College of Engineering, Technology, and Architecture
Message from the Dean

The mission of the College of Engineering, Technology, and Architecture is to nurture students in those disciplines and develop them into highly effective professionals. We aspire to affect tomorrow’s technologies and use them to shape the environment in which we live. We focus on interdisciplinary research facilitated by our home in the ISET Complex. ISET, which stands for Integrated Science, Engineering and Technology, is a connected three-building complex that houses all of our engineering, technology, science, nursing and physical therapy programs over a unique floor plan of interweaved laboratories that encourage interdisciplinary collaborations. We emphasize interdisciplinary education and research because we believe that the problems of the world are addressable only through multi-functional team efforts that bring together many different skills. Consider the challenges we face in energy, the environment, homeland security, or the technologies needed to provide affordable healthcare for an aging American and international population. Progress in any of these areas will require many of the disciplines found in the ISET complex. At the University of Hartford we are highly effective at engaging these skills and allowing students to collaborate across disciplines, just as they would in a major corporation or start-up company.

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We believe that the technologists who will succeed in the twenty-first century are those who can go beyond narrow expertise and deliver complete solutions, integrating skills and resources to solve problems. The toolkit of the twenty-first century must go well beyond technical excellence to include system-level thinking and a global perspective. We teach you to use those skills to unlock the value in yourself and in others, whether they are across the hall or across the globe, whether you are designing a museum or a medical device. Our graduates will possess the communication skills to deliver clear value propositions to a wide spectrum of audiences from venture capitalists to chief technical officers. We develop real world skills by addressing real world problems. Essentially all of our design projects and senior capstone projects originate in industry, and the students who work on those projects have corporate mentors to guide them through the actual challenges and constraints they face. Our collaborations have produced new parts for NASA space suits, new laser machining methods, and improved acoustics for performance venues.

As you page through this book, you will see that CETA represents a unique opportunity to study, to design, to implement, and to practice in an environment that we describe as caring, creative, and connected. We stress the creativity of our professions, our extensive connections with regional and multinational companies, and our nurturing environment that is delivered through small class size and extensive interaction with our dedicated teaching faculty.

For more information, please go to our website at uhaweb.hartford.edu/ceta where you can tour our departments and facilities, meet our faculty and staff, and learn more about our projects and research institutes. Please do not hesitate to contact me at manzione@hartford.edu if I can help you with any additional information or answer any of your questions.
Civil Engineering

This program promotes project-based learning. As students learn the fundamentals of science, math, and engineering in their first two years, they are also taking courses that include hands-on projects in which they apply those fundamentals in the “real” world. For example, students in the sophomore surveying course worked with biology students to map out important features of a University conservation area. The students worked with professional surveyors to identify and locate wetland plantings, trees, and trails. These features will be tracked annually to monitor the health of the conservation area. Sophomore students are also working on an Engineers Without Borders project, designing a sustainable water supply for a village in India, as described on the next page. We expect that global service learning projects will become a permanent part of our curriculum.

In their final two years, students take courses in the core areas of civil engineering such as structural, geotechnical, transportation, water resources, environmental, and construction engineering, but the curriculum continues to emphasize project-based learning such as performing a traffic impact study for a magnet school in the city of Hartford, performing a pond restoration study for a West Hartford neighborhood association or designing a low-cost home water treatment unit for low to middle income residents of a developing country such as Turkey. The civil engineering curriculum culminates with a senior capstone design project. Students select a project in their area of interest and work as part of a design team mentored by a practicing engineer. The experience gained by our students working as “junior engineers” for their mentors has been extremely successful for our graduates in making the transition from students to their professional careers.

Civil Engineering with Environmental Concentration

Our Bachelor of Science in Civil Engineering with a concentration in Environmental Engineering emphasizes environmental and water resources engineering. Students are prepared to develop physical, chemical, and biological processes to protect our planet’s natural resources by safely destroying toxic substances, removing contaminants from the air, and developing groundwater supplies. They also learn to deal with water in terms of both quality and quantity, removing pollutants, controlling floods, supplying water for cities, industry, and irrigation, and protecting beaches. They can study the design, construction, and maintenance of hydroelectric power facilities, canals, dams, and seaports.

Biomedical Engineering

Biomedical engineers develop materials, tools, and techniques that assist people who have diseases or disabilities. In CETA, the faculty and students work closely with professionals at various local health care facilities, among them the University of Connecticut Health Center and Connecticut Children’s Medical Center. Whether students’ interests lie in preparing to work as a biomedical engineer or heading to medical school, the biomedical engineering program has a curriculum that leads toward their goal.

All biomedical engineering students work on a year-long design project in partnership with an industrial, manufacturing, or medical company to solve an open-ended engineering problem. Their solution must involve a synthesis of engineering knowledge, analysis, creativity, market needs, safety, aesthetics, and the human factor. In addition, students must assist in clinical activities at outside facilities such as hospitals and medical centers, so that they learn real-world conditions in an actual lab setting. Many of the projects students in this specialty are working on are done through the Biomechanics Institute, which is described on page 18.

Engineers without Borders

The village of Abheypur near New Delhi, India, has only two hand-pump wells and 3,000 people, so women and girls spend up to five hours a day collecting water for their families. Soon, thanks to the efforts of the students in Engineers Without Borders-USA here in CETA, the village will have a solar-powered groundwater pump system. Students and their advisors traveled to the village to understand the problem, then brought their information back to a sophomore design class in which the students are designing the system. Once the system is installed, the girls of Abheypur will be able to spend more time in school and the women can get involved in health and entrepreneurial programs being provided by an NGO (Navjyoti Delhi Police Foundation) working to improve the lives of the villagers.
The Department of Architecture is a diverse community of practitioners, teachers, and students dedicated to educating future architectural professionals and expanding the knowledge base of the profession. Our commitment is to engage architecture in its civic, social, and professional realms for the ultimate benefit of the built environment and those who use it. We believe in creating an open, challenging, diverse, and collaborative studio environment where undergraduate and graduate students can explore architecture through drawing, model making, and digital media, sharing their vision of architecture with fellow students, faculty, and regular visitors from the professional architectural community.
Electrical and Computer Engineering

Electrical and Computer Engineering encompasses several programs, all related to one another through their foundation in electronics.

Audio Engineering Technology
Computer Engineering
Electrical Engineering
Electronic Engineering Technology
offering two concentrations:
  Mechatronics
  Networking/Communications

Audio Engineering Technology
Audio Engineering Technology spans the disciplines of electronics, acoustics, and music to prepare students for careers in the recording, music, and sound industries. It is a dynamic new academic discipline that prepares students for our multimedia-content world. Electronics is a major portion of the curriculum in this program, so that our students and graduates often build recording and other sound equipment. Positions most familiar to the public and available to graduates of this program lie in the radio, television, recording, and live concert industries. However, many other career options are available to Audio Engineering Technology degree recipients, including media system contracting, which integrates sound and video systems into public spaces such as hospitals, hotels, museums, and sports stadiums. Opportunities also exist in manufacturing and engineering firms dealing with consumer electronics products, from digital radios and stereo speakers to software games and specialized websites.

Students from our Audio program have gone on to work at Sony Industries and Bose. Many run their own production studios or sound design consultancies. In preparation for such work, our students intern at such businesses as Telefunken North American, which produces professional-level microphones. Other students work at recording studios, building equipment used in the studio in addition to doing production. And all of the students are required to record independent projects as part of the coursework.
Computer Engineering Technology
Our Computer Engineering Technology program consists of a blend of theory, laboratory experimentation and design. Teamwork is also important since most computer engineering technologists work in industry as members of teams in the execution of projects. The third and fourth years of study focus on developing skills in computer design and programming.

In the course of their study, students may pursue additional educational goals such as a minor in business or an associate’s degree in Electrical Engineering Technology. During their senior year, Computer Engineering Technology students work over the two semesters to identify a problem and design, build, and test their solution. Many of the projects are performed jointly with local companies who identify issues they need addressed. Recently, students worked on a new control system with the SCORBOT ER II robot, including an interface to LabVIEW, and a fully functioning traffic intersection control system.

Computer Engineering
Because Computer Engineering focuses on the application of both software and hardware in engineering, science, industry, business, and general computing, a fundamental knowledge of electronics is essential. Computer engineers design not just the computers but also the embedded systems that control almost all of our consumer electronics. Computer architecture, VLSI and VHDL, FPGA, microprocessors, programming, artificial intelligence, and system simulation. All these topics prepare students to design automatic pilot systems for airplanes or virtual reality video games. Our graduates work for such corporations as IBM, Microsoft, Cisco Systems, Motorola, and International Paper.

Electrical Engineering
Electrical Engineering prepares students to deal with a diverse array of design and development problems in radio and television transmitters and receivers, telephone networks and switching systems, computer systems, and electric power generation and distribution. Our students design circuits and systems from very large power distributions that span continents to very small micro-miniature systems whose size is measured in thousands of a human hair. Our students contribute to projects on communications, signal processing, and instrumentation, such as developing transmitters and receivers and a greenhouse controller. Students have developed an electronic go-cart and investigated RFID systems, and they are contributing work on a wireless EKG machine that will be incorporated in an infant-apnea-monitoring system.
Mechanical engineering covers the application of mechanics, the study of energy and forces and their effects on systems, and the design of machines. Because the discipline is so broad, students can pursue studies that will prepare them for careers in the automotive, aerospace, or power-generation industries, or they can pursue concentrations in acoustics or manufacturing.

Acoustics Programs
The College offers two Acoustics programs. One is the Acoustics and Music Bachelor of Science in Engineering program, which combines an engineering program that emphasizes acoustics and vibrations with course work at The Hartt School of Music. This interdisciplinary program requires a musical audition. The other program is a Mechanical Engineering with Acoustics Concentration, which leads to a Bachelor of Science in Mechanical Engineering.

Specializations in both programs include:
- Architectural acoustics (design of concert halls, recording studios, and music rooms)
- Audio engineering (high fidelity sound system design)
- Biomedical engineering acoustics (design of hearing aids, psychoacoustics, sound quality design)
- Environmental acoustics (control of airport, rail, and highway noise, for example)
- Musical acoustics (design of musical instruments)
- Noise control (in machinery, jet engines, and automobiles, for example)

In addition, our graduates work for varied employers:
- Bose Loudspeakers
- Shure Microphones
- QSC Amplifiers
- Steinway & Sons
- LucasFilm (THX Sound Division)
- Acoustical consulting firms

Our facilities include a new Acoustics lab constructed in 2006. The lab features an anechoic chamber and a reverberation room, both of which are vibration-isolated from the rest of the building. Students are trained on state-of-the-art acoustical analysis equipment, including hand-held spectrum analyzers, laboratory grade microphones and accelerometers, sound intensity measurement and digital solid-state recorders. Our students have worked on projects sponsored by industry and governmental agencies such as:
- Interior acoustic study of the Great Hall at Union Station, Hartford, Connecticut
- Acoustic and sound system evaluation of Kellogg Middle School, Newington, Connecticut
- Sound system review for South Britain Congregational Church, Southbury, Connecticut
- Outdoor sound reinforcement system recommendations for University of Hartford Athletics

Mechanical Engineering with Manufacturing Concentration
Mechanical Engineering Technology
Mechanical Engineering with Acoustics Concentration
Mechanical Engineering continued...

Mechanical Engineering with Manufacturing Concentration
Studies in materials, fabrication, and computer-aided design prepare students to assist manufacturers increase productivity and cost-effectiveness.

Mechanical Engineering Technology
Mechanical Engineering Technology uses a multidisciplinary approach to design and manufacturing processes. Teamwork is especially important since most mechanical engineering technologists work as members of industrial teams performing mechanical testing techniques in product design, fabrication, and field service evaluation. Experimental and analytical mechanical testing and project management are especially important.

For their senior project, three mechanical engineering technology students worked with a local company whose employees were developing carpal tunnel syndrome as a result of a process that required a clockwise and counterclockwise motion performed by hand to assemble a sensor. Many employees suffered from the syndrome, and the company was spending a great deal per employee for medical treatment, ergonomic equipment, training, loss of productivity, and other expenses. The students designed a universal holding fixture along with a program that eliminated the motion causing the problem. Students performed studies to aid in the continuous performance enhancements of the SH-2G and K-MAX helicopters in a project sponsored by Kaman Aerospace. Remote-operated scale model tests were conducted in our wind tunnel.
We offer Master of Engineering and Master of Architecture degrees to prepare students to work in industry or go on to higher degrees. The Master of Engineering program, which includes independent study requirements and the opportunity to pursue design projects or self-directed study, offers specialty concentrations in Civil, Electrical, Environmental, and Mechanical Engineering with sub-specializations in manufacturing and turbo-machinery. In addition, the College offers the EIM Program, which enables students to earn both a Master of Engineering and a Master of Business Administration by taking a total of 63 credits.

The work done in the Master of Architecture program is aimed at ensuring that integrative learning takes place, that students can approach an architectural project with skills beyond design, including critical thinking, presentation and documentation skills, and cross-disciplinary teamwork. To further address cross-disciplinary and integrative development, the Department supports several combined or dual degree programs in conjunction with other graduate programs at the University of Hartford, three of the most popular of which are the MArch/MFA; the MArch/MBA; and the MArch/MEng.

The Master of Architecture program in the College of Engineering, Technology, and Architecture at the University of Hartford was granted status as a "Candidate School" in January of 2003 by the National Architectural Accrediting Board (NAAB). NAAB is the only agency authorized to accredit professional degree programs in Architecture in the United States. Most state registration boards in the United States list graduation from a NAAB-accredited program as one of the requirements for licensure as an Architect. Consequently, faculty and staff have been preparing to meet NAAB’s requirements for accreditation and expect to achieve that status in 2008.

Among the various projects our graduate students have recently worked on is one conducted in collaboration with LEGO Systems, Inc., of Enfield, Connecticut. The project involved charge imbalances on the surface of LEGO blocks, which can cause the parts to stick together, leading to parts becoming trapped in machinery on the assembly line and major errors during packaging. Our student investigated the effectiveness of static charge dissipation through periodic contact of the blocks with conducting surfaces.

In addition, several of our graduate students’ projects have been recognized by the University’s Board of Regents for their creativity. Among the projects so recognized was work done by Jason Bornas, a student in the Master of Engineering program, who worked on laser percussion hole drilling modeling & simulation. This project involved the creation of modeling software that has been tested by various industries in the area.

Casey Nixon, from the Master of Architecture program, received a Graduate Regents’ Honor Award for her work involving the construction of prefabricated structures, important because projects involving prefabricated structures often involve untrained volunteer assemblers.

Dmitry Kulikov, a Master’s degree candidate in Architecture, won a Hunter Douglas Award for his master’s thesis, “2 in 1: The Conception of Anti-Extreme & Resource-Saving City Space.” Kulikov received his award at the Archiprix International in Shanghai April 15-21, 2007. Hunter Douglas Awards are the highest award given to projects submitted by students as part of degree requirements. Every other year, seven projects are honored in an effort to promote young architects and internationally further architecture and design. Kulikov’s project is intended to address two problems: aggression and terror and super-consumption. He sees his design as providing both an ark and a bunker for residents, while at the same time reducing consumption.
Engineering Applications Center

We created the Engineering Applications Center (EAC) because we believe industry must be a partner with the University in delivering excellence in engineering education. The EAC is one of the University’s major vehicles for collaboration with industry on applied research involving students, faculty and staff. It provides the opportunity for regional businesses to introduce leading edge technology, along with processes that they would otherwise not be able to fund directly, into their products and to further that opportunity through our symposia, certificate programs, and in-house training. The EAC’s commitment to collaboration with industrial partners is at the core of the practice-based character of our curriculum. We typically offer quick completion of projects in a multi-disciplinary environment that brings to bear engineering, technology, the sciences, and software on our partners’ technical challenges. A small staff of highly qualified research engineers helps us to formulate and implement solutions in timely fashion. When encouraged by our partners, we publish our results in top national and international journals to share the value of the EAC beyond the campus and the region. We offer expertise in such diverse areas as acoustics, bioengineering, lasers and laser manufacturing, lean manufacturing, clean energy and digital health technologies. Many of these competencies are offered through interaction with one or more of our College institutes that are also described in this book. Recent research developments, such as our patented rehabilitation suspension system, and the educational programs that spin out of them prove that the Center continues to be a model of innovation and effectiveness at the interface of education and industry since its founding in 1980. We invite you to visit our web pages and explore more of what the EAC Engineering Applications Center means for you as a technology business or as a student.

Acoustics and Vibrations Laboratory

The Acoustics and Vibrations Laboratory is a professional acoustics facility serving the educational needs of our students, the research needs of faculty, and the consultation needs of businesses and organizations throughout the United States. Our facilities include an anechoic (echo-free) sound chamber, Dual-Channel FFT and 1/24 octave spectrum analyzers, portable sound level meters and digital audio (DAT) tape recorders, community noise monitoring equipment, vibration analysis tables and pickups, and room acoustics evaluation equipment. Among the many industries and organizations the Laboratory has worked with are A.T. Cross, Rhode Island; Coherent Communications Sys., Inc., Virginia; Combustion Engineering (ABB, Inc.); the Connecticut DOT; DePuy Orthopaedics, Inc., Indiana; General Electric–Elec. Dist & Control Div.; Inertia Dynamics Company; Leybold–Hereaus Company; Marinco, Napa, Calif.; Ovation Guitar Division, Kaman Corp.; Proctor & Gamble Company, Ohio; Steinway & Sons, New York; United Technologies, various divisions; and Wiremold Company. Students have also analyzed school auditoriums and other performance venues for improvement of acoustics.
The Advanced Manufacturing Institute

The Advanced Manufacturing Institute runs projects in the design and development of new products and processes, CAD/CAM, non-contact sensing and measurement, flexible design, mechatronics, and consultation on manufacturing problems. Some of the projects currently being worked on by this institute include jet engine surface finish measurement, a laser probe for inspection, a vision system for solder verification in PCBs—JSF Program, a digitizer for contour inspection, a vibrometer for breakthrough detection, and a non-contact shrinkage measuring device.

The Environmental Institute

Drawing on faculty and students in the Civil and Environmental programs in CETA, the Environmental Institute assists various businesses and governments with water treatment and resources, remote sensing, and geo-technical and transportation issues. Among recent projects are a study conducted for the Connecticut Department of Public Health on asbestos exposure in occupied spaces and a study on energy alternatives and conservation to be used by the Connecticut Legislature in developing an energy policy for the state. Other projects have involved transportation issues such as a traffic simulation and signal optimization of Albany Avenue.

The Biomechanics Institute

The Biomechanics Institute continues to make progress in areas of bio-implants and sensing and human factors in the work environment. The new undergraduate program in Bioengineering has created interest in student-supported projects with hospitals in the local community. Among these projects are an investigation into a miniaturized sensing device for angular measurement in hip implants run in conjunction with the University of Connecticut Health Center in Farmington and a telemetry system for in vivo temperature measurement in orthopedic implants being conducted with the Albert Einstein College of Medicine at the Montefiore Medical Center in New York City. In industry, students are working with LEGO Systems in Enfield, Connecticut, to set lifting limits for elements boxes on LEGO’s autoline.
The Institute for Life Support and Sustainable Living

The Institute for Life Support and Sustainable Living aims to develop innovative solutions and improvements for the environmental, medical, and space industries. Faculty, staff, and students, both graduate and undergraduate, work together on ongoing projects that include a simple machine to deal with infant apnea, a breathing device to simplify the process of getting into a space suit, and a regenerative chemical system to eliminate CO₂ and moisture from the Crew Exploration Vehicle that will replace the space shuttle.

The Clean Energy Institute

We are dedicated to introducing and encouraging the use of renewable energy resources in Connecticut. Full-time faculty experienced in both academia and industry, part-time faculty from local industry, and undergraduate and graduate students together create innovative mechanisms to provide cheap, reliable power while reducing environmental impacts. The Institute recently installed a parabolic solar collector on the roof of United Technologies Hall, the principal engineering building. This research, funded by Connecticut Innovations, will assess materials used for the parabolic collector as it produces hot water for the building. Other projects include assessing the practical installation of wind turbines in Connecticut and creating a biodiesel processing system to create usable, renewable diesel replacement fuel from the waste oil produced by the cafeterias on campus.
Center for Integrated Design

The Center for Integrated Design (CID) is a cross-disciplinary organization at the University that provides the surrounding cities and towns with resources in architecture, engineering, business, and visual communication design. Two of the four disciplines, Architecture and Engineering, originate in CETA. The Barney School of Business and the Hartford Art School are also active in the Center. Governments and public and private entities, including K-12 schools, non-profits, and other organizations, submit projects. The benefits of this unique interdisciplinary learning environment are real-world experience for students, professional project work for communities, and civic engagement for faculty. Recently, the CID co-sponsored (with the Capitol Region Council of Governments) “Bright Ideas on Community Design: An Interactive Dialogue.” Town officials and planners, design professionals, developers, and the general public were invited to provide input on their visions for a more livable community in their towns. The CID is using the input as part of a needs assessment to determine how the towns in the capital region can develop and implement their vision to promote a more economically and environmentally sustainable community. The CID also recently investigated the requirements for and the opportunities available to ensure that the town center of Bloomfield remain the cultural hub of that town. The study detailed how Bloomfield Center currently functions and provided recommendations on how to transform it into a central community district.

Digital Health Initiative

CETA is expanding its involvement in healthcare technologies, one of the fastest growing segments of the American economy, especially as the baby boom generation reaches senior citizenship over the coming years. We are collaborating with physical therapists, computer scientists, and others on the campus and partnering with major health companies and healthcare providers in a highly interdisciplinary initiative to develop monitoring technologies for medical conditions and deliver cost effective healthcare to an aging population. Examples of digital health technologies include monitoring the force difference between healthy and damaged knees, detecting balance dysfunctions through the use of tilt sensors, and assessing the mobility of geriatric patients as they move about their homes or assisted living quarters. These passive monitoring methods require extensive signal processing and data mining to diagnosis problems and determine when to alert medical professionals. Using low cost wireless sensor networks installed in the residence, we are able to provide early detection of conditions or assess the degree of deterioration or improvement of conditions such as hip and knee replacements. This program has gathered strong student interest and created important collaborations within and beyond the University.
Off the Clock

Students get involved in CETA activities outside of the classroom. Take, for example, the Concrete Canoe Competition. Sponsored by the American Society of Civil Engineers, ASCE, this annual competition requires students to build and race a concrete canoe. Our students take part every year, designing, building, and racing their own boat. And after the race, the student chapter of ASCE sponsors the Concrete Canoe Smash, an excellent way to deal with stress.

Another popular activity is the Formula SAE (Society of Automotive Engineers) car. Another national competition, this one requires students to design, build, and race a car to specifications developed by the SAE. Students of all majors are welcome to participate in this activity.

To raise money and help students deal with the stress of their studies, the Society of Women Engineers sponsors Pie a Professor day. All that whipped cream goes to a good cause!

In addition, students who meet the stringent requirements are eligible to belong to the various honor societies with chapters in the College:
- Pi Tau Sigma, the National Mechanical Engineering Honor Society
- Eta Kappa Nu, the National Electrical Engineering Honor Society
- Sigma Epsilon, the Civil Engineering Honor Society
- Tau Alpha Pi, the National Engineering Technology Honor Society
- Tau Beta Pi, the National Engineering Honor Society

To be serious, CETA Students join student chapters of
- American Institute of Architecture Students (AIAS)
- American Society of Mechanical Engineers (ASME)
- Audio Engineering Society (AES)
- Acoustical Society of America (ASA)
- The American Society of Civil Engineers (ASCE)
- The Institute of Electrical and Electronics Engineers (IEEE)
- The Society of Women Engineers (SWE)
- The Society of Automotive Engineers (SAE)
- Instrument Society of America (ISA)
- The Construction Institute
Both engineering and engineering technology are problem-solving professions. And, whether the problem is how to get a bridge over a particular space or how to remind premature infants to breathe, engineers and engineering technologists work together on teams. The basic difference between engineering and engineering technology is the approach to the problem. Engineers begin with theory; engineering technologists begin with hands-on applications. That difference begins with the course of study. In Engineering, you will study theory first and work "down" to the application; in Engineering Technology, you will learn the application first and work "up" to the theory. The Engineering program is much more math-intensive than the Engineering Technology program, but engineering technology students do have to learn calculus, just at a slower pace. What are the differences in career possibilities? The chart below shows you.

### Graduate

**Master of Architecture**
Includes dual degrees with the Barney School of Business (MBA), the Hartford Art School (MFA), and a Master of Engineering through other CETA programs

**Master of Engineering 3+2 program**
Bachelor of Science and a Master's of Engineering in five years

**Excellence in Engineering and Management EIM Program**
A Master’s of Engineering and an MBA

**Master of Engineering**
Civil Engineering
Computer Engineering
Electrical Engineering
Environmental Engineering
Mechanical Engineering

Specialization in Manufacturing Engineering
Specialization in Turbomachinery Engineering

For information about these programs and admission requirements, please contact Laurie Granstrand at granstran@hartford.edu or 860 768.4858.

### Undergraduate

**Associate in Science**
Computer Engineering Technology
Electronic Engineering Technology
Engineering Science

**Bachelor of Science**
Acoustics and Music BSE
Architectural Engineering Technology
Audio Engineering Technology
Biomedical Engineering BSE
Civil Engineering BSE
Environmental Concentration
Computer Engineering BSE
Computer Engineering Technology
Electrical Engineering BSE
Electrical Engineering Technology
Engineering Technology (Contract)
Mechanical Engineering
Acoustics Concentration
Manufacturing Concentration
Mechanical Engineering Technology

For information about these programs and admission requirements, please contact Rachel Bagby at bagby@hartford.edu or 860 768.4446.

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**Differences Between Engineering and Engineering Technology?**

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For information about these programs and admission requirements, please contact Laurie Granstrand at granstran@hartford.edu or 860 768.4858.
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Design
John Nordyke

Photography
Natalie Segal
Shalane Regan
Caitlin Rega
John Nordyke

Stock Agencies:
Dreamstime
Fotalia
Bluemoon

Printing
Wolf Color Print

Printed with soy ink on partially recycled paper