

YEAR 1 SEMESTER 2
EN140 College Composition II
MA240 Calculus I
ECE105 Circuit Theory I
PH222 University Physics I
PH215 Physics Lab I

YEAR 2 SEMESTER 3
HU/SS HU/SS Elective
ECE205 Circuit Theory II
MA250 Calculus II
PH223 University Physics II
PH225 Physics Lab II

YEAR 2 SEMESTER 4
ECE225 Linear Systems with Differential Equations
HU/SS HU/SS Elective
ENS333 Computer Programming for Engineers
ECE206 Solid State Devices

YEAR 3 SEMESTER 5
MA260 Multivariable Calculus
ECE307 Power Systems I
ECE 311 Embedded Systems
ENS202 Engineering Technical Communications

YEAR 3 SEMESTER 6
ECE308 Power Systems II
ECE403 Electromagnetic Theory
BS311 Microeconomics
ECE325 Statistics for Engineers

YEAR 4 SEMESTER 7
HU/SS HU/SS Elective
ECE430 Digital Signal Processing
ECE414 Engineering Senior Project I
ECE335 Control Systems
TS310 General Chemistry

YEAR 4 SEMESTER 8
ECE415 Engineering Senior Project
ECE410 Communication Systems
ECEE02 ECE elective
SS Ethics
SK400 Career Success Seminar

Electrical Technology (AS)

The Electrical Technology program prepares students for ever increasing career opportunities within the electrical field. From the designing of construction projects in residential, commercial, and industrial areas to the completion of these projects, students experience all phases of an electrical project. The Electrical Technology Associate Degree Program at BFIT fulfills the Massachusetts Board of State Examiners of Electrician's academic requirements for Journeyman Electrician licensure by providing 600 hours of class room instruction in accordance with 237 CMR 13.06 and 22.01.

Experienced personnel in the trades, as well as state regulators, such as the Board of Electricians and the Division of Apprentice Training, assures that the program is aggressive and ever-changing, with new methods and technology. In addition, our material is constantly updated to conform to the National Electrical Code, which updates every three years. Graduates of our program have many entry level career options in the electrical industry including a direct pathway toward obtaining a Journeyman Electrician license, electrical contractor, and electrical support positions such as estimator, product sales representative, and designer.

Curriculum

The curriculum is structured to provide educational hours in both the classroom and laboratory setting. Students are offered a broad range of courses in the electrical field. Some of these courses include: DC and AC Circuit Theory, electrical design and layout, electrical machines, photovoltaics and renewable energy, and low voltage systems and controls. Laboratory projects accompany most classes.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Facilities

The Electrical Department has three laboratories, which are equipped to provide students ample and meaningful hands-on experience in the electrical field. The three labs provide students with the opportunity to learn the basics of wiring, as well as the proper methods of application to the many theoretical principles of motors, transformers, and renewable energies.

Outcomes

Upon successful completion of the Associate Degree in Electrical Technology, the graduate will be able to:

- Comprehend and utilize current Electrical Industry Standards, including the National Electrical Code (NFPA 70), Massachusetts Electrical Code (527 CMR 12.00), and Standards for Electrical Safety in the Workplace (NFPA 70E).
- Identify and install electrical devices and equipment, utilizing a variety of wiring methods and practicing safe work habits.
- Design, analyze and install various electrical circuits and diagrams related to residential, commercial, and industrial applications.
- Perform electrical calculations, including Ohm's law, wire sizing, branch-circuit overcurrent protection sizing, voltage drop, and residential service entrance.
- Design, analyze, and troubleshoot motor circuits and motor controls.
- Understand the need for renewable energies and evaluate alternative energy technologies.

Faculty

Tracey Arvin, Chair

Instructor Staff: Thomas DeCosta, Christopher Villano

Degree Requirements: Electrical Technology 65 Credits

TECHNICAL COURSES: 42 CREDITS

Course #	Course	Credits	Lecture	Lab
EL110*	Circuit Theory I (DC)	4	3	2
EL127*	Design & Layout I/National Elec. Code I	5	4	2
EL129*	Design & Layout II/National Elec. Code II	5	4	2
EL213*	Circuit Theory II (AC)	4	3	2
EL214*	Low Voltage Systems & Controls	4	4	0
EL222*	Design & Layout III/National Elec. Code III	4	3	2
EL229*	Design & Layout IV/National Elec. Code IV	4	3	2
EL240*	Electrical Machines I	4	3	2
EL241*	Electrical Machines II	4	3	2
EL243*	Photovoltaics & Renewable Energy	4	3	2

* *These courses count towards the 600 clock hours of classroom instruction required by the Massachusetts State Board of Electrical Examiners for partial fulfillment of the requirements for Journeyman Electrician licensure.*

GENERAL STUDIES COURSES: 23 CREDITS

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA130	Pre-Calculus	3	3	0
	or			
MA270	Statistics	3	3	0
SK130	Success in Electrical Technology	1	1	0
SK200	Career Success Seminar	1	1	0
TS201	Environmental Science	3	3	0

Typical Course Sequence for Electrical Technology

SEMESTER 1

EL110 Circuit Theory I (DC)

EL127 Design & Layout I/ NEC I

EN130 College Composition I

MA120 Algebra & Trigonometry

SK130 Success in Electrical Technology

SEMESTER 2

EL129 Design & Layout II/ NEC II

EL213 Circuit Theory II (AC)

EN140 College Composition II

MA MA130 or MA270

SEMESTER 3

EL214 Low Voltage Sys & Controls

EL222 Design & Layout III/ NEC III

EL240 Electric Machines I

HU/SS Elective

SK200 Career Success Seminar

TS201 Environmental Science

SEMESTER 4

EL229 Design & Layout IV/ NEC IV

EL241 Electric Machines II

EL243 Photovoltaics & Renewable Energy

HU/SS Elective

Practical Electricity (Certificate)

According to the U.S. Department of Labor, electrician job growth will be higher than average, growing at a rate of 23% over the next decade (Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2012-13 Edition). Here in the state of Massachusetts, that growth rate is estimated to be even higher as many in the current workforce will be retiring in the next few years.

The Electrical Technology Department offers a twelve-month Certificate of Proficiency in Practical Electricity. This program fulfills the Massachusetts Board of State Examiners of Electrician's academic requirements for Journeyman Electrician licensure by providing 600 hours of classroom instruction in accordance with 237 CMR 13 and 22.

The course of study includes the theoretical application of electricity as applied to the electrical construction industry and relevant Electrical Code requirements necessary to design and install a compliant installation.

A laboratory component accompanies every course and provides practical, hands-on skills that are desired of apprentice electricians seeking employment. Through a blend of lecture and laboratory classes, the certificate program provides a deep introductory knowledge of the electrical field. Upon successful completion, graduates are well positioned to start learning on-the-job while having foundational understanding of electrical principles.

Curriculum

The curriculum is aligned with the learning objectives outlined in 237 CMR 22.01, as mandated by the Massachusetts State Board of Examiners of Electricians. Courses include topics such as DC and AC circuit theory, electrical code and wiring lab, electrical machines, and low voltage systems. Laboratory projects accompany all classes. Credits from this certificate program may be applied as technical electives for students who wish to pursue an associate degree in the Technology Business and Management program at BFIT.

Facilities

The Practical Electricity program utilizes three laboratories, which are equipped to provide students ample and meaningful hands-on experience in the electrical field. The three labs provide students with the opportunity to learn the basics of wiring, as well as the proper methods of application to the many theoretical principles of motors, transformers, low voltage and renewable energy systems. The three labs are the Wiring Method lab, the Electro-Mechanical lab, and the Renewable Energy lab.

Outcomes

Upon successful completion of the Practical Electricity Certificate program, the graduate will be able to:

- Comprehend and utilize current Electrical Industry Standards, including the National Electrical Code (NFPA 70), Massachusetts Electrical Code (527 CMR 12.00), and Standards for Electrical Safety in the Workplace (NFPA 70E).
- Identify and install electrical devices and equipment, utilizing a variety of wiring methods and practicing safe work habits.
- Design, analyze and install various electrical circuits and diagrams related to residential, commercial, and industrial applications.
- Perform electrical calculations, including Ohm's law, wire sizing, branch-circuit overcurrent protection sizing, voltage drop, and residential service entrance.
- Design, analyze, and troubleshoot motor circuits and motor controls.

Faculty

Tracey Arvin, Chair

Instructor Staff: Thomas DeCosta, John McDonagh, Christopher Villano

Certificate Requirements: Practical Electricity 28 Credits

TECHNOLOGY COURSES: 28 CREDITS

Course #	Course	Credits	Lecture	Lab
PE101*	Electrical Code I	5	8	2
PE103*	Circuit Theory	5	6	4
PE201*	Electrical Code II	5	8	2
PE203*	Electrical Machines	5	6	4
PE211*	Electrical Code III	5	8	2
PE213*	Electrical Systems & Regulations	3	8	2

* *These courses count towards the 600 clock hours of classroom instruction required by the Massachusetts State Board of Electrical Examiners for partial fulfillment of the requirements for Journeyman Electrician licensure.*

Typical Course Sequence

SEMESTER 1

PE101 Electrical Code I

PE103 Circuit Theory

SEMESTER 2

PE201 Electrical Code II

PE203 Electrical Machines

SEMESTER 3

PE211 Electrical Code III

PE213 Electrical Systems & Regulations

Electronic Engineering Technology (AS)

The field of Electronic Engineering Technology involves building, testing, troubleshooting, repairing, or installing a variety of electronic printed circuit boards or systems. Graduates are electronic technicians that may perform a broad range of tasks for high tech companies in the Electronic Components, Communications, Computers, Industrial Control, Instrumentation or Defense sectors. An electronic technician generally works under the supervision of engineers and may support design engineers developing a new product by assembling prototypes and testing them to verify their operation. Or the technician may be in the manufacturing department where he/she builds, tests and repairs high tech products. They also may repair customer products, provide technical support to customers, or assist the sales organization with technical support. Datacom and telecom companies employ electronic technicians to install and maintain their networks. Technicians are hands-on practitioners who know how to apply algebra and trigonometry to real-life problems, or run computer simulations to analyze circuits.

To advance in these careers, it is also important to develop skills in communicating the problems, ideas and solutions to others in the company. Those graduates in departments that interface with customers must also develop people skills.

Many graduates choose to continue their education and are accepted into Electronic Engineering Technology or Electrical Engineering programs leading to the Bachelor of Science degree. Alternatively, a graduate could choose to pursue a degree in business, acquiring both technical and business skills. Others who choose to enter the workforce are employed by companies producing consumer products, medical device manufacturers, technology for other companies, defense contractors, or network providers.

Automation/Robotics Track

Robotics is a growing multi-billion dollar industry supporting just about every field of the economy such as agriculture, healthcare, biotech, manufacturing, construction, aerospace, automotive, appliance, consumer products, defense, energy, food packaging, mining, and more! Automated systems produce efficiencies and cost reductions that are revolutionizing many businesses across America and the world.

Instead of Calculus and University Physics, the robotics track has courses that teach motors, sensors, controls, automation, and ladder logic. The first year is the same for the Electronics transfer track, Robotics track, and Biomedical track.. Students will start to specialize after their first year of study.

Curriculum

The curriculum is structured to provide a broad education, with students taking courses in each of the recognized areas of analog circuits, digital circuits, processors, writing skills, presentation skills, algebra, trigonometry, elementary calculus, computer application, programming, and problem solving skills. Typically the electronics courses are three hours of lecture and two hours of laboratory work, reinforcing concepts and principles taught in the classroom and providing extensive hands-on education.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, Electronics students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Facilities

The electronics laboratory is equipped to provide students ample and meaningful hands-on experience in breadboarding, testing, schematic capture, and simulation of analog and digital circuits. Students will typically spend six hours a week or more in the laboratory, confirming that the lecture material works in real life and is not unproven theory. Students follow the laboratory experiment with a report where the results are analyzed and discussed. In the laboratory, the students learn how to use standard test equipment to build circuits, create schematics, and test circuits.

Outcomes

By the time of graduation, the Electronic Engineering Technology graduate will be able to:

- Analyze or troubleshoot in three major electronic engineering areas: analog circuits, digital circuits, and processors.
- Recognize and apply fundamental knowledge of mathematics, especially algebra and trigonometry.
- Conduct experiments in teams, building or breadboarding, using basic test equipment and tools to measure performance, and to critically analyze and interpret data.
- Effectively communicate either technical observations, results, issues, and successes or negotiate a change in design or procedure.
- Apply computer skills for preparing technical documents or analyzing data: using applications for word processing, spreadsheets, simple programming, schematic capture, and simulation.
- Calculate costs.
- Read manuals and schematics and identify components on a printed wiring board.
- Apply proper laboratory procedures.

Faculty

James Giumarra, Chair

Instructor Staff: Mozhgan Hosseinpour, Dr. Nikhil Satyala, Russ VerNooy

Degree Requirements for Electronic Engineering Technology (AS) 71 Credits

TECHNICAL COURSES: 35 CREDITS

Course #	Course	Credits	Lecture	Lab
CT142	Fundamentals and Applications of C++	4	3	2
	OR			
CT143	Intro to C++ Programming	4	3	2
EE101	Intro to Electro-Mechanical Systems	3	2	2
EE110	DC Circuits	4	3	2
EE113	AC Circuits	4	3	2
EE122	Electronics I	4	3	2
EE131	Digital Principles	4	3	2
EE223	Electronics II	4	3	2
EE235	Programmable Logic	4	3	2
EE240	Embedded Processors	4	3	2

GENERAL EDUCATION COURSES: 20 CREDITS

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA130	Pre-Calculus	3	3	0
SK135	Success in Electronics	1	1	0
SK200	Career Success Seminar	1	1	0

ELECTIVE COURSES TRANSFER TRACK 20 CREDITS

Course #	Course	Credits	Lecture	Lab
EE250	Electronic Communications	4	3	2
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0
PH215	Physics Lab I	1	0	2
PH222	University Physics I	3	3	0
PH223	University Physics II	3	3	0
PH225	Physics Lab II	1	0	2

ELECTIVE COURSES ROBOTICS TRACK 16 CREDITS

Course #	Course	Credits	Lecture	Lab
EE210	Robotics, Motors, and Controls I	5	2	4
EE220	Robotics, Motors, and Controls II	5	2	4
EE254	Networking for End Users	4	3	2
PH212	Physics I	3	3	0
PH215	Physics Lab I	1	0	2

Typical Course Sequence for Electronic Engineering Technology (AS) Transfer Track

SEMESTER 1

EE101 Intro to Electro-Mechanical Systems

EE110 DC Circuits

EE131 Digital Principles

EN130 College Composition I

MA120 College Algebra and Trigonometry

SK135 Seminar

SEMESTER 2

CT142 or CT143

EE113 AC Circuits

EE122 Electronics I

EN140 College Composition II

MA130 Pre-Calculus

SEMESTER 3

EE223 Electronics II

EE235 Programmable Logic

EN320 Technical Communications

MA240 Calculus I

PH215 Physics Lab I

PH222 University Physics I

SEMESTER 4

EE240 Embedded Processors

EE254 or EE250

HU/SS Elective

MA250 Calculus II

PH223 University Physics II

PH225 Physics Lab II

SK200 Career Seminar

Typical Course Sequence for Electronic Engineering Technology (AS) Robotics Track

SEMESTER 1

EE101 Intro to Electro-Mechanical Systems

EE110 DC Circuits

EE131 Digital Principles

EN130 College Composition I

MA120 College Algebra and Trigonometry

SK135 Seminar

SEMESTER 2

CT142 or CT143

EE113 AC Circuits

EE122 Electronics I

EN140 College Composition II

MA130 Pre-Calculus

SEMESTER 3

EE223 Electronics II

EE235 Programmable Logic

EN320 Technical Communications

EE210 Robotics, Motors, and Controls I

SEMESTER 4

EE254 Networking for End Users

HU/SS Elective

EE220 Robotics, Motors, and Controls II

PH212 Physics I

PH215 Physics Lab I

SK200 Career Seminar

Biomedical Engineering Technology (AS)

Biomedical Engineering Technology appeals to students desiring to be technical, and at the same time, devote their careers to saving lives by helping doctors, nurses and hospital patients. Graduates become biomedical technicians or health engineering technicians or field service engineers, by learning to install, maintain, repair, and calibrate the electronic medical instruments used in healthcare. To advance in these careers, it is also important to develop skills in communicating problems, ideas and solutions to other employees.

In this program students will develop troubleshooting skills in analog and digital systems. In addition, students will study networking, physiology, medical terminology and the operation of medical equipment such as EKG instruments, defibrillators, and incubators among many others.

In the workforce, graduates are typically employed by hospitals or a subcontractor for a hospital. Some graduates are employed by manufacturers of medical instruments or medical devices, or as field support technicians, after earning experience in the field. Although this program's primary objective is workforce development, some graduates choose to continue their education and are accepted into Electronic Engineering Technology bachelor degree programs.

Others pursue a degree in business, or continue their education in clinical programs. However, students intending to continue full-time education toward a bachelor's degree in engineering technology are encouraged to consider the Electronic Engineering Technology Transfer Program.

Curriculum

The curriculum is structured to provide a broad education, with students taking courses in each of the recognized areas of analog circuits, digital circuits, processor programming, writing skills, presentation skills, algebra and trigonometry. Typically, the electronics courses are three hours of lecture and two hours of laboratory work, reinforcing concepts and principles taught in the classroom and providing extensive hands-on education.

The freshman year is identical to the Electronic Engineering Technology program and transfer between the two programs is easy during the first year. In the sophomore year, students learn about physiology, networking and medical instrumentation.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students in the Biomedical program are enrolled in this course for the 3rd semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to the semester.

Facilities

The electronics laboratory is equipped to provide students ample and meaningful hands-on experience in breadboarding, testing, and schematic capture. Students will typically spend six hours a week or more in the laboratory, confirming that the lecture material works in real life and is not unproven theory. Second year students will be trained on the theory and operation of the medical instruments in late afternoon and evening courses at a local hospital, and will also have an internship at a medical facility during their last Semester.

Outcomes

By the time of graduation, the Biomedical Engineering Technology graduate will be able to:

- Perform periodic maintenance or troubleshoot medical electronic instruments and devices.
- Recognize and apply fundamental knowledge of mathematics.
- Conduct experiments in teams, building or breadboarding, using basic test equipment and tools to measure performance, and to critically analyze and interpret data.
- Effectively communicate either technical observations, results, issues, and successes or negotiate a change in design or procedure.
- Apply computer skills for preparing technical documents or analyzing data, using applications for word processing, spreadsheets, simple programming, schematic capture, and simulation.
- Calculate costs.
- Read manuals and schematics and identify components in systems.

Faculty

James Giumarra, Chair

Instructors: Brian Baril, Barry Hammel, Mozhgan Hosseinpour, Bill Purtell, Dr. Nikhil Satyala, Shawn Trainor, Russ VerNooy, Patricia Volpe

Degree Requirements: Biomedical Engineering Technology (AS) 70 Credits

TECHNICAL COURSES: 43 CREDITS

Course #	Course	Credits	Lecture	Lab
CT142	Fundamentals and Applications of C++	4	3	2
	OR			
CT143	Introduction to Programming Logic and C++	4	3	2
EE101	Intro to Electro-Mechanical Systems	3	2	2
EE110	DC Circuits	4	3	2
EE113	AC Circuits	4	3	2
EE122	Electronics I	4	3	2
EE131	Digital Principles	4	3	2
EE223	Electronics II	4	3	2
EE254	Networking for End Users	4	3	2
MD223	Medical Instrumentation I	4	2	4
MD225	Medical Instrumentation II	4	2	4
MD242	Internship	4	0	8

GENERAL EDUCATION COURSES: 27 CREDITS

Course #	Course	Credits	Lecture	Lab
EN129/EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
MA120	College Algebra	3	3	0

MA130	Pre-Calculus	3	3	0
PH213	Physics I	3	3	0
PH225	Physics Lab I	1	0	2
SK135	Success in Electronics	1	1	0
SK200	Career Success Seminar	1	1	0
TS240	Human Anatomy and Physiology	3	2	2

Typical Course Sequence for Biomedical Engineering Technology (AS)

SEMESTER 1

EE101 Intro to Electro-Mechanical Systems
EE110 DC Circuits
EE131 Digital Principles
EN130 College Composition I
MA120 College Algebra and Trigonometry
SK135 Seminar

SEMESTER 2

CT142 or CT143
EE113 AC Circuits
EE122 Electronics I
EN140 College Composition II
MA130 Pre-Calculus

SEMESTER 3

EE223 Electronics II
EE254 Networking for End Users
HU/SS Elective
MD223 Medical Instrumentation I
SK200 Career Seminar
TS240 Human Anatomy and Physiology

SEMESTER 4

EN320 Technical Communications
MD225 Medical Instrumentation II
MD242 Internship
PH212 Physics I
PH215 Physics Lab I

Heating, Ventilation, Air Conditioning, and Refrigeration (Certificate)

Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC&R) is rated by the U.S. Department of Labor as one of the fastest growing job areas in the country.

There are excellent employment opportunities available, both locally and nationally, for graduates of certificate programs.

This nine-month, 800-hour, full-time day or evening certificate program is designed to provide students with the knowledge and hands-on skills to become successful HVAC&R technicians. HVAC&R technicians work for heating and cooling contractors, refrigeration and air conditioning service and repair shops, schools, hospitals, office buildings, a variety of industries, and local, state or federal governments.

Under the supervision of a licensed technician, the HVAC&R apprentices help with the installation, troubleshooting, diagnosis and repair of equipment. Upon successful completion of the program, students are credited with 2000 hours towards the requirement to sit for the Refrigeration Technician Examination. Today's HVAC&R Technician needs to be EPA certified. BFIT's HVAC&R program provides test preparation for the EPA certification. In addition, we also offer an R-410 A certificate and 10-hour OSHA Safety certificate, upon successful completion of the program.

This program offers 150 hours of electrical code and a minimum of 150 hours of refrigeration theory needed for state licensure and follows all federal regulations regarding gainful employment.

Curriculum

The course curriculum is structured to provide a basic knowledge of the refrigeration, air conditioning, and heating fields with no prior experience needed. Core courses in the first semester cover topics such as: refrigeration and heating principles, electricity for HVAC&R, safety in the HVAC&R field, and use of HVAC&R tools and equipment. An EPA course covering the reclamation and recycling of refrigerant completes the first semester. In the second semester of the program, students concentrate on commercial and industrial refrigeration, air conditioning and testing. This semester also covers heating, including oil and gas-fired units, and forced hot air and hydronic systems. Credits from this certificate program may be applied as technical electives for students who wish to pursue an associate degree in the Technology Business and Management program at BFIT.

Facilities

Benjamin Franklin Institute of Technology maintains a HVAC&R laboratory with a wide variety of tools and equipment used in the heating, air conditioning, refrigeration, and ventilation industry. The HVAC&R Lab contains 20 refrigeration trainers, multiple high efficient furnaces, air conditioners, ductless systems, and gas and oil fired boilers. HVAC&R Lab equipment gives students the real world hands-on training needed to be sucessful in the HVAC&R field.

Outcomes

Upon successful completion of the HVAC&R Certificate, the graduate will be able to:

- Demonstrate the principles of refrigeration and air conditioning.
- Identify principles of different refrigerants and their temperature pressure relationships.
- Demonstrate a knowledge of refrigeration and air conditioning components, including compressors, evaporators, metering devices and condensers.
- Implement proper charging of refrigeration and air conditioning systems and proper leak protection methods.
- Solder and braze pipes and fittings.
- Test pressure and detect leaks.
- Recover, reclaim and recycle refrigerant in accordance with EPA and Mass. Dept. of Public Safety guidelines.
- Flare and swage tubing.

- Troubleshoot electrical and mechanical malfunctions of commercial and domestic units.
- Use HVAC&R tools and measuring devices effectively.
- Proper installation maintenance procedures of heating, refrigeration, airconditioning and ventilation equipment

The HVAC&R program is also offered during the evening for students who are unable to study during the day. Students in the HVAC&R evening program study Monday through Thursday. The program normally begins in January and concludes the following August. Information about the course schedule for the HVAC&R evening program is available through the BFIT Admissions Office.

Faculty

John Terasconi, Department Chair

Instructor Staff: Kevin Bell, Mark MacCormack, Thomas Pagliarulo, Anthony Joseph Silva

Certificate Requirements for HVAC&R Technology 28 Credits

TECHNOLOGY COURSES: 28 CREDITS

Course #	***Course***	***Credits***
HV111	Fundamentals of Electricity as applied to HVAC-R	3
HV112	Refrigeration Fundamentals	3
HV113	Electrical and Mechanical for Refrigeration	6
HV114	EPA--Refrigerant Recovery, Recycle, and Reclaim	1
HV211	Commercial Refrigeration and Ice Machines	3
HV212	Commercial Air conditioning and Heat Pumps	3
HV213	Gas Heating and Residential Air Conditioning	4
HV214	Oil Furnaces and Hydronic Heating.	5

Mechanical Engineering Technology (AS)

The objective of the Mechanical Engineering Technology program is to prepare its graduates both for immediate employment as technicians and for further study at the bachelor's level in Mechanical Engineering Technology.

This program maintains a close connection with industry. Its Industry Advisory Committee, consisting of mechanical engineering and mechanical engineering technology professionals in Greater Boston and New England, meets periodically to evaluate the objectives, curriculum, and course content, to keep the program updated and practical.

With a strong foundation in manufacturing processes and CAD (SolidWorks™), graduates of the Mechanical Engineering Technology program are prepared for employment as Machinists, Mechanical Designers, Assistant Mechanical Engineers, Engineering Research Assistants, Mechanical Engineering Associates, Manufacturer's Representatives, Specifications and Technical Specialists, etc.

Curriculum

The Mechanical Engineering Technology Program includes fundamental and advanced courses in statics, materials, thermodynamics, CAD with SolidWorks™, machine design with 3-D solid modeling design, manufacturing processes, and CNC machine programming.

Four semesters of mathematics are required for graduation. Students will be placed in an appropriate math course, based on a math skills assessment. Humanities, social sciences, and English courses comprise part of the curriculum to ensure the graduates possess broader social visions and proficient and effective communication skills.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Facilities

The Mechanical Engineering Technology Department maintains a CAD (SolidWorks™) classroom, a fabrication and material testing laboratory that includes CNC machines, joining equipment and an assortment of hand tools and measuring equipment.

Outcomes

Upon successful completion of the Associate Degree in Mechanical Engineering Technology, the graduate will be able to:

- Utilize SolidWorks™ to produce engineering drawings and to analyze interference fits and tolerances.
- Program and operate CNC equipment in an industrial environment.
- Understand manufacturing processes and their uses in industry.
- Design and build products and equipment for a changing technical environment.
- Demonstrate a knowledge of mathematics and the ability to apply this knowledge as practiced in materials science, engineering mechanics (statics) and thermodynamics.
- Effectively communicate technical observations, results, issues and successes in both oral and written form.
- Demonstrate the fundamental skills necessary for continuing their education towards a bachelor's degree in mechanical engineering technology or related fields.
- Understand professional, ethical and social responsibilities.
- Work effectively in a team-oriented/project-focused work environment.

Faculty

Joanna Dowling, Chair
Instructor Staff: Roy Garber, David Post, Dr. Tom Naderi, Pragun Goyal

Degree Requirements: Mechanical Engineering Technology (AS) 62 Credits

TECHNICAL COURSES: 34 CREDITS

Course #	Course	Credits	Lecture	Lab
ME105	CAD with SolidWorks	3	2	2
ME106	Advanced CAD w/SolidWorks	3	2	2
ME110	Statics	4	4	0
ME141	Materials	3	3	0
ME150	Intro to MFG	4	2	4
ME151	MFG Process & CNC	4	2	4
ME220	Mastercam Milling I	4	2	4
ME240	Machine Design with SolidWorks	4	3	2
ME241	SolidWorks Certification Preparation	1		
ME250	Advanced Manufacturing and CNC1	4	2	4

GENERAL EDUCATION COURSES: 31 CREDITS

Course #	Course	Credits	Lecture	Lab
EN130	College Comp I	3	3	0
EN140	College Comp II	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
MA120	College Algebra & Trig	3	3	0
MA130	Pre-Calculus	3	3	0
PH212	Physics I	3	3	0
PH213	Physics II	3	3	0
PH215	Physics Lab I	1	0	2
PH225	Physics Lab II	1	0	2
SK140	Success in MET	1	1	0
SK200	Career Success Seminar			

Typical Course Sequence for Mechanical Engineering Technology (AS)

SEMESTER 1

- EN130 College Comp I
- MA120 College Algebra & Trig
- ME105 CAD with SolidWorks
- ME141 Materials
- SK140 Success in MET

SEMESTER 2

- EN140 College Comp II
- ME106 Advanced CAD w/ SolidWorks
- HU/SS Elective
- MA130 Pre-Calculus
- ME150 Intro to Manufacturing

SEMESTER 3

- ME151 MFG Processes & CNC Machining
- ME220 Mastercam Milling I
- ME240 Machine Design with SolidWork
- MA241 SolidWork Certification
- PH212 Physics I
- PH215 Physics Lab I
- SK200 Career Seminar

SEMESTER 4

- EN320 Technical Communications
- ME110 Statics
- ME250 Advanced Manufacturing and CNC1
- PH213 Physics II
- PH225 Physics Lab II

Mechanical Engineering Technology (BS)

The objective of the Mechanical Engineering Technology program is to prepare its graduates for immediate employment in advanced manufacturing careers with technical expertise in mechanical technology. The bachelor program builds on the associate degree to prepare students for a career as a mechanical engineering technologist. These professionals make sketches and rough layouts, CAD drawings, record and analyze data, make calculations and estimates, and report their findings to mechanical engineers. The bachelor's program focuses on the development of more detailed and specialized knowledge as well as more mature skills in communication, information literacy, and problem solving. The students have greater opportunity to explore the linkage between management, quality systems, and technical production.

The combination of classroom learning with the hands-on laboratory experience gives students exposure to the manufacturing and design processes and to have a competitive edge in Advanced Manufacturing Careers.

Graduates of the program will have developed communication skills, critical-thinking, managerial, problem solving and organizational skills. These employability skills are essential to the vitality of manufacturing companies and their manufacturing processes.

This program maintains a close connection with industry. Its Industry Advisory Board (IAB), consisting of mechanical engineering and mechanical engineering technology professionals in Greater Boston and New England, meets periodically to evaluate the objectives, curriculum, and course content, to keep the program updated and practical.

With a strong foundation in manufacturing processes and SolidWorks™ CAD, graduates of the Mechanical Engineering Technology program are prepared for employment as machinists, production support staff, mechanical designers, assistant mechanical engineers, engineering research assistants, mechanical engineering associates, manufacturer's representatives, and specifications and technical specialists.

Curriculum

The Mechanical Engineering Technology Program includes fundamental and advanced courses in statics, materials, thermodynamics, CAD with SolidWorksTM, machine design with 3-D solid modeling design, manufacturing processes, CNC machine programming, Robot Programming and Modeling, Mastercam, Lean Manufacturing Concepts and Advanced Manufacturing.

Humanities, social sciences, and English courses comprise part of the curriculum to ensure the graduates possess broader social visions and proficient and effective communication skills.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule.

Facilities

The Mechanical Engineering Technology Department maintains a CAD (SolidWorks™) classroom, a fabrication and material testing laboratory that includes CNC machines, joining equipment and an assortment of hand tools and measuring equipment.

Outcomes

Upon successful completion of the bachelor's degree in Mechanical Engineering Technology, the graduate will be able to:

- Utilize SolidWorks™ to produce engineering drawings and to analyze interference fits and tolerances.
- Program and operate CNC equipment in an industrial environment.
- Understand manufacturing processes and their uses in industry.
- Design and build products and equipment for a changing technical environment.
- Demonstrate a knowledge of mathematics and the ability to apply this knowledge as practiced in materials science, engineering mechanics (statics) and thermodynamics.

- Effectively communicate technical observations, results, issues and successes in both oral and written form.
- Apply Lean Manufacturing Concepts.
- Understand the linkage between management, quality systems, and technical production.
- Apply entry level computer programming.
- Understand professional, ethical and social responsibilities.
- Work effectively in a team-oriented/project-focused work environment.

Faculty

Joanna Dowling, Chair

Instructor Staff: Roy Garber, David Post, Dr. Tom Naderi, Pragun Goyal

Degree Requirements: Mechanical Engineering Technology (BS) 131 Credits

TECHNICAL COURSES: 83 CREDITS

Course #	Course	Credits	Lecture	Lab
BS284	Operations Management	3	3	0
BS332	Financial Accounting	3	3	0
BS431	Management Accounting	3	3	0
EE214	Electricity and Electronics	4	3	2
ME105	CAD with SolidWorks	3	2	2
ME106	Advanced CAD w/SolidWorks	3	2	2
ME110	Statics	4	4	0
ME141	Materials	3	3	0
ME150	Intro to MFG	4	2	4
ME151	MFG Process & CNC	4	2	4
ME220	Mastercam Milling I	4	2	4
ME225	Mastercam Milling II	4	2	4
ME226	Mastercam Turning	4	2	4
ME230	MFG Business Practices	3	3	0
ME240	Machine Design with SolidWorks	4	3	2
ME241	SolidWorks Certification Preparation	1		
ME250	Advanced MFG and CNC I	4	2	4
ME252	Thermodynamics	4	4	0
ME260	Advanced MFG and CNC II	4	2	4
ME310	Robotics I	4	2	4
ME315	Robotics II	4	2	4
ME345	Mechanics of Materials	3	3	0
ME490	Senior Design I	3	2	2
ME491	Senior Design II	3	2	2

GENERAL EDUCATION COURSES: 48 CREDITS

Course #	Course	Credits	Lecture	Lab
EN130	College Comp I	3	3	0
EN140	College Comp II	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
MA120	College Alegbra & Trig	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0
MA270	Statistics	3	3	0
PH212	Physics I	3	3	0
PH213	Physics II	3	3	0
PH215	Physics Lab I	1	0	2
PH225	Physics Lab II	1	0	2
SK140	Success in MET	1	1	0
SK400	Career Success Seminar	1	0	0

Typical Course Sequence for Mechanical Engineering Technology (BS)

SEMESTER 1:

EN130 College Comp I
MA120 College Alegbra & Trig
ME105 CAD with SolidWorks
ME141 Materials
SK140 Success in MET

SEMESTER 2:

EN140 College Comp II
ME106 Advanced CAD with SolidWorks
HU/SS Elective
MA130 Pre-Calculus
ME150 Intro to Manufacturing

SEMESTER 3 :

ME51 Manufacturing Processes & CNC Machining
ME220 Mastercam Milling I
MA240 Machine Design with SolidWorks
ME241 SolidWorks Certification Prep
PH212 Physics I
PH215 Physics Lab I

SEMESTER 4:

EN320 Technical Communications
ME110 Statics
ME250 Advanced Manufacturing and CNC I
PH213 Physics II
PH225 Physics Lab II

SEMESTER 5:

MA240 Calculus I
ME226 Mastercam Turning
ME230 Manufacturing Business Practice
ME252 Thermodynamics
ME260 Advanced Manufacturing and CNC II

SEMESTER 6:

BS332 Financial Accounting
EE214 Electricity and Electronics
HU/SS Elective
MA250 Calculus II
ME225 Mastercam Milling II

SEMESTER 7:

BS431 Management Accounting
HU/SS Elective
MA270 Statistics
ME310 Robotics I
ME490 Senior Design I
SK400 Career Success Seminar

SEMESTER 8 :

BS284 Operations Management
HU/SS Elective
ME315 Robotics II
ME345 Mechanics of Materials
ME491 Senior Design II

Opticianry (AS)

The Opticianry program is fully supported by the Opticians Association of Massachusetts. The program has full accreditation from the Commission on Opticianry Accreditation (COA, 2013). The BFIT Opticianry program is the only program of its kind in Massachusetts, and one of only a few in all of New England.

The Opticianry program serves as the educational gateway for students of all ages, including adult learners and apprentice opticians. With a vibrant optical industry and continued need for qualified eye care professionals, there exists a tremendous opportunity for technically skilled and highly knowledgeable opticians.

The optical industry is experiencing tremendous growth. With this growth comes expanded regulations and increased requirements for becoming a licensed optician in Massachusetts.

The curriculum is designed to prepare the graduate to meet both the requirements for licensing in all states, including national and local certification exams and practical tests, as well as for entry into the profession of opticianry itself. Upon graduation, the student will be well-versed and knowledgeable in all facets of opticianry, including spectacle design, fitting and dispensing, contact lens design and fitting, prescription and non-prescription fabrication and manufacturing, and special application optics.

The optical profession itself offers great diversity and versatility. Graduates will be able to work in many different environments ranging from HMO/medical offices to retail/ high fashion optical boutiques, corporate and chain optical conglomerates to independent ownership. Graduates will be well versed in all aspects of optics as it relates to opticianry. Graduates will be qualified for positions involving spectacle design and dispensing, contact lens design and dispensing, optical laboratory finishing and management, optical business management or independent ownership. Many graduates of the opticianry program seek advanced degrees and/or certification related to business, management, ophthalmic technology and health care management.

The primary objective of the program is to prepare students for a career as a licensed optician. The licensing requirements for the state of Massachusetts are certification by the American Board of Opticianry, certification by the National Contact Lens Examiners, completion of an associate degree in opticianry, and successful completion of the state licensing exam.

Curriculum

The two-year curriculum is comprehensive in design and has been modeled after opticianry accredited programs from across the country. As a member of the National Federation of Opticianry Schools (NFOS), the comprehensive curriculum is reviewed each year at the annual meeting.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Facilities

The college facilities include three dedicated classrooms for the opticianry program; a spectacle finishing lab, a contact lens fitting and dispensing clinic, and a prototype optical shop. The optical shop is open regular hours during the academic year and is operated by the opticianry students under the direct supervision of a licensed optician in order to serve the eyecare needs of the college community.

The finishing lab provides students with the opportunity to learn prescription spectacle fabrication, both as individual work projects and assignments, as well as the capability for conversion to a simulated high capacity wholesale optical laboratory.

The contact lens clinic serves as a model working environment classroom.

The contact lens lab provides the student an opportunity to work with contact lens related devices and instrumentation. In addition, the dispensing and fitting aspects of the laboratory will allow opportunities for contact lens related instruction and actual patient care.

Program Goals

The associate degree program in Opticianry will:

- Prepare students to complete successfully the American Board of Opticianry Examination, the National Contact Lens Examination, and the requirements for licensing in any state.
- Promote the highest technical and ethical standards in the practice and delivery of professional patient care.
- Provide students the opportunity to excel in all aspects of opticianry related to academic and practical knowledge, technical skill and professional level competence.
- Promote inter-disciplinary and cooperative patient care concepts in order to take advantage of the strengths of optometry and opticianry in solving patients' vision care concerns and issues.
- Practice global awareness and ethical responsibility, fostering in students a commitment to civic engagement and volunteerism, leadership, and life-long learning through community-based learning projects and involvement with professional organizations, events and associations.
- Seek to eliminate hazardous waste and to reduce non-hazardous waste to the minimum levels economically and technically practical, and to be in full-compliance with all federal and state environmental regulations.

Outcomes

Upon successful completion of the degree, students will be able to perform the following professional responsibilities:

- Based upon a patient's prescription, vision needs and lifestyle and desires, visualize and design appropriate solutions pertaining to prescription glasses and/ or contact lenses.
- Design, fit and dispense prescription glasses and contact lenses
- Utilize and operate all forms of ophthalmic devices and instrumentation including keratometers, lenmeters, biomicroscopes, corneal topographers, pupilometers and digital image measuring devices.
- Utilize and operate all finishing lab equipment including edgers, heat treating units, safety beveling units, drop ball testing, chemical treating units, blocking and layout devices and rimless edging devices.
- Inspect and verify spectacle and contact lenses for optical precision, proper and comfortable fit, and proper aesthetics.
- Evaluate and troubleshoot patient's concerns and symptoms as they are related to the eyeglasses and contact lenses.
- Professionally and academically express optical technical skills and knowledge, both in an exam scenario, as well as in a clinical environment.

Faculty

Blair Wong ABOM, M.Ed., NCLC, LDO, Chair

Instructors: George Bourque, ABO AC, Ldo; Robert Goldman, BS, ABOC, LDO; Joanne Le, OD, BS; Kathryn Plante, ABOC, NCLC, BS, LDO; Kevin Silva, ABOC, NCLC, BS, LDO

Degree Requirements: Opticianry 71 Credits

TECHNICAL COURSES: 49 CREDITS

Course #	Course	Credits	Lecture	Lab
BS201	Small Business Management	3	3	0
OP105	Anatomy and Physiology of the Eye	3	3	0
OP110	Ophthalmic Optics I	3	3	0
OP115	Principles and Practices in Opticianry I	3	3	0
OP120	Ophthalmic Optics II	3	3	0
OP122/123	Ophthalmic Design & Dispensing I / Lab	4	3	2
OP125	Principles and Practices in Opticianry II	3	3	0
OP128	Optical Business & Clinical Care Management	2	2	0
OP 230/231	Contact Lens Theory I /Lab	5	3	4
OP232/233	Ophthalmic Design & Dispensing II / Lab	4	3	2
OP235	Principles and Practices in Opticianry III	3	3	0
OP 240/241	Contact Lens Theory II /Lab	5	3	4
OP243	Principles and Practices in Opticianry IV	3	3	0
OP245	Vision Assessment	3	3	0
OP281	Opticianry Technical Skills & Service Lab I	1	0	2
OP282	Opticianry Technical Skills & Service Lab II	1	0	2

GENERAL EDUCATION REQUIREMENTS: 22 CREDITS

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
MA105	Technical Math	3	3	0
MA107	Optical Math	3	3	0
SK200	Career Success Seminar			

Typical Course Sequence for Opticianry

SEMESTER 1

EN130 College Composition 1

MA105 Technical Math

OP105 Anatomy and Physiology of the Eye

OP110 Ophthalmic Optics 1

OP115 Principles and Practices in Opticianry I

OP122/123 Ophthalmic Design & Dispensing I/Lab

SEMESTER 2

EN140 College Composition II

HU/SS Elective

MA107 Optical Math

OP120 Ophthalmic Optics II

OP125 Principles and Practices in Opticianry II

OP232/233 Ophthalmic Design & Dispensing II/Lab

SEMESTER 3

BS201 Small Business Management

HU/SS Elective

OP230/231 Contact Lens Theory I/Lab

OP235 Principles and Practices in Opticianry III

OP281 Opticianry Technical Skills & Service Lab I

SEMESTER 4

HU/SS Elective

OP128 Optical Business and Clinical Care

OP240/241 Contact Lens Theory II/Lab

OP243 Principles and Practices in Opticianry IV

OP245 Vision Assessment

OP282 Opticianry Technical Skills & Service Lab II

SK200 Career Success Seminar

Technology Business & Management (AS)

For an enterprise to succeed with a technology-based product or service, it must overcome technical challenges in design, implementation, and production.

It is not enough, however, to overcome technical challenges at any cost. Rather, processes must make business sense. Furthermore, all aspects of an operation should work together smoothly. For example, a manufacturer of telecommunications equipment may need workers with knowledge of machining, programming, or troubleshooting. Graduates of BFIT's programs in Mechanical Engineering Technology, Computer Technology, or Electronic Engineering Technology would be good choices to fill these roles. But engineers and managers at the same company might be looking at changes in the supply chain to improve the profitability of a unit. Support for those changes requires someone who understands the language of business. Likewise, work cells might be re-organized to reduce cost or improve turnaround time. Again someone with knowledge of business and management practices would be more valuable in support of such changes than someone who understands only technological aspects of the work.

The Technology, Business & Management (TBM) program develops skills and knowledge to allow graduates to assist with external and internal customer service, financial analysis, marketing and mangement of technical products and processes.

According to a recent report by the Georgetown Center on Education and the Workforce, the highest paying jobs for individuals who have earned an associate degree are in business and manufacturing; the highest category within those fields is operations management, which requires a blending of business, management and technical skill. Openings in these areas promise to be in the top six of total openings for middle skill jobs in the next seven years.

Graduates of the TBM program are generally expected to go directly to work, though some would wish to seek additional education in business or technology. In addition, current members of the workforce (or job seekers) who have already earned a degree may be able to leverage their previous learning to earn this degree in approximately one year of full time study.

Curriculum

The associate degree in TBM provides graduates with essential business skills grounded in knowledge from a technical field. Students in TBM study technology more broadly than those specializing in a technical major. Students also refine their ability to communicate, establish a foundation in math and science, and develop ethical awareness.

Depending on the students' choice of the technical elective track, the program would include three groups of coursework, a business and management core, general education, and a technical specialization. The business and management core provides a foundation in the variety of skill areas that support a successful business. The technical specializations as outlined below leverage courses from the Computer Technology, Electronics Engineering Technology, and Mechanical Engineering Technology programs. Should students wish to select courses from other technical departments, they should meet with the program coordinator to seek approval.

All BFIT students are required to successfully complete a Career Success Seminar course prior to graduation. Typically, students are enrolled in this course for the semester prior to graduation. Please note this course may be added to a student's course load after the registration process, and thus may not be visible on a student's schedule until a few weeks prior to their final semester.

Facilities

The Technology Business & Management program utilizes facilities from the Computer Technology, Electronics Engineering Technology, Mechanical Engineering Technology departments at the college. The students in the program will make use of the CAD (SolidWorks) classroom, the electronics laboratory, and the computer laboratories that include more than 230 computer workstations in 12 classroom laboratory settings.

Outcomes

Upon completion of the associate degree program in Technology Business and Management, the graduate will be able to:

- Speak and write clearly and persuasively on business and technical topics based on their technical elective choices.
- Communicate business issues to a technical audience and technical issues to a business audience.
- Contribute to effective teams.
- Apply financial concepts and techniques to the analysis of business proposals.
- Describe and understand technological challenges facing a business.
- Understand and use the terminology of computer science, manufacturing, or other technology fields.
- Apply corporate responsibility and ethics to support sound decisions.
- Describe marketing principles and apply them to promote a product or service.
- Develop a technical idea into a business plan.

Faculty

Joanna Dowling, Chair

Instructors: Julianne Donato, Russ VerNooy

Degree Requirements: Technology Business & Management 64 credits

TECHNICAL COURSES: 18 CREDIT HOURS

Course #	Course	Credits	Lecture	Lab
BS101	Principles of Accounting	3	3	0
BS110	Introduction to Business	3	3	0
BS120	Introduction to Marketing	3	3	0
BS210	Entrepreneurship	3	3	0
BS285	Technology Business Capstone	3	1	4
BS431	Management Accounting	3	3	0

TECHNICAL ELECTIVES 23*

Course #	Course	Credits	Lecture	Lab
AV110	Intro to AV Technology	3	2	2
BS284	Operations Management	3	3	0
CT119	Business Applications	3	2	2
CT121	Web Design I	3	2	2
CT122	Web Design II	3	2	2
CT143	Intro to C++ Programming	4	3	2
CT146	Intro to Java Programming	4	3	2
CT211	Intro to PHP/MySQL	4	3	2
EE101	Introduction to Electromechanical Systems	3	2	2
ME105	CAD with SolidWorks	3	2	2
ME106	Advanced CAD with SolidWorks	3	2	2
ME230	Manufacturing Business Practices	3	3	0
ME240	Machine Design with SolidWorks	4	3	2

**Please note that other technical courses at BFIT may be substituted for the above technology elective courses.*

GENERAL EDUCATION COURSES: 23 CREDITS

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA 270	Statistics	3	3	0
SK150	Success in TBM	1		
SK200	Career Success Seminar	1	0	0
SS265	Exploring Ethical Issues	3	3	0

Typical Course Sequence for Technology Business & Management--MET Track

YEAR 1 SEMESTER 1		SEMESTER 2		YEAR 2 SEMESTER 3		SEMESTER 4	
EN130	College Comp I	EN140	College Comp II	BS431	Management Accounting	BS285	Technology Business Capstone
MA120	College Algebra & Trig	MA270	Statistics	BS120	Introduction to Marketing	SS265	Exploring Ethical Issues
BS110	Introduction to Business	BS101	Principles of Accounting	BS210	Entrepreneurship	HU/SS	Elective
ME105	CAD with SolidWorks	ME106	Advanced CAD with SolidWorks	ME230	MFG Business Practices	BS284	Operations Management
EE101	Intro to Electromechanical Systems	CT119	Business Applications	ME240	Machine Design with SolidWorks	EN320	Technical Communications
		SK150	Success in TBM			SK200	Career Success Seminar

Typical Course Sequence for Technology Business & Management--CT Track

YEAR 1 SEMESTER 1		SEMESTER 2		YEAR 2 SEMESTER 3		SEMESTER 4	
EN130	College Comp I	EN140	College Comp II	EN320	Technical Communications	BS285	Technology Business Capstone
MA120	College Algebra & Trig	MA270	Statistics	BS431	Management Accounting	SS265	Exploring Ethical Issues
BS110	Introduction to Business	BS101	Principles of Accounting	BS120	Introduction to Marketing	HU/SS	Elective
CT119	Business Applications	CT121	Web Design I	BS210	Entrepreneurship	CT211	Intro to PHP/ MySQL
AV110	Intro to AV Technology	CT143/146	Intro to Computer Programming	CT122	Web Design II	ME105	CAD with SolidWorks
		SK150	Success in TBM			SK200	Career Seminar

Humanities and Social Sciences

The Department of Humanities and Social Sciences is dedicated to the growth and support of the educated student, emphasizing written and verbal communication skills to complement and enhance technical skills. It provides a core curriculum that promotes effective critical thinking, teamwork, information literacy, professionalism, and ethical decision-making. Through study in these courses, students gain historical, cultural, social and global awareness, thereby challenging their intellect and instilling a basis for lifelong learning.

Curriculum

The Humanities and Social Sciences curriculum provides 12 to 15 credits of courses for each technical degree program. All Humanities and Social Science courses require students to write, read, research, and to participate in discussions, group projects, and presentations. All of these skills are necessary ingredients for the successful student in any technical program, higher education, or in the workforce.

Two standard three-credit English courses, EN130 College Composition I, and EN140 College Composition II, are required for all degree students in the first two semesters.

The goal of these writing courses is to develop cognitive, as well as effective written and oral communication skills, which are supported and advanced by the technical programs. Students are expected to become independent writers, thinkers, and researchers by evaluating and assessing their own approaches and processes.

Depending on placement and performance, a student may need one or more additional semesters of course work in order to complete the requirements for an Associate degree. In order to continue the student's major course of study, the following criteria must be met: passing grades in all courses, grades of C or better in all mathematics and language courses and satisfactory completion of course requirements.

Students needing extensive work on their language skills will successfully complete EN091: Reading and Writing for Academic Success doubled with EN110: Introduction to Oral Communication, which will lay down the foundation for effective communication skills.

Some students will begin their HU/SS coursework by taking EN129: College Composition I: Embedded Support. This course features mostly identical curriculum to EN130, but features an additional course designed to help students develop their reading, writing, research, and presentation skills. This course is EN131: College Communication. Only students who are placed into EN129 take EN131, and they always take them at the same time, one course after the other.

The department also offers many elective courses to satisfy the remaining 6 to 9 credits required. While the electives are designed to promote lifelong learning, these courses also build on the critical thinking, reading, and writing practiced in College Composition I and II.

Throughout all courses, the department aims to instill a sense of professionalism, as well as socio-cultural and ethical awareness.

Samples of Typical Course Schedules

STUDENTS NEEDING DEVELOPMENTAL MATH AND DEVELOPMENTAL LANGUAGE:

Course #	Course	Credits	Lecture	Lab
EN091	Reading & Writing for Academic Success	4	4	0
EN110	Introduction to Oral Communication	3*	3	0
MA090	Fundamental Mathematics	6	6	0
or				
MA 095	Fundamentals of Technical Mathematics	7	8	0

STUDENTS NEEDING DEVELOPMENTAL MATH ONLY:

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3*	3	0
and				
HU/SS	Elective	3*	3	0
or				
EN129	College Composition I: Embedded Support	3	3	0
and				
EN131	College Communication	3	3	0
MA090	Fundamental Mathematics	6	6	0
or				
MA 095	Fundamentals of Technical Mathematics	7	8	0

STUDENTS NEEDING DEVELOPMENTAL LANGUAGE ONLY:

PLACED IN EN090

Course #	Course	Credits	Lecture	Lab
EN0901	Reading and Writing for Academic Success	4	4	0
EN110	Introduction to Oral Communication	3	3	0
MA105/120	Tech. Math/College Algebra and Trigonometry	3*	3	0
EN110	Oral Communication	3*	3	0
	Tech Course	3+*	3	0
	Tech Course	3+*		
	Tech Course	3+*		

SAME SCHEDULE FOR STUDENTS PLACED IN THEIR TECHNICAL MAJOR:

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
or				
EN129	College Composition I: Embedded Support	3	3	0
and				
EN131	College Communication	3	3	0
MA105/120	Tech. Math/College Algebra and Trigonometry	3*	3	0
	Tech Course	3+*	3	0
	Tech Course	3+*		
	Tech Course	3+*		

Outcomes

Upon successful completion of the courses in the Department of Humanities and Social Sciences, the student will be able to:

- Employ effective communications skills in a variety of academic and professional settings, while working in teams and individually.
- Employ efficient study skills, note-taking, and critical thinking.
- Analyze and adjust their own communication behavior dependent upon audience, purpose, and occasion to demonstrate clarity and effectiveness in academic and professional contexts.
- Demonstrate an understanding of writing as a process which includes pre-writing, composing, editing, and proofreading to produce documents with clear purpose, workable organization, and minimal errors in usage or convention.
- Demonstrate awareness of global, social, and ethical issues in their historical and cultural contexts through written work and discussion.
- Demonstrate information literacy by accessing, interpreting and ethically using information.
- Acquire the skills to engage in lifelong learning in their professional fields and beyond.
- Contribute effectively to a team with strong communication and sound negotiation skills.

Faculty

Chair: Michael Grigelevich

Instructor Staff: Abra Berkowitz, Sharon Bonk, Dan DiPaolo, Michael Grigelevich, Kathleen Keleher, Steve Lawrence, James Lawton, Dr. Dawn Letarneau, Todd Natti, Brett Wellman

Mathematics And Physics

Mathematics and Physics are the foundation for any technical discipline. Being successful in technology requires understanding mathematical theory and the ability to apply the concepts to familiar situations and newly encountered problems. Physics introduces the fundamental laws and principles that govern virtually everything around us.

Studying math and physics promotes critical reasoning, creative thinking, and logical analysis, which are central skills in the classroom and in life. The Mathematics and Physics Department at BFIT places an emphasis on problem solving, using practical everyday problems related to the Industrial and Engineering Technologies. A variety of strategies are used to present the material effectively to a highly diverse body of students.

Curriculum

The mathematics curriculum at BFIT is designed to provide a solid foundation in mathematics through a range of course offerings relevant to the technical degree programs. Each BFIT degree program requires at least two semesters of college math that emphasize building a strong foundation of mathematics knowledge. Many programs require additional math courses, where students expand on their foundational knowledge and explore additional technical applications. Many engineering technology programs require students to complete the math sequence through Calculus II, courses which can typically be used for transfer if a student in the engineering technology programs wants to continue his or her studies upon completing an Associate's Degree at the college. Different entry points into the math sequence are available depending on the student's skill level. Refer to the section dedicated to the degree program of interest for specific degree requirements.

Depending on placement and performance, a student may need one or more additional semesters of course work in order to complete the requirements for an Associate degree. In order to continue the student's major course of study, the following criteria must be met: passing grades in all courses, grades of C or better in all mathematics and language courses and satisfactory completion of course requirements.

BFIT's physics curriculum is designed to provide an additional technical foundation in the student's major as well as practical applications for mathematics. Each physics lab contains hands-on instruction that reinforces topics covered in the lecture and demonstrates that the governing laws of physics exist beyond the pages of the text.

Physics course requirements vary by BFIT major. However, most students take at least one semester of physics. Refer to the section dedicated to the degree program of interest for specific degree requirements.

Samples of Typical Course Schedules

STUDENTS NEEDING DEVELOPMENTAL MATH AND DEVELOPMENTAL LANGUAGE:

Course #	Course	Credits	Lecture	Lab
EN091	Reading & Writing for Academic Success	4	4	0
EN110	Oral Communication	3*	3	0
MA090	Fundamental Mathematics	6	6	0
or				
MA 095	Fundamentals of Technical Mathematics	7	8	0

STUDENTS NEEDING DEVELOPMENTAL MATH ONLY:

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3*	3	0
with				
HU/SS	Elective	3*	3	0
or				
EN129	College Composition I: Embedded Support	3*	3	0
with				
EN131	College Communication	3*	3	0
MA090	Fundamental Mathematics	6	6	0
or				
MA 095	Fundamentals of Technical Mathematics	7	8	0

STUDENTS NEEDING DEVELOPMENTAL LANGUAGE ONLY:

Course #	Course	Credits	Lecture	Lab
EN091	Reading & Writing for Academic Success	4	4	0
EN110	Oral Communication	3	3	0
MA105/120	Tech. Math/College Algebra and Trigonometry	3*	3	0

STUDENTS NEEDING NO DEVELOPMENTAL COURSES:

EN130	College Composition I	3*	3	0
or				
EN129	College Composition I: Embedded Support	3*	3	0
with				
EN131	College Communication	3*	3	0
MA105/120	Tech. Math/College Algebra and Trigonometry	3*	3	0
	Tech Course	3+*	3	0
	Tech Course	3+*		
	Tech Course	3+*		

Outcomes

Upon successful completion of the courses in the Department of Mathematics and Physics, the student will be able to:

- Use mathematical reasoning to solve problems, demonstrating the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.
- Demonstrate proficiency in the basic concepts of algebra.
- Effectively apply mathematics and physics concepts and critical reasoning skills to solve application problems.
- Effectively communicate quantitative information.
- Demonstrate an understanding of the mathematics and physics required for their major by showing proficiency in the skills and concepts embedded in their technical courses.
- Demonstrate capability to access and utilize resources that will facilitate further learning in mathematics, physics, technical courses, and future careers.
- Demonstrate an understanding of physics concepts through laboratory experiments.

Faculty

Transition Chair: Sally Heckel

Instructor Staff: Rachel Case, Calvin Conyers, Richard Daugherty, James Johanson, David Kamin, Peter Kang, Catherine Mount, Bryan Shaffer, Matthew Webber

Academic Course Descriptions

AT134 AUTOMOTIVE BRAKES SYSTEMS 4 CREDITS

This course teaches students braking system theory, operation and repair. The students will study all brake hydraulics, such as proportioning valves, master cylinders and bleeding procedures. The students will also study power assist units, anti lock brakes, disc and drum brakes. Students will learn how to diagnose and properly repair all of these systems. *(Offered in the fall, spring and summer)*

AT150 AUTOMOTIVE ENGINES 4 CREDITS

Lecture and laboratory covering designs, nomenclature, and operational theory of internal combustion engines. Includes valves and operating mechanism, piston and connecting rod assembly, crankshaft and bearings, lubrication system, crankcase ventilation, lubricants, and complete engine overhaul procedure. Laboratory practice and instruction in servicing engines. *(Offered in the fall and spring)*

AT170 ELECTRICITY AND ELECTRONICS 4 CREDITS

Fundamentals of electricity and magnetism. Topics include current, voltage and resistance; Ohm's Law; series and parallel circuits; electric power; electromagnetic circuits; electrical measurement; electronic devices and circuits. *(Offered in the fall and spring)*

AT173 AUTOMOTIVE ELECTRICAL SYSTEMS 4 CREDITS

Operation, construction, and servicing of automotive electrical equipment including lighting circuits, ignition systems, cranking motors and controls, and alternator-regulator circuits. Prerequisite: AT170 *(Offered in the spring and summer)*

AT234 AUTOMOTIVE CHASSIS AND SUSPENSION SYSTEMS 3 CREDITS

This course is designed to teach students various automotive chassis and steering systems operation and repair. Students will learn chassis designs, alignment angles, including front and rear suspension systems. The student will also be taught steering gears, steering linkage and advanced level systems such as four wheel steering, electronic steering. Students will examine electronic suspension control systems, stability control systems and the proper diagnosis and repair of these systems. Prerequisites AT134 and AT170. *(Offered in the fall)*

AT241 MANUAL TRANSMISSIONS 2 CREDITS

The theory, operation and service of manual transmissions and transaxles, including domestic and imported units. Emphasis is on the diagnosis, repair, and servicing of component parts. *(Offered in the fall)*

AT244 AUTOMATIC TRANSMISSIONS 2 CREDITS

Continuation of AT241. Study of principles of operation, maintenance, and diagnosis of automatic transmissions. Prerequisite: AT241 and AT173 *(Offered in the spring)*

AT252 AIR CONDITIONING 3 CREDITS

This course is a comprehensive study of automotive cooling, heating, ventilation and air conditioning systems. Studies include topics on bodily comfort, heat and pressure, and temperature relationships. The course culminates with a study of computer controlled, dual-zone climate control systems. Prerequisite: AT170 *(Offered in the spring and summer)*

AT253 AUTOMOTIVE LABORATORY I 4 CREDITS

Practical, hands-on garage experience is acquired in the automotive laboratories, including major service work on live vehicles and the operation of test instruments and other specialty diagnostic equipment. Students will apply the theory learned in the first-year automotive classes to become more proficient in the diagnosis of engines, electrical, suspension, steering, and brake systems. This practical experience incorporates strategy-based engine performance, emission failure diagnosis, and engine rebuilding and machining. Prerequisites: A valid driver's license, AT134, AT150, and AT173 *(Offered in the fall)*

AT254 AUTOMOTIVE LABORATORY II 4 CREDITS

Practical, hands-on garage experience is acquired in the automotive laboratories, including major service work on live vehicles and the operation of test instruments and other specialty diagnostic equipment. Prerequisite: A valid driver's license, AT253, AT234 and AT271 *(Offered in the spring)*

AT255 ALTERNATIVE FUELS 2 CREDITS

This course will concentrate on the theory, operation, and service of all alternative fuels and electric vehicles.

The topics of study will be hybrid battery service, electric motors, generators, regenerative braking Systems, hybrid transmissions and hybrid heating and air conditioning. The lab component will secure all the theory taught in lecture. Prerequisite AT173 and AT134. *(Offered in the fall)*

AT256 AUTOMOTIVE LAB-CERTIFICATE 3 CREDITS

Practical, hands-on garage experience is acquired in the automotive laboratories, including major service work on live vehicles and the operation of test instruments and other specialty diagnostic equipment. Students will apply the theory learned in the first-year automotive classes to become more proficient in the diagnosis of engines, electrical, suspension, steering, and brake systems. This practical experience incorporates strategy-based engine performance, emission failure diagnosis, and engine rebuilding and machining. Prerequisites: A valid driver's license, AT134, AT150, and AT173. *(Offered in the fall and summer)*

AT259 INTRODUCTION TO AUTOMOTIVE SAFETY AND TECHNOLOGY 3 CREDITS

This course looks at the present use of automotive hybrid safety in the automotive industry, along with future technology. Topics covered are safety procedures and precautions that are required when repairing battery electric vehicles, high voltage batteries, hybrid vehicles and fuel cells. The lab portion focuses on safety, service, and maintenance of hybrid vehicles, electric vehicles and bio fuels vehicles. *(Offered in the fall and spring)*

AT271 ENGINE PERFORMANCE AND DIAGNOSIS I 4 CREDITS

This course applies the theory learned in AT150 Engines and AT170 Electricity to properly diagnose mechanical and electrical problems that affect drivability and emissions. Material includes current tune-up and maintenance procedures, the development of diagnostic routines, basic ignition diagnosis, on-vehicle electrical testing, volumetric efficiency theory and testing, turbocharger/supercharger theory and diagnosis, and On-Board Computer Diagnosis. Prerequisites: AT150 and AT170 *(Offered in the spring and summer)*

AT274 ENGINE PERFORMANCE AND DIAGNOSIS II 4 CREDITS

This course builds on AT271, enabling students to understand the complexities of electronic engine management systems and how they affect drivability and emissions. Diagnosis topics include fuel systems theory, fuel injection systems, microprocessor theory and operation, Electronic Ignition Systems (E.I.S.), four- and five-gas analysis, emission failure, and On-Board Computer Diagnosis. Prerequisite: AT271, AT150 and AT173 *(Offered in the fall, spring and summer)*

AT282 AUTOMOTIVE SERVICE ADVISING AND CUSTOMER RELATIONS 3 CREDITS

This course enables the students to understand the complexities of automotive customer service. Topics of study include the different types of automotive facilities, customer relations, and internal service facility operations.

Through lectures and class discussion, the student should be aware of the different types of automotive repair facilities ownerships, the chains of command, and roles and requirements for each of the different employees. The student will be able to identify the major financial measurements that have an effect on the business's profit or loss. The student will also be exposed to the start-up cost and procedures involved in the development of a new automotive repair business.Topics of study include customer interviewing and complaint assessment, flat rate and hourly methods of payment and benefit packages. Case studies are presented and guest lecturers from industry are utilized to reinforce service-advising principles. *(Offered in the spring)*

AT373 ADVANCED ENGINE PERFORMANCE 3 CREDITS

An advanced level course which builds upon the basic computerized engine control diagnostic skills acquired in AT271, AT274, and the drivability clinic. Special emphasis is placed on oscilloscope pattern interpretation, serial data communications, database configurations and functional testing of major computerized engine control systems and subsystems. Prerequisite: AT274 *(Offered in the fall)*

AT474 ENHANCED EMISSIONS AND DRIVABILITY 3 CREDITS

An advanced level of enhanced emissions and drivability diagnostics using dynamometer-based transient testing covering ASM 50/15, ASM 25/25 and RG-240 drive traces. This course also includes advanced On Board Diagnostics - Generation II (OBD II) and Controller Area Network (CAN) diagnostics. Students will become proficient in 5-gas exhaust analysis and scan tool data stream information and applications. *(Offered in the spring)*

AT481 AUTOMOTIVE MARKETING 3 CREDITS

This course exposes the student to today's marketing principles as they relate to the automotive field. Through lectures, practical exercises, and class discussion, the student will be made aware of the marketing process, understanding the marketplace and consumers. The student will also be able to design a customer-driven marketing strategy based on automotive customers needs. Distribution and sale of automotive vehicles and related parts and accessories are topics that are also covered. The student will learn policies pertaining to wholesale and retail transactions, parts inventory and turnover, service sales, dealership personnel, and warranty. *(Offered in the spring)*

AT482 VEHICLE APPRAISAL 3 CREDITS

Instruction and practical application in the use of estimating manuals to produce reports for buying, selling and trading of vehicles, including damage appraisal. *(Offered in the spring)*

AT483 COMPUTERS IN THE AUTOMOTIVE INDUSTRY 3 CREDITS

Microcomputer applications of database, spreadsheet, and office management in the automotive industry. Specific automotive management packages that service an entire automotive enterprise including sales, parts and inventory, and service will be covered. *(Offered in the fall)*

AT485 SENIOR SEMINAR I 1 CREDIT

The preliminary section of a two-part course of study that will explore research tools and methods utilizing virtual and physical library resources as well as Internet Meta-search tools. Skills acquired will allow students to develop individual research topics and hypothesis statements that will lead to the formal presentation of a Senior Research Project in AT495. Prerequisites:,EN320, *(Offered in the fall)*

AT494 SERVICE MANAGEMENT 4 CREDITS

This course enables the students to understand the complexities of automotive service management. Through lectures, practical exercises, and class discussion, the student will be made aware of the different types of automotive repair facilities, ownerships, the chains of command, roles and requirements for the service manager in each of the different facilities. The student will also be exposed to the recruitment, selection, induction, development, and evaluation of employees. Also the student should be able to identify and use financial reports to be able to analyze financial data that has an effect on the business's profit or loss. Upon successful course completion, the students will have the tools needed to be able to maintain and also increase the profitability of a modern day automotive repair facility. Theory and practice of service management are explored, including OSHA laws, record keeping, productivity, efficiency, and profitability. *(Offered in the fall)*

AT495 SENIOR SEMINAR II 3 CREDITS

This concluding course expands on the topics previously developed and approved in AT485. Students will have the opportunity to discuss, organize and refine their chosen projects. The culmination of this course will be the presentation of a formal written Senior Research Project. Prerequisite: AT485 *(Offered in the spring)*

AV110 INTRO TO AV TECHNOLOGY 3 CREDITS

Intro to AV Technology is a comprehensive, introductory overview of science and technology for audio, visual and audiovisual systems integration. In this course, students learn about the fundamentals of light and sound in relation to the industry, explore technology concepts of microphones, loudspeakers, basic networking, cameras and displays, study signal types and signal flow, and practice techniques to improve customer service. Course content serves as the basis for the AVIXA-Recognized AV Technologist Test. *(Offered in the fall and spring)*

AV132 AV INSTALLATION 3 CREDITS

In AV Installation students will receive instruction regarding proper cable termination techniques, rack building, cable handling and mounting. Topics to be covered include: audio systems, video systems, connectivity and control systems, audiovisual systems commissioning checklist and AV math. Prerequisite/Corequisite: AV110 *(Offered in the spring)*

AV154 AV APPLICATIONS 4 CREDITS

In AV Applications, students will begin with an overview of the history and evolution of audiovisual production. They will then establish basic skills in operating cameras, basic audio equipment, and other production equipment. Upon completion of this course, proficient students will be able to explain and complete the phases of the production process including pre-production, production, and post-production. Prerequisite: AV110 *(Offered in the fall)*

AV235 FACILITIES DESIGN 4 CREDITS

In Facilities Design, students will explore the project phases and documentation associated with AV system design, as well as the physics affecting the surrounding environment, such as human ergonomics, display and projection needs, and sound reinforcement. In addition, students will learn how to properly document and translate a client's needs into actionable project drawings, learn human-centered design factors to help place the people in a space, learn how to properly specify and locate displays using image specifications, and learn how to specify microphones and loudspeakers to achieve target sound pressure levels in a given space. At the end of the course, students will produce a complete drawing package based on several real-world scenarios. Prerequisite: AV132 *(Offered in the spring)*

AV257 NETWORKED AV SYSTEMS 4 CREDITS

Networked AV Systems explores the impacts of audiovisual systems on computer networks. In this course students will gain an in-depth understanding of network architecture, components, protocols, security, and important considerations to implement AV over the network. Beginning with a review of IT networks and terminology, students will learn to intercept, filter, and read network conversations between AV and IT devices, discuss remote monitoring and management, streaming, conferencing, and other software applications, and learn how to discover client needs for networked systems. Prerequisite: AV110, CT265 *(Offered in the spring)*

AV279 CTS EXAM PREPARATION 3 CREDITS

CTS Prep will prepare students to take the AVIXA-Certified Technology Specialist exam. Through this course, students will hone in on the specific areas where they need to focus their study time. Course topics will include: exploring the CTS exam format, test-taking strategies and what to expect the day of the exam, and a review of exam content areas including creating, operating, and servicing AV solutions, as well as conducting management activities. Prerequisite: AV235 *(Offered in the spring)*

BS101 PRINCIPLES OF ACCOUNTING 3 CREDITS

Presents the theory and techniques of financial accounting. The course encompasses the basic functions of collecting, processing, and reporting accounting information for interested third parties (e.g. owners, investors, and government) and enables students to analyze, interpret, and use accounting information. *(Offered in the spring and summer)*

BS110 INTRODUCTION TO BUSINESS 3 CREDITS

This course serves as an introduction to business in the U.S. and how it exists within a global marketplace. Business practices and concepts will be central to the learning process throughout the semester. Each unit during the semester will focus on the different operational functions within business, including finance, human resources, management, and marketing. In addition, the various forms of business ownership, operation, and governance will also be explored. *(Offered in the fall and spring)*

BS120 INTRODUCTION TO MARKETING 3 CREDITS

This course educates students about the basic principles of marketing a business or a product and applying these principles in the workplace. Students in the course will explore multiple avenues of marketing and branding that will focus on the theories surrounding price, promotion, product, and placement in order to generate revenue and increase customer satisfaction. Students will explore consumer behavior and reactions. *(Offered in the fall and spring)*

BS201 SMALL BUSINESS MANAGEMENT 3 CREDITS

This course introduces students to the fundamental practices of small business management. Topics will include basic business planning principles, inventory management, sources of funding for small businesses and marketing strategies. Content will focus on the risks and opportunities in the Opticianry Field. *(Offered in the fall)*

BS210 ENTREPRENEURSHIP 3 CREDITS

This course serves as an introduction to business ownership, the steps involved in creating a business plan, and securing funding to launch the business. Students will assess a business idea and evaluate its position in the marketplace through SWOT analysis and the completion of a competitive analysis. This course will prepare students for their capstone project and presentation. *(Offered in the fall)*

BS230 FINANCIAL MANAGEMENT OF TECHNICAL ENTERPRISES 3 CREDITS

This course serves as a springboard for students to understand the various financial management techniques necessary for the technology-focused business lifecycle. Students will expand their learning regarding the funding of a technical business and the tools used to maintain a financially viable enterprise. Students will gain a strong understanding of managerial decision making from a financial perspective and have a solid understanding of how decisions can impact an organizations bottom line. *(Offered in the fall)*

BS284 OPERATIONS MANAGEMENT 3 CREDIT

Introduction to the concepts, principles, problems and practices of operation management. Emphasis is on managerial processes for effective operations in both products and service based organizations. Topics include operations strategy, process design, capacity planning, forecasting, production scheduling, inventory control, quality assurance, and project management. 5S Lean concepts will be introduced. *(Offered in the spring)*

BS285 TECHNOLOGY BUSINESS CAPSTONE 1 CREDIT

Working in teams, students will develop a technological idea into a business plan and then pitch that plan to a panel of representatives from potential funding sources. Students will consult with each other and with technology majors to build the knowledge-base of the plan. *(Offered in the spring)*

BS311 MICROECONOMICS 3 CREDITS

A broad introductory survey in which special attention is given to the role of economic principles in analyzing and understanding current economic problems. Emphasis is placed on the functioning of markets and on examining the behavior of individual economic units such as the business firm and the consumer. *(Offered in the fall)*

BS312 ADVANCED CONCEPTS IN INFORMATION LITERACY 3 CREDITS

This project-based course covers the process of information literacy; from determining information needs through evaluating, managing and disseminating information; by integrating academic research strategies with advanced applications of desktop software. Best practices for effective communication of information in multiple formats will be examined with emphasis on integrating software programs through merging, transferring and linking files. *(Offered in the fall)*

BS324 MANAGING ORGANIZATIONS 3 CREDITS

Examines theory, research, and practice in the management of organizations. Students learn to make use of analytical tools for recognizing, diagnosing, and acting on managerial problems related to organizations, to the objectives, and to the development of human resources. The course emphasizes topics at the macro level, such as organizational analysis and design, and at the micro level, such as managerial behavior, motivation, and interpersonal relations. *(Offered in the spring)*

BS332 FINANCIAL ACCOUNTING 3 CREDITS

Presents the theory and techniques of financial accounting. The course encompasses the basic functions of collecting, processing, and reporting accounting information for interested third parties (e.g., owners, investors, and government) and enables students to analyze, interpret, and use accounting information. *(Offered in the spring)*

BS334 BUSINESS LAW AND LEGISLATION 3 CREDITS

This course reviews the American legal system, organizational structures, and the regulatory environment pertinent to business. Critical examination is conducted regarding: business ethics; contracts; business associations (agency, partnerships, corporations); and other legal entities. *(Offered in the spring)*

BS431 MANAGEMENT ACCOUNTING 3 CREDITS

Presents the theory and technique of managerial accounting from the particular perspective of the manager. The course covers the identification and analysis of the behavior of costs within the organization, and illustrates how managers use such knowledge for planning and control. Major topics include responsibility accounting, comprehensive and cash budgeting, and standard job order and process cost systems. Prerequisite: BS332 *(Offered in the fall)*

BS432 HUMAN RESOURCES MANAGEMENT 3 CREDITS

Examines the role of the human resources manager in the areas of selection and placement; training and development; performance appraisal; wage, salary, and benefit programs; and labor-management relations. *(Offered in the fall)*

CM100 BUILDING CONSTRUCTION GRAPHICS 3 CREDITS

Fundamental principles of Building Construction Graphics are presented in weekly lectures and are developed in the lab through a wide variety of assignments and a semester long project. Emphasis is placed on the core competencies of graphic communication for the built environment, how design professionals communicate ideas, from inception through construction.

Students will learn foundation concepts including: measurement and scale and the reading of and interpretation of architectural drawings - plans, sections, elevations. Other topics include an explanation of graphic symbols and abbreviations, dimensioning, typical US sheet sizes, proper sheet (page) layout, sheet arrangement, sheet sequence (set), and drawing relationships on a sheet. Students will begin to understand and apply construction regulations, specifications and standards such as CSI Masterformat, Project delivery, ADA accessibility, building codes, zoning regulations, and LEED. *(Offered in the fall and spring)*

CM110 CONSTRUCTION MANAGEMENT I 3 CREDITS

This course offers a sampler of the entire CM program. It provides the first introduction to the principles of management, construction industry, roles and responsibilities, and an overview of common project management tools.

Upon successful course completion, students will be able to understand terminology common to the construction industry, general principles of management and the roles and responsibilities of parties. Students will be familiar with selected planning and control tools and common safety concerns and protocol. *(Offered in the fall and spring)*

CM120 INTRODUCTION TO CAD 3 CREDITS

Through lectures and hands-on laboratory sessions students will be introduced to the use of computers for the production of drawings. Students will learn to create architectural drawings similar to those produced in an architectural office, using industry standards such as AutoCAD and National CAD Standard v5. CAD skills will include basic drawing, modifying and editing commands, and proper techniques for final presentation drawings. Students will learn these skills through the development of a semester project from plans to a 3d model. At course end, students take a simulated AutoCAD assessment exam in order to demonstrate their proficiency in AutoCAD. *(Offered in the fall and spring)*

CM130 CONSTRUCTION ESTIMATING 3 CREDITS

This course introduces students to the skills and tools necessary to prepare cost estimates for construction projects. The course focuses on the blueprint reading and determination of quantities (materials takeoff). Classes will include lectures, problems, examples and a term project. This course aims to increase and improve the working knowledge of students in construction estimating and to train them as professional construction managers.

Upon successful course completion, students will be able to read blueprints, and perform quantity takeoff for various work items. Students will utilize computer software to prepare required deliverables. Perform quantity take offs and pricing for a small construction project. Emphasis shall be placed on the scope of work, coordination and quantity surveys for the building components for residential and commercial projects. *(Offered in the spring and summer)*

CM145 HEAVY CONSTRUCTION 3 CREDITS

This course introduces students to construction equipment and selected construction methods. This includes economy, selection, and productivity of common construction equipment and construction procedures for industrial and heavy civil construction.

Upon successful course completion, students will be able to understand terminology and units of measurements related to equipment usage in industrial and heavy civil projects. Understand standard designations, sizes, and graduations of equipment and perform comparative cost analysis for owning and operating heavy equipment.

Perform the proper selection, applications, utilization and productivity of heavy equipment and understand general processes/methods for constructing industrial and heavy civil projects. Show awareness of construction Safety (OSHA regulations for excavation, inspection and protection). *(Offered in the spring and summer)*

CM160 BUILDING MATERIALS AND APPLICATIONS 4 CREDITS

Building Materials and Applications is a comprehensive study of building construction technology, which includes various building systems, the construction process and the materials used in those systems and processes. The study of the methods and techniques of material extraction, manufacturing assembly and installation are covered in depth. Students will learn about specific material's properties, characteristics, and their combinations to form composite elements. Construction regulations and standards including building codes, zoning regulations, and ADA accessibility are studied.

The construction process is examined, including the roles of professionals such as regulatory agencies, the design team, the construction team, financing agencies, the owner, and the user. Professional industry entities dealing with building specifications such as the CSI (construction specifications institute), their composition and organizational components such as Masterformat and Project Delivery are covered as well as green rating systems such as LEED (leadership in energy and environmental design) for new construction. The course also provides an overview of building structural design.

Students will develop several semester projects that tie directly to lectures and offer practical application of textbook material. Each project will focus on basic building materials such as wood, concrete, masonry, and steel construction. Students will design and draft simple construction documents with attention on construction details for different assemblies. *(Offered in the spring and summer)*

CM210 CONSTRUCTION MANAGEMENT II 3 CREDITS

A management course in contract documents, safety, planning, scheduling, production control, and law and labor. Topics include contracts, planning, cost and production peripheral documents, and cost and work analysis.

Upon successful course completion, students will be able to explain construction contract documents, planning and scheduling, cost and production controls. Describe laws and labor issues related to construction projects. Demonstrate the ability to plan and schedule a construction project. Implement job site safety practices and procedures. Identify use of tools and equipment along with method of use in construction and perform common procedures at the job site. Describe and recognize requirements in construction documents. Describe terms and methods in techniques for planning, scheduling and supervision and identify laws and labor issues in construction. Demonstrate problem solving techniques and dexterity in planning and scheduling projects. *(Offered in the spring)*

CM220 SUSTAINABLE BUILDINGS: DESIGN & CONSTRUCTION 3 CREDITS

Overview of the concept of sustainability (holistic living and building design that integrates solar concepts, energy efficiency, and material ecology) and its economic, political, and environmental consequences. Lecture and hands-on application focus on sustainable building practices, including design, specification, construction, lifecycle issues, LEED certification and other organizations. The historical basis for the ideology of sustainability, and its applications in today's society will be explored. *(Offered in the fall)*

CM240 ENVIRONMENTAL SYSTEMS 4 CREDITS

The study of heating, ventilation, air conditioning, plumbing and electrical systems for facilities both residential and commercial is taught. Students will learn to understand the basic design and construction terminologies used to be able to read and create HVAC, plumbing and electrical construction documents. Also included is the presentation of the basic principles found in vertical circulation, security, fire protection, noise control and room acoustics, energy sources, and green building design considerations. Field trips to area construction and building sites augment class studies. *(Offered in the spring)*

CM250 CONSTRUCTION SURVEYING 4 CREDITS

The purpose of this course is to provide the student with the fundamental understanding of land surveying, including both the theory of surveying as well as the hands-on use of modern surveying instruments. Specifically, the theory portion of the course includes surveying computations of: grade, direction, traverse adjustment, area, volume, and horizontal & vertical curve geometry. The instrumentation portion of the course includes making field measurements of elevation, distance and angle using the appropriate land surveying equipment including: the tape, engineer's level, transit, theodolite, EDMI, and total station. An introduction to construction layout is also included.

Upon successful course completion, students will understand the use of measuring systems and the proper mathematical calculations to produce accurate and correct true distances and the use of a level and the mathematical calculations to determine elevation differences. Understand the use of a transit to determine vertical and horizontal angles to locate reference points as applied to construction staking and surveying. Students will have an improved understanding of the rule on Construction Surveying and layout in the operation of the construction industry. *(Offered in the spring)*

CM260 PROJECT SCHEDULING 3 CREDITS

This course introduces students to the theory and application of the fundamentals of construction planning and scheduling to include creating, presenting, revising, and updating construction schedules. This course will help enhance students' ability to understand and apply management principles and practices including: process planning, directing, costing, resource allocation, and controlling all aspects of the construction operations and resources from pre-construction through project close out.

Upon successful course completion, students will be able to understand and apply network scheduling methods to construction projects and prepare WBS (work breakdown structures). Perform cost and budget analysis and calculate schedule and cost variance for projects. Use commercial scheduling software and perform resource allocation and leveling. Update schedules and monitor work progress using the schedule and other tools/programs in managing a construction project. *(Offered in the fall)*

CM280 STATICS AND STRENGTH OF MATERIALS 4 CREDITS

Introduction to the basic fundamentals of statics and strength of materials relating to structural components of a building or structure. The principles of static equilibrium and free-body diagrams are applied to basic building structural elements and simple structural systems commonly found in buildings. The principles of stress, strain, and material properties are studied as they relate to materials commonly used in the building industry. Bending, shear, and deflections and associated stresses are investigated and used as design requirements. Prerequisite: MA120 and PH212 *(Offered in the spring)*

CT119 BUSINESS APPLICATIONS 3 CREDITS

In this course students will learn to use MS Excel and MS Access as effective tools for organizing, analyzing, and presenting data in the workplace. Using MS Excel students will learn to enter data; move, copy and edit cells; construct tables and charts; and create and apply basic mathematical functions to spreadsheet data. Using MS Access students will learn the basics of database design; how to create and modify database tables, forms, queries and reports; and complete a project designed to test the student's grasp of proper relational database design and implementation of a design plan. *(Offered in fall and spring)*

CT121 WEB DESIGN I 3 CREDITS

In this course students will learn how to design and develop websites using the top web development languages in use today. Students will learn the fundamentals of HTML5 and CSS3 in tandem and apply them through the design, development and publishing of their own website as a final project. *(Offered in the spring and summer)*

CT122 WEB DESIGN II 3 CREDITS

This course introduces the student to dynamic web development using the JavaScript programming language. Students will learn to implement programming logic, define and use variables, perform looping and branching, develop user interfaces, capture and validate user input, store data, and create well-structured applications. Prerequisite: CT121 *(Offered in the fall)*

CT134 INTRO TO WINDOWS OPERATING SYSTEMS 3 CREDITS

This course presents an in-depth introduction to the core features of Microsoft Windows operating systems, as covered by the Microsoft Technology Associate Exam 98-349. Topics include operating system configurations, installing and upgrading client systems, managing applications, managing files and folders, managing devices, and operating system maintenance. At the conclusion of the course students will be encouraged to attempt MTA Exam 98-349 using discounted exam vouchers available through the college. *(Offered in the fall and spring)*

CT142 FUNDAMENTALS AND APPLICATIONS OF C++ 4 CREDITS

This course is an introduction to problem solving and program design using the procedural aspects of the C and C++ programming languages. The fundamentals are introduced with the student expected to apply the programming and logic design methodology in solving programming problems. The MS Visual Integrated Development Environment (IDE) is used at first and then the Arduino IDE is used to interface with sensors and program hardware. Prerequisites: Pass placement testing or complete MA105 with a GPA of at least 2.00. *(Offered in the spring and summer)*

CT143 INTRO TO C++ PROGRAMMING 4 CREDITS

This course is an introduction to problem solving and program design using the procedural aspects of the C++ programming language. The fundamentals of the C++ programming language are introduced with the student expected to apply the programming and logic design methodology in solving programming problems. The MS Visual C++ Integrated Development Environment (IDE) is used as the primary development tool. *(Offered in the fall, spring, and summer)*

CT144 INTERMEDIATE C++ 4 CREDITS

This course is a continuation of CT143. It picks up with user developed functions including inline functions, default arguments, function overloading and function templates. Array processing is enhanced with the introduction of parallel arrays, passing arrays to functions and sorting and searching of arrays. This is followed by the C++ string class, structures, pointers and dynamic memory allocation. The course finishes up with a shift in focus to the object-oriented paradigm with an introduction to classes. The MS Visual C++ Integrated Development Environment (IDE) is used as the primary development tool. Prerequisite: CT143. *(Offered in the spring and summer)*

CT146 INTRO TO JAVA PROGRAMMING 4 CREDITS

This course is an introduction to the Java programming language. The fundamentals of the Java programming language are introduced with the student expected to apply the programming and logic design methodology in solving programming problems. The Eclipse Integrated Development Environment (IDE) is used as the primary development tool. *(Offered in the fall and spring)*

CT211 WEB SITE MANAGEMENT 3 CREDITS

This course provides a working understanding of two core technologies used in hosting websites on a web server. This course goes through installation of PHP and MySQL technologies on a local machine as well as hosted servers, explains basic tags, commands and constructs, and helps the student to build and work within a solid back-end database. Prerequisite: CT122 *(Offered in the spring)*

CT212 PC MAINTENANCE AND REPAIR I 3 CREDITS

This course covers the fundamental topics of PC technician training as covered by the CompTIA A+ 220-901 certification exam, including hardware, networking, laptops, printers and operational procedures. The focus of the course is split between hands-on maintenance and repair of PCs, and certification exam preparation. At the conclusion of the course students will be encouraged to attempt the 220-901 certification exam using discounted exam vouchers available through the college. *(Offered in the fall)*

CT213 PC MAINTENANCE AND REPAIR II 3 CREDITS

This course resumes study of the fundamental topics of PC technician training begun in CT212. This time the topics are those covered by the CompTIA A+ 220-902 certification exam, including operating systems, security, mobile devices and troubleshooting. The focus is again split between hands-on maintenance and repair of PCs and certification exam preparation. At the conclusion of the course students will be encouraged to attempt the 220-902 certification exam using discounted exam vouchers available through the college. Prerequisite: CT212 *(Offered in the spring)*

CT221 ENTERPRISE DATABASE MANAGEMENT 3 CREDITS

This course provides students with an understanding of the issues in managing enterprise database systems as an essential organizational resource. Topics include the enterprise data architecture components, data storage configurations, and information retrieval methods. The course expands from the relational model to the multidimensional model, object-relational techniques, and Web-accessed data. Oracle databases serve as the primary tools for use in the course. *(Offered in the spring and summer)*

CT231 LINUX SYSTEM ADMINISTRATION 3 CREDITS

This course introduces the Linux file system, group administration, and system hardware controls. Topics include intermediate command-line (CLI) administration, access control, file systems, software installation and management, process control, and security. Students will write shell scripts and constructs to enhance and automate system administration activities, and, upon course completion, will be able to perform basic system administration tasks including installation, configuring and attaching a new Linux workstation to an existing network. *(Offered in the fall)*

CT233 WINDOWS SYSTEM ADMINISTRATION 3 CREDITS

This course presents an in-depth introduction to the core features of Microsoft servers, as covered by the Microsoft Technology Associate Exam 98-365. Topics include server installation, server roles, active directory, storage, server performance management, and server maintenance. At the conclusion of the course students will be encouraged to attempt the MTA-365 certification exam using discounted exam vouchers available through the college. Prerequisite: CT134 *(Offered in the spring and summer)*

CT249 CONTEMPORARY PROGRAMMING LANGUAGES 4 CREDITS

This course looks at two contemporary programming languages, Python and C#. After learning the new syntax, students apply programming techniques developed in previous courses to write programs and examine the situations for which each language is best suited. *(Offered in the spring)*

CT265 NETWORKING I 4 CREDITS

Students are introduced to computer networking concepts using the TCP/IP and OSI networking models. Topics covered include the TCP/IP application, transport, Internet and network access layers, and the OSI layers and their functions. The fundamentals of LANs, including Ethernet data link protocols and basic cabling, are covered.

This course uses a practical, technical introduction to computer networking and provides a thorough foundation through concept mastery and hands on activities. Prerequisite: CT233 *(Offered in the fall)*

CT267 NETWORKING II 4 CREDITS

This course continues and builds upon the theory and hands-on laboratory work of CT265. It focuses on the design and implementation of state-of-the-art network architectures and solutions for enterprise networks. It provides an in-depth, hands-on coverage of protocols and network technologies that are essential for building corporate infrastructures and seamlessly integrating them with the Internet. Special attention is paid to essential characteristics of high-quality e-business environments, such as scalability, reliability, and security. Hands-on laboratory work will be done on industry leading Cisco routers and switches. Students will develop and build small enterprise class networks. Prerequisite: CT233 *(Offered in the spring)*

CT365 NETWORK SECURITY 4 CREDITS

This course provides the skills necessary to apply and implement technical knowledge of security concepts in the security environments confronting enterprises today. Topics include systems security, access control, network infrastructure, assessments and audits, cryptography and organizational security. Students are given real world scenarios to reinforce the material covered and will learn how to apply the concepts to particular settings such as healthcare. This course helps prepare students for the CompTIA Security+ SY0-301 certification exam. Corequisite: CT267 *(Offered in the spring)*

ECE101 DIGITAL ELECTRONICS 3 CREDITS

This course introduces the elements and tools of digital design. The course covers Boolean algebra, Karnaugh maps, Logic gates and digital circuits, analysis and design of combinational and sequential circuits, and timing issues. Adders, decoders, multiplexers, flip-flops, counters, and registers are implemented using TTL or CMOS ICs as well as VHDL-programmed FPGAs. Corequisites: ECE101L. *(Offered in the fall)*

ECE101L DIGITAL ELECTRONICS LAB 1 CREDIT

Illustrates the concepts of ECE101. Exercises in various forms of Combinational and Sequential Logic design. Use of test equipment. Design projects will include a digital security system, use of PSPICE to verify feasibility of some designs. FPGA board citing Xilinx, software development tools from Xilinx and other third parties are introduced. Corequisites: ECE101L. *(Offered in the fall)*

ECE105 CIRCUIT THEORY I 3 CREDITS

Basic elements and analysis techniques of DC circuits. Coverage includes resistors, capacitors, inductors, and sensors ; independent and dependent sources. Ohm's law, power, energy, and power transfer. Kirchoff's voltage and current laws; Nodal and Loop analyses; Thevenin and Norton equivalents; step and transient responses of first-order systems; time constants. Emphasis on functional circuits. Corequisites: ECE105L, MA240. *(Offered in the spring)*

ECE105L CIRCUIT THEORY LAB I 1 CREDIT

The Circuit Theory Lab I is designed to supplement the Circuit Theory I course. Corequisites: ECE105. *(Offered in the spring)*

ECE205 CIRCUIT THEORY II 3 CREDITS

Analysis and design of lumped networks. Resistive elements, superposition, nodal analysis, dependent sources, equivalence theorems. Energy storage in elements, dynamics of first and second order networks, transient responses, phasors, sinusoidal steady state analysis, steady state power analysis, three phase power circuits. Offered yearly. Prerequisites: ECE105 with a minimum C grade; Corequisites: ECE205L, MA250 & PH223. *(Offered in the fall)*

ECE205L CIRCUIT THEORY II LAB 1 CREDIT

Illustrates the concepts of ECE 205. Simulations with PSPICE, LABVIEW, NXT Robotics, INCSYS Power Simulator, Mathematica; construction and design. First order, second order transients, ideal and non-ideal transformer circuits, sinusoidal steady state circuits, power grid simulation. Offered yearly. Corequisites: ECE205 with a minimum grade of C. *(Offered in the fall)*

ECE206 SOLID STATE DEVICES AND CIRCUITS 3 CREDITS

Review of Thevenin and Norton Equivalent circuits. Frequency Domain analysis and Bode Plots. Representation of an active device by its Gain, Input and Output Resistance. Thorough coverage of op amps - circuits, applications, and inherent limitations. Introduction to semiconductor physics and the PN junction. Diode circuits, applications, and models. Zener diodes and power supplies. Ripple estimations. The Bipolar Junction Transistor - large and small signal analyses. Active, cutoff, and saturation region characterization. Hybrid Pi and T models. Basic transistor configurations - common collector, common base, and common emitter - along with their characteristics, applications, and tradeoffs. Estimation of bandwidth using open circuit time constants. Prerequisites: ECE205 with a minimum grade of C. Corequisites: ECE206L. *(Offered in the spring)*

ECE206L SOLID STATE DEVICES & CIRCUITS LAB 1 CREDIT

The Solid State Devices & Circuits Lab is designed to supplement the Solid State Devices & Circuits course. Prerequisites: ECE205 with a minimum grade of C. Corequisites: ECE206. *(Offered in the spring)*

ECE225 LINEAR SYSTEMS WITH DIFFERENTIAL EQUATIONS 3 CREDITS

Classification of systems, differential equations, linear algebra, discrete mathematics, derivation of the system model, state variable description, impulse response, convolution, frequency response of discrete and continuous systems. Fourier Series, Fourier transforms, Fourier methods of discrete signals, Laplace transforms, Z transform, analysis of control systems. Prerequisites: MA250 and ECE205 with a minimum grade of C; Corequisites: ECE225L. *(Offered in the spring)*

ECE225L LINEAR SYSTEMS WITH DIFFERENTIAL EQUATIONS LAB 1 CREDIT

The Linear Systems lab is designed to supplement the Linear Systems course. Matlab simulation of linear systems, Hardware Implementation of Analog Filters, measurement of the transfer function. Corequisites: ECE225. *(Offered in the spring)*

ECE306 SOLID STATE DEVICES, POWER AND CIRCUITS 3 CREDITS

This elective course is a continuation of Solid State Dev & Circuits I, with emphasis on MOSFET field effect transistors; Physical structure, I-V characteristics, modeling, use as a switch and CMOS inverter, biasing circuits, and basic amplifier configurations - common drain, common gate, and common source. Differential Amplifiers - BJT and MOSFET implementations, along with small and large signal analysis. Multistage circuits, active loads. Design of current source and current mirrors. Internal capacitance and high frequency limitations. Low midband, and high frequency analyses of transistor amplifiers. Miller effect. Open and Short Circuit Time Constants. Cascade and Cascode configurations. Frequency response of amplifiers. Significant circuit design activities. Prerequisites: ECE 206 with a minimum grade of C; Course tightly coupled to ECE306L. *(Offered upon demand)*

ECE306L SOLID STATE DEVICES, POWER AND CIRCUITS 1 CREDIT

Illustrates the concepts of ECE 306. Exercises that help meld the practical aspects with the theoretical concepts taught in ECE 306. Biasing and design of MOSFET amplifiers. Construction of differential and multistage amplifiers. Investigation of different current source implementations. Simulation of bandwidth improvement using Cascode structures. Course concludes with a multistage design challenge using MOSFETs to reach a specified gain, output impedance and bandwidth objective provided by the instructor. Corequisites: ECE 306

ECE307 ELECTRIC POWER SYSTEMS I 4 CREDITS

This course is a first step in understanding the components that compose the high power grid. Generation of power; transmission line characteristics, load impacts. Real and reactive power along with compensation techniques.

Transformers. Synchronous generators and motors. Power flow. Power quality. Transient and dynamic stability issues. Handling faults, overvoltage and surge protection. Electronic control by high power devices such as thyristors, relays, and circuit breakers. HVDC examined. Recent developments and opportunities in the Power field. A strong emphasis placed on problems solving and representative exercises. Prerequisites: MA250, ECE205 with a minimum grade of C;. *(Offered in the fall)*

ECE308 ELECTRIC POWER SYSTEMS II 4 CREDITS

A continuation of the topics begun in ECE306. Prerequisites: MA250, ECE205, ECE206. ECE403 helpful, but not required. *(Offered in the spring)*

ECE309 LABVIEW AND ELECTRIC CIRCUITS AND MACHINES 3 CREDITS

The purpose of this elective course is twofold: to give students facility in programming and data acquisition in Labview, and to use Labview to learn about power concepts such as three-phase, power corrections, per units, Star (Wye) and Delta connections, magnetic circuits, power electronic circuits, electric machines. Lab component reinforces concepts taught in course. Prerequisites: ECE 205 with a minimum grade of C;, ECE 206 *(Offered upon demand).*

ECEL309 LABVIEW AND ELECTRIC CIRCUITS AND MACHINES 1 CREDIT

Lab component reinforces concepts taught in course. Corequisite: ECE 309 *(Offered upon demand).*

ECE311 EMBEDDED SYSTEMS 3 CREDITS

This course will introduce the fundamentals of embedded micro controllers for system level applications: fundamental elements - sensors or transducers, microcontrollers, and the interfacing to external components. Procedural methods for design of the complete embedded system are developed. Programming using assembly, and C languages is utilized. Prerequisites: ECE101 and ECE206 with a minimum grade of C. CT143, CT146 or CT333 with a minimum grade of C; Corequisites: ECE311L. *(Offered in the spring)*

ECE311L EMBEDDED SYSTEMS LAB 1 CREDIT

The Embedded Systems Lab is designed to supplement the Embedded Systems course. Prerequisites: ECE311. *(Offered in the spring)*

ECE325 STATISTICS FOR ENGINEERING AND SCIENCE 3 CREDITS

Understanding the fundamentals of probability and statistics of experimental data. Measures of central tendency, variation, probability, events, Bayes Rule, discrete and continuous random variables, discrete and continuous distributions including the binomial distribution, normal distribution, chi-square distribution and student distribution, covariance, central limit theorem, hypothesis testing, linear regression, signal processing statistics (EE students), categorical data analysis (non-EE students). Use of Mathematica's statistical packages central to this course. Final project is a project with Biology measuring rat whisker resonance. Prerequisites: MA250 with a minimum grade of C; Corequisites: ECE325L. *(Offered in the spring)*

ECE325L STATISTICS FOR ENGINEERING AND SCIENCE LAB 1 CREDIT

The Engineering Statistics and Probability lab is designed to supplement the Engineering Statistics and Probability course. Corequisites: ECE325. *(Offered in the spring)*

ECE335 CONTROL SYSTEMS 3 CREDITS

Introduction to feedback control systems; control system characteristics (stability, sensitivity, disturbance rejection, steady-state accuracy, transient response); stability analysis; root-locus analysis and design; frequency-response analysis and design; analysis and design of digital control systems. Prerequisites: ECE225 with a minimum grade of C. Corequisites: ECE335L. *(Offered in the fall)*

ECE335L CONTROL SYSTEMS LAB 1 CREDIT

The Control Systems lab is designed to supplement the Control Systems course. Corequisites: ECE335. (*Offered in the fall)*

ECE390 DATA & COMPUTER COMMUNICATIONS 3 CREDITS

Basic principles and topics in data communication, local area networks, wide area networks, communication architectures and protocols. Data transmission, encoding, multiplexing, circuit switching, packet switching, frame relays, and asynchronous transfer mode are also discussed. The TCP/IP protocol suite is studied and a project involving configuring, implementing, and installing a network is carried out during the semester. Prerequisite: ECE 225 or instructor's approval. 1 term - 3 credits. Must be taken concurrently with ECE L390.*(Offered in the spring)*

ECE-390L DATA & COMPUTER COMMUNICATIONS 1 CREDIT

The Data and Computer Communications lab is designed to supplement the Data and Computer Communications course. Corequisites: ECE390. *(Offered in the spring)*

ECE403 APPLIED ELECTROMAGNETICS 3 CREDITS

Electrostatics and magnetostatics, including Coulomb's law, Gauss's law, Biot-Savart law and Ampere's law, vector operations in rectangular, cylindrical, and spherical coordinates, divergence theorem and Stokes theorem, electric fields in materials, Lorentz force, magnetic torque, Faraday's law, Maxwell's equation, wave propagation, transmission lines with Smith charts, rectangular waveguides, Hertzian dipole antenna; examples related to power when applicable. Prerequisites: ECE205 and MA265 with a minimum grade of C; Corequisites: ECE403L *(Offered in the spring)*

ECE403L APPLIED ELECTROMAGNETICS LAB 1 CREDIT

The Applied Electromagnetics Lab is designed to supplement the Applied Electromagnetics course. Corequisites: ECE403. *(Offered in the spring*)

ECE410 COMMUNICATION SYSTEMS 3 CREDITS

Coverage of a variety of basic communication systems, their theory of operation, and the analysis of their performance. Review of linear systems, Fourier and Laplace Transforms, and Frequency Domain analysis as needed. Graphical convolution of analog signals. Digital Baseband modulation techniques. Receiver design with an introduction to Stochastics. Digital Bandpass modulation and demodulation techniques. Analog communication systems including AM, FM, and PM approaches. Consideration of Noise and the resultant system performance. Multiplexing and information compression. Prerequisites: ECE206, ECE225 and MA265 with a minimum grade of C; Corequisites: ECE410L. *(Offered in the spring)*

ECE410L COMMUNICATIONS SYSTEMS LAB 1 CREDIT

Illustrates the concepts of ECE410. Exercises will focus both on communication system components and in the construction of a complete communication system. Introduction to FSK, DTMF, Phase lock loops, AM and FM modulation, oscillators, A/D and D/A conversion and the Nyquist rate. Wireless transmissions. Troubleshooting of non-working systems. Students have flexibility in the design and construction a full communication system which includes digitization, rearrangement in parallel and serial formats, transmission over a distance, and reconstruction back to its original analog form. Corequisites: ECE410. *(Offered in the spring)*

ECE414 SENIOR PROJECT PROPOSAL 1 CREDIT

The aim of this course is for students to generate a thoughtful and well -written senior project proposal. This course will provide guidelines and critiquing for that purpose. By the end of the course, students will have narrowly identified their project, performed a review of current available related technology, and selected the approach they will pursue. They will also establish a parts list, timetable, set of milestones, and basis or procedure for determining an answer to the question how good is it? At the end of the course they will formally present their project and write a comprehensive project proposal document. Once accepted, they are permitted to take ECE415 Senior Project. Note that this course is focused on the process of creating a viable proposal. Enough flexibility exists that students may either implement the project they documented in this course when they take ENS415, or may pursue an alternative project if desired. Prerequisites: ECE101, ECE206, MA240; *(Offered in the fall)*

ECE415 SENIOR PROJECT 4 CREDITS

For the senior project the student implements, documents, and presents their completed project of the proposal generated in ECE414. Having defined their project, students gather the resources necessary and proceed to execute their designs. This period will include the construction, testing, troubleshooting, refinement, and evaluation of their project. A formal presentation of the project is made. A professional caliber documentation of the project is also required, and may go through numerous iterations of review. The final project report must consider most of the following: environmental impact, sustainability, manufacturability, ethics, health and safety issues, and political concerns. Time management, prioritization of process, formal communication, overcoming obstacles and meeting deadlines are monitored by the project advisor. Weekly reports and meetings are expected. The advisor also serves as a resource for the student. However, full responsibility for the success of the project rests on the student. Cross-disciplinary projects are encouraged. Prerequisites: ECE414. *(Offered in the spring)*

ECE430 DIGITAL SIGNAL PROCESSING 3 CREDITS

Discrete signals and systems, digital simulation of analog systems, Z transforms, recursion equations, finite-order systems, Fourier transforms, line spectra and Fourier series, discrete Fourier series and Fast Fourier Transforms (FTT), sampling and interpolation, mean-square approximations, non-recursive and recursive filters, selected topics on algorithms, design and applications of digital signal processing. There will be an end-of-semester design project that will involve students' creativity, design of open ended projects, formulation of alternative solutions, detailed system description, realistic constraints (economic factors, safety, reliability, aesthetics ethics, and social impact). Prerequisites: ECE101, ECE225 with minimum grade of C; Corequisites: ECE430L. *(Offered in the fall)*

ECE430L DIGITAL SIGNAL PROCESSING LAB 1 CREDIT

Illustrates the concepts of ECE430. This laboratory course uses MATLAB, Simulink, and the Texas Instruments 6713 DPS board to design, test and implement various projects. The students will also learn how to use FPGA boards to design and implement various DSP systems. There will be a design project at the end of the course designed to synthesize what the students have learned. Corequisites: ECE430. *(Offered in the fall)*

EE101 INTRODUCTION TO ELECTRO-MECHANICAL SYSTEMS 3 CREDITS

Fundamental principles will be applied to analyze simple electro-mechanical systems including microcontrollers. Excel will be used to explore variations in parameters; Word will be used to document results and PowerPoint used in developing presentations. The course may include electrical components, sensors, or motors. Prerequisites: Pass placement testing or complete MA105 with a GPA of at least 2.00. *(Offered in the fall and spring)*

EE110 DC CIRCUITS 4 CREDITS

Introduction to basic DC circuit theory. Topics include a study of SI units; Ohm's Law and Kirchhoff's Law; series, parallel, and series-parallel circuits, power and energy relations. Also Thevenin's, Norton's and Maximum Power Theorems. Topics reviewed and reinforced in the accompanying laboratory. Prerequisites: Pass placement testing or complete MA105 with a GPA of at least 2.00. Corequisites: EE101, MA120 *(Offered in the fall and spring)*

EE113 AC CIRCUITS 4 CREDITS

Continuation of topics in EE110 with emphasis on basic AC circuit concepts, such as: capacitors, inductors, generation of single-phase alternating potential; average and RMS values of sinusoidal waveforms; phasers; power in AC circuits; application of general AC circuit analysis. Topics reviewed and reinforced in accompanying laboratory. Prerequisites: EE101, EE110, MA120,; Corequisite: MA130 *(Offered in spring and summer)*

EE122 ELECTRONICS I 4 CREDITS

Basic electronics including energy levels and bands, semiconductor construction, electron-hole conduction characteristics and areas of application of various bipolar semiconductor devices. Application of diodes and rectifier circuits and filters. Transistor operation analysis for common emitter configurations. Topics include DC biasing arrangements, stabilization methods for DC operating point and AC gain, input impedance and output impedance. Prerequisites: EE101, EE110, MA120; Corequisite: EE113, MA130 *(Offered in the spring and summer)*

EE131 DIGITAL PRINCIPLES 4 CREDITS

An introductory course in digital concepts, which includes number systems, codes, Boolean algebra, Karnaugh maps, gating circuits, characteristics and properties of integrated circuit logic families, logic circuit analysis and logic circuit design. Types of flip-flops, counters, registers and their applications are explained. A weekly laboratory enables the student to apply the principles taught in the theory portion of the course. Prerequisites: Pass placement testing or complete MA105 with a GPA of at least 2.00. Corequisites:EE101, MA120 *(Offered in the fall and spring)*

EE210 ROBOTICS, MOTORS, AND CONTROLS I 5 CREDITS

The emphasis in this course is on the software, hardware, and fundamental concepts of automation. The first part of the course will focus on how PLC's and Ladder Logic are used to control industrial processes and manufacturing. An introduction to different types of motors and sensors is given. We will build and control entire systems including robots using microcontrollers. Prerequisites: EE131, EE122, EE113, CT143 or CT142. *(Offered in the fall)*

EE214 ELECTRICITY AND ELECTRONICS 4 CREDITS

The study of electrical and electronic devices used in electrical measurements with basic DC and AC circuit theory. Topics include Ohm's Law; Kirchhoff's Laws; Applications of Thevenin's Theorem; reactive elements. Topics reviewed and reinforced in accompanying laboratory. Prerequisites: MA120 Corequisites: MA130. *(Offered in the spring)*

EE220 ROBOTICS, MOTORS, AND CONTROLS II 5 CREDITS

This course is a continuation of the work done in EE210. We will learn more advanced PLC instructions as well as work on and build more complicated systems. Prerequisites: EE210. *(Offered in the spring)*

EE223 ELECTRONICS II 4 CREDITS

This course will analyze bipolar differential amplifiers, operational amplifiers, feedback, class A, B, and C power amplifiers, and single stage FET amplifiers. The advantages and disadvantages of each will be discussed, including costs. Prerequisites: EE122, MA130 *(Offered in the fall)*

EE235 PROGRAMMABLE LOGIC 4 CREDITS

Students will study both the technical and business benefits of programmable integrated circuits. They will learn to simulate both combinational circuits and sequential logic circuits, and Finite State Machines. In the laboratory, CAE tools will enable the student to design, program and test circuits. Prerequisites: CT142 or CT143, EE101, EE122, EE131, MA120; Corequisite: EE223. *(Offered in the fall)*

EE240 EMBEDDED PROCESSORS 4 CREDITS

This course focuses on micro-controller/microprocessor technology, basic hardware components of a micro-controller, programming concepts, timers, interrupts, and A/D converter operations with interfacing concepts to perform I/O operations. Students will be exposed to constructing circuits, downloading and running assembly language and "C" programs to control these components, and hardware interfacing. In addition, networked microcontroller edge devices sensing in the IoT world are connected to small network gateway microcomputers providing students experience in using Linux and the Python programming language in labs to gather and analyze realtime data. Prerequisites: CT142 or CT143, EE101, EE131. *(Offered in the spring)*

EE254 NETWORKING FOR END USERS 4 CREDITS

This course is intended for those who need to install, configure, troubleshoot, repair computers or instrumentation to connect to the local area network in the workplace. After completing this course, you will have a working knowledge of routing, switching, network applications and protocols. Connections to wired 802.3 and wireless 802.11 networks will be discussed. This course is the first Cisco course that leads toward earning the CCENT certificate. *(Offered in the spring)*

EL110 CIRCUIT THEORY I 4 CREDITS

Introduction to basic DC Circuit Theory. Topics include introduction to SI units and a study of Ohm's Law and Kirchoff's Voltage and Current Laws; series, parallel, and series-parallel circuit analysis, and power and energy relations and analysis. Theory and application of inductors and capacitors. National Electrical Code application of DC Theory. Topics reviewed and reinforced in the accompanying laboratory exercises. Prerequisites: Pass placement testing or complete MA105 with a GPA of at least 2.00. *(Offered in the fall and spring)*

EL127 ELECTRICAL DESIGN AND LAYOUT I/ NEC I 5 CREDITS

An introduction to the National and Massachusetts Electrical Codes and study of the fundamentals of electrical design, based on the requirements of these codes. Topics focus on residential applications and include polarity identification of systems and circuits; safety rules for working on electrical systems; electrical symbols; factors affecting conductor size and type of insulation; application of switches; and an emphasis on circuit wiring diagrams. Application of general wiring methods, boxes, fittings and cabinets. Laboratory included. Prerequisites: Pass placement testing or complete MA105 with a GPA of at least 2.00. *(Offered in the fall and spring)*

EL129 ELECTRICAL DESIGN AND LAYOUT II/ NEC II 5 CREDITS

A continuation of the topics covered in EL127. Continued study of the National and Massachusetts Electrical Codes and fundamentals of electrical design. Topics include requirements for calculating branch circuit sizing and loading; principles of overcurrent protection; grounding and bonding; residential special purpose outlets; and Service-Entrance equipment and calculations. Laboratory included. Prerequisite EL127 with GPA of at least 2.00. *(Offered in the spring and summer)*

EL213 CIRCUIT THEORY II 4 CREDITS

Continuation of topics covered in EL110. Emphasis will be on basic AC circuit concepts as applied to the generation of single-phase alternating current voltages. Analysis of Peak and RMS voltages. Study of the differences between sinusoidal and non-sinusoidal waveforms. Analysis of power in AC circuits and the effects of inductive and capacitive elements on electrical systems. Study and analysis of the relationships between voltage, current, and impedance in AC circuits. National Electrical Code application of AC Theory. Topics reviewed and reinforced in the accompanying laboratory exercises. Prerequisite MA120 and EL110, both with GPA of at least 2.00. *(Offered in the spring and summer)*

EL 214 LOW VOLTAGE SYSTEMS AND CONTROLS 4 CREDITS

Topics include fire warnings and security systems, fiber, data and communications wiring and systems. Study will focus on the application of the current National and Massachusetts Electrical Codes as they pertain to these systems. Prerequisite EL129 and EL213. *(Offered in the fall)*

EL222 ELECTRICAL DESIGN AND LAYOUT III/ NEC III 4 CREDITS

Continued study of the National and Massachusetts Electrical Codes and fundamentals of electrical design as they pertain to commercial applications. An introduction to a variety of wiring methods, including EMT, RMC, IMC, PVC, and types AC and MC cable.Topics include interpreting blueprints and specifications; calculating types of luminaires and their application; electrical loads; motor and appliance circuits, and feeder sizing. Laboratory included. Prerequisite EL129 with GPA of at least 2.00. *(Offered in the fall)*

EL229 ELECTRICAL DESIGN AND LAYOUT IV/ NEC IV 4 CREDITS

Continued study of the National and Massachusetts Electrical Codes with emphasis on advanced topics, including hazardous locations and requirements for special occupancies. Other topics include commercial branch circuits, feeders and electrical services; feeder diagram calculations; motor and motor control installations; motor load calculations; and principles of grounding systems and equipment.Laboratory included. Prerequisite EL222 *(Offered in the spring)*

EL240 ELECTRIC MACHINES I 4 CREDITS

Study of the operating characteristics of single-phase and three-phase transformers, voltage and current transform ratio, transformer modeling. Effects of loads, voltage regulation, losses and efficiency. Study of the operating characteristics of DC generators such as shunt, compound, series and separately excited generators, voltage build-up, regulation and efficiency. Study of the operating characteristics of DC motors, counter emf, torque and starters. Study of single-phase and three-phase AC generators and motors. Laboratory included. Prerequisite EL129 and EL213 with GPA of at least 2.00. *(Offered in the fall)*

EL241 ELECTRIC MACHINES II 4 CREDITS

Continuation and advanced coverage of topics presented in EL240. Emphasis will be on the principles and characteristics involved in the modern day commercial and industrial usage of various electrical motors, generators, control circuits, transformers, pilot devices, schematic and ladder diagrams, and the introduction to the operation, connections, and programming of PLC's for the control of electrical machinery. Laboratory exercises with operating actual electro-mechanical machinery will allow students hands-on experience with the topics presented in classroom study. Students will be presented with the areas of the National Electrical Code that are pertinent to the material covered. Prerequisite EL240 *(Offered in the spring)*

EL243 PHOTOVOLTAIC DESIGN AND INSTALLATION 4 CREDITS

This course will introduce students to the basic principles of photovoltaics. Topics will focus on site selection, panel types, storage centers, system design, and system application. Upon course completion, students will be able to install basic system components in accordance with the National Electrical Code and OSHA. Topics focus on photovoltaics and wind energy technology. Prerequisite EL213, EL222, and EL240, TS201 *(Offered in the spring)*

EN091 READING AND WRITING FOR ACADEMIC SUCCESS 4 CREDITS

This Academic Development course integrates the growth of critical reading strategies in addition to academic writing and language skills. Students are introduced to the writing process and a deeper understanding and application of academic writing conventions. In order to enhance their participation in an academic environment, students will develop critical reading, thinking, note taking and writing skills by working through high-interest readings. Co-requisite: EN110. *(Offered in fall, spring, and summer)*

EN110 INTRODUCTION TO ORAL COMMUNICATIONS 3 CREDITS

This course is intended to provide students with a basic understanding of the communication process and to enable them to develop their communication competence in various contexts. We will study the styles of speech used in these contexts, and will explore issues of audience, purpose, and tone. The course aim is to develop an awareness of the many ways in which we communicate with one another, and to promote confidence and overall speaking skills. The course will provide numerous and varied opportunities for students to practice communication techniques. At the conclusion of the course, all students should be knowledgeable of the elements of effective communication and capable of recognizing and participating in varied contexts. Co-requisite: EN091. *(Offered in the fall and spring)*

EN129 COLLEGE COMPOSITION I: EMBEDDED SUPPORT 3 CREDITS

This course is an embedded support version of EN130, which has students taking an additional course to help develop their reading, writing, research and presentation skills. This course invites students to investigate the ways in which language is used in various settings. By examining how language is connected to issues of identity, students see the importance of using spoken and written communications appropriate to particular contexts. The course is structured around three main projects: a memoir where students explore their own experiences with language and identity, and two ethnographic studies where they look closely at two distinct communities, one informal and one professional, to see how people interact in those settings. The course calls for frequent informal written responses that build toward larger formal texts. Students are invited to become reflective of their writing processes as they are involved in a constant process of revising. They receive feedback from their instructor and classmates, and discuss many ideas and concepts in groups. Co-requisite: EN131. *(Offered in the fall and spring)*

EN130 COLLEGE COMPOSITION I 3 CREDITS

This course invites students to investigate the ways in which language is used in various settings. By examining how language is connected to issues of identity, students see the importance of using spoken and written communications appropriate to particular contexts. The course is structured around three main projects: a memoir where students explore their own experiences with language and identity, and two ethnographic studies where they look closely at two distinct communities, one informal and one professional, to see how people interact in those settings. The course calls for frequent informal written responses that build toward larger formal texts. Students are invited to become reflective of their writing processes as they are involved in a constant process of revising. They receive feedback from their instructor and classmates, and discuss many ideas and concepts in groups. *(Offered in the fall, spring, and summer)*

EN131 COLLEGE COMMUNICATION 3 CREDITS

A companion course to EN129, College Composition, the purpose of this course is to grow and develop academic communication skills that will give students the tools to be more successful throughout both their college and professional careers. The course takes four key skills: reading, research, writing, and presentation, and spends 3-4 weeks developing each while asking students to reflect on their own educational experiences past, present, and future. All of the skills used and developed in this course will be put into practice in EN129 and throughout every course the students need to complete. While focusing on skill development, the course also discusses topics of identity, self, home, urban life and societal issues, and how your experiences and background help define your identity. Co-requisite: EN129. *(Offered in the fall and spring)*

EN140 COLLEGE COMPOSITION II 3 CREDITS

A continuation of College Composition I, this class considers many written genres while focusing on such issues as work, social class, culture, and identity. By examining these issues through the genres of journal articles, oral history, narrative, short story, poetry, drama, and film, students will build on their abilities to work reflectively, develop their responses, and incorporate the voices of others into their own texts through the use of quotations. Students will have the opportunity to write texts similar to the ones they are reading, as well as academic essays. Through the practice of close reading and expository writing, students will develop the ability to comment on not only specific genres, but also on the world around them. They will also have the opportunity to participate in the kinds of group and presentational work that might be practiced in a professional setting. Prerequisite: EN130 *(Offered in the spring and summer)*

EN320 TECHNICAL COMMUNICATION 3 CREDITS

Principles of effective communication on both the employee and organizational levels are emphasized in this course. Students create professional written documents and there is a strong emphasis on oral communications. Through class discussions, working groups, and formal presentations, students will consider and present on various workplace scenarios. These situations will provide students the opportunity to practice negotiation, conflict management, ethical decision-making, leadership roles, and presentation skills. Professionalism in all forms of communication will be expected. *(Offered in the fall and spring)*

ENS103 INTRODUCTION TO ENGINEERING 3 CREDITS

This course provides exposure to engineering practice, with particular focus on electrical engineering components such as circuit elements and systems. It seeks to go beyond the mathematics and provide an intuitive appreciation of functional devices. Examples taken from a broad swath of technological history illustrate significant crossroads, decisions, and inventiveness. Emphasis is placed on learning to think as an engineer - assessment of problems, candidate solution tradeoffs, and implementations. Frequent exercises in creative engineering design will be used. Students will be required to design several elementary devices, such as a magnet, a capacitor, a timing device, and a motor, which they will enter in a competition for overall strength, compactness, accuracy, or speed. Sometimes assignments relate to "survival on an island" concerns, such as communication or drinking water. Students also learn about reverse engineering by selecting, building, troubleshooting, and presenting an electronic kit of their choice. A term paper determining the engineering behind a topic of their choice will also be written and presented. On occasion (see ENS103L) there will be team competitions between various smaller groups in the class. Corequisites: ENS103L. *(Offered in the fall)*

ENS103L INTRO TO ENGINEERING LAB 1 CREDIT

The Lab is designed to provide opportunities to gain familiarity with engineering tools. Students will be introduced to parts (e.g. learn the resistor color code), test equipment (multimeters, proto-typing trainers, signal generators, and oscilloscopes), and construction techniques (wiring, soldering, troubleshooting). Although it varies from year to year, Class Projects can be built during the Lab sessions. In the past these have included a 25 Watt electric generator, various door lock systems (both mechanical and electronic), and an AM transmitter and receiver (all projects made from scratch). Electronic kits and motors can also be built and serviced in the Lab. There is an adjoining machine shop, which can be utilized (with supervision), for fabricating items. Individual creativity is encouraged, and informal problem solving sessions occasionally occupy lab time. However, the lab is accessible outside of the traditional scheduled time.

Corequisites: ENS103. *(Offered in the fall)*

ENS202L ENGINEERING TECHNICAL COMMUNICATION 1 CREDIT

Emphasis on clarity, precision, accuracy, and conciseness in scientific writing. Assignments include a team-based design-contest proposal, an oral presentation on current scientific topics, a team-based design of an experiment with a write-up and an oral presentation, a paper on engineering ethics concerning the Challenger and an instruction manual. Memo writing, summary writing, and resumes are also included. Prerequisites: EN140, PH223 & PH225; *(Offered in the fall)*

ENS220 DESIGN AND DESIGN TOOLS 4 CREDITS

This course applies design tools (AutoCAD primarily and others as necessary for specified design problems) to design problems specified by the instructor. Prerequisites: PH222

HI130 INTRODUCTION TO HEALTH INFORMATION TECHNOLOGY 4 CREDITS

This course is designed to explore the use of information systems in healthcare. Students will be introduced to the information systems and their applications in healthcare. The fundamentals of information systems, including Electronic Health Record, will be explored. Students will become familiar with information systems used for managerial and clinical support. Information security will be discussed. *(Offered in the fall, spring and summer)*

HI210 ELECTRONIC HEALTH RECORDS IMPLEMENTATION 4 CREDITS

This course provides a practical experience with a laboratory component (utilizing the VistA for Education program) that will address approaches to assessing, selecting, and configuring Electronic Health Records to meet the specific needs of customers and end-users. In addition, this course provides an overview of the most popular vendor systems highlighting the features of each as they would relate to practical deployments, and noting differences between the systems. Prerequisites: SS110 and HI130 *(Offered in the spring)*

HI310 MEDICAL CODING, CLASSIFICATION AND COMMUNICATION 3 CREDITS

This course introduces students to the study and practice of procedural medical coding using ICD-9-CM and ICD-10-CM (Revisions 9 and 10 of the International Classification of Diseases), and CPT (Current Procedural Terminology). Topics include ICD and CPT coding rules, conventions, and guidelines in complex case studies. Additional topics include the investigation of government regulations and changes in healthcare reporting. Prerequisite: TS120 *(Offered in the spring)*

HI330 INTRODUCTION TO HEALTHCARE DATABASES 4 CREDITS

This course introduces students to the principles of data management in the context of Health Information Technology (HIT). The emphasis is on practical database experience reinforced through assignments and weekly laboratory work. Students learn first to work with Microsoft SQL Server 2008 R2 database system. Then, they are introduced to the design of databases and their implementation in relational systems.. Topics include tables, queries, forms, reports, importing and exporting data, structured query language, entity relationship models, the relational data model, and normalization of databases. Examples, assignments, and laboratory work are drawn from hospital and other HIT environments. Students will be prepared to take the MTA 98-364 exam in-house. Prerequisites: CT221 and HI210 *(Offered in the fall)*

HI410 HEALTH INFORMATION SYSTEMS INTEGRATION 4 CREDITS

This course focuses on teaching students Health Level 7 (HL7), which is one of the most common health care messaging and data exchange standards. Students also learn how healthcare interoperability, six categories of standards, controlled vocabularies, and message and document exchanges help with achieving greater health information availability, which will lead to the reduction of medical errors, and the enhancement of care quality. Students are given hands-on experience with learning HL7 messaging for many different scenarios, and creating their first HL7 message. Prerequisite: HI330 *(Offered in the spring)*

HI430 HEALTHCARE COMPLIANCE 3 CREDITS

This course will cover the fundamentals of healthcare compliance administration from an IT perspective. A major focus of the course will be a thorough understanding of the HIPAA privacy laws as related to the role of HIT professionals. Specific topics include network and email security as related to healthcare compliance under HIPAA. *(Offered in the fall)*

HI445 PROFESSIONAL EXPERIENCE (PRACTICUM) 4 CREDITS

Students are placed in a hospital information technology (or other suitable) department to gain experience in a professional working environment. Students are responsible for various assigned duties depending on the placement. Prerequisites: HI330, SS335, and HI430 *(Offered in the spring)*

HI490 CAPSTONE PROJECT 4 CREDITS

In this course students work in teams to design and complete a full semester project in Health Information Technology. The course will guide students in defining a complex problem and developing a workable solution. The professor will identify an array of potential project areas for student consideration, who will then be assigned an area based on preference, skills and team size. To the degree possible, students will get their top choices of project areas. Prerequisites: HI330, SS335, and HI430 *(Offered in the spring)*

HV111 FUNDAMENTALS OF ELECTRICITY AS APPLIED TO HVAC-R 3 CREDITS

This course is designed to explore the sources and principles of electrical energy and magnetism, and its control. Students will learn how to apply safety procedures while working with electricity, electrical devices, and equipment. They will learn to distinguish the difference between series and parallel circuits and how to apply principles of electricity to electrical formulas as they relate to basic circuits and equipment. Students will also learn to apply automatic controls used in the HVAC&R industry. They will learn the various types and applications of electric motors and controls used in the industry. In addition students will learn to diagnosis and troubleshoot electric motors, circuits and controls. In the process they will learn to use various types of testing equipment. The OSHA 10 hour certification is administered in this course as well. Prerequisites- None. *(Offered in the fall and spring)*

HV112 REFRIGERATION FUNDAMENTALS 3 CREDITS

This course is designed to present the student with the principles and basic operation of refrigeration systems and the refrigeration cycle. They will learn about the laws of thermodynamics as applied to refrigeration, different refrigerants and their applications, compressors, evaporators, condensers, metering and control devices and their operation within the refrigeration system. Students will learn how to plot refrigeration pressures for refrigerants on a pressure/temperature chart. *(Offered in the fall and spring)*

HV113 ELECTRICAL AND MECHANICAL FOR REFRIGERATION 6 CREDITS

This course is designed to familiarize students with the electrical and mechanical aspects of a refrigeration system. Wiring schematics for refrigeration units will be studied in depth and applied to refrigeration trainers as well as the operation, installation, and functions of different mechanical components. Students will also be introduced the different types of temperature and pressure controls of a refrigeration system and their roll within the system. Students will also learn basic service procedures such as, system charging and evacuation, superheat and subcooling, leak testing procedures, tubing and piping techniques, as well as pump down systems, and domestic refrigeration.

HV114 EPA--REFRIGERANT RECOVERY, RECYCLE, AND RECLAIM 1 CREDITS

Recovery, Reclamation and Recycling Program: this course concentrates on Federal EPA certification test preparation, R410A certification, Aynand the use of recovery equipment. *(Offered in the fall and spring)*

HV211 COMMERCIAL REFRIGERATION AND ICE MACHINES 3 CREDITS

Students will study commercial applications of evaporators and condensers as applied to commercial refrigerationss, including ice machines and walk-in units. This course will also include different types of expansion devices for these applications, special refrigeration systems, troubleshooting and typical operating conditions. *(Offered in the spring and summer)*

HV212 COMMERCIAL AIR CONDITIONING AND HEAT PUMPS 3 CREDITS

This course is designed to provide the student with the necessary information about the various types of air conditioning systems such as package roof top systems, chillers/cooling towers, geothermal heat pumps, and their characteristics and applications. This course also explores the servicing and troubleshooting of systems and controls. Students will learn the parameters associated with psychometrics, the process involved in installing an air conditioning or heat pump system, and the conditions that affect these systems. Students will also learn factors involved in comfort and plot air conditions using a psychometric chart. *(Offered in the spring and summer)*

HV213 GAS HEATING AND RESIDENTIAL AIR CONDITIONING 4 CREDITS

This course is designed to provide the student with the necessary information about service and repair of gas fired warm air heating units and residential central air systems. Combustion theory, efficiency testing, combustion air and vent design, heat exchanger types, blower motors, fans and control systems including thermostats are covered. Students will study installation, operation and maintenance techniques for A/C units found in single-family homes and living facilities. Specific topics of study include mechanical repairs, air treatment, electrical repairs and home duct work. *(Offered in the spring and summer)*

HV214 OIL FURNACES AND HYDRONIC HEATING 5 CREDITS

This course covers the installation, maintenance, and operation of oil-fired hot air and hydronic heating systems; principles of combustion, and hands-on troubleshooting in residential and light commercial applications. This course will include oil efficiency testing, oil safety, and a NORA oil certification. Students will also learn the principles of steam, as well as hydronic system design and maintenance. *(Offered in the spring and summer)*

MA080 FUNDAMENTAL MATHEMATICS 3 CREDITS
MA090 FUNDAMENTAL MATHEMATICS 6 CREDITS

This course is designed to reinforce the foundations of mathematics and prepare students for success in future math courses. Topics covered include fractions, mixed numbers, decimals, fraction to decimal conversion, basic rules of algebra, real numbers and operations, order of operations, linear equations. To help develop students number sense and mental arithmetic, the use of calculators will not be allowed in most instances. *(Offered in the fall, spring, and summer)*

MA095 FUNDAMENTALS OF TECHNICAL MATHEMATICS 7 CREDITS

This course is designed to reinforce the foundations of mathematics and prepare students for success in future math courses. Topics covered include fractions, mixed numbers, decimals, fraction to decimal conversion, basic rules of algebra, real numbers and operations, order of operations, linear equations, unit conversions, ratios and proportions, percentages, exponents and polynomials, and graphing. To help develop students number sense and mental arithmetic, the use of calculators will not be allowed in most instances. *(Offered in the fall)*

MA105 TECHNICAL MATHEMATICS I 3 CREDITS

This course is designed as an overview of the math topics most often encountered in a technical environment. Practical examples of the math as it is used in the various technical fields are employed as much as possible. Topics covered include: a review of fractions and decimals, unit conversions, ratios and proportions, percentages, exponents and polynomials, graphing and geometric formulas. Prerequisite: MA090 (grade of C or higher) or Placement Exam *(Offered in the fall, spring, and summer)*

MA106 TECHNICAL MATHEMATICS II 3 CREDITS

This course, the second in the technical math sequence, continues to develop the students' mathematics knowledge through the use of practical examples. Topics covered include ratio and proportion, geometry, and right angle trigonometry.

An emphasis is placed on practical examples from the automotive field and project assignments are used to refine problem solving, critical thinking and communication skills. Prerequisite: MA105 *(Offered in the spring and summer)*

MA107 OPTICAL MATH 3 CREDITS

Optical Math provides the Opticianry student with an opportunity to become familiarized with mathematical concepts and formulae that are commonly used in ophthalmic science. The student will be introduced to optical formulae that contain mathematical concepts involving positive and negative integers, definition of infinity, algebra, trigonometry and approximations. In addition, students will learn how to solve complex optical formulae using a scientific calculator. *(Offered in the spring)*

MA 115 PLANE AND SOLID GEOMETRY 4 CREDITS

This course introduces the study of Euclidean geometry, focusing on lines and angles, measurement and units, triangle properties, parallelograms, trapezoids, polygons, circles, spheres, conic sections, pyramids, areas and volumes. Applications to the field of building technology will be stressed. Prerequisite: MA105 *(Offered in the fall)*

MA120 COLLEGE ALGEBRA AND TRIGONOMETRY 3 CREDITS

This course begins with a review of the metric system, order of operations, exponents, and polynomials. Students' understanding of algebra is developed through methods of solving algebraic fractions, systems of linear equations, quadratic equations, other types of equations, and word problems. The introduction to the basics of functions and their graphs leads into the study of composite and inverse functions. The course concludes with an introduction to angles and radian measure, followed by problem solving involving right triangles and an introduction to trigonometric functions.. Prerequisite: MA 095 (grade of C or higher) or MA105 (grade of C- or higher) or Placement Exam *(Offered in the fall, spring, and summer)*

MA130 PRECALCULUS 3 CREDITS

This course begins with a review of basic functions, continuing on to prepare the students for calculus by studying the properties and graphs of polynomial and rational functions. This leads into the study of exponential and logarithmic functions and their graphs, properties, and equations. Extending the student's knowledge of trigonometry, the trigonometric functions are further explored, including developing their graphs. The course continues by solving trigonometric equations and investigating applications of trigonometry. Polar coordinates and complex numbers (in both rectangular and polar form) are covered, concluding with an introduction to vectors. Prerequisite: MA120 *(Offered in the spring, and summer)*

MA240 CALCULUS I 4 CREDITS

This course introduces differential and integral calculus. It begins with the study of limits and continuity, which naturally leads to the development of the derivative. Topics covered include the rules of differentiation for exponential, logarithmic, trigonometric, inverse-trigonometric, and polynomial functions, rates of change, implicit differentiation, maximization/minimization problems, and an introduction to integration. Prerequisite: MA130 *(Offered in the fall)*

MA250 CALCULUS II 4 CREDITS

This course builds and expands upon the techniques and applications covered in Calculus I. Topics include the indefinite and definite integral, the fundamental theorem of calculus, integration by substitution, an introduction to differential equations, advanced integration techniques, area of region between two curves, parametric equations, improper integrals, applications of integration to volumes. Prerequisite: MA 240 *(Offered in the spring)*

MA260 CALCULUS III 4 CREDITS

Parametric equations and polar coordinates (curves, areas, conic sections); vectors and the geometry of space (the dot product, vector arithmetic, lines and planes in 3-space, the cross product, cylinders and quadratic surfaces); vector functions (limits, derivatives and integrals, motion in space); partial derivatives (functions of several variables, limits and continuity, tangent planes and differentials, chain rule, directional derivatives, gradient, extrema, Lagrange multipliers); multiple integrals (double integrals, applications); vector calculus (vector fields, line integrals, fundamental theorem for line integrals, Green's Theorem, curl and divergence, parametric surfaces, surface integrals). 4 lecture hours plus 1 recitation session each week. Prerequisites: MA250 with grade of C or better. *(Offered in the spring and fall)*

MA265 FINITE MATH

This course serves as a broad overview of topics in finite math and a brief introduction to topics in statistics. Topics covered include linear equations, linear systems, linear programming, mathematics of finance, matrix math, probability, and an introduction to statistics. (Offered in the spring and summer)

MA270 STATISTICS 3 CREDITS

This course studies the collection, analysis and presentation of data, frequency distributions, probability and probability distributions. Making inferences from statistical data and the techniques used for making business and management decisions will be discussed. Applications to various technical fields will also be included. Data analysis and presentation make use of statistical software. Prerequisite: MA265 or MA 120 *(Offered in the fall, spring and summer)*

MA290 TOPICS IN HEALTHCARE STATISTICS 1 CREDIT

This course is an MA270 laboratory component that focuses on the healthcare sector. As such, it provides an introduction to the use of statistics in the fields of healthcare. Topics include conducting statistical analyses using the Statistical Analysis Systems (SAS) software on various publicly available health IT and healthcare datasets, employing contemporary charts such as bubble and motion to visualize data, calculating descriptive and inferential statics, and performing quality assessment and improvement (such as process, collection tools, data analysis, reporting techniques), as well as creating PivotChart and PivotTable Report. Corequisite: MA270 *(Offered in the fall)*

MD223 MEDICAL INSTRUMENTATION I 4 CREDITS

Study of medical devices and transducers used in Intensive Care Units and general patient floors. Covers typical circuits, applications, safe usage of devices, and interpretation of derived data. Emphasis on troubleshooting and repair techniques as applied to medical devices. Prerequisites: A GPA of 2.0 in EE110, EE113, EE122, EE131 or a waiver from the department chair. *(Offered in the fall)*

MD225 MEDICAL INSTRUMENTATION II 4 CREDITS

A continuation of MD223. More complex medical devices are introduced that incorporate both previously learned technologies as well as new concepts. Increased emphasis is placed on safety and equipment testing. Opportunities to use troubleshooting and repair techniques are provided. Prerequisite: MD223 *(Offered in the spring)*

MD242 CLINICAL INTERNSHIP 4 CREDITS

Student is placed in a hospital clinical engineering department to gain experience in a professional working environment. Students will perform various assigned duties, some of which involve preventive maintenance or repair of medical equipment and will become familiar with equipment and specialty tools used in the biomedical field. Prerequisite: MD223 Corequisite: MD225 *(Offered in the spring)*

ME105 CAD WITH SOLIDWORKS 3 CREDITS

Introduction to the use of CAD systems for the production of engineering drawings through lectures and hands-on laboratory sessions. SolidWorks software is used to create basic drawings related to mechanical equipment and machine parts. Modifying existing drawings similar to those produced in mechanical engineering firms. *(Offered in the fall and spring)*

ME106 ADVANCED CAD 3 CREDITS

The use of SolidWorks to generate complicated 3D Assembly Models. Extensive projects given to challenge the student and extend their knowledge. Prerequisite: ME105 *(Offered in the spring and summer)*

ME110 STATICS 4 CREDITS

Study of fundamental concepts and principles governing the equilibrium of rigid bodies under the action of forces. Resolution and addition of forces by graphic and analytical methods, moment of a force, couples, equivalent systems of forces, analysis of trusses and frames, and distributed loads. Also, centroids and centers of gravity, and friction. Prerequisite: MA120 *(Offered in the spring)*

ME141 MATERIALS 3 CREDITS

The study of metals and non-metals. Students will gain a basic understanding of crystal structures, heat treating, annealing, cold working and how they affect mechanical properties. Stress-strain diagrams, phase diagrams, time temperature transformation diagrams and failure analysis of engineering materials will also be covered. *(Offered in the fall and spring)*

ME150 INTRODUCTION TO MANUFACTURING 4 CREDITS

Introduction to the basic processes related to machining and cutting engineering materials. Methods of joining both mechanical and welding, brazing, and soldering. The use of measuring instruments for the production of accurate parts. *(Offered in the spring and summer)*

ME151 MANUFACTURING PROCESSES AND CNC MACHINING 4 CREDITS

The study of advanced manufacturing processes such as forging, casting, forming processes, injection molding, thermo forming and composite layups. Programming and operation of CNC equipment including an introduction to Robotics. Prerequisites: ME105, ME150 *(Offered in the fall)*

ME220 MASTERCAM MILLING I 4 CREDITS

The students will receive the basics of two-dimensional part programming including: geometry development, milling, drilling, tapping, and pocketing. Prerequisites: ME106, ME151. *(Offered in the fall)*

ME225 MASTERCAM MILLING II 4 CREDITS

This course is a continuation of topics student in ME220. Students will work with 3D model building, tool path selection, creation and verification. Prerequisites: ME106, ME151, ME220. *(Offered in the spring)*

ME226 MASTERCAM TURNING 4 CREDITS

The students will receive the basics of part programming for lathes utilizing Mastercam software. Prerequisite: ME250. *(Offered in the fall)*

ME230 MANUFACTURING BUSINESS PRACTICES 3 CREDITS

This course serves as an introduction to manufacturing from a business-person's perspective. The course deals with issues including supply chain management, operations management, and inventory management. The linkage between strategy and tactics will be emphasized. Students will learn about the concepts and tools that will help them to manage from the "boardroom" to the "manufacturing floor." *(Offered in the fall)*

ME240 MACHINE DESIGN WITH SOLIDWORKS 4 CREDITS

The study of the fundamentals of machine design using SolidWorks. Technical drawings as a method of solving engineering problems with the use of Cosmos as an analytical tool. Prerequisites: ME106, MA120 *(Offered in the fall)*

ME241 SOLIDWORKS CERTIFICATION PREPARATION CLASS 1 CREDIT

This class is designed to help students through discussion and practice in class to prepare for the SolidWorks certification exam. Prerequisites: MA120, ME105, ME106, ME240 *(Offered in the fall)*

ME250 ADVANCED MANUFACTURING AND CNC 4 CREDITS

Rapid prototyping is covered from concept to completed part. The use of SolidWorks models to generate CNC programs and parts. Prerequisites: ME106, ME151 *(Offered in the spring)*

ME252 THERMODYNAMICS 4 CREDITS

This course will focus on the following: First and Second Law of Thermodynamics; thermodynamic properties of substances; reversible and irreversible processes, entropy; thermodynamic processes, power and refrigeration cycles; three modes of heat transfer, conduction, convection and radiation; heat transfer through plain surfaces and fins, in tube flow and in heat exchangers. Prerequisites: MA130, ME141. Co-requisite: ME110 *(Offered in the fall)*

ME260 ADVANCED MFG CNC II 4 CREDITS

Rapid Prototyping is covered from concept to completed part. This is a more advanced class that covers CNC Programming and Machining. Prerequisites: ME110, ME220, ME250. *(Offered in the fall)*

MET310 ROBOTICS I 4 CREDITS

This is an introductory course in robotic systems. It covers the basic operations of robots. Students explore powering up and jogging the robot, configurations, control systems, drive systems, robot vision systems, and programming methods. The course covers the Robot Operations outline intermixed with the tasks required to set up the Handling Tool application, test, run and refine the program and production setup. Students will introduce into the relationship of robot applications to other automated technologies.

Students complete a series of projects that require them to perform the power up and jogging robot in JOINT, WORLD, and TOOL, change the Robot Software Limits, Recover from common Faults, Set up Frames, Create Teach Pendant Program. Students practice industrial robot safety at all times. *(Offered in the Fall)*

MET315 ROBOTICS II 4 CREDITS

This course covers the basic tasks and procedure to set up, teach, test, and modify iRVision applications on an R-30iA Robot Controller. Students learn how to power up the robot, set up communication between robot and teaching computer, vision concepts overview, vision setup that including camera setup, calibration, and vision process setup. This course covers TPP programing, troubleshooting, procedures for creating a 3D robot simulation program. Students practice industrial robot safety at all times. Students successfully completing the course requirements receive the Fanuc CERT Certification , an internationally recognized robotics certification. Prerequisites: ME310 *(Offered in the spring)*

ME345 MECHANICS OF MATERIALS 3 CREDITS

Material properties will be discussed as they apply to product design, manufacturing process design and control. Theories will be discussed in class and reinforced through lab problems. *(Offered in the spring)*

ME352 ADVANCED THERMODYNAMICS 3 CREDITS

Work and heat interactions are defined. The first and second laws of thermodynamics and concepts of thermodynamic equilibrium are explored. Conservation of energy and mass and the entropy balance relation are discussed for open and closed systems. Irreversibility, energy, and the energy balance relation are introduced and applied in analyzing thermodynamic systems. Thermodynamics fundamentals are used to model power generation and refrigeration systems. This course also covers thermodynamics of non-reacting gas mixtures with applications to air and water vapor mixtures for air conditioning systems.

ME490 SENIOR DESIGN AND MFG PROJECT I 3 CREDITS

A project-based course in which students will develop a real project schedule, progress reports, presentations, and team meeting agendas. *(Offered in the fall)*

ME491 SENIOR DESIGN AND MFG PROJECT II 3 CREDITS

A continuation of ME490, this is a project-based course in which students will develop a real project schedule, progress reports, presentations, and team meeting agendas. This course is designed to allow students the opportunity to accomplish a project from concept to completion. *(Offered in the spring)*

OP105 ANATOMY AND PHYSIOLOGY OF THE EYE 3 CREDITS

This course is designed to give the opticianry student insight into the anatomical structure of the eye and its adnexa. The student will also learn the function of the parts of the eye as they relate to vision, eyewear, and contact lenses. The learner will be presented with common pathologies of the eye and ocular pharmacology. *(Offered in the fall and spring)*

OP110 OPHTHALMIC OPTICS I 3 CREDITS

This course is a three-hour lecture course designed to include a brief history of glass and plastic, the various sphere, cylinder, and prism powers, review of the optical cross, flat and toric transposition, history and types of multifocals, and the lens aberrations. *(Offered in the fall and spring)*

OP115 PRINCIPLES AND PRACTICES IN OPTICIANRY I 3 CREDITS

The lab portion of this course will introduce the student to terms, instruments, equipment, lenses and materials to be used in the surfacing and finishing of ophthalmic prescription eyewear. Special emphasis will be placed on the procedures used to surface ophthalmic lenses including calculations, layout, blocking, generating, fining, polishing and inspection.

The clinical portion of this course will offer students an opportunity to gain real life exposure to the designing, fitting and dispensing of prescription eyewear in an optical business setting. The students will learn to operate an optical business, as well as the intricacy of quality patient care.

The Optical Shoppe is open during the regular academic year and is operated by the students under the direct supervision of licensed opticians. The operating clinic offers students the opportunity to learn the practical aspects of opticianry through weekly presentations and assignments, as well as actual patient care. *(Offered in the fall and spring)*

OP120 OPHTHALMIC OPTICS II 3 CREDITS

This is a lecture course designed as a continuation of Ophthalmic Optics I.

It will include seg OC location, image jump, vertical imbalance using charts, correction of small amounts of vertical imbalance, sagital values, and center and edge thickness based upon vertex depth, specular images, and lens aberrations. *(Offered in the spring and summer)*

OP122 OPHTHALMIC DESIGN & DISPENSING THEORY I 3 CREDITS
OP123 OPHTHALMIC DESIGN & DISPENSING THEORY I LAB 1 CREDIT

This course is a hybrid course in which a portion of the course (approximately 75%) is offered as distance learning, and another portion meets physically on campus (approximately 25%). Ideally, students will engage in weekly distance learning sessions and assignments, a weekly on-campus lab for a practical quiz and/or assignment, and a monthly regular on-campus lecture session.

This course is designed to introduce the student to the dispensing procedures.

This course is designed to instruct the student in the process for ordering an Rx from the lab, the insertion and removal of lenses from frames and mountings, the alignment and adjustment of the frames and mountings for standard alignment and for the client's face. The lab portion of the course is designed to introduce the student to the practical dispensing of optical products. Practical topics covered in the course include the neutralization of single vision and multifocal lenses for duplication of an Rx, measurement of frames and mountings, measurements of pupillary distance (PD's), and the demonstration and calculation of the placement of multifocal segments. *(Offered in the fall)*

OP125 PRINCIPLES AND PRACTICES IN OPTICIANRY II 3 CREDITS

This course will consist of lectures, demonstrations, and practice time to develop skills in the fabrication of single vision eyewear. It will include surfacing procedures, the use of the lensometer for verification and the layout of single vision lenses for edging. Blocking, automatic edging, hand beveling, lens tempering, lens insertion, pattern making, and machinery maintenance will also be covered.

The clinical portion of this course will offer students an opportunity to gain real life exposure to the designing, fitting and dispensing of prescription eyewear in an optical business setting. The students will learn to operate an optical business, as well as the intricacy of quality patient care.

The Optical Shoppe is open during the regular academic year and is operated by the students under the direct supervision of licensed opticians. The operating clinic offers students the opportunity to learn the practical aspects of opticianry through weekly presentations and assignments, as well as actual patient care. *(Offered in the spring and summer)*

OP128 OPTICAL BUSINESS & CLINICAL CARE MANAGEMENT 2 CREDITS

This business course, specific to managing an optical dispensary, will cover point-of-purchase and business software programs, handling insurance programs pertinent to the optical consumer, and professional and ethical business conduct. Additionally, customer care practices related to low vision dispensing, pediatric care, sports protection and eye health, and treatment of computer vision syndrome, will be presented by experts in each area of specialization. *(Offered in the spring)*

OP230 CONTACT LENS THEORY I 3 CREDITS
OP231 CONTACT LENS THEORY I LAB 2 CREDITS

This course is designed as a basic introduction to the fitting of rigid and soft contact lenses. It will include terminology, instrumentation for the fitting of contact lenses, the development and history of lenses, patient selection, and the assessment of the fit.

The lab portion of the course is designed to introduce the student to the handling of contact lens materials and the operation and maintenance of instruments used in the fitting and designing of contact lenses. Primary instruments that students will be operating include a keratometer, measuring loupes, lensmeter, phoptor, biomicroscope, radiuscope, and corneal topographer. *(Offered in the fall)*

OP232 OPHTHALMIC DESIGN & DISPENSING II 3 CREDITS
OP233 OPHTHALMIC DESIGN & DISPENSING II LAB 1 CREDIT

This course is a hybrid course in which a portion of the course (approximately 75%) is offered as distance learning, and another portion meets physically on campus (approximately 25%). Ideally, students will engage in weekly distance learning sessions and assignments, a weekly on-campus lab for a practical quiz and/or assignment, and a monthly regular on-campus lecture session.

The course is designed to further explore topics learned in Ophthalmic Design & Dispensing I and Ophthalmic Design & Dispensing Lab I. Students will review frame alignment and adjustments, techniques for fitting multifocals, and lens identification. The course will expand into troubleshooting of visual problems, repairing of frames, applying safety standards in the optical workplace and lifestyle dispensing. Students will become familiar with progressive lenses, lens options / coatings, and the techniques for ordering lenses, frames and optical supplies. The lab portion of the course is designed to further explore topics learned in Ophthalmic Design & Dispensing I and Ophthalmic Design & Dispensing II. Students will review frame alignment and adjustments, techniques for fitting multifocals, and lens identification. The course will expand into troubleshooting of visual problems, repairing of frames, applying safety standards in the optical workplace and lifestyle dispensing. Students will become familiar with progressive lenses, lens options / coatings, and the techniques for ordering lenses, frames and optical supplies. *(Offered in the spring)*

OP235 PRINCIPLES AND PRACTICES IN OPTICIANRY III 3 CREDITS

In this progression course, students will be able to hone and perfect the lab finishing skills in the fabrication of prescription eye wear. Students will learn the advances in spectacle finishing and manufacturing. Students will be expected to complete lab assignments which contain multiple jobs of varying levels of difficulty within a timed period. Students will also learn to work as a team as the finishing lab is turned into a wholesale production facility.

The clinical portion of this course will offer students an opportunity to gain real life exposure to the designing, fitting and dispensing of prescription eyewear in an optical business setting. The students will learn to operate an optical business, as well as the intricacy of quality patient care.

The Optical Shoppe is open during the regular academic year and is operated by the students under the direct supervision of licensed opticians. The operating clinic offers students the opportunity to learn the practical aspects of opticianry through weekly presentations and assignments, as well as actual patient care. *(Offered in the fall)*

OP240 CONTACT LENS THEORY II 3 CREDITS
OP241 CONTACT LENS THEORY II LAB 2 CREDITS

This course is a continuation of Contact Lens Theory I, emphasizing contact lens verification, dispensing, and follow-up care. The fitting of astigmatic, presbyopic, and special needs patients will also be covered. The lab portion of the course is a continuation of Contact Lens Lab I emphasizing contact lens verification, dispensing, and follow-up care. The fitting of astigmatic, presbyopic, and special needs patients will also be covered.

The lab portion of the course is designed to introduce advanced levels of clinical instrumentation and their use in determining the proper contact lens fit on the eye.

Students will also be able to refine and hone their expertise in the handling of contact lens materials and the operation and maintenance of instruments used in the fitting and designing of contact lenses. Primary instruments that students will be operating include a keratometer, measuring loupes, lensmeter, phoptor, biomicroscope, radiuscope, and corneal topographer *(Offered in the spring)*

OP243 PRINCIPLES AND PRACTICES IN OPTICIANRY IV 3 CREDITS

This course is designed to educate students in the technical skills of performing various procedures within the ophthalmic visual assessment area of a dispensary. The course will present technical equipment procedures, maintenance and use, as well as the skills needed in assisting Optometrists and patients with various procedures such as administering medicines and pharmacology identification and uses.

The clinical portion of this course will offer students an opportunity to gain real life exposure to the designing, fitting and dispensing of prescription eyewear in an optical business setting. The students will learn to operate an optical business, as well as the intricacy of quality patient care.

The Optical Shoppe is open during the regular academic year and is operated by the students under the direct supervision of licensed opticians. The operating clinic offers students the opportunity to learn the practical aspects of opticianry through weekly presentations and assignments, as well as actual patient care. *(Offered in the spring)*

OP245 VISION ASSESSMENT 3 CREDITS

This course is designed to instruct the student in the theories behind the various tests given during a routine refraction. Topics include anatomy and physiology of the eye (review), mechanics of ametropias, epidemiology and etiology of refractive errors. Trends in visual acuity and accommodative / convergence relationships in the myopic, hyperopic and presbyopic eye will be discussed. Also included will be problems in binocular vision and retinoscopy. *(Offered in the spring)*

OP 281 OPTICIANRY TECHNICAL SKILLS AND SERVICE LAB 1 1 CREDIT
OP 282 OPTICIANRY TECHNICAL SKILLS AND SERVICE LAB 2 1 CREDIT

The topics of this course are designed to introduce the opticianry student to current and relevant issues related to public health and aspects of clinical care. Students will develop an awareness and identify areas of the community that are in need of optical care. The course presents students with the tangible opportunity to learn from community involvement and helping to engage and address areas of social, ethical, economic and policy-limiting concerns within our own environment. Students will engage in several aspects of service learning projects and professional inter-disciplanry presentations.

Clinical patient care offers students an opportunity to rotate among a variety of opticianry businesses. Students will begin to gain real life exposure to the opticianry industry, which will ultimately allow them to better understand client service and management, as well as allow them to explore different career paths.

Assigned research and professional presentation projects offer students an opportunity to explore optical health issues related to eye health and their many possible developing solutions based upon advanced ocular health procedures and treatments. Assigned projects may also include collaborative research and presentation with students from optometry in order to promote interdisciplinary professional problem solving and eye care that is routinely practiced throughout the profession.

The course is designed to fully support the College mission of community service learning. Students will be evaluated on the successful completion of two projects: the first is a community based service learning project where students

engage in providing clinical care to a worthwhile organization event, project or population; the second is a poster project where students educate their audience.

The poster project is an education awareness campaign designed to educate the public as to a particular segment of "Healthy Sight For Life". The project will be presented and displayed at the end of the academic year at a college wide vision health fair as a poster session. Presentations are judged in a competitive format during the Vision Health fair by optical experts representing the profession. *(OP281 is offered in the fall and OP282 is offered in the spring)*

PE101 ELECTRICAL CODE I 5 CREDITS

A study of the requirements of the National and Massachusetts Electrical Codes. The focus of study is on Chapters 1-4 of these codes. Topics include an introduction to the codes, general rules and requirements for electrical installations, wiring and protection, general wiring methods and materials, and equipment for general use in electrical installations. Included in the course is a hands-on practical application of the principles learned in lecture. During the lab experience students will be instructed in the design and configuration of common switching circuits, control circuits, and installation of electrical services while utilizing wiring methods common to residential installations. Training in the use of electrical tools, along with the testing and troubleshooting of basic electrical circuits are included. *(Offered in the fall and spring--evenings)*

PE103 ELECTRICAL CIRCUIT THEORY 5 CREDITS

A study of the concepts of voltage, current, resistance, and electrical power as applied to common DC and sinusoidal AC circuits. Topics covered are Ohm's Law, series, parallel, and combination circuits. Other topics include magnetism, AC waveforms, inductance, capacitance, reactance, and impedance, along with phasers and RC, RL and RLC circuits. Included with this course is a laboratory component that provides the student an opportunity to visually analyze the practicable application of those principles discussed in lecture. Students will assemble Direct and Alternating Current series, parallel and combination circuits comprised of resistive, inductive and capacitive loading components. The assigned lab experiments will provide the student an opportunity to clarify the various fundaments of power distribution and the relationship of voltage, current, power, power factor and phase relationships commonly experienced in today's electrical systems. *(Offered in the fall and spring--evenings)*

PE201 ELECTRICAL CODE II 5 CREDITS

A continuation of study of the National and Massachusetts Electrical Codes and the study of the fundamentals of electrical design, based on the requirements of these codes. Topics focus on Residential and Commercial applications and include Grounding and Bonding, overcurrent protection devices, services, single- and multifamily dwelling calculations, raceway and box calculations, conductor sizing and voltage drop calculations, and commercial calculations. The course includes a hands-on laboratory component where topics discussed in lecture will be explored; particular attention is paid to safety rules for working on electrical systems. Prerequisite PE101 *(Offered in the spring and summer--evenings)*

PE203 ELECTRIC MACHINES 5 CREDITS

Advance coverage on AC circuits and power factor. A study of the theory of polyphase circuits, single and three phase transformers, rotating electrical machinery, machine characteristics, and practical control of machines. Included with this course is a laboratory component that provides an opportunity for students to visually analyze the application of those principles discussed in lecture. Students will connect and operate direct current motors and generators, alternating current transformers, motors and generators, and monitor their operation under simulated load. The lab experiments will provide the student an opportunity to observe the various fundaments of power distribution and the effects of various reactive loads on the operation of transformers, generators, AC motors and motor control circuits. Prerequisite PE103 *(Offered in the fall and spring--evenings)*

PE211 ELECTRICAL CODE III 5 CREDITS

A continuation of study of the National and Massachusetts Electrical Codes with emphasis on advanced topics. The focus of study is on Chapters 5-7 of these codes. Topics include the requirements for electrical installations in special occupancies such as hazardous locations, the installation requirements of special equipment such as swimming pools, and the requirements associated with special conditions such as emergency systems. Included in this course is a laboratory component that provides a practical application of the requirements of the National and Massachusetts Electrical Codes as applied to the topics discussed in lecture. Prerequisite PE201 *(Offered in the fall and summer--evenings)*

PE213 ELECTRICAL SYSTEMS & REGULATIONS 3 CREDITS

This course is an advanced study of electrical systems and system control circuitry. Emphasis will be on the design, operating principles, and characteristics involved in the installation, layout, protection, and control of alternating and direct current motors, generators, control circuits, transformers, and air conditioning. The student will explore schematic and ladder diagrams, and the operation, and connections. Laboratory exercises will support and enhance the student understanding of these principals. Other topics to be covered include Fire Warning and Security Systems, Power-Limited Sources and Circuits, and Data and Communications Wiring. Study will include basic theory, operation and selection of equipment, cables, and wiring methods necessary for installation, and termination of low voltage systems. Also covered will be an overview of MGL. 141.1-9, 143-3L and 237 CMR 12.00 thru 23.00 pertaining to licensing requirements. Prerequisite PE203 *(Offered in the and fall and summer--evenings)*

PH102 PHYSICS 3 CREDITS

This course is an introduction to the physics of mechanics and basic concepts in chemistry, including the study of motion, Newton's Laws, energy, conservation laws, physics of matter, temperature, heat transfer, the atom, the periodic table, chemical bonding, the Mole, and balancing chemical equations. *(Offered in the spring and summer)*

PH212 PHYSICS I 3 CREDITS

This course is an algebra-based introduction to the physics of mechanics that includes a math review (algebra, geometry and trigonometry), scalars and vectors, force, mass, equilibrium, torque, acceleration, gravity, Newton's Laws, work, energy, power, impulse, momentum, circular motion and rotation of rigid bodies. Prerequisite: MA115 or MA120. Co-requisite: PH215 *(Offered in the fall and spring)*

PH215 PHYSICS LAB I 1 CREDIT

This lab focuses on supporting the topics in the physics lectures, PH212 and PH222. This lab offers the opportunity to practice laboratory techniques, data collection, and written reports. Topics include kinematics and mechanics. *(Offered in the fall and spring)*

PH222 UNIVERSITY PHYSICS I 3 CREDITS

This course is a calculus-based approach to the physics of mechanics. The topics include scalars, vectors, and up to vector calculus; the kinematics of translation; force, mass and dynamics of translation; statics, equilibrium, and torque; angular quantities and dynamics of rotation; friction, work, energy and power; impulse and momentum; simple harmonic motion and oscillations; Universal Law of Gravitation; the mechanics of solids and fluids; wave motion and wave equations; sound including Doppler Effect; superposition principle. A math review is not included. Co-requisite: PH215 (Offered in the fall)

PH223 UNIVERSITY PHYSICS II 3 CREDITS

This course is a calculus-based approach to the physics of thermodynamics, waves, electricity and magnetism. The topics include the study of fluids and fluid dynamics, harmonic motion and wave phenomenon, thermodynamics and heat, and electricity and magnetism. Prerequisite: PH222, Co-requisite: PH225 *(Offered in the spring)*

PH225 PHYSICS LAB II 1 CREDIT

This lab focuses on supporting the topics in the physics lectures for PH223. This lab offers the opportunity to practice laboratory techniques, data collection, and written reports. Topics include: mechanics, thermodynamics, harmonic motion, electric charge, and optics. Prerequisite: PH215 *(Offered in the spring)*

SK095 FRANKLIN SEMINAR 1 CREDIT

The Franklin Seminar is designed to enhance your college experience at Benjamin Franklin Institute of Technology. This course will assist students in the transition from high school to college by using critical thinking skills and developing the capability to take ownership of their academic path through small group activity, hands on guidance and support, and peer-to-peer interaction. Students will learn about campus resources, academic success strategies, and lifelong learning techniques to help students succeed in the remainder of their academic career and beyond. In addition, students will be given individualized tutoring support to guide students in maneuvering college level course work. *(Offered fall and spring)*

SK096 FRANKLIN SEMINAR II 1 CREDIT

The Franklin Seminar II is designed to assist students in the transition from the Department of Academic Development into their majors. Students will use the critical thinking skills, campus resources, academic success strategies, and lifelong learning techniques developed in the Franklin Seminar to continue academic learning. Students will utilize individualized tutoring support to maintain sound study habits and work towards successful academic achievement. *(Offered fall and spring)*

SK100 ACADEMIC ACHIEVEMENT SEMINAR 1 CREDIT

The Academic Achievement Seminar is designed to support and enhance academic endeavors as students reenter courses at Benjamin Franklin Institute of Technology. This course will teach students how to claim their education. Students will learn how to utilize campus resources, academic success strategies, and lifelong learning techniques that will prepare them to achieve success in their present and future academic career. The elements of professionalism: time management, accountability, teamwork, workplace ethics, and active participation in learning, will be strongly emphasized and put into practice. This course will also provide individualized tutoring support to reestablish strong study habits. *(Offered fall and spring)*

SK110 SUCCESS IN AUTOMOTIVE TECHNOLOGY 1 CREDIT

Success in Automotive is designed to assist students in the transition from the Department of Academic Development into their major classes and to provide additional lifelong learning skills to support success towards earning an Associate Degree. Students meet with academic coaches each week in focus groups and review sessions with their peers. Students meet to review material specific to their automotive courses and to discuss academic challenges, as well as challenges that occur outside of school that hinder their success. Academic coaches also provide support to students' academic success through one on one meetings. *(Offered in the fall and spring)*

SK115 SUCCESS IN CONSTRUCTION MANAGEMENT 1 CREDIT

Success seminars serve students in a number of ways: they connect students with college resources, such as financial aid, the library, counseling services, and student life/campus activities; they help students balance their outside and academic lives by working through topics like time and stress management, academic honesty, multicultural perspectives, and ethics; and, of course, they provide students with significant support in the Construction Management program by reviewing coursework and targeting specific areas in which students may need extra help, as well as outlining the professional realities of working in the industry.

SK120/125 SUCCESS IN CT/HIT 1 CREDIT

Success seminars serve students in a number of ways: they connect students with college resources, such as financial aid, the library, counseling services, and student life/campus activities; they help students balance their outside and academic lives by working through topics like time and stress management, academic honesty, multicultural perspectives, and ethics; and, of course, they provide students with significant support in the Computer Technology and Health Information Technology programs by reviewing coursework and targeting specific areas in which students may need extra help, as well as outlining the professional realities of working in the industry.

For students who have yet to declare a major track in CT, this seminar will help in this process by clearly explaining the options, such as AV and CET.

SK130 SUCCESS IN ELECTRICAL TECHNOLOGY SEMINAR 1 CREDIT

The Success in Electrical Technology Seminar is designed to support the student's entry into the Electrical Technology program. Successful completion of this seminar is based on attendance, preparation, and participation. Success is also based on the successful completion of EL110 and EL127 with a GPA of 2.00. This seminar must be retaken if the student has not fulfilled the requirements of either course. *(Offered fall and spring)*

SK135 SUCCESS IN ELECTRONICS 1 CREDIT

Success seminars serve students in a number of ways: they connect students with college resources, such as financial aid, the library, counseling services, and student life/campus activities; they help students balance their outside and academic lives by working through topics like time and stress management, academic honesty, multicultural perspectives, and ethics; and, of course, they provide students with significant support in the Electronics program by reviewing coursework and targeting specific areas in which students may need extra help, as well as outlining the professional realities of working in the industry.

Students will also learn more about degree tracks and career opportunities, such as Robotics and Automation and Biomedical Electronics.

SK140 SUCCESS IN MECHANICAL ENGINEERING TECHNOLOGY 1 CREDIT

Success seminars serve students in a number of ways: they connect students with college resources, such as financial aid, the library, counseling services, and student life/campus activities; they help students balance their outside and academic lives by working through topics like time and stress management, academic honesty, multicultural perspectives, and ethics; and, of course, they provide students with significant support in the Mechanical Engineering Technical program by reviewing coursework and targeting specific areas in which students may need extra help, as well as outlining the professional realities of working in the industry.

SK150 SUCCESS IN TECHNOLOGY BUSINESS MANAGEMENT 1 CREDIT

Success seminars serve students in a number of ways: they connect students with college resources, such as financial aid, the library, counseling services, and student life/campus activities; they help students balance their outside and academic lives by working through topics like time and stress management, academic honesty, multicultural perspectives, and ethics; and, of course, they provide students with significant support in the Technology Business Management program by reviewing coursework and targeting specific areas in which students may need extra help, as well as outlining the professional realities of working in the industry.

SK 155 SUCCESS IN HVAC 0 CREDIT

Success seminars serve students in a number of ways: they connect students with college resources, such as financial aid, the library, counseling services, and student life/campus activities; they help students balance their outside and academic lives by working through topics like time and stress management, academic honesty, multicultural perspectives, and ethics; and, of course, they provide students with significant support in the HVAC program by reviewing coursework and targeting specific areas in which students may need extra help, as well as outlining the professional realities of working in the industry.

This seminar also features in-depth discussions about the professional expectations and issues facing workers in the field of HVAC, such as safety protocols and industry ethics.

SK200/SK400 CAREER SUCCESS SEMINAR: NEXT STEPS AND BEYOND 1 CREDIT

The Career Success Seminar is designed to support your transition out of BFIT and prepare you for life after graduation. This seminar will provide you with guidance on how to conduct a successful job search and will assist you in learning how to navigate a professional environment while refining the skills needed to be a successful college graduate. The seminar will provide guest speakers, group activities, and individual guidance on personal goals. You can expect to review topics such as resume writing, job search techniques, interviewing skills, and post graduation finances. *(Offered fall and spring)*

SS105 TWENTIETH CENTURY HISTORY 3 CREDITS

A concentration on major world events including significant social, economic and political shifts and changes viewed through various media including film, fiction, historical articles and non-fiction essays. Through discussions, written responses, presentations and creative projects, students will not only engage in historical studies, but will also use analytical and critical thinking skills to consider the ethical implications of historical events and to determine how accurately history is recorded, taught and represented in education, art, politics, the media and society.

SS109 TECHNOLOGY AND SOCIETY 3 CREDITS

This course examines the role of technology in contemporary social life. An overview of technological evolution and its impact on society from the Industrial Revolution to the present is explored, with emphasis on current technologies and the debates surrounding them. Through discussion, papers, projects, and presentations, students explore the impact of particular technologies on various aspects of human life, including society's increasing reliance on technology and the consequences on human existence.

SS110 INTRODUCTION TO US HEALTHCARE 3 CREDITS

This course provides an introduction to the multiple systems that define, describe, and shape the delivery of healthcare in the United States. Using case studies and presentations of major issues, this course will give the learner an appreciation of the dilemma confronting policy makers, providers, and patients: how to balance cost, quality, and access. We will examine specific healthcare issues such as access and disparity, healthcare professions, facilities, managed care organizations, and government healthcare programs. We will also discuss the impact of policy changes on American healthcare in the past century. *(Offered in the fall and spring)*

SS115 INTRODUCTION TO PSYCHOLOGY 3 CREDITS

A basic course introducing the major content areas of psychology as a scientific study of human behavior and mental processes through an acquaintance with the fundamental process of human behavior. Topics include: the nature of psychology, biological processes, human development, individual differences, personality and mental health.

SS135 INTRODUCTION TO ANTHROPOLOGY 3 CREDITS

An introductory course that studies human cultures across time and place in their various environmental and historical contexts. The majority of the course focuses on cultural anthropology, and the evolution and development of human societies. Some topics explored might be community, kinship, religion, economic structure, and political order. In addition, the ways in which culture shapes experience is discussed, and students will be called to recognize their role as both creators and byproducts of culture.

SS205/SS405 CONTEMPORARY SOCIAL ISSUES 3 CREDITS

This course analyzes, in both empirical and theoretical terms, many of the social problems currently facing Americans. Among these are deepening inequality and poverty among working and middle-class Americans, particularly racial minorities, women, and youth; related problems of racism and sexism; growing unemployment; deterioration of the health system; crime; and war and militarism. Strategies and political options for solving these problems are considered. Through additional coursework, students enrolled in the baccalaureate level course sections learn to practice enhanced critical thinking, especially through analyzing arguments, and to produce research-driven writing and projects to help understand the importance of awareness in addressing social issues.

SS215 WE THE PEOPLE: A CLASS ON COMMONALITIES AND DIFFERENCE 3 CREDITS

This course will provide an analysis of society based on the interrelationships between race, class and gender (including LGBTQ++) and their influence on our social structure and behavior. There will be special focus on the ways in which any type of minority status impacts the social experience and the definition of personal and cultural roles. Both historical and contemporary perspectives will be explored through selected articles and multimedia. Prepared and thoughtful discussions will be integral to the student's experience.

SS233 FILM AND SOCIETY 3 CREDITS

Through the analysis of film and television as texts, this course explores social issues such as race, class, gender, politics, education, religion, social and historical change, considering the ways film and television can reflect the realities behind sociological behavior. Students will reflect on the connections between film and society through in-depth discussions, presentations, readings, written responses, and research.

SS235 FINANCIAL PLANNING AND PRINCIPLES 3 CREDITS

This course provides a framework for personal financial planning through the study of economic principles including emphasis on the current economy and its effects on the individual and society as a whole. Through discussions, projects, and presentations students will gain an understanding of principles such as budgeting, credit and debt, and processes such as mortgages and retirement planning.

SS245 PHOTOGRAPHY AND THE HUMAN CONDITION 3 CREDITS

This course provides students with a general introduction to photography as an art form and reflection of the human condition. In this course, students will study the history of photography, famous photographers and photographs, photographs as a record of their subject, and also the artistic value of photographs. Students will explore various photographs to consider not only their aesthetic value, but also the relationships between artist, subject, and audience, as well as the social, historical, and cultural significance of these images. Students will pay particular attention to the stories photographs tell, from their subject matter to the way they are composed. Students will consider these stories when viewing and also when taking photographs, telling stories of their own.

SS250 PSYCHOLOGY OF LEADERSHIP 3 CREDITS

Drawing on psychological research at the level of the individual, group, and organization, the class focuses on how leaders think, feel, and behave. This course provides an opportunity for students to learn and discuss leadership theories, and to develop a personal leadership philosophy. Topics include visionary leadership, leadership development, goal setting, ethics, storytelling, charisma, systems thinking, and crucible experiences.

SS255 SELECT TOPICS IN PSYCHOLOGY 3 CREDITS

An exploration of the ways in which human behavior and mental processes relate to everyday life. Basic concepts of psychology are introduced with special emphasis on their application to the students' understanding of themselves and their interactions with others.

SS260 POSITIVE PSYCHOLOGY 3 CREDITS

Psychology is the study of cognitions, emotions, and behavior. This course is designed to provide a basic understanding of psychology, what we have learned about ourselves, and how psychology is applied to help improve our lives. The course focuses on the psychological aspects of a fulfilling and flourishing life. Psychology has often focused on deficits and disability. Recently, however, more focus has been placed on the more positive aspects of life. This course focuses on each person's unique potential for positive growth and development. Topics include happiness, self-esteem, empathy, friendship, goal setting, love, achievement, creativity, mindfulness, spirituality, and humor.

SS265 EXPLORING ETHICAL ISSUES 3 CREDITS

This course invites students to explore specific ethical dilemmas that arise in societal and professional settings and to consider how to approach and resolve these issues. Students have the opportunity to develop their abilities to reason and debate scenarios involving ethical questions. By developing practical models for thinking and refining techniques of approaching ethical dilemmas, students will pay particular attention to issues that arise in social and industrial settings. *(Offered in the spring)*

SS275 SPORTS AND SOCIETY

This course will examine the meaning of sports and the role sports play in American culture and society. Various sports will be studied from historical and contemporary perspectives to consider the connection between sports and such issues as race, class, gender, ethnicity, education, nationalism, health, socialization, and the role of the media. Students will reflect on the connections between sport and society through in-depth discussions, presentations, readings, written responses, and research

SS309 SUSTAINABILITY AND THE HUMAN CONDITION 3 CREDITS

Through study of films, readings, websites and political policy, students will explore principles of sustainability with emphasis on how to meet human needs and reduce hunger and poverty while maintaining the life-support systems of the planet.

Focus will be placed on discovering real ways that individuals, organizations, and governments can manage resources in a responsible manner, with minimal impact on the earth and its inhabitants. Discussion of solutions will include technological innovation, government and corporate policy, community organizations and individual advocacy.

SS315 THE IMPACT OF THE AUTOMOBILE ON AMERICAN CULTURE 3 CREDITS

Few inventions have redefined American life quite as dramatically as the automobile; it created new concepts of work and leisure, brought all Americans closer together, changed the shape of our cities and country, and even altered our understanding of "freedom" itself. This course will explore representations of the automobile's role in American culture through various media, including text, film, and music, culminating in a major research project on an aspect of the automobile's influence on American life.

SS330 LEGAL AND ETHICAL ISSUES IN HEALTH IT 3 CREDITS

This course introduces the student to the study of legal and ethical principles related to patient care and health information; legal terminology and procedures; court systems; and liability of health care providers. Legal requirements governing policies designed to safeguard and maintain health information, including how to appropriately respond to requests for patient specific information will be explored. Students will explore ethical issues and apply a decision making model to selected case studies. Prerequisites: SS110 and HI130 *(Offered in spring)*

SS335 CURRENT ISSUES IN HEALTH CARE 3 CREDITS

The aim of this course is to explore current topics in health care with a focus on the U.S. health care system, its components, and the policy challenges created by the organization of this system. Special attention is given to health policy in the context of the current reform efforts, their impact on major health policy institutions and important issues that cut across these institutions. Prerequisite: SS110 *(Offered in fall)*

TS120 MEDICAL TERMINOLOGY 3 CREDITS

This course is designed to introduce the student to medical terms, including roots, prefixes, and suffixes, with emphasis on spelling, definition and pronunciation. This course introduces the student to the basic rules for interpreting, constructing, and spelling medical terms. Emphasis is upon learning word roots, prefixes and suffixes and how they are combined rather than learning each individual term. *(Offered in the spring)*

TS201 ENVIRONMENTAL SCIENCE 3 CREDITS

An introduction to general science and 21st century issues. Topics include earth's systems and resources, water and land use, the living world, population and pollution. The course focuses on energy resources and consumption as a prerequisite to the study of photovoltaics and renewable energies. *(Offered in the fall)*

TS240 HUMAN ANATOMY AND PHYSIOLOGY 3 CREDITS

This course is an introduction to the basic structure and function of the various organ systems of the human body. Topics include normal versus pathological anatomy and physiology, examination of basic properties of nerves and muscles and their relationships to the central nervous system, and study of various functions of the respiratory, cardiovascular, digestive and urinary systems. *(Offered in the fall)*

TS242 PATHOPHYSIOLOGY AND PHARMACOLOGY 3 CREDITS

This course introduces students to the principles of human pathophysiology and drug action. The basic mechanisms of organ function in disease are presented and analyzed, and strategies for designing drug-based therapeutic interventions are explored.

The course is organized around seven exemplary areas of human physiology and disease mechanisms and the therapeutic strategies used to intervene in human disease pathways. *(Offered in the spring)*

TS310 GENERAL CHEMISTRY 4 CREDITS

Introduction to the fundamental principles of chemistry, including atomic structure, stoichiometry, the periodic table of the elements, chemical bonding, molecular structure, and states of matter based on kinetic theory. Laboratory work presents an introduction to methods of quantitative chemical techniques. *(Offered in the fall)*

Faculty

Tracey Arvin, Professor of Electrical Technology

Chair, Electrical Technology and Practical Electricity. B.A. in Liberal Studies, Framingham State College; B.S. in Geological Science, Salem State College; M.S. in Geology and Geophysics, Boston College; Licensed Journeyman and Master Electrician, Commonwealth of Massachusetts.

Richard Azzi, Professor of Computer Technology

B.S. in Computer Science, Mathematics, and Chemistry, University of Texas Pan American. M.S. in Mathematics, Texas Tech University

Temitayo Banjo, Lecturer in Computer Technology

B.S. in Computer Information Systems, University of Maine at Augusta; M.Ed. in Education Technology, American College of Education; B.A. in Fine Arts, University of Ife; A.S. in Web Development, Bunker Hill Community College

Alec Belanger, Lecturer in Audiovisual Technology

B.S./B.A. in Management/Marketing, University of Massachusetts Lowell; A.S. in Engineering Science, Middlesex Community College

Abra Berkowitz, Assistant Professor of Humanities and Social Sciences

A.B. English with Environmental Science minor, Lafayette College; M.A. Environmental Science, Ben-Gurion University of Negev

Sharon Bonk, Professor, Director of Library Services

B.A. in Journalism, University of Rhode Island; B.A. in Political Science, University of Rhode Island; M.L.S., University of Rhode Island

Richard E. Cadotte, Assistant Professor of Automotive Technology

Certificate in Vocational Education, Commonwealth of Massachusetts; ASE Certified Automobile Technician; ASE Certified L-1 Advanced Level Engine Performance

Craig Christensen, Associate Professor of Electrical Engineering

B.S. in Electrical Engineering, MIT; M.S. in Electrical Engineering, MIT; Ph.D. in Electrical Engineering, MIT

Jackie Cornog, Professor of Humanities and Social Sciences

Dean of Students; B.A. in English and Women's Studies, University of Massachusetts Boston; M.A. in English in Composition and Creative Writing, University of Massachusetts Boston

Thomas DeCosta, Assistant Professor of Electrical Technology

A.S. in Electrical Technology, Benjamin Franklin Institute of Technology; Licensed Journeyman Electrician and Certified Wiring Inspector, Commonwealth of Massachusetts; Licensed Master Electrician, State of Rhode Island

James Dellot, Assistant Professor of Automotive Technology

B.S. in Vocational Education, Fitchburg State College; M.Ed. in Occupational Education Administration, Fitchburg State College; M.Ed. in Instructional Design, University of Massachusetts Boston; Certificate of Proficiency in Automotive Technology, Franklin Institute of Boston, ASE Certified Automotive Technician

Daniel DiPaolo, Instructor of Humanities and Social Sciences

B.A. in English Writing / Journalism, University of Pittsburgh. M.F.A. in Creative Writing, Emerson College.

Julianne Donato, Assistant Professor in Technology Business Management

JD/MBA Suffolk University Law School & Sawyer School of Management at Suffolk; BA , Michigan State University.

Cheryl Dorsey, Lecturer in Health Information Technology

M. S. in Healthcare Administration, Simmons College; M.Ed. in Technology and Leadership, Kaplan University; B.S in Business Management, Northeastern University

Joanna Dowling, Assistant Professor of Mechanical Engineering Technology

Chair, Mechanical Engineering Technology and Technology Business & Management. B.A. in English, Merrimack College

Gerald Elysee, Associate Professor of Health Information Technology

Chair, Computer Technology. B.S. in Physical Science, St. John's University; B.Eng. in Electrical Engineering, Pratt Institute; M.S. in Management, Lesley University; Ph.D. in Organization & Management with a specialization in Information Technology Management, Capella University

Roy Garber, Assistant Professor of Mechanical Engineering Technology

B.S. in Electrical Engineering, Saint Cloud State

James J. Giumarra, Professor of Electronic and Biomedical Engineering Technology

Chair, Electronic Engineering Technology and Biomedical Engineering Technology. B.A. in Physics, State University of New York at Geneseo; M.S. in Electrical Engineering and Computer Science, University of Illinois at Chicago

Joseph Golden, Associate Professor of Automotive Technology

Certificate in Vocational Education, Commonwealth of Massachusetts. ASE Certified Automotive Technician; Massachusetts Motor Vehicle Safety/Emissions Inspector; Member SAE

Margaret Goodwyn, Instructor in Computer Technology

M. S. in Information Assurance, Regis University; B. S. in Psychology, minor - Law Enforcement, Worcester State College

Pragun Goyal, Assistant Professor, Mechanical Engineering Technology

MS in Media Arts and Sciences, MIT, B. Tech in Computer Science & Engineering, India Institute of Technology.

Michael Grigelevich, Associate Professor of Humanities and Social Sciences

B.A. in English, Rhode Island College; M.A. in English, University of Connecticut

Mozhgan Hosseinpour, Professor of Electronic and Biomedical Engineering Technology

B.S. in Electrical Engineering, Boston University

James Johanson, Associate Professor of Mathematics and Physics

B.S. in Mathematics, Ohio University; M.A. in Mathematics, University of Colorado

David Kamin, Instructor of Mathematics and Physics

B.S. in Mathematics, Michigan Technological University; M.S. in Mathematical Sciences, Michigan Technological University; M.S. in Mathematics Education, University of Massachusetts Dartmouth

Kathleen Keleher, Associate Professor, Digital Services and Instruction Librarian

B.A. in Theater, Antioch College; M.L.I.S., Simmons College

Afshan Kirmani, Lecturer in Health Information Technology

B.S. in Women's Health, Lesley University; Associates in Radiological Sciences, Bunker Hill Community College

Steven Lawrence, Associate Professor of Humanities and Social Sciences

B.A. in Theatre Arts, Salem State University; M.Ed. in Learning, Teaching and Educational Transformation, University of Massachusetts, Boston

James Lawton, Lecturer of Humanities and Social Sciences

B.A. in English, Benedictine University; M.A. in English Language and Literature and M.A. in Library Science, University of Michigan; TESOL Certificate, ITTT International; Certified E-Learning Instructor, Northeastern University

Marianne Lepp, Assistant Professor of Computer Technology

Ph.D. in Mathematics, Minor in Computer Science, University of Wisconsin

Dawn Letourneau, Assistant Professor of Humanities and Social Sciences

B.S. in Psychology/Early Childhood Education, Bridgewater State College; M.A. in School Counseling, New York University; Ed.D. in Educational Leadership, Northeastern University

John McDonagh, Instructor of Practical Electricity

Licensed Journeyman and Master Electrician, Commonwealth of Massachusetts

Catherine Mount, Assistant Professor of Mathematics and Physics

B.A. in Physics, Smith College; M.S. in Physics, Washington State University

Todd Natti, Assistant Professor of Humanities and Social Sciences

B.A. in English and Comparative Language, University of Buffalo; M.A. in Critical and Creative Writing, University of Sussex; M.F.A. in Creative Writing—Nonfiction, Emerson College

Tom Naderi, Assistant Professor of Mechanical Engineering Technology

B.S. University of Massachusetts, Lowell. Ph.D.,Chemistry, M.S., Chemistry (Analytical/Instrumentation) The University of Akron. M.S., Structrual Engineering Pahlavi University (PENN University Affiliation). M.S., Mechanical Engineering B.S., Mechanical Engineering

Karen Newkirk, Lecturer in Health Information Technology

M.S. in Business Administration, Cambridge College

Joseph O'Neil, Instructor of Automotive Technology

AS in Automotive Technology, Benjamin Franklin Institute of Technology; ASE Certified Automobile Technician

Jose Ortiz, Assistant Professor of Automotive Technology

Certificate in Automotive Technology, Universal Technical Institute; ASE Certified Automobile Technician

Eddy Pierre-Jules, Lecturer in Audiovisual Technology

A.S. Massachusetts Communications College

David Polson, Instructor of Construction Management

M.S. in Construction Management, Wentworth Institute of Technology; Graduate Certificate in Operations Management; Worcester Polytechnic Institute; B.S. in Management Lesley University and A.S. in Electro-Mechanical Technology, Licensed MA Construction Supervisor.

David Post, Professor of Mechanical Engineering Technology and Physics

B.S. in Mechanical Engineering; M.S. in Mechanical Engineering, Northeastern University; Registered Professional Mechanical Engineer

David Protano, Professor of Automotive Technology

Chair, Automotive Technology. B.S. in Business Management, Nichols College. ASE Certified Automobile Technician; ASE Certified Parts Specialists; Massachusetts Motor Vehicle Safety/Emissions Inspector. Member SAE

Larson Rogers, Associate Professor of Computer Technology

Dean of Academic Affairs. B.S. (Hon.) in Physics, University of British Columbia; B.Ed. In Secondary Physics, Mathematics, and Information Technology, University of British Columbia; Ph.D. in Science Education, University of British Columbia

Nikhil Satyala, Assistant Professor of Electronics Engineering Technology

Bachelor of Technology in Electronics, Jawaharlal Nehru Technological University, India; Master of Engineering in Electronics, University of Texas at Tyler; Ph.D. in Electrical Engineering, Oklahoma State University

Lisa Shatz, Professor of Electrical Engineering

Chair, Electrical Engineering. B.S. in Electrical Engineering, MIT; M.S. in Electrical Engineering, MIT; Ph.D. in Electrical Engineering, MIT

Greg Sonek, Associate Professor of Electrical Engineering

B.S. in Physics, Polytechnic Institute of New York; M.S. / Ph.D. in Engineering Physics, Cornell University; M.B.A. in General Management, Boston University

David Tavilla, Assistant Professor of Computer Technology

Coordinator, Computer Technology Program. B.A. in Physics, Bates College; MAT in ESL, Salem State University; EdM in Technology, Innovation, and Education, Harvard Graduate School of Education

John Terasconi, Instructor of HVAC-R Technology

Chair, HVAC-R Technology. Certificate of HVAC-R Technology, RETS Technical Center; E.P.A. 608 Proctor

Donald L. Tuff, Associate Professor of Automotive Technology

Automotive Management Program Coordinator. M.Ed., Cambridge College. ASE Certified Automobile Technician. Charter Member SAE

Francis Tuminelli, Instructor of Automotive Technology

Certificate in Vocational Education, Commonwealth of Massachusetts; ASE Certified Automobile Technician.

Leslie Tuplin, Instructor of Construction Management

AS, Architectural Engineering Technology Benjamin Franklin Institute of Technology: BSCE, Bachelor of Science in Civil Engineering, Northeastern University; Unrestricted Contractor License MA, Home Improvement Contractor MA, Licensed Sanitary Installer-Beverley Massachusetts, SOWMBA/ ODS Certified MA.

Jeff Van Dreason, Professor of Humanities and Social Sciences;

Chair, Humanities and Social Sciences. B.A. in English with concentrations in creative writing and communication, Le Moyne College. M.F.A. in Creative Writing, Emerson College

Russ VerNooy, Associate Professor of Electronics and Biomedical Engineering Technology

B.S. Electrical Engineering, Southern Illinois University; M.B.A. Curry College

Christopher Villano, Instructor of Practical Electricity

Licensed Journeyman and Master Electrician, Commonwealth of Massachusetts.

Andrew Wong, Lecturer in Labor Law and Legislation

B.A. in Political Science and Austrian Economics, University of Massachusetts Amherst; J.D. in Business Transactions and Regulation, American University Law School; MBA in Long-Term Strategic Planning and Integration, Suffolk University School of Management

Blair C. Wong, Associate Professor of Eye Health Technology

Chair, Eye Health Technology. M.Ed., Cambridge College; Graduate of the Optical Institute of Newbury College

Mostapha Ziad, Associate Professor of Electrical Engineering

B.S. in Electrical Engineering, University of Algiers; M.S. in Systems and Computer Engineering, Boston University; Ph.D. in Computer Science, Boston University

Administration

Executive Office

ANTHONY BENOIT

President

LINDA REY

Executive Assistant to the President

DIANE DANIELS

Director of Human Resources

AISHA FRANCIS

Chief of Staff

Career Services and Industry Partnerships

EMILY LEOPOLD

Director of Career Services and Industry Partnerships

LAUREN BUTLER

Assistant Director of Career Services and Industry Partnership

SERGE ANDRE

Career Counselor

Office of Academic Affairs

Dean's Office

JEFF VAN DREASON

Interim Dean of Academic Affairs

JAMES KLASEN

Assistant Dean of Records and Research

YASMINE JULMISSE

Assistant Director of BPS Partnerships and Community Outreach

LARA TAVARES

Assistant Director of BPS Partnerships

Registrar's Office

JAMES KLASEN

Assistant Dean of Records and Research

ROBERT SENDRAS

Assistant Registrar

Library

SHARON BONK

Director of Library Services

KATHLEEN KELEHER

Instructional Technology Librarian

JULIE HANKINSON

Library Cataloguer

Academic Department Chairs

DAVID PROTANO

Chair, Automotive Technology Department

DAVID TAVILLA

Coordinator, Computer Technology Department

LESLIE TUPLIN

Chair, Construction Management Department

TRACEY ARVIN

Chair, Electrical Technology and Practical Electricity Departments

JAMES GIUMARRA

Chair, Electronic and Biomedical Engineering Technologies Department

BLAIR WONG

Chair, Eye Health Technology Department

MICHAEL GRIGELEVICH

Interim Chair, Humanities/Social Sciences Department

JOHN TERASCONI

Chair, HVAC&R Department

SALLY HECKEL

Transition Chair, Math/Physics Department

JOANNA DOWLING

Chair, Mechanical Engineering Technology and Technology Business & Management Departments

DR. GERALD ELYSEE

Chair, Computer Technology

Office of Admissions and Student Financial Services

DR. MARVIN LOISEAU

Dean of Recruitment

Admissions

CALVIN CONYERS

Director of Admissions

MIN CHEN

Senior Associate Director of Admissions and International Recruitment

TBA

Assistant Director of Admissions

TERRENCE FORBES

Admissions Counselor

ACKEEM HILL

Admissions Counselor

TBA

Community Outreach Recruiter

THOMAS BARROWS

Admissions Operations Specialist

KYRA THOMAS

Admissions Recruiter

Financial Aid

JAMIE SANTIAGO
Director of Financial Aid

SHANI WILKERSON
Assistant Director of Financial Aid

CHRISTOPHER FERNANDES
Financial Aid Counselor

DANIELLE CUNNINGHAM
Financial Aid Assistant

Office of Student Affairs Dean's Office

JACKIE CORNOG
Dean of Student Affairs

SHAWN AYALA
Director of Student Success

SALLY HECKEL
Learning Specialist

CHARLES LAI
Student Success Coach

MICHAEL FELIX
Student Success Coach

JULIA LACHMAN
Director of Student Wellness and Support

Athletics

GEOFF LERNER
Assistant Athletic Director and Head Basketball Coach

Student Life

BRETT WELLMAN
Assistant Dean of Students

TBA
Campus Activities Coordinator/ Resident Director

Facilities

MYFTAR MYRTAJ
Director of Facilities

GENTI HYSAJ
Maintenance

ARBEN SHEHU
Maintenance

SELVIN PEARSON
Custodian

EDMOND GJINI
Custodian

ZHANETA PECOLLARI
Custodian

Security

THOMAS GOCKING, JR.
Manager of Campus Security

Office Finance and Administration

CFO's Office

MAUREEN JOYCE
Chief Financial Officer

ALAN BLAIR
Student Accounts Manager

Business Office

ELSIE CAPONE
Business Office Associate

SHAWN WHITLOCK
Business Office Assistant

External Events

CAROLE ANDREOTTI
Director of Event Services

Office of Development

KIMBERLY FREEDMAN
Chief Development Officer

MOLLY RUSSELL
Associate Director of Development

CARLY JOHNSON
Development Associate

Office of Information Technology

DR. LARSON ROGERS
Dean of Information Technology

ELIZABETH BREWER
IT Systems Administrator

MARY DUGGAN
Director of Learning Systems

AMANDA MARSTALLER
Director of Institutional Reporting

Board of Trustees

JED NOSAL, CHAIR

Counsel, Brown Rudnick LLP

JUDY PAGLIUCA, VICE CHAIR

President, Pags Group

DANIEL BONNETTE, TREASURER

Partner, RSM USA

JACOB E. GROSSMAN, CLERK

Co-President,
The Grossman Companies, Inc.

MAUREEN POMPEO,
ASSISTANT CLERK

Consultant

ANTHONY BENOIT, EX-OFFICIO

President, Benjamin Franklin Institute of Technology

ROGER BERMAN

President, The Berman Company

KAYE FERRITER

Former Managing Director, PwC

DAVID FISCHER

Partner, Gold Hill Capital

RYAN E. HUTCHINS

Senior Vice President-Regional Manager, Gilbane Building Company

AMY LEDDY

Director, Category Strategy,
Liberty Mutual Insurance

MARISA MELDONIAN

Director of Operations,
Lewis Family Foundation

CHRIS MORSS

Retired Educator and Author

JOSEPH SHAKER

Principal Owner, Shaker Auto Group

KEVIN STONE

Vice President-Senior Portfolio Manager, KeyBank Real Estate Capital

CLAIRE WADLINGTON

Founder and Managing Principal,
Clear Path

RAHUL YARALA

Executive Director, Wind Technology Testing Center – Mass CEC

HONORABLE MARTIN WALSH,
EX-OFFICIO

Mayor of Boston

MAYOR'S REPRESENTATIVE:
TURAHN DORSEY,
CHIEF OF EDUCATION

REV. NANCY TAYLOR, EX-OFFICIO

Senior Minister and Chief Executive Officer, Old South Church

MICHAEL MAZZOLA '48, EX-OFFICIO

President Emeritus, Benjamin Franklin Institute of Technology

WILLIAM SPRING, EX-OFFICIO

BENJAMIN FRANKLIN
INSTITUTE OF TECHNOLOGY
YOUR PATHWAY TO SUCCESS

Benjamin Franklin Institute of Technology
41 Berkeley Street
Boston, Massachusetts 02116

www.bfit.edu