



**UMass**

**Dartmouth**

COLLEGE OF ENGINEERING

Civil and Environmental  
Engineering Department

# **Handbook for Graduate Students**

## **Master of Science in Civil and Environmental Engineering**

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## Table of Contents

Foreword.....	3
Introduction.....	4
General Information.....	4
Eligibility .....	4
Advising and Registration.....	4
Course Load Guidelines.....	5
Satisfactory Academic Progress .....	6
Continuous Registration Requirements .....	6
Termination of Studies.....	6
Transfer of Credit.....	7
Financing a Graduate Education.....	7
Master of Science in Civil and Environmental Engineering .....	8
MSCE Course Requirements: .....	8
MSCE Degree Tracks .....	8
Thesis Track.....	8
Project Track.....	9
Course work Track.....	9
5-Year BS/MS option .....	10
Milestones to MSCE Degree .....	10
Selection of the Graduate Advisor.....	10
Selection of the Thesis/Project Committee.....	10
Project/Thesis Agreement.....	11
Thesis Proposal .....	11
Project/Thesis Oral Presentation.....	11
Project Final Report .....	12
Thesis Format/Approval .....	12
Appendix A.....	13
SELECTION OF GRADUATE ADVISOR.....	14
SELECTION OF GRADUATE COMMITTEE.....	15
THESIS AGREEMENT .....	16
PROJECT AGREEMENT .....	17
MSCE ORAL PRESENTATION.....	18
PETITION FOR WAIVER OF A REQUIREMENT .....	19

## **Foreword**

The Department of Civil and Environmental Engineering (CEN) at the University of Massachusetts Dartmouth offers a graduate program leading to the Master of Science in Civil and Environmental Engineering (MSCE).

This handbook describes a number of procedures for graduate students and states various departmental regulations. Information provided in this handbook is intended as a supplement to, and not a substitute for, the University of Massachusetts Dartmouth Graduate Catalog. The Graduate Catalog contains general rules and regulations governing the University's graduate programs. The department web site and the Graduate Office home page are located at <http://www.umassd.edu/engineering/cen> and <http://www.umassd.edu/graduate>, respectively.

## **Introduction**

This handbook is published as a guide for graduate students who are seeking a Master of Science degree in Civil and Environmental Engineering. The goal of this document is to inform students of the necessary requirements and milestones along the way to their degree objectives. Appendix A contains forms that can be used if needed.

This handbook should be used together with the latest copy of the UMass Dartmouth Graduate Catalog (<http://catalog.umassd.edu/index.php?catoid=50>), which is the official source of information about the university's graduate academic programs (excluding law), its approved courses, and associated policies and procedures.

Additional guidance provided by the following offices can assist you: the Office of Student Affairs, the Center for Access and Success, Writing and Reading Center, Computing and Information Technology Services, and the Office of the Registrar.

## **General Information**

### **Eligibility**

Individuals with a BS degree in Civil and Environmental Engineering from an accredited institution and a GPA of at least 2.5 are eligible to apply to the MSCE program. Those with BS degrees in other fields or a BS in Civil and Environmental Engineering from a non-accredited institution need to have successfully passed the following courses before being considered for the graduate program:

- One year (2 semesters) of Physics + One year (2 semesters) of Chemistry + One year (2 semesters) of Calculus
- EGR 241: Engineering Mechanics I (Statics)
- EGR 242: Engineering Mechanics II (Dynamics)
- CEN 202: Mechanics of Materials
- CEN 303: Fluid Mechanics

Some of the above courses could possibly be waived in consultation with the academic advisor and the graduate program director. Enrollment in CEN grad courses, however, requires that the pre-requisites put in place by the CEN faculty teaching the course be met.

### **Advising and Registration**

Once accepted into a graduate program, the first step is to choose a graduate advisor based on your personal interests through consultation with the department graduate program director. After the graduate advisor is identified, the student must prepare a preliminary plan of study based on the degree requirements. The course listings provided in the Graduate Catalog will help you develop a

preliminary plan of study. Planning will help ensure that you have the necessary prerequisites for the courses you need at the times they are offered. After you make a draft plan, you should meet with your advisor to discuss it.

When you arrive on campus, go to the Civil and Environmental Engineering Department Office (Violette Bldg., room 108) where the secretary will direct you to the CEN Graduate Program Director who will help you in the process of initiating your discussions with different faculty members towards identifying a graduate advisor. Selection of graduate advisor is important since he or she will be the person who advises you on your thesis, project, or course selection and guides your program to completion. You must file a Selection of a Graduate Advisor form with the CEN Graduate Program Director before the end of your first semester. Failure to do so may result in forfeiture of any teaching assistantship (TA) or research assistantship (RA) and inability to register for courses.

The selection of courses including independent studies as well as the thesis or project research topic should be done in consultation with the graduate advisor and with the approval of the graduate program director. It is, however, your responsibility, not your graduate advisor's, to make sure that the planned program meets all requirements stipulated in the graduate handbook. If deficiencies are found during certification for graduation, your graduation will be delayed until the deficiencies are removed.

A Thesis or Project Agreement form must be completed before completing 15 credits. You and your advisor will then agree on a sequence of courses that will give you the best preparation for your thesis or project as quickly as possible.

Pre-registration periods are specified by the university each semester. Graduate students are strongly encouraged to enroll for the next semester at those times. After consultation with their advisor, students are expected to register themselves for courses using the university online system ([www.umassd.edu/coin/](http://www.umassd.edu/coin/)). Departmental RAs and TAs will not be renewed unless students pre-register and file all appropriate paperwork. The pre-registration period is also a time to review your graduate program of study and to make whatever changes are appropriate in consultation with your advisor. Pre-registration helps ensure that you will have a place in a course if enrollment is large and that a course you wish to take does not get canceled due to a low enrollment. In addition, if you hold a summer assistantship, you cannot get paid unless you have pre-registered for the fall semester. Fall assistantships will not be renewed if you are not pre-registered, with a Selection of Advisor form on file with the CEN Graduate Program Director.

## **Course Load Guidelines**

A course load of 9 credits per semester is considered minimum for full-time status at UMass Dartmouth. Students awarded full-time graduate assistantships may take no more than 9 credits (including research thesis or project) per semester. These course load guidelines must be followed unless approval is obtained in writing from your advisor and the Graduate Program Director.

## Satisfactory Academic Progress

Students are expected to make appropriate progress toward completion of their degrees, and those who do not are subject to review for warning, probation or possible dismissal as indicated under Academic Sanctions in graduate catalog:

<http://catalog.umassd.edu/content.php?catoid=50&navoid=4008>

Unsatisfactory academic progress results from failure to meet the requirements stipulated in graduate catalog under Graduate Degree Requirements and or and/or failure to complete the following:

- For students who enroll in thesis/project track: (1) filing a project or thesis proposal; (2) scheduling the project or thesis presentation; (3) producing final copies of the master's thesis/project; (4) passing the minimal number of required credits
- For students who enroll in course work track: (1) passing a comprehensive written or oral examination after a maximum of two trials; (2) passing the minimal number of required credits

Please note that course credits have a longevity of 6 years from the time course is completed. Only graduate courses in which the student receives a grade of C or better will count towards the degree. However, all grades are averaged into the student's GPA. Required courses in which a student received a grade of C minus or less must be repeated in order for the student to graduate.

## Continuous Registration Requirements

To maintain status as an MS degree candidate, it is necessary to be enrolled continuously (exclusive of summers) or receive an approved Leave of Absence (if you must interrupt progress towards your degree). If you continue to work on your thesis or project after completing formal course requirements and 3 or 6 credits of research for project or thesis, respectively, you must enroll in zero-credit "Continuation" for every semester until the thesis/project is completed, including the semester in which final approvals are given.

## Termination of Studies

Withdrawal from the University permanently removes the student from the program and is therefore a serious procedure. Any student considering withdrawal should consult with their advisor. If the student subsequently decides to withdraw from the University, she/he should do so formally through the normal University procedure. Withdrawing students who hold University appointments should also submit a letter of resignation to the CEN Graduate Program Director. Students who do not register for any courses or continuing studies, or do not request a Leave of Absence, will be automatically withdrawn from the University.

Students who have withdrawn from the University and wish to return must apply for re-admission. Application for re-admission is made by written request to the Office of Graduate Studies. Re-admission is granted subject to the approval of the CEN Graduate Committee, the CEN Department Chairperson, and the Dean of the College of Engineering.

## **Transfer of Credit**

A maximum of 6 credits may be transferred from another institution. The Transfer Credit Evaluation form is available at the Office of Registrar. All transfer requests must be accompanied by official transcripts (not copies). Supporting information, such as syllabi and detailed course descriptions, that could be useful in the evaluation of transfer credit should be included with the request. Course credits applied in the attainment of another degree from any institution, including UMass Dartmouth, cannot be counted towards the 30 credits needed to obtain the MSCE degree at UMass Dartmouth, unless a student is enrolled in the 5-year BS/MS program. Students in the 5-year BS/MS program are allowed to have 6 credits of upper level (400 or higher) courses count towards both the BS and MS degrees. Students may submit a Waiver of Requirement (Appendix A) request if they believe they have already taken a course satisfying a CEN degree requirement during the completion of another degree program. It should, however, be noted that a waiver does not reduce the total number of credits required for completion of the M.S. degree. Only courses in which a grade of B minus or better was obtained are eligible to be transferred.

## **Financing a Graduate Education**

A limited number of research and teaching assistantships are available each year. These assistantships, which are available only to MS students on thesis track (see below), are awarded based on academic merit and are very competitive. All Teaching Assistantships (TAs) are recommended by the CEN department's graduate committee, are approved by CEN chair or the graduate program director and are awarded by the Dean of the College of Engineering. Research Assistantships (RAs) are awarded by a faculty sponsor, signed by graduate program director and approved by the Dean of College of Engineering. A graduate assistantship may include a full or partial waiver of tuition depending on the type of assistantship and the funding source.

If you receive any form of assistantships, you need to contact the CEN Department secretary as soon as you arrive on campus to sign the necessary paperwork to initiate payments. If you receive an RA, contact your faculty sponsor to learn the scope of your assistantship. Renewal of assistantships beyond the initial contract period is determined by the department or the faculty sponsor and the college. Assistantship renewal is contingent upon maintain an acceptable academic record (e.g., a cumulative GPA of at least 3.0 for TAs) and satisfactory progress towards the degree (see above). Performance in performing the duties associated with the assistantship and availability of funds are also criteria for continuation.

A full-time graduate assistant is expected to work 20 hours per week "for the assistantship" she or he is receiving during the academic year. Note, this is not necessarily equal to the number of hours the student needs to commit to research in order to maintain satisfactory progress towards degree completion. Full time support in the summer assumes 40 hours per week commitment.

# **Master of Science in Civil and Environmental Engineering**

The Master of Science in Civil and Environmental Engineering (MSCE) assists the region's, the state's and the nation's industries, small businesses, and governmental agencies by providing an accessible source of graduate education. The need for advanced degrees in Civil and Environmental Engineering is both regional and global. Our master's degree program aims at providing students with the knowledge, the skills and the confidence that are needed to address the challenges of today and future.

The program offers small classes, close contact with a diverse and international faculty, and easy access to well supported research facilities to provide state-of-the-art learning and research experiences. Courses are scheduled to permit either fulltime or part-time study.

## **MSCE Course Requirements:**

A total of thirty (30) credits, selected with the approval of the Graduate Advisor, are required. In general, the courses must be designated as CEN courses, although courses taken from other departments may be accepted with approval of the CEN graduate program director.

## **MSCE Degree Tracks**

There are four different tracks available to students seeking a master's degree in Civil and Environmental Engineering:

- Thesis track
- Project track
- Course work track
- 5-Year BS/MS track

Only CEN undergraduate students who are interested in pursuing a master's degree can choose the accelerated 5-Year BS/MS option.

### **Thesis Track**

The thesis option requires the completion of a research thesis usually involving a theoretical, numerical or experimental investigation of a fundamental nature.

1. A minimum of 30 credits must be completed. These must be selected by the student in consultation with the graduate advisor.
2. A grade of C or better is required for all graduate courses to be counted towards the degree.
3. As many as 6 credits of 400 level courses may be counted towards the degree. For these courses, a grade of B or better and the approval of the graduate program director are required.



4. 6 credits of MS Graduate Thesis (CEN 590) must be completed. In addition to the written thesis, the approval of the Thesis Committee (see Appendix A for the approval form) on a satisfactory oral presentation and defense of the thesis is required.
5. No more than 6 credits of individual study, including independent study and/or directed study, and excluding graduate thesis, may apply as credit toward the master's degree.
6. The thesis must be accepted for library collections. The library has moved to an electronic only system for archiving theses, and the submission of bound copies to library are no longer required. A minimum of 2 copies, however, should be bound and submitted to the department and the Graduate Advisor. Other copies may be requested by thesis committee members or other interested parties involved in the thesis research.

## **Project Track**

The project option requires the successful completion of a project, usually involving a theoretical, numerical or experimental investigation of an applied nature, often in conjunction with a company's or government agency's interests.

1. A minimum of 30 credits must be completed. These must be selected by the student in consultation with the graduate advisor.
2. A grade of C or better is required for all graduate courses to be counted towards the degree.
3. As many as 6 credits of 400 level courses may be counted towards the degree. For these courses, a grade of B or better and the approval of the graduate program director are required.
4. 3 credits of MS Graduate Project (CEN 592) must be completed for the Project track. In addition to the written report, the approval of the Project Committee (see Appendix A for the approval form) on a satisfactory oral presentation and defense of the project is required.
5. No more than 6 credits of individual study, including independent study and/or directed study, and excluding graduate project, may apply as credit toward the master's degree.

## **Course work Track**

The course work option requires the successful completion of a comprehensive written or oral exam, involving questions from a set of a minimum of four core courses completed by the student. The set of core courses will be determined by the student's advisor in consultation with the student and must be approved by the Graduate Program Director.

1. A minimum of 30 credits must be completed. These must be selected by the student in consultation with the graduate advisor.
2. A grade of C or better is required for all graduate courses to be counted towards the degree.

3. As many as 6 credits of 400 level courses may be counted towards the degree. For these courses, a grade of B or better and the approval of the graduate program director are required.
4. A comprehensive written or oral exam must be passed after the completion of a set of core courses. A student who fails to pass the exam may retake it for the second time upon consultation with the graduate advisor and approval of the graduate program director.
5. No more than 6 credits of individual study, including independent study and/or directed study, may apply as credit toward the master's degree.

### **5-Year BS/MS option**

CEN undergraduate students at UMass Dartmouth can choose to apply to the accelerated 5-Year BS/MS option. Upon admission, these students are required to follow one of the three tracks discussed above. However, students in the 5-Year BS/MS program are allowed to have 6 credits of upper level (400 or higher) tech-elective (not core-elective) courses count towards both the BS and MS degrees.

### **EGR 500 Graduate Internship**

Students in the **project track** and the **course work track** may be eligible to do internship under this course provided they are in good standing as a graduate student in the College of Engineering and they have the approval of their advisor, graduate program director, department chairperson and COE dean. Please see <https://www.umassd.edu/engineering/graduate/internships/> for more details, and [https://www.umassd.edu/international\\_students/information-for-f-1-and-j-1-students/student-employment/curricular-and-optional-practical-training/](https://www.umassd.edu/international_students/information-for-f-1-and-j-1-students/student-employment/curricular-and-optional-practical-training/), for other regulations and compliance by international students.

### **Milestones to MSCE Degree**

#### **Selection of the Graduate Advisor**

Once accepted into a graduate program, the first step is to choose a graduate advisor based on your personal interests. Selection of graduate advisor is important since he or she will guide you through the necessary steps toward completion of degree requirements. You must file a Selection of a Graduate Advisor form (see Appendix A for selection form) with the CEN Graduate Program Director before the end of your first semester. Failure to do so may result in forfeiture of any teaching assistantship (TA) or research assistantship (RA) and inability to register for courses.

#### **Selection of the Thesis/Project Committee**

Students in the Thesis and Project tracks must also select 3 faculty members to serve as their thesis or project committee (see Appendix A for the Committee Selection form). The Committee reviews the student's progress towards the degree and approves the thesis or project. The Committee will need to include at least 2 faculty members from within the CEN Department. The student's Graduate Advisor, who is chairperson of this committee, must be a full-time, joint, or affiliate member of the CEN faculty at UMass Dartmouth. The student is responsible for arranging for faculty to serve on his/her committee. When appropriate, a senior industrial person may serve on the Committee with approval of the CEN Graduate Program Director and the Dean of the College of Engineering.

## **Project/Thesis Agreement**

This is a preliminary agreement between the student and the Graduate Advisor regarding the general topic to be investigated in the project or thesis. It must be filed as soon as the student has decided which track he or she will pursue and what the topic might be. This agreement must be filed no later than the end of the first year of study (see Appendix A for Agreement form).

## **Thesis Proposal**

Prior to taking CEN 590 a proposal for thesis research must be prepared by the student in consultation with the Graduate Advisor. The proposal must be approved by the student's Thesis Committee and filed with the CEN Graduate Program Director as a prerequisite to enrolling in thesis.

The format for the thesis proposal is:

- Cover Page - Title; student name, date, signature of graduate student; names, signatures, date of student's Thesis Committee.
- Background - One paragraph (1/3 page) to orient the reader to the area of research
- Problem Statement - One or two sentences that concisely state the problem that will be addressed by the research.
- Technical Discussion - About one page that presents some of the more important aspects of the proposed research. This should include a summary of the state-of-the-art in the particular research area.
- Approach - One paragraph (1/3 page) that describes the methods that will be applied in conducting the research.
- Bibliography – Full citations of cited literature.

## **Project/Thesis Oral Presentation**

Each degree candidate in the thesis or project track will make an oral presentation to the student's committee and invited guests. Students are required to give the oral presentation on the thesis or project topic and are expected to show mastery of the material presented. The details of the thesis or project (including title, date, room, etc.) must be announced at least 2 weeks in advance of all oral presentations. The student's Committee will determine if the presentation and knowledge of the student are satisfactory or if the presentation must be repeated again.

## **Project Final Report**

The Project Final Report must be submitted to the Graduate Advisor for the student to receive a grade for Graduate Project (CEN 592). While there are no specific format requirements for the final report, the report must be reviewed and approved by the committee and the Graduate Advisor. Advisors are free to impose requirements on the final report.

## **Thesis Format/Approval**

The thesis must be completed in accordance with the rules of the UMass Dartmouth Office of Graduate Studies and the College of Engineering. Following the oral presentation, several signatures are required for final approval of the thesis. These include but are not limited to the student's Thesis Committee, the CEN Graduate Program Director.

## **Appendix A**

## SELECTION OF GRADUATE ADVISOR

TO: The CEN Graduate Program Director

The faculty member named below has agreed to serve as MSCE Graduate Advisor for:

Student: \_\_\_\_\_  
                    Last                                    First                                    M.I.

Email Address: \_\_\_\_\_ Student ID: \_\_\_\_\_

Professor: \_\_\_\_\_  
                    Last                                    First                                    M.I.

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Approval: \_\_\_\_\_  
                    CEN Graduate Program Director

## SELECTION OF GRADUATE COMMITTEE

TO: The CEN Graduate Program Director

The following faculty have agreed to serve on the MSCE Graduate Committee of:

Student: \_\_\_\_\_  
                                Last  First  M.I.

Email Address: \_\_\_\_\_ Student ID: \_\_\_\_\_

Professor: \_\_\_\_\_  
                                Last  First  M.I.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Professor: \_\_\_\_\_  
                                Last  First  M.I.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Note: In some circumstances a senior engineer or scientist from outside UMass Dartmouth may serve on a Graduate Committee. Approval of the CEN Graduate Program Director is required if such a person is being considered. Attach a letter indicating the company, title and areas of expertise of the proposed committee member.

Approval: \_\_\_\_\_ Date: \_\_\_\_\_  
                                CEN Graduate Program Director

## THESIS AGREEMENT

**TO:** The CEN Graduate Program Director

The faculty member named below has agreed to act as Graduate Advisor and to direct the MSCE thesis of:

Student: \_\_\_\_\_  
Last                                      First                                      M.I.

Email Address: \_\_\_\_\_                      Student ID: \_\_\_\_\_

Advisor: \_\_\_\_\_  
Last                                      First                                      M.I.

The general topic or field of research will be \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

This agreement may be terminated by either party by written notification of both parties to the CEN Graduate Program Director. Completion of this form does not fulfill the Thesis Proposal requirement.

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# PROJECT AGREEMENT

**TO:** The CEN Graduate Program Director

The faculty member named below has agreed to act as Graduate Advisor and to direct the M.S. project of:

Student: \_\_\_\_\_  
                    Last                                    First                                    M.I.

Email Address: \_\_\_\_\_ Student ID: \_\_\_\_\_

Professor: \_\_\_\_\_  
                    Last                                    First                                    M.I.

The general topic or field of research will be \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

This agreement may be terminated by either party by written notification of both parties to the CEN Graduate Program Director. Completion of this form does not fulfill the Project Proposal requirement.

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## MSCE ORAL PRESENTATION

**TO:** Dean, College of Engineering

**FROM:** CEN Graduate Program Director

**DATE:** \_\_\_\_\_

\_\_\_\_\_ (Name of student) has successfully completed the oral presentation requirement for the MSCE on this date.

Advisor: \_\_\_\_\_

Committee Member: \_\_\_\_\_

Committee Member: \_\_\_\_\_

## PETITION FOR WAIVER OF A REQUIREMENT

TO: CEN Graduate Program Director

FROM: (Student Name) \_\_\_\_\_ Date: \_\_\_\_\_

Email Address: \_\_\_\_\_ Student ID: \_\_\_\_\_

I believe that I have already accomplished the objectives of the following degree requirement:

\_\_\_\_\_

\_\_\_\_\_

and that I should therefore have this requirement waived. I understand that a waiver does not reduce the total number of credits required as a graduate student for completion of the M.S. degree.

In the space below give information that justifies your petition (use additional sheets if necessary). Give course numbers, names, where taken and for what degree. Attach a transcript (copy) and circle the applicable courses:

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Approval:

Course Coordinator: \_\_\_\_\_ Date: \_\_\_\_\_

CEN Graduate Program Director: \_\_\_\_\_ Date: \_\_\_\_\_

*All rules are subject to change at any time in accordance with existing and hereafter adopted University policies.*

*It is the policy of University of Massachusetts Dartmouth not to discriminate against any applicant for admission or employment, or against any employee, or any educational program, on the basis of race, religion, national origin, age, veteran status, handicap, sex, or sexual orientation. The following person has been designated to handle inquiries regarding the nondiscrimination policies:*

*Associate Vice Chancellor of  
Diversity, Equity & Inclusion  
Foster Administration Building  
University of Massachusetts Dartmouth  
285 Old Westport Road  
North Dartmouth, MA 02747-2300*

*Telephone (508) 999-9293*

*For information regarding graduate admission contact:*

*Office of Graduate Studies  
University of Massachusetts Dartmouth  
285 Old Westport Road  
North Dartmouth, MA 02747-2300*

*Telephone (508) 999-8604*