Visualization of a detonation phenomenon in Professor Cetegen’s Combustion and Gas Dynamics Laboratory
Dear Graduate Student:

On behalf of the faculty and staff of the Department of Mechanical Engineering, I welcome you to the University of Connecticut. The Department of Mechanical Engineering is thriving: our undergraduate and graduate programs have consistently ranked #1 among public universities in the New England region (U.S. News and World Report 2004 and 2005). Research productivity continues to climb with the department’s latest annual research expenditures reaching $4.4M, up nearly 15% from fiscal year 2004. Our department has 22 faculty members, about 140 graduate students pursuing master’s and doctoral degrees, and approximately 380 undergraduate students. The faculty includes three endowed chair professors and two members of the prestigious National Academy of Engineering. Three faculty members are Editors-in-Chief of international journals, while more than half have held associate editorships for various international engineering publications in the last five years. Our faculty members have written five new textbooks in the last six years. There are five full-time staff members in the department, including a computer technician and a mechanical technician. Fully-equipped machine and electronics shops are also available to students and are operated by the School of Engineering.

The University of Connecticut is in the middle of a series of renovations to the teaching and research infrastructure that will result in a completely new campus at Storrs in the coming years. As you walk around campus, you will see this transformation in progress in the form of new buildings and ongoing construction. The University of Connecticut is an institution with 25,000 students, over 150,000 alumni, and over 100 major buildings located on 4,000 acres. Storrs is 35 miles east of Hartford, the state capital. Information about living in Storrs is available at: http://www.engr.uconn.edu/SoE/living_in_ct.html

This Graduate Handbook serves as a guide to your graduate studies in the Department, and contains information about our graduate programs including requirements, regulations and procedures. In addition to this Handbook, you must also consult the Graduate School Catalog and periodically check the graduate studies section of the Department’s website: http://www.engr.uconn.edu/me for important updates. Professor Kevin Murphy, the Director of Graduate Studies, oversees the administration of the graduate program in the department, and is assisted by Ms. Laurie Hockla, the graduate program coordinator. You are encouraged to consult with your major advisor and Professor Murphy should you have questions concerning your graduate studies. You will be notified of changes made to the Graduate Handbook by email from the Director of Graduate Studies and you are expected to download the latest version of the Handbook from the web. I urge you to read the Handbook completely and carefully; it is your responsibility to make sure all requirements outlined in the Graduate Handbook and the Graduate Catalog are fully met.

Once again, I welcome you to the Department and wish you success.

Ranga Pitchumani

August 2005

Ranga Pitchumani
Distinguished Professor and Head
Table of Contents

Welcome! 1
Degree Programs 3
Application, Admission and Re-Application Procedures 4
Financial Aid 5
Graduate Degree Requirements 6
M.S. Degree Requirements 7
Ph.D. Degree Requirements 8
Ph.D. Qualifying Examinations 11
Faculty Advisor and Thesis Committee 13
Registration and Orientation 14
Other Policies 15
Other Information 16
Mechanical Engineering Laboratories 17
Appendix: Forms 18
Department Directory (back cover)
Degree Programs

The Department of Mechanical Engineering offers degree programs leading to both a Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degree. The following sections of the handbook detail the academic requirements for graduate degrees in these two degree program concentration areas:

**Systems and Mechanics** includes theories of computer-aided design and manufacturing, control systems, damage mechanics, digital signal processing, dynamics, elasticity, fracture mechanics, linear and nonlinear vibrations, kinematics of mechanisms, machining and metal removal, micromechanics, optimization, plasticity, plates and shells, robotics, stability, and wave propagation.

**Faculty:**
- Zbigniew Bzymek
- Horea Ilies
- Robert Jeffers
- Eric Jordan
- Kazem Kazerounian
- Kevin Murphy
- Nejat Olgac
- Kenneth Reifsnider
- Nigel Sammes
- Jiong Tang
- Bi Zhang

**Thermal and Fluid Sciences** includes classical and statistical theories of thermodynamics and studies of conduction, convection, radiation, inviscid and viscous flows, compressible and heated flows, combustion, laminar and turbulent flows. Engineering applications include design and analysis of many systems, processes, and devices, such as advanced materials processing, microfabrication, biotransport phenomena, fuel cells, gas turbines, combustion systems, and heat pipes.

**Faculty:**
- Thomas Barber
- John Bennett, Jr.
- Theodore Bergman
- Baki Cetegen
- Wilson Chiu
- Amir Faghri
- Tai-Hsi Fan
- Ugur Pasaogullari
- Ranga Pitchumani
- Michael Renfro
Application, Admission, and Re-Application Procedures

The formal application and admission procedure is outlined in the Graduate Catalog (available at http://catalog.grad.uconn.edu). It is imperative to read, understand and follow all of the Graduate School requirements.

Application Material

All necessary application material may be obtained from the Graduate School or from the Mechanical Engineering Department website at: http://www.engr.uconn.edu/~me_dgs. An application must be complete in order to be considered for admission. There are three common omissions that delay many applications. While the entire application must be complete, applicants should pay particular attention to the following:

- The nominal application fee, set by the Graduate School, must be paid in full.
- A written research statement must accompany the application
  (see http://www.engr.uconn.edu/me/me_grad_statement.htm)
- Three letters of reference must be submitted; at least two should be references for academic performance.
- In addition to these three items, international applicants must have taken the TOEFL and GRE examinations, and scores must be provided.

Admission Procedure

The Graduate School forwards completed applications to the Mechanical Engineering Director of Graduate Studies who, together with members of the Mechanical Engineering Graduate Admissions Committee, evaluates the credentials of the applicant. They rank the application, assigning it a priority for financial aid and/or assistantship. The ranking and decisions are based on the applicant’s academic record, the match between the applicant’s area of interest and departmental programs, and the applicant’s research statement, test scores, and letters of recommendation. Based on the evaluation, a recommendation on admission is made to the Graduate School. Admission to the University of Connecticut is granted by the Graduate School, not by the Department of Mechanical Engineering.

Re-application

Students completing a master’s degree program at the University of Connecticut who wish to continue toward the Ph.D. degree, as well as students desiring to transfer from a master’s program in mechanical engineering to the Ph.D. program, must re-apply for admission into the Ph.D. program. Two letters of recommendation are required along with official transcripts.
The Department of Mechanical Engineering and the University provide financial aid for graduate students in one of these forms: graduate teaching assistantships, graduate research assistantships, and fellowships. These assistantships include a tuition waiver, medical benefits, and a stipend. The value of this support package is usually over $31,000 per year. Most graduate students receive financial aid in the form of research or teaching assistantships.

**Research Assistantships**

Many faculty members in the Department of Mechanical Engineering have active grants that continually support graduate research assistants. The research assistant works with the faculty in the conduct of the sponsored research, and the research work forms the student’s thesis/dissertation.

**Teaching Assistantships**

Teaching assistantships are limited and are usually offered to graduate students for a period of two academic semesters, with preference given to new graduate students. Continuing students who wish to be considered can find an ‘Application for Teaching Assistantship’ form in Appendix or online.

**Fellowships**

The Graduate School Outstanding Scholars program awards fellowships to up to ten doctoral applicants annually consisting of an $8,000/year fellowship with an additional $2,000/year summer stipend for three years, combined with a 50% assistantship from the student’s department. The Graduate School’s Diversity Graduate Student Recruitment program, along with a number of special graduate student fellowships, provides support for qualified minority graduate students.

The University provides other fellowships, including its named Graduate School Fellowships, University Pre-doctoral Fellowships, Doctoral Dissertation Fellowships, Doctoral Dissertation Extraordinary Expense Award, Summer Fellowships for Doctoral and Pre-doctoral Tuition Remission and Dean’s Fellowships. Additionally, the Director of the Diversity Program for the School of Engineering has a listing of companies/organizations that award fellowships. Details concerning these fellowships are available in the Graduate Catalog.

**Loans**

Students can also apply for other forms of financial assistance including: Graduate Student Senate Short Term Loans, Stafford Student Loans (GSL), and loans through the Carl Perkins Loan Program. Details and descriptions of application procedures are in the Graduate Catalog.
Graduate Degree Requirements

Standards and degree requirements of the Graduate School are described in detail in the Graduate Catalog. In the discussion to follow, these standards and requirements are summarized, and additional requirements of the Mechanical Engineering Department are described.

Area of Concentration (applicable to M.S. and Ph.D. degrees)

To determine the appropriate course requirements the student must first choose one of the two areas of concentration in the Mechanical Engineering Department: Systems and Mechanics or Thermal and Fluid Sciences. The specific core course requirements for each of these areas differ as listed below.

Systems and Mechanics Core Courses
1. ME 305 Basic Concepts of Continuum Mechanics
2. ME 320* Mechanics of Solids
3. ME 320* Geometric Modeling
4. ME 331 Analytical and Applied Kinematics
5. ME 360 Advanced Dynamics I
6. ME 372 Theory and Design of Automatic Systems

Thermal and Fluid Sciences Core Courses
1. ME 320* Advanced Thermodynamics
2. ME 320* Advanced Heat and Mass Transfer
3. ME 320* Advanced Thermo-Fluid Sciences I
4. ME 326 Heat and Mass Transfer in Multiphase Systems

* These courses will receive new course numbers in a subsequent semester

Beyond taking four core courses from an area of concentration, there are additional course requirements for the specific degrees (M.S. Plan A, M.S. Plan B, Ph.D.). These are described in the following sections.
M.S. Degree Requirements

The M.S. degree may be earned under either Plan A (thesis option) or Plan B (non-thesis option). Plan A emphasizes problem-solving through research, and involves close interactions with mechanical engineering faculty members, while Plan B focuses on graduate level course work in mechanical engineering topics. Students who have ever been supported in their graduate studies by the University or by the Department must select Plan A.

Required Credit Hours

A total of 30 credit hours after the B.S. is required. In Mechanical Engineering, Plan A requires 21 credits of advanced course work and successful completion of a thesis. For students entering the graduate program in the Fall 2000 semester or later, thesis work for the Plan A option is equivalent to 9 credit hours. The thesis must be an original and significant contribution to the field of engineering science, and must be defended orally according to Graduate School requirements. Plan B requires at least 30 credits of advanced course work. After completion of at least 24 credits, the student must take and successfully pass an oral examination in compliance with Graduate School requirements.

In exceptional cases, and for students with substantial graduate work elsewhere, the total credit hours after the B.S. may be reduced to 24 upon petition to the Mechanical Engineering Department Head (see form in Appendix).

- At most, 6 credit hours or two classes may be transferred from other institutions, subject to department approval through a Graduate Petition and to the Graduate School regulations outlined in the Graduate Catalog.
- At most, 3 credit hours of course work can be in University of Connecticut 200-level courses that are not required for the undergraduate Mechanical Engineering degree and are not open to sophomore students.

Plan of Study

The student’s plan of study should be prepared with the aid and approval of the advisory committee and be approved by the Director of Graduate Studies and the Executive Committee of the Graduate Council. All students must have a plan of study on file at the Graduate School and the Mechanical Engineering Department. For Mechanical Engineering students, the plan of study must include the following coursework:

- **Four** Mechanical Engineering core courses chosen from the student’s area of concentration, listed on page six.
- **One** mathematics, computational, engineering analysis or statistics course.
- **ME 401 Graduate Seminar for each semester** enrolled in the M.S. program as a full-time student.
- **Two** elective courses with at least one in Mechanical Engineering (Plan A), or five elective courses with at least three in Mechanical Engineering (Plan B). Elective courses outside of engineering, science or mathematics must be approved by the student’s advisor and advisory committee in advance.
- **Nine** credits of thesis work (Plan A).
- **Nine** credits of Master’s Thesis Research (GRAD 395), as stipulated in the Graduate Catalog (Plan A).

Course Substitutions

If a student has completed equivalent courses in a well-established graduate program, he/she can apply for a waiver by petitioning the Department Head by the end of the first semester. If a waiver is granted, the student may substitute an equal or greater number of elective graduate course credits for the waived course credits. However, at least two of the required Mechanical Engineering core courses must be taken at the University of Connecticut.

Independent Study Courses

At most one independent study course in mechanical engineering can be applied as an elective toward course requirements.
Ph.D. Degree Requirements

The Ph.D. is primarily a research degree, and may be undertaken after the M.S. or following the B.S. To be awarded the Ph.D., the student must satisfy all of the requirements of the Mechanical Engineering Department and all of the requirements of the Graduate School. These requirements are more extensive than those associated with the M.S. degree and the major ones are as follows.

**Qualifying Examination**

The student must successfully pass the Department’s Ph.D. qualifying examination, described in the next section.

**Prospectus**

Before the Ph.D. dissertation is well under way, the student must file a prospectus of the proposed research, according to Graduate School regulations. The student’s advisory committee and the Area Review Committee in Mechanical Engineering named by the Department Head must approve the prospectus. Instructions for writing the prospectus are included on the prospectus form.

**Prospectus Presentation**

The student must give a one-hour research presentation in department seminar format to his or her Ph.D. advisory committee on the proposed dissertation research (which formed the prospectus). The seminar is held at the latest one year before the intended graduation date. The presentation will typically include preliminary results of the research.

**Dissertation**

The most important part of the study for the Ph.D. degree is the dissertation. A dissertation must be an original and significant contribution to the field of engineering science and must be defended orally according to Graduate School requirements. A copy of the dissertation must be made available to the advisory committee at least two weeks prior to the final examination. Other requirements are described in the Graduate Catalog.

**Final Examination**

The final examination (an oral examination often called the dissertation defense) deals mainly with the subject matter of the dissertation. At least five members of the faculty including all members of the advisory committee must be present for the final examination. The dissertation defense is open to the public. The decision as to whether the student passes the examination is based on a vote of the advisory committee. According to Graduate School regulations, the notification of the time and place of the final examination must appear in *UConn Advance* no later than seven days prior to the examination.

**Publications**

The student must have submitted a minimum of two papers for publication in the archival literature (journals), and have at least one of these papers published or accepted for publication at the time of the Ph.D. defense. These papers must be based on the student’s dissertation research and must be co-authored by the student’s faculty advisor from the Mechanical Engineering Department.

**Residency**

All students, full-time and part-time, must satisfy a residency requirement by spending at least two consecutive semesters in the second or subsequent years of graduate work on the Storrs campus, devoting all effort to graduate work and research.
Ph.D. Degree Requirements continued

Foreign Language or Related Area of Study
The student must satisfy a “Foreign Language” or a “Related Area of Study” requirement as described in the Graduate Catalog. In the Mechanical Engineering Department, the Ph.D. candidate’s native language being other than English will not be considered to meet the language requirement. This requirement may be fulfilled in one of three ways:
- completion of a 3 credit advanced mathematics course (such as ME 307, which could also count toward the computational/math course requirement of the Mechanical Engineering Department)
- completion of 6 credits of courses in a related area of study, as approved by the faculty advisor and the candidate’s advisory committee
- completion of language courses per the Graduate Catalog

Changing Programs
Effective January 1, 1997, any student who entered the Ph.D. program, was supported by an assistantship, scholarship or fellowship, and abandoned the program before completion, may only pursue the M.S. Plan A option to leave with an M.S. degree.

Required Credit Hours
- For the Ph.D. following the M.S. degree, a minimum of 21 credit hours after the M.S. (excluding requirements for dissertation language and minor area) is required. In exceptional cases, and for students with substantial post-M.S. graduate work elsewhere, the total after the M.S. may be reduced to 18 credit hours upon successful petition to the Department Head. The ‘Graduate Petition Form’ is attached in the Appendix.
- For a Ph.D. following the B.S. degree, a minimum of 42 credit hours after the B.S. (excluding requirements for dissertation, language and minor area) is required. In exceptional cases, and for students with substantial post B.S. graduate work elsewhere, the total of credit hours after B.S. may be reduced upon successful petition to the Department Head.
- At most, 6 credit hours or two classes may be transferred from other institutions, subject to department approval through a Graduate Petition and to the Graduate School regulations outlined in the Graduate Catalog.
- At most, 3 credit hours of course work can be in University of Connecticut 200-level courses that are not required for the undergraduate Mechanical Engineering degree and are not open to sophomore students.

Plan of Study
The student’s plan of study should be prepared with the aid and approval of the advisory committee and be approved by the Director of Graduate Studies and the Executive Committee of the Graduate Council. All students must have a plan of study on file at the Graduate School and the Mechanical Engineering Department. For Mechanical Engineering students, the plan of study must include the following coursework:

Ph.D. following a B.S.:
- **Four** Mechanical Engineering Ph.D. core courses in the student’s area of concentration, listed on page six.
- **Two** advanced graduate courses in mathematics, computational or engineering analysis, or statistics. One of these courses may be used to fulfill the language requirement.
- **Eight** elective courses, at least five of which must be in Mechanical Engineering. Elective courses outside of engineering, science or mathematics must be approved by the student’s advisor and advisory committee in advance.
Ph.D. Degree Requirements continued

- ME 401 Graduate Seminar for each semester enrolled in the Ph.D. program as a full-time student (part-time students must have attended and passed the ME 401 course for a minimum of two semesters during their one-year residency period).
- Twelve GRAD 495 course credits, as described in the Graduate Catalog.

Ph.D. following an M.S.:
- **Four** Mechanical Engineering Ph.D. core courses in the student’s area of concentration as listed on page six. If the M.S. degree was obtained from the University of Connecticut and the student has already taken the four core classes, they may be replaced with four Mechanical Engineering elective courses through a Graduate Petition.
- **One** advanced graduate course in mathematics, computational or engineering analysis, or statistics.
- **Two** elective courses. Elective courses outside of engineering, science or mathematics must be approved by the student’s advisor and advisory committee in advance. The language requirement may be fulfilled by taking an advanced mathematics course as one of the two electives.
- ME 401 Graduate Seminar for each semester enrolled in the Ph.D. program as a full-time student (part-time students must have attended and passed the ME 401 course for a minimum of two semesters during their one-year residency period).
- Twelve GRAD 495 course credits, as described in the Graduate Catalog.

Course Substitutions
If a student has completed equivalent courses in a well-established graduate program, he/she can apply for a waiver by petitioning the ME Department Head by the end of the first semester. If a waiver is granted, the student may substitute an equal or greater number of elective graduate course credits for the waived course credits. However, at least two of the required ME core courses must be taken at the University of Connecticut.

Independent Study Courses
At most one independent study course in mechanical engineering can be applied as an elective toward course requirements.
Ph.D. Qualifying Examinations

Purpose

The Ph.D. qualifying examination fulfills the requirement for General Examinations as explained in the Graduate Catalog. The examination has two general objectives: (1) to make sure the candidate has sufficient mechanical engineering background for doctoral studies, and (2) to maintain quality, uniformity and consistency in the department’s doctoral program.

Timing

In mechanical engineering, the student must take this examination for the first time no later than his/her second semester of the Ph.D. program at the University of Connecticut. In the event of an unsuccessful first attempt, the student must retake the examination at its next offering in the semester immediately following the date of the first attempt.

The qualifying examinations are offered within the first four weeks of each semester, and candidates must sign up for the examinations no later than the first week of the semester. For the benefit of the candidates, an information briefing will be held approximately two weeks prior to the examinations. It is imperative that the candidates attend the information briefing to further familiarize themselves with the examination format. Students are also encouraged to meet with the examining faculty members well ahead of the examinations to discuss the faculty members’ expectations for individual subject areas.

Examination Format and Subjects

The qualifying examinations are oral (not written) in format, and are given over several consecutive days, typically from a Tuesday through Friday. Examinations will be scheduled such that a student takes no more than two examinations on any one day. A candidate must take a total of four examinations:

- A mandatory Applied Mathematics Examination (Topics typically covered in ME 307, MATH 227, MATH 272).
- In addition, the candidate must choose three of the following five examinations. The topics covered in each of the examinations are indicated below. Note that the University of Connecticut courses listed after each topic are representative, but not necessarily all-inclusive of the topical coverage.
  1. Solid Mechanics Examinations (CE 211 Statics, CE 287 Strength of Materials)
  2. Dynamics and Vibrations Examinations (CE 212 Dynamics, ME 220 Vibrations)
  4. Fluid Mechanics Examinations (ME 250 Fluid Mechanics)

Each examination will be of 45 minutes duration and will be given by two (or more) faculty members with only one candidate present at a time. Each candidate will be tested for a graduate level knowledge of undergraduate course materials on the subjects listed, and judged on their understanding and use of concepts stemming from fundamental engineering principles. A candidate’s graduate knowledge of undergraduate courses must include as a minimum:

- an ability to solve any problem typically assigned in such courses, explain the basic principles supporting each step, and to identify the assumptions and limitations of the underlying theory used
- an ability to derive governing equations and major formulae from basic principles used in the subject area
- an ability to list and explain the physical meaning of the basic principles of each topic, and to explain the physical meaning of solutions
Ph.D. Qualifying Examinations continued

- an ability to solve problems including those that are not typically covered in such courses, using the basic principles of the subject area

Evaluation

Each candidate’s performance will be discussed by all of the graduate faculty members at a faculty meeting following the last qualifying exam. The outcome of the examinations will be one of the following: (1) pass, (2) pass conditionally to take an exam over again in a weak area, (3) fail with the option to take all of the exams over again, (4) fail with no options. The results of the oral examinations will be announced in writing to the candidate by the Director of Graduate Studies and may additionally be communicated by the student’s faculty advisor in a meeting.
Faculty Advisor and Thesis Committee

Faculty Advisor

The faculty advisor works closely with the student during the entire graduate program. Although the Director of Graduate Studies and the faculty advisor will explain the rules associated with the degree, the ultimate responsibility for meeting all requirements lies with the student. Students are encouraged to consult with the Director of Graduate Studies on any questions regarding the regulations in this handbook.

The Director of Graduate Studies serves as the student’s temporary faculty advisor for the first semester, except for students who are brought in as Research Assistants. For Research Assistants, the faculty member who obtained the research grant supporting at least 50% of the assistantship serves as the student’s advisor. All new students must complete their major advisor selection no later than October 15 for students entering the program in the fall semester and no later than March 15 for students starting in the spring semester. Failure to comply with these deadlines may be considered as lack of satisfactory progress toward the degree and bear associated consequences, including discontinuation of financial support and dismissal from the program.

Prior to arriving at the University of Connecticut, students should learn about the research being done by the faculty. The faculty member profiles (on the web at http://www.engr.uconn.edu/me) are a good source of up-to-date information. Once a student arrives on campus and has identified his/her area of concentration, the student must meet with all full-time graduate faculty members in the specific area group (see page three) to determine possible topics for a thesis. The ‘ME Selection of Major Advisor Form’ (Appendix) should be signed and dated by each faculty member following each meeting. The student then returns this form along with two preferences for an academic advisor to the Director of Graduate Studies.

The faculty advisor should be a full-time faculty member of the Mechanical Engineering Department and a member of the University’s Graduate Faculty. An up-to-date list of full-time Mechanical Engineering faculty members may be found at http://www.engr.uconn.edu/me, and a list of all Graduate Faculty is included in the Graduate Catalog.

The department typically assigns the student to one of the faculty preferred by the student, and the student is notified of the advisor assignment. The student will normally work with the assigned major advisor throughout the degree program, but in exceptional cases, may request a change in the major faculty advisor. Note that changes to the major advisor following initial assignment must be approved by the Department Head on the ‘Notification of Change of Major Advisor’ form. Since there are practical considerations associated with these changes (loss of time and, possibly, financial support), students are encouraged to make a careful initial selection.

Thesis Committee

All students under the thesis option must have a thesis committee consisting of at least three faculty members (including the major advisor). At least one associate member from outside the department is recommended. The committee will be selected by the student in consultation with the major advisor, before completion of the second semester of work. This committee will supervise the candidate’s entire program of study.
Registration and Orientation

Students should register for all of their courses in the University’s computer system by December 1 for spring classes and by June 1 for fall classes. Enrollment in courses as of the two dates will normally be used to determine if the course will be offered. Prior to registering for courses, students should make an appointment with their faculty advisor to plan their class schedule for the following academic semester.

All incoming students are required to attend the Mechanical Engineering new student orientation, usually held in late August. A variety of important topics regarding the graduate program are discussed, and there are opportunities for students to ask questions. Incoming students should register for classes immediately after attending the mandatory orientation meeting held by the Director of Graduate Studies.

Courses may be dropped through the ninth week of a normal semester or prior to the halfway point during a summer semester. Courses can normally be added through the fourth week of the semester or as of the midpoint of a summer semester. For students supported on an assistantship or fellowship, all course adds/drops must be made with the prior consent of the faculty advisor. Adding or dropping a course without your advisor’s consent may result in loss of financial support.

Students who have completed all coursework but require more time to complete their research must enroll in a zero-credit, Continuing Registration course (GRAD 398, GRAD 399, GRAD 498, and GRAD 499). Please consult the Graduate Catalog for more details.

Fees must be paid at the Office of the University Bursar or a limited deferment of the payment date must be obtained from the Deferment Office before completion of registration. In any event, registration of courses and payment of fees or issuance of limited deferment must be completed on or before the second Friday of the Semester; otherwise, the student may be subject to a late registration/payment fee. Estimated total expenses for the academic year are given in the Graduate Catalog.
Other Policies

Resolution of the Council of Graduate Schools

The University of Connecticut abides by the resolution of the Council of Graduate Schools, a national organization. The text of this resolution is included in the Graduate Catalog. The main features of the resolution are as follows:

- Acceptance of an offer of financial support by a prospective student completes an agreement that both the student and the graduate school expect to honor.
- Students are under no obligation to respond to offers of financial support prior to April 15.
- An acceptance of an offer of financial support given or left in force after April 15 commits the student to not accepting another offer from another school without first obtaining a written release from the institution to which the student has made a commitment.

The Department of Mechanical Engineering requires written notification from any graduate student who intends to withdraw permanently from the Mechanical Engineering graduate program. For students who are supported with a fellowship, teaching or research assistantship, written notification must be given to the Director of Graduate Studies and the student’s faculty advisor at least six months prior to the student’s departure. Students who are not supported financially must provide written notification at least three months prior to the student’s departure.

Department Seminars

The Mechanical Engineering department seminar (ME 401) is a formal course with 0 credits and a Pass/Fail grade. All full-time graduate students must sign up for the course every semester, and must attend all of the seminars in the department seminar series to earn a passing grade. If the student has to miss a seminar for a legitimate reason (such as illness, conference attendance, etc.), the student must notify the seminar coordinator in advance, in writing. If accepted by the coordinator, the student may miss that specific seminar; however, no student may miss more than one seminar per semester. If a student misses more than one seminar in a semester or if a student misses a seminar without having first been excused, the student will receive a failing grade for the semester. The seminar coordinator is the instructor on record for the course and will be responsible for grading. A student must have a passing grade in the seminar courses throughout his/her degree program to satisfy the Department requirements for graduation.

Leave of Absence

A leave of absence can be taken in either the M.S. or Ph.D. program provided that the time limitations discussed above are fulfilled. It is required that the student inform his/her faculty advisor and the Director of the Graduate Studies in writing at least three months prior to the semester of the leave. A leave of absence may adversely impact financial aid.

Graduation Procedure

Students must fill out the ‘Clearance Notice for Engineering Students Completing a Graduate Degree’ and the ‘Graduation Checklist’ (Appendix) at least two weeks prior to leaving the university. The forms are given to the Director of Graduate Studies who will check that the Mechanical Engineering degree requirements have been met. The ‘Clearance Notice’ and the ‘Graduation Checklist’ will then be forwarded to the Department Head for final action.
Other Information

Non-Degree Program

U.S. students who do not have the requirements, or do not wish to be accepted to the regular graduate programs, can take courses under non-degree status. Applicants to the regular graduate programs can also register under this status while their application is being processed: registration will have no effect on the approval or denial of their application. With the approval of the student’s advisory committee and the graduate school, a maximum of two non-degree courses with grades of B or higher can be transferred to the graduate degree program. Non-degree students may register for courses in the Department of Mechanical Engineering only with the approval of the Department Head.

Office and Mail/E-Mail

Each full-time graduate student who is supported will be assigned an office and a mailbox for incoming mail. All students must provide the Graduate Program Coordinator, Ms. Laurie Hockla, with their most commonly used email address. Students should check their email and mailboxes daily for Department/University announcements and correspondence.

Telephone

Laboratory telephones are for local calls only. If a student’s research requires long distance phone calls, the research advisor should be consulted. Please keep a list of all long distance calls made in a telephone log.

Photocopying

The photocopier in the Mechanical Engineering department office is to be used for official purposes only: personal copying is not allowed. Teaching Assistants must obtain permission from the instructors before using the photocopier. Research Assistants must contact the faculty advisor prior to using the photocopier.

Computer Accounts

Students may apply for a computer account on the School of Engineering’s Unix network, run by ECS, the Engineering Computing Services (http://www.engr.uconn.edu/ecs). The application form is available at the Department Forms webpage (see Appendix) or from the Department’s Computer Support Consultant, Mr. Jim Clougherty (EII-202; 486-1449). The ECS account provides access to electronic mail and the internet. The account may be accessed from the Mechanical Engineering Department’s Computational Laboratory (EII, Room 202). The Department’s computers are available to students primarily for use in their research and coursework. Additional machines are available in other computer clusters, such as in the Engineering Learning Center (on the third floor of the Engineering II Building).
Mechanical Engineering Laboratories

For a description of the research laboratories, please see the Mechanical Engineering Department homepage at http://www.engr.uconn.edu/me

Computational Laboratory

The Mechanical Engineering Department’s Computation Laboratory is located in EII 202 and is equipped with over two dozen workstations that run a variety of computation and productivity software packages. Approximately half of the machines run Microsoft Windows while the remaining machines run Unix. All of the stations have access to the Internet, and are fully integrated with the School of Engineering’s network which provides data storage and automatic backup capabilities. Computational packages are available from several software vendors and include EDS (Unigraphics, SolidEdge, I-deas NX), Fluent, Inc (Fluent, Gambit, Flowlab), Abaqus, and PTC (Pro/Engineer Wildfire). Scanning and printing facilities are also provided. The lab’s software policy is to be accommodating, and additional software can be installed as needed by individual research projects. In order to provide a state-of-the-art working environment, the hardware is under constant review, with new machines scheduled to be purchased at least once a year.

Metalworking and Machine Shop Laboratory

This instructional and research laboratory is equipped with a variety of state-of-the-art machinery to provide training to shop users and to lend support in fabrication on any type of equipment for undergraduate and graduate research. Equipment available is: standard tool room/machine shop equipment, computer aided machinery, instrumentation equipment, light sheet metal fabrication capability, welding equipment, a casting gas furnace for small aluminum parts, a roller mill (6” capacity), a swaging machine, and various wood and plastic working equipment.

All shop users must be shop-trained and qualified. Any student in engineering is encouraged to use the shop facilities for any academic or research work under the supervision of the shop staff. Shop training courses are regularly offered two times a year, during the last full week before the start of any semester. This course consists of 40 hours of mixed classroom and hands-on equipment training, and will normally lead to a shop qualification and proficiency certificate. Special needs and training of a small group of students can be arranged at any time during the year with the shop manager, provided they do not disrupt the workload and priorities of the laboratory. Some equipment may also be used for testing or short-term research and data collecting.
Appendix: Forms

Forms may be downloaded from the URLs given.

**Department Forms** (see: [http://www.engr.uconn.edu/~me_dgs/forms](http://www.engr.uconn.edu/~me_dgs/forms))

- Preliminary Application Form for Graduate Studies
- Graduate Petition Form
- Application for the Ph.D. Qualifying Examination
- Application for Teaching Assistantship
- ME Selection of Major Advisor Form
- Notification of Change of Major Advisor
- ECS Engineering Computer Account Application Form
- ME Missed Seminar Makeup Form
- Graduation Checklist

**Graduate School Forms** (see: [http://www.grad.uconn.edu/forms.html](http://www.grad.uconn.edu/forms.html) for updates)

- Graduate School Application Forms (online and paper formats)
- Plan of Study (M.S. and Ph.D.)
- Doctoral Dissertation Proposal Coversheet and Instructions
- Report on the Final Examination for the Master’s Degree
- Report on the Final Examination for the Doctoral Degree
- Announcement of the Dissertation Oral Defense (Ph.D.)
- Doctor of Philosophy Dissertation Tentative Approval Page (Ph.D.)
- Clearance Notice for Students Completing a Graduate Degree
- Please see Graduate School Website for other forms
Full Time Faculty

Bennett, John
Associate Professor
EII-472, jcbjr@engr.uconn.edu

Bergman, Theodore
Professor & Associate Dean for Research & Outreach
UTEB 452, tberg@engr.uconn.edu

Bzymek, Zbigniew
Associate Professor
EII-200A, zbigr@engr.uconn.edu

Cetegen, Baki
Professor
UTEB 360, cetegen@engr.uconn.edu

Chiu, Wilson
Associate Professor
UTEB 378, wchiu@engr.uconn.edu

Faghri, Amir
Professor & Dean, School of Engineering
FLC-338, faghan@engr.uconn.edu

Fan, Tai-Hsi
Assistant Professor
UTEB 386, tfan@engr.uconn.edu

Ilie, Horea
Assistant Professor
UTEB 366, ilie@engr.uconn.edu

Jeffers, Robert
Associate Professor & Director of Undergraduate Studies
EII-300, bobjeff@engr.uconn.edu

Jordan, Eric
Professor
EII-315, jordan@engr.uconn.edu

Kazerounian, Kazem
Professor
EII-309, kazem@engr.uconn.edu

Langston, Lee
Professor (Emeritus)
EII-201D, Langston@engr.uconn.edu

Murphy, Kevin
Associate Professor & Director of Graduate Studies
UTEB 376, kdm@engr.uconn.edu

Olgiac, Nejat
Professor
EII-201A, olgiac@engr.uconn.edu

Pasamallari, Ugur
Assistant Professor
UTEB 362, ugeerisa@engr.uconn.edu

Pituchman, Ranga
Distinguished Professor & Head
UTEB 460, pituch@engr.uconn.edu

Reifsnider, Kenneth
Pratt & Whitney Chair Professor in Design and Reliability, Director of Operations, CT Global Fuel Cell Center
Fuel Cell Center and UTEB 364, reifsnid@engr.uconn.edu

Renfro, Michael
Assistant Professor
UTEB 372, renfro@engr.uconn.edu

Sammes, Nigel
UTC Chair Professor in Fuel Cell Technology
Fuel Cell Center
sammes@engr.uconn.edu

Tang, Liang
Assistant Professor
UTEB 368, jiang@engr.uconn.edu

Zhang, Bi
Associate Professor
UTEB 384, zhang@engr.uconn.edu

Faculty-in-Residence

Barber, Thomas
Professor-in-Residence
EII-314, barbertj@engr.uconn.edu

Crow, Ed
Distinguished Professor-in-Residence
UTEB 382, crow@engr.uconn.edu

Wood, Marcelle
Lecturer and Assistant Dean
EII-304, mculley@engr.uconn.edu

Technical and Administrative Staff

Mealy, Tom
Mechanical Design Technician III
(860) 486-3711
EII-100B, 108A, tmealy@engr.uconn.edu

Clougherty, Jim
Computer Support Consultant
(860) 486-1449
EII-202, jdc5@engr.uconn.edu

Hockla, Laurie
Secretary II & Graduate Program Coordinator
(860) 486-2189
UTEB 465, hockla@engr.uconn.edu

Jerome, Emily
Program Assistant II
(860) 486-2178
UTEB 465, ejerome@engr.uconn.edu

Veronese, Jacqueline
Administrative Coordinator
(860) 486-2090
UTEB 465, jacki@engr.uconn.edu

Interdisciplinary Research Centers

Institute of Materials Science
http://www.ims.engr.uconn.edu

Environmental Research Institute
http://www.engr.uconn.edu/eri

Connecticut Global Fuel Cell Center
http://www.ctfuelcell.uconn.edu

Booth Engineering Center for Advanced Technology
http://www.engr.uconn.edu/boeat