Graduate studies in engineering at the University of Hartford lead to the Master of Engineering (M.Eng.). The overall objective of the Mechanical Engineering Department is to educate students so they may become leaders in engineering, industry, government and other professions. The graduate program provides advanced level of instruction emphasizing engineering practice. The department is interested in engineering systems that relate to energy, design, manufacturing, biomechanics, acoustics, and mechatronics systems. The opportunity exists in one of the following options: Mechanical Engineering. A student can choose from the areas of Design, Manufacturing, Thermo-fluids, Acoustics, Turbomachinery and Mechatronics.

Practice oriented Masters program in Manufacturing Engineering.

Excellence in Engineering and Management (E²M). Receive a Master’s Degree in Engineering M.Eng. and a Master’s Degree in Business Administration MBA.
ACCREDITATION

All graduate engineering degree programs are accredited by the New England Association of Schools and Colleges and by the Board of Higher Education of the state of Connecticut. According to ABET (Accreditation Board for Engineering and Technology) regulations, ABET does not accredit both undergraduate and graduate programs at the same time.

GRADUATE MECHANICAL ENGINEERING PROGRAM REQUIREMENTS

To be considered for admission applicants must have an appropriate baccalaureate degree in engineering from an engineering degree program accredited by the Engineering Accreditation Commission (EAC) of the Accrediting Board for Engineering and Technology (ABET); and have a minimum 3.0 GPA as an undergraduate.

Applicants who hold baccalaureate degrees in engineering fields not usually considered typical (electrical, mechanical, civil, aerospace, chemical, computer, or control engineering are typical engineering degrees), or who hold baccalaureate or master’s degrees in non-engineering fields or in engineering technology, or whose undergraduate GPA is below 3.0 but who have significant engineering experience will be considered on an individual basis. The same applies to applicants holding bachelor degrees from institutions not accredited by EAC/ABET. Applicants in these categories may be required to complete specified undergraduate engineering courses before being admitted to the Master of Engineering program. Students should obtain at least a B grade in all such preparatory courses. Applicants may enroll for up to 6 credits on a non-matriculated basis prior to making a formal application for admission. Grades of courses taken on this basis will be considered in the review of the application.

APPLICATION REQUIREMENTS

The admissions review committee will consider only complete applications. All application materials should be sent to the Graduate Office at the following address: Center for Adult and Graduate Academic Services, CC231; University of Hartford; 200 Bloomfield Avenue; West Hartford, CT 06117 USA.

The following items are required:
• An on-line application
• A non-refundable application fee of $50 (checks are payable to the University of Hartford)
• Official transcripts for all collegiate level coursework forwarded to the University of Hartford
• Letter of intent or resume
• 2 letters of recommendation
• If interested enrolling full time and applying for an assistantship: Official results of the GRE (Graduate Record Exam) forwarded to the University of Hartford using school code 3436. Visit: www.ets.org

International Applicants

The following items are required in addition to the above:
• TOEFL – official scores to be submitted. The University of Hartford test code Number is 3436. Visit TOEFL at: www.ets.org Min score: 550 paper-based; 79-80 iBT. IELTS is also accepted. Min score 6.5 Visit: www.ielts.org
• Guarantor’s Statement – A certified Guarantor’s Statement of financial support is required. You may download the Guarantor’s Statement at: www.hartford.edu/graduate/int.aspx
DEADLINES AND DATES

Admission into Engineering can occur for the Fall or Spring Semester. Applications are accepted year-round, but should be received no later than November 1 for the spring term and April 15 for the fall term. The admissions committee will review complete applications in the order in which they are received.

COSTS OF ATTENDANCE

Graduate students in Engineering are charged the per-credit-hour rate. The 2014-2015 academic year per-credit-hour rate for courses in the Engineering program is $716 per credit hour.

International students who hold F-1 visas are required to attend as full-time students (minimum of 9 credits per semester). The 2014-2015 academic year full-time tuition and fees for international graduate students in Engineering program is $14,348 per year. This is estimated and based on the minimum full-time cost for tuition and fees for the fall and spring semesters.

FINANCIAL AID

Domestic Financial Aid:
Student financial assistance for graduate and professional students through the Office of Admission and Student Financial Assistance at the University of Hartford is limited to the Federal Family Education Loan and supplemental loan programs. Students must meet all eligibility requirements as established by the U.S. Department of Education. The academic year includes summer, fall, and spring.

There are three items which students must satisfy in order to be eligible for financial aid:

- Be matriculated into a graduate degree-granting program
- Be registered for at least 6 credits a semester-except Summer term, which contains 2 six-week sessions. You may satisfy the 6 credit requirement during Summer term by taking 6 credits during one session or by taking 3 credits each session.
- File the Free Application for Federal Student Aid (FAFSA) for the academic year and meet all eligibility requirements established by the U.S. Department of Education.

For more information, call: 800.947.4303 or email: finaid@hartford.edu

International Financial Aid:
Financial Aid for international graduate students is currently limited to Graduate Assistantships. These assistantships are administered by the individual departments throughout the University and vary in size and availability.

Assistantships and Fellowships:
CETA has a number of openings available for graduate assistantships. To qualify, a graduate student must be matriculated and carrying at least 9 credits per semester. Official Graduate Record Examination (GRE) scores are also required but only for the first semester of study. The amount of assistantship is up to $2,500 per semester, reflecting a commitment of up to 10 work hours per week. Work assignments are determined by the department that oversees the student’s technical specialty. Assistantships will be awarded on the basis of academic performance and financial need. Cumulative and most recent semester grade point averages will determine academic performance. Assistantships will be awarded on a semester basis. Consideration for continuation of an assistantship requires a minimum cumulative grade point average of 3.6 Please note, assistantships, fellowships or other support a student receives as a result of their enrollment may impact Federal Stafford Loan eligibility.
The Master of Mechanical Engineering program requires a minimum of 30 credits. The general requirements structure of the Master of Mechanical Engineering program is as follows (all courses are 3 credits unless otherwise specified):

**MECHANICAL ENGINEERING** (30 CREDITS)

**Core Courses (15 credits required)**
Five courses selected from Mechanical Engineering 500-level or 600-level graduate courses

**Mathematics (3 credits required)**
– M 515 Methods of Applied Mathematics I

**Engineering Management (3 credits required)**
– EM 601 Engineering Program Management

**Graduate Project (6 credits required)**
– ME 607 Graduate Project in Mechanical Engineering (3 to 9 credits) – Independent Study usually cannot begin until the student has completed 12 credits of course work toward the degree.

**Elective Course (3 credits required)**
A professional elective may be selected from the following categories:
1. Any ME graduate course not selected to fulfill core course requirements.
2. ME 607 Graduate Project in Mechanical Engineering may be increased to 9 credits.
4. EM 600 Engineering and the Corporation
5. An additional graduate management course
6. An approved engineering graduate course in another department.

**SPECIALIZATION IN MANUFACTURING ENGINEERING** (30 CREDITS)
Students in the Mechanical Engineering Specialty may concentrate their studies in Manufacturing Engineering. The following requirements apply.

**Mathematics (3 credits required)**
– M 515 Methods of Applied Mathematics I

**Engineering Management (3 credits required)**
– EM 601 Engineering Program Management

**Manufacturing Engineering Core Courses (9 credits required)**
– ME 607 Graduate Project in Manufacturing Engineering (minimum 6 credits)
– ME 680 Design for Manufacturing

**Balance of Program (15 credits required)**
– ME 501 Kinematic Linkage Design
– ME 504 Dynamics of Machines
– ME 505 Mechatronics System Design
– ME 507 Finite Element Analysis
– ME 510 Advanced Mechanics of Materials
– ME 511 Advanced Materials
– ME 580 Designing for Process Quality and Control
– ME 582 Reliability Engineering
– ME 512 Precision Engineering
– ME 519 Six Sigma Principles and Applications
– ME 600 Computer-Aided Geometric Modeling
– ME 601 Machine Vision and Robotics
– ME 681 Seminar on Modern Issues in Manufacturing Engineering
– ME 682 Advanced Manufacturing Processes

**SPECIALIZATION IN TURBOMACHINERY (30 CREDITS)**

**Math Course (3 credits Required)**
– M 517 Applied Engineering Statistics

**Engineering Core Courses (18 credits required)**
– ME 530 Gasdynamics
– EM 601 Engineering Program Management (3 credits required)
– ME 531 Gas Turbine Analysis
– ME 632 Aerodynamic Design of Turbines and Compressors
– ME 640 Turbomachinery Dynamics and Control
– ME 672 Strength, Design, and Materials in Turbomachinery
– ME 607 Graduate Project in Mechanical Engineering
– Elective Courses (6 credits required)
– A second semester of ME 607 may be chosen
– ME 506 Principles of Combustion
– ME 606 Turbomachinery Noise Control
– ME 609 High Speed Aerodynamics
– ME 676 Manufacturing Issues in Turbomachinery
– M 515 Methods of Applied Mathematics I

**RESEARCH TOPICS AND PROJECTS**

**Research Topics:**
• Advanced Mechatronics
• Design for Manufacturing and Disassembly
• Environmentally Conscious Manufacturing
• Concurrent Product and Process Design
• Design for Quality and Measurement

**Student Projects:**
• An Alternative Flow Metering and Control System
• Product Improvement of Elevator Safety System
• Force-Position Feedback Control in Aerospace Applications
• Study of the Ergonomic Risk Factor and Redesign of Machinery
• Rehab Walker
• New Methodology in CAD/CAM Interface and Machining
• In-process Surface Measurement Research
• Supervisory Control and Manufacturing
• Product design involving failure mode effects evaluation
• Development of precision methodology for contour inspection
• Embedded processor in precision instrumentation
• Control strategy for ambulatory rehabilitation devices
• Laser based inspection techniques for precision holes
• Real time mechatronic processes, simulation and control
• Neural network for inspection in manufacturing industries
UNIQUE FEATURES

- **Mechatronics Laboratory**: where research is conducted in the area of Sensors, Data Acquisition Systems, new measurement devices for production purposes, Miniaturized Telemetry Systems, Modeling, and Simulation of Industrial Case Studies.
- **NSF Funded Instructional Design Laboratory** provides state-of-the-art facilities for conducting design and simulation projects. It also has facilities for multimedia presentation and Web-based educational technology tools.
- **Intelligent Manufacturing Facilities** exist for graduate level research on factory automation including CAD/CAM interfacing, supervisory manufacturing and expert systems.
- **Acoustics Laboratory**: for projects dealing with sound intensity mapping, sound absorption tests, machine noise diagnostics, and acoustic evaluation.

FURTHER INFORMATION

The Center for Graduate and Adult Academic Services would be happy to provide more specific information about a degree program or answer any other questions you may have. Please contact the office at: GradStudy@hartford.edu or by phone 860.768.4371 or 800.945.0712.

For more specific information about the Engineer program please contact the Graduate Program Manager Laurie Granstrand at 860.768.4858 or email: granstran@hartford.edu or visit the CETA website.

Program Website: new.hartford.edu/ceta/