

Civil, Environmental, and Geospatial Engineering
Graduate Student Handbook

2021-2022

Updated: June 21, 2021

1) Program Specific Information

a) Graduate Programs

The Department of Civil, Environmental, and Geospatial Engineering (CEGE) is proud to offer the following programs.

- Graduate Certificates in Civil, Environmental, and Geospatial Engineering. Certificates in: Sustainable Pavement Design and Construction, Sustainable Water Resources Systems and Water, Sanitation, and Hygiene (WASH) Engineering are offered to students at the Michigan Technological University campus in Houghton, MI. Certificates in: Advanced Photogrammetry and Mapping with UAS, Geospatial Data Science and Technology, Resilient Water Infrastructure, Structural Engineering: Advanced Analysis, Structural Engineering: Bridge Analysis and Design, Structural Engineering: Building Design, Structural Engineering: Hazzard Analysis, Structural Engineering: Timber Building Design, and Water Resources Modeling are offered to students at the Michigan Technological University campus in Houghton, MI and online as well.
- Master of Science in Civil Engineering. This program is offered to students at the Michigan Technological University campus in Houghton, MI.
- Master of Science in Civil Engineering—Online. This program is an online coursework program in structural engineering.
- Master of Science in Environmental Engineering. This program is offered to students at the Michigan Technological University campus in Houghton, MI.
- Master of Science in Environmental Engineering Science. This program is offered to students at the Michigan Technological University campus in Houghton, MI.
- Master of Science in Integrated Geospatial Technology. This program is offered to students at the Michigan Technological University campus in Houghton, MI as well as online.
- Doctor of Philosophy in Civil Engineering. This program is offered to students at the Michigan Technological University campus in Houghton, MI.
- Students may pursue a Doctor of Philosophy in Environmental Engineering through an interdisciplinary Ph.D. program such as the EPD2 program.

b) Department Structure

It is the mission of Civil, Environmental, and Geospatial Engineering Department to “provide an educational, professional, and intellectual experience that enables a diverse body of students, alumni, faculty, and staff to contribute to society through teaching, research, practice, and service.” This community seeks to achieve this mission using the following structure.

CEGE Department Chair: Dr. Audra Morse

CEGE Graduate Program Director; Chair, Graduate & Research Committee (GRC): Dr. Zhanping You

CEGE Department Staff

Title	Name	Description
Graduate Program Assistant	Angela Keranen	Assists with graduate program administration
Administrative Aide	Amanda Cadwell	Assists with payroll
Research Engineer I	Kiko de Melo e Silva	Safety training and building/laboratory access and laboratory assistance and special training

Technical Lab Coordinator	Rob Fritz	Laboratory assistance and special training
Budget Coordinator	Shelle Sandell	Other miscellaneous support

Graduate Student Government (GSG) Representatives change each year. Contact the Graduate Program Assistant for the updated GSG Representatives.

c) Keys, Desk, Computers, and Research Space Assignments

Each graduate student in residence is provided a desk for personal use in an office and after-hours access to that office. However, not all students may have an office space due to space limitations. Students who have been assigned an office space will be notified by the Graduate Program Assistant when a key is ready. Students that have not been assigned an office space and feel office space is needed should contact the Graduate Program Assistant. A student's Tech Express identification card and assigned M-number grant after-hours admission to all Civil, Environmental, and Geospatial Engineering spaces in Dow, Dillman, Great Lakes Research Center (GLRC), and Benedict Laboratory. Students working on research projects may be issued keys or card swipe access to project laboratories upon approval of the faculty member responsible for that laboratory and upon completion of all required safety training. Requests for new keys, replacements for lost keys, or swipe-card access to restricted areas should be made to the Staff Assistant. Keys or ID cards must not be passed on to anyone else, or duplicated, under ANY circumstances. Lending or duplication of keys is grounds for dismissal. Lost keys or ID cards need to be reported to supervisors as soon as they are noticed to be missing. A \$100 fee is assessed for any key lost/replaced or not returned to public safety when no longer needed or when the student has graduated.

All graduate students are provided computer access through computer labs in several common areas (Dillman B002 and Dow 853) and graduate student offices. Computers for research use are provided by research advisors and must be maintained for the purpose of research. If traveling with those computers, students need to follow the instruction given by the University policy. It is noted that carrying those computers for international travels requires special permission depending on the country. Questions and problems with computers should be directed to the Information Technology (IT) Help Desk, found on the first floor in the library or via email at it-help@mtu.edu. The IT staff will supply you with your username and password; change your password the first time you log into your account. Please read the policies for using computers as well as using any Michigan Tech computer facilities as soon as you begin using the computers.

Students should pay particular attention to Michigan Tech computer use policies regarding copyrights, privacy, passwords, and hacking. These can be found through the IT website, or directly at http://www.it.mtu.edu/OIT/documents/computer_use_policy.pdf.

d) Email, Mail Service, Photocopier, Supplies and Printers

Email is the department's primary communication tool with graduate students regarding issues such as financial support, graduate program obligations and responsibilities, and semester timelines and deadlines, to name a few. You are expected to be responsive to departmental emails at all times.

Student mailboxes are available for those that wish to have one. Student mailboxes are located on the 8th floor of the Dow Building, outside the main office. It is advisable to check your mailbox daily for mail and messages.

Photocopiers, laser printers (Dillman 201k and Dow 869), and office supplies are available for CEGE graduate students to use for research and teaching purposes only. Departmental resources are limited, so efficiencies such as double-sided printing and copying are appreciated. Please print

work related material only. Note that there are important national laws regarding photocopying copyrighted materials. If you have a question about copyright law please inquire in the library or see <http://www.admin.mtu.edu/admin/procman/ch13/ch13p10.htm>.

e) CEGE Seminars

The CEGE Department offers seminars throughout the fall and spring semesters. Attendance is highly encouraged for all students, and for funded students, participation is listed as an obligation in your offer letter. Please review email announcements regarding seminar offerings.

f) Responsible Conduct of Research

Responsible Conduct of Research (RCR) Training is an important aspect of being an effective scholar and is mandatory whether a Masters or Doctoral degree candidate. Basic training must be completed within the first two semesters at MTU or a registration hold will be placed on the student's account. Advanced training must be completed by the end of the third semester. Students may not graduate or enter candidacy if RCR training is not complete. <http://www.mtu.edu/gradschool/administration/academics/resources/rcr/>.

g) Continuous Enrollment and Residency Requirements

Continuous enrollment throughout the academic year (fall and spring semesters) is required through the semester in which students complete all degree requirements. Graduate students are not required to register for the summer session. This means students who wish to remain active in the graduate program must be enrolled every academic fall and spring semester from their first enrollment through filing the completed Report on Final Oral Examination form (for MS thesis, MS report, and PhD students) or Verification of Final Degree Requirements form (for MS coursework students) with the Graduate School. Each fall and spring semester, students must be enrolled in (a) regular courses including independent study, special projects, etc.; (b) research credits; OR (c) in one of three courses ([UN5951](#), [UN5952](#), [UN5953](#)).* Students who do not maintain active status enrollment (through one or more of the three course options above) will have to apply for re-admission to regain active status. Students may request a waiver of continuous enrollment. However, waivers of continuous enrollment will be strictly limited to one term except in the most serious situations. For more information, contact the Graduate School.

Graduate students must take at least 20 credits beyond the masters or 50 credits beyond the bachelors to obtain their Ph.D. degree through Michigan Tech. Additionally, a minimum of two-thirds of the required coursework credits (non-research) must be completed at Michigan Tech. Research credits used to satisfy degree requirements must be taken through Michigan Tech and must be supervised by a member of Michigan Tech's graduate faculty. Courses which meet the "through Michigan Tech" requirement are defined as courses listed by the Michigan Tech Registrar's Office (see https://www.banweb.mtu.edu/pls/owa/stu_ctg_utils.p_online_all_courses_gr) and taught by Michigan Tech faculty.

*Contact the Graduate School regarding these courses. Please note that tuition for these courses may not be waived and these courses may not be paid from departmental or sponsored accounts.

h) Grades

Fundamentally, students can gauge their progress in their coursework and research credits using the following explanation of letter grades. Faculty may opt to distinguish between excellent and good graduate work and inform students of those distinctions.

Grade	Level of Progress
A	Excellent and good graduate work
A/B	Acceptable graduate work
B	Marginally acceptable graduate work
B/C	Unacceptable graduate work
C	Unacceptable graduate work (all requirements completed)
F	Unacceptable graduate work (all requirements not completed)

According to the Graduate School, graduate students must maintain at least a 3.0 cumulative grade-point average in the courses required for a graduate degree. No credit is given for courses in which students receive B/C, C or F grades (<http://www.mtu.edu/gradschool/administration/academics/policies-procedures/good-standing/>). Exceptions include credits taken in cognate departments that may carry a B/C or C, if approved by the CEGE Department Chair.

Students who receive a B/C, C or F in required courses must retake the courses to fulfill the requirements. Students who receive a C or F in other courses selected to fulfill requirements may elect to take a different course to fulfill the requirement. Students are placed on probation if they receive a Q (Inadequate Progress) in research credits.

i) Student Standing

The standing of each graduate student is evaluated at minimum at the end of each semester (Fall, Spring, or Summer) of enrollment, through assessment of course grades and/or research performance. Details depending on program (MS or PhD) and/or path (research or coursework) are provided below.

Coursework Master's Students

To be in good standing, Master's students must receive grades of A, A/B, or B in all courses and make reasonable progress toward the degree. Students receiving B/C's, C's, or F's must meet with their advisor. A grade of B/C, C, or F in a course may be grounds for probation; two B/C's, C's, or one F may be grounds for withdrawal or dismissal from the program. If students are not in good standing at the end of the semester, they will receive an email from the Graduate School and the CEGE Graduate Program Director. Students should make an appointment with the Graduate Program Director to determine appropriate paths forward with respect to their degree.

Research Master's Students

To be in good standing, Master's students must receive grades of A, A/B, or B in all courses and make reasonable progress toward the degree. Students receiving B/C's, C's, or F's must meet with their advisor. A grade of B/C, C, or F in a course may be grounds for probation; two B/C's, C's, or one F may be grounds for withdrawal or dismissal from the program. Students must also make satisfactory progress toward the degree, as described in the Graduate Student Research

Performance Evaluation Review section of this document. If students are not in good standing, they will receive an email from the Graduate School and the CEGE Graduate Program Director. Students should make an appointment with the Graduate Program Director to determine appropriate paths forward with respect to their degree.

Doctoral Students

Doctoral students are expected to receive more A's or A/B's than B's to be in good academic standing. Doctoral students' grades are reviewed yearly, and if they have received more B's than A's or A/B's, they must meet with their advisor to discuss their status in the program. Students who receive B/C's, C's, or F's must also meet with their advisor to discuss their status in the program. A grade of B/C, C or F in a course may be grounds for probation; two C's or one F may be grounds for withdrawal or dismissal from the program (see "Academic Probation" below). Students must also make satisfactory progress toward the degree, as described in the Graduate Student Research Performance Evaluation Review section of this document.

j) Academic Probation

Students receiving B/C, C, or F grades in any course must meet with their advisor during the following semester to review their status.

Probationary status is reviewed at the end of each semester by the Graduate School to determine if the student may stay enrolled in the program. The Graduate School initiates academic probation and dismissal procedures. The Graduate Program Director and the graduate advisor will respond to Graduate School requests. As noted above, students should make an appointment with the Graduate Program Director to determine appropriate paths forward with respect to their degree.

Research students receiving anything less than a designation of "Satisfactory" on the Graduate Student Research Performance Evaluation Review must also discuss required actions to remediate their status with their advisor. Failure to take appropriate steps by the end of the subsequent semester may result in a student being placed on probation or in a recommendation of withdrawal or dismissal.

k) Grievance Procedure

Defining Grievance Cause

Faculty or students with concerns or complaints about the behavior of other faculty or students in professional situations or in interpersonal relationships should follow the grievance procedures described below. Note that questions of plagiarism should be taken to the Dean of Students, and sexual discrimination and sexual harassment issues should be taken to the University Title IX Coordinator (<http://www.mtu.edu/equity/title-ix/overview/>).

These procedures are designed to protect the rights and privacy of both faculty and students and to equitably adjudicate conflicts among faculty and students.

General Guidelines for Grievances

Faculty and students should avoid discussing their complaints with colleagues. Faculty or students who believe they have been subjected to discrimination based on sex or sexual harassment, suspect that an unfounded discrimination complaint may be filed against them, or have been threatened with the filing of such a complaint should notify the Affirmative Action Officer as soon

as possible. (For more information on grievances and grievance procedures, as well as issue pertaining to discrimination, see the “Tenured/Tenure-Track Faculty Handbook”:
<http://www.mtu.edu/faculty-handbook/>).

Student-Initiated Grievances

Students have the right to fair and equal treatment by administrators and to expect professional behavior from faculty and other students. Professional behavior includes such matters as a respect for expertise, individual beliefs, and personal privacy.

Students should be aware that the campus provides an ombudsperson. One of the functions of the ombudsperson is to process student complaints (<http://www.mtu.edu/ombuds/>). Students who have complaints about administrators, faculty, or other students should first discuss their complaints with the person concerned, if possible. If the complaint cannot be resolved in this way, they should discuss the complaint with the Graduate Program Director. The Graduate Program Director discusses the complaint with the CEGE Department Chair, faculty member, or student in question, and attempts to resolve the problem. If resolution is not possible at this level, the complaint will be referred to the CEGE Department Chair. If the complaint concerns the Graduate Program Director, it should be referred to the CEGE Department Chair. If the complaint concerns the CEGE Department Chair and resolution is not possible within the department, the complaint should be referred to the Dean of the Graduate School (<https://www.mtu.edu/gradschool/policies-procedures/academic/grievance/>).

Faculty-Initiated Grievances

Faculty members have the right to fair and equal treatment by administrators and to expect professional behavior from other faculty and students. Professional behavior includes such matters as a respect for expertise, individual beliefs, and personal privacy.

Faculty with complaints about administrators or other faculty should first discuss their complaints with the person concerned, if possible. If the complaint cannot be resolved in this way, faculty should discuss the complaint with the CEGE Department Chair or the Dean of the College Engineering; or, if that is not possible or resolution cannot be attained, the ombudsperson should be contacted.

Faculty with complaints about graduate students should first discuss their complaints with the graduate student concerned, if possible. If the complaint cannot be resolved in this way, they should discuss the complaint with the Graduate Program Director, who will discuss the complaint with the student, attempt to resolve the problem, and report to the CEGE Department Chair. If resolution is not possible at this level, the complaint will be referred to the Dean of the Graduate School. Faculty members should be aware that the campus provides an ombudsperson. One of the functions of the ombudsperson is to investigate faculty complaints.

Title IX

Title IX of the Education Amendments of 1972 is a Federal civil rights law that prohibits discrimination on the basis of sex in educational programs and activities that receive Federal funds. It states:

“No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.”

Under Title IX, discrimination on the basis of sex can include gender discrimination, pregnant and parenting discrimination, sexual harassment or sexual violence, such as rape, dating

violence, domestic violence, stalking, sexual assault, sexual battery, and sexual coercion.

To officially report an incident of gender discrimination, sexual harassment, or sexual assault/violence, you may contact the Title IX Coordinator at titleix@mtu.edu, 906-487-3310, 306 Administration Building or Public Safety and Police Services (<https://www.mtu.edu/publicsafety/>) at 906-487-2216. If you are a student, you may also choose to report to the Office of Academic and Community Conduct (<https://www.mtu.edu/conduct/>).

l) Voluntary Withdrawal

The advisor in consultation with the Graduate Program Director may suggest that an individual student on academic probation or making unsatisfactory progress withdraw from a CEGE Program. If the student does not voluntarily withdraw from the program, the Graduate Program Director may allow the advisor to begin dismissal proceedings.

m) Dismissal

Students may be dismissed from the program if any one of the following events occurs:

- Student fails to maintain good academic standing or does not make satisfactory progress in their work toward a degree, per Graduate Student Research Performance Evaluation Review.
- Student fails the Master's Final Oral Examination.
- Student fails the Doctoral Comprehensive Examination twice.
- Student fails the Doctoral Final Oral Examination.

The dismissal procedure is described at:

<http://www.mtu.edu/gradschool/administration/academics/policies-procedures/good-standing/>

n) Safety

The CEGE Department expects all faculty, staff, and students to make safety a priority. As such, all graduate students must complete the University General Safety Training annually. Before receiving access to a laboratory, a graduate student must complete all mandatory safety trainings designated by the laboratory space. Lab safety training is assigned and verified complete by the Staff Assistant. If lab specific training requires the lab specific safety operational protocol, students must follow the protocol and the lab supervisor is responsible for those who do not follow the protocol. Once assigned, all safety trainings should be completed within two weeks.

o) Absence Policy

Students receiving financial aid through the University (teaching assistantship, research assistantship, and/or fellowship) are entitled to staff holidays. Please note that the breaks between academic terms and the break at Christmas are not automatically considered as holidays or time off. In the case of GRAs, excused absences must be arranged with the faculty advisor.

GTAs follow a similar policy, but require the approval of the course instructor and/or their advisor. In general, all graduate students may take up to two weeks off campus each year, excepting that in NO CASE may it be during an academic term or finals week. PRIOR written authorization is required from the Administrative Aide, in consultation with student's advisor, the Graduate

Program Director, and in the case of GTAs, the course instructor. The Absence Request form should be completed and filed with the Administrative Aide. The Absence Request form may be found at <http://www.cege.mtu.edu/gradstudenthandbook/>.

Written approval is required for international travel (<http://www.admin.mtu.edu/acct/forms/travel/index.html>) in addition to the Absence Request form, the International Travel Request form must be completed. Any absence which does not follow this policy will result in an automatic deduction of pay and disciplinary action.

p) Academic Integrity

The University and the CEGE Department expects all students to maintain the highest level of academic and scientific integrity in all aspects of their studies, from class work to exams to research. If you are unsure of or have specific questions about assignments, projects, examinations, etc., please ASK your instructor or research advisor.

A detailed booklet describing Michigan Tech's academic integrity policy and procedures, including definitions of plagiarism, cheating, fabrication, and facilitating academic dishonesty, is available from the Dean of Students office, or on the web at:

<http://www.admin.mtu.edu/usenate/policies/p109-1.htm>. All graduate students should carefully read this policy. Students must also view the orientation module on academic integrity at <http://www.mtu.edu/gradschool/admissions/admitted/online-orientation/>

Further information on Scientific Misconduct Procedures may be found at <http://www.admin.mtu.edu/admin/prov/facbook/appf/fapp.htm>.

q) Student Responsibility

It is the responsibility of each CEGE graduate student to be familiar with CEGE Department policies as outlined in this Handbook, and with Graduate School policies as outlined on the Graduate School website. It is the responsibility of each CEGE graduate student to be sure that forms are completed and authorized in a timely fashion, and are filed with the administrative staff in the CEGE Department.

r) International Students

Upon arrival on campus all international students must register with the Office of International Programs and Services located in room 200 of the Administration Building. All matters concerning employment practice, visa renewals, and related matters are handled through this office. Changes in I-20 forms are handled in the Graduate School.

All international students whose native language is not English must take an English Language Assessment. The assessment takes place in the Michigan Tech Testing Center, Center for Teaching and Learning, Van Pelt and Opie Library 226. Visit the Testing Center to schedule a time to take the assessment or contact them at 906-487-1001, techtesting-l@mtu.edu. More details can be found at

<http://www.mtu.edu/ctl/for-graduate-teaching-assistants/language-assessment/>

Additionally, all first-time international students assigned a GTA must attend International Graduate Student Communication and Cultural Center (IGSC3). Students' language skills and their cultural competency will be assessed, and students will be provided with services on an as-needed basis so they can provide better service to our undergraduates and faculty while serving as graduate teaching assistants. Additional information is here

<https://www.mtu.edu/ctl/for-graduate-teaching-assistants/igsc3/>.

In order to be visa compliant, international students must register as full-time students. Questions

regarding I-20 forms, visa status, and full-time student status may be directed to the Graduate School.

s) Accommodation Policies for Americans with Disabilities

Michigan Tech complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disability Act of 1990 (ADA) (<http://www.mtu.edu/equity/access-disability/ada/>). If any student has a disability and needs a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office, Coordinator for Student Disability Services (7-1494). For other concerns about discrimination, contact one's advisor, Department Chair, or the Affirmative Action Office (x7- 3310).

t) Diversity, Equity, and Inclusion

To further the Department's mission of teaching, research, and service, the Department of Civil, Environmental, and Geospatial Engineering at Michigan Technological University strives to be diverse, inclusive, and respectful of all Department staff, faculty, and students in support of the University's Diversity Statement. The goal of this statement is to ensure everyone will be given equitable support, opportunity, and access to resources necessary to realize individual potential while contributing to the success of the Department.

The Department adopts the University's definition of diversity and non-discrimination statement as follows: Diversity encompasses the differences that we each bring with us through our individual backgrounds, which include race, ethnicity, religion, color, national origin, age, sex, sexual orientation, gender identity, height, weight, genetic information, socioeconomic class, marital status, differently abled, and veteran status. Inclusive means that all members will be welcomed, respected, and engaged in all aspects of the Department in which they choose to be involved.

In addition to adopting a diversity statement and definition, the Department has adopted a culture statement and a Code of Conduct. As a member of the Department, please consider how you can uphold the values and ideas expressed in these words. More information may be found on the Department website (<https://www.mtu.edu/cege/department/mission/>).

2) Financial Support

a) Procedure and Schedule for Awarding Support

The CEGE Program endeavors to support all students needing financial support, using a combination of external and internal funding. The Graduate Research Committee (GRC) makes support recommendations after decisions on admission have been made.

Decisions on financial support and contract offers for the coming academic year are made every spring semester. However, some funding opportunities may become available at other times during the year.

Reappointments to GTA positions are subject to review by the GRC Chair in consultation with the GRC and faculty mentors. Other students may be appointed as graduate research assistants (GRAs) to faculty, and selection is the decision of the faculty advisor providing the financial support.

b) Types of Support Teaching Assistantships

Teaching assistantships are offered to qualified applicants. Graduate teaching assistants (GTAs) work with the faculty and conduct recitation and laboratory sections. First-year graduate students are generally supported as GTAs. A typical GTA package includes tuition, fees, and a stipend. Stipends are adjusted periodically to ensure that they are competitive. For more information,

contact the Graduate Program Assistant.

Research Assistantships

Research assistantships are offered to qualified applicants. The research conducted in the department is supported by external funds. Graduate students performing research on these projects are supported as research assistants. Graduate research assistants (GRAs) are not assigned to teaching duties. The stipend and benefits are the same as those for GTAs.

Finishing Fellowships

The Graduate School offers a limited number of competitive Finishing Fellowships for one or two semesters to PhD students in residence who are close to finishing their dissertations. For more information, please review the Graduate School website.

Other Funding

- King/Chavez/Parks Fellowship. The [Michigan King/Chavez/Parks Fellowship](#) program provides grants to support graduate education for students from under-represented groups.
- External Graduate Research Fellowships. Faculty in the CECE Department, or from across campus, may secure research funding that contains employment opportunities for qualified graduate students, e.g., "piggyback" NSF grants (for public outreach) or web-page design. Students are encouraged to seek outside support and funding, as long as the work or research entailed is consistent with and supportive of a student's progress towards completion of the MS or Ph.D. degree.
- Other Fellowships. A number of competitively awarded fellowships are available for research and dissertation completion. Securing prestigious awards provides time for concentration on one's research and writing. See a partial list of available awards at the Graduate School website: <http://www.mtu.edu/gradschool/admissions/financial/>.
- Summer Youth Programs. Students may find employment as counselors or instructors in various summer youth/outreach programs offered by the university. See the web page at <https://www.mtu.edu/syp/> or contact the Educational Opportunity Office on campus for more information.
- Danielle Ladwig Award for Graduate Excellence. This award is made annually to a graduate level student in civil or environmental engineering in recognition of outstanding achievement in academics, research, and service, in memory of our friend and colleague, Danielle Ladwig. This award is accompanied by the Pati and Soumitri Reddy \$1000 endowed fellowship.
- Wilbur Haas Graduate Research Excellence Award. This award is made annually to a graduate level student in civil or environmental engineering to recognize outstanding student scholarship and research contributions. This award is accompanied by a \$1000 departmental fellowship.

c) Support Packages

Tuition, Fee Waivers, and

Stipends

During the regular academic year (Fall and Spring semesters), all GTAs receive tuition waivers for

up to 9 credits, computer-lab fee waivers and 75% of their graduate student insurance paid. All supported students are required to maintain a minimum of 9 credits of enrollment during each of those semesters.

GRAs receive tuition waivers for the period the faculty advisor has support for them. All supported students are required to maintain a minimum of 9 credits of enrollment during each of those semesters.

Workload

One credit should average 3 ½ hours of a student's time per week for one semester. One hour in class and 2 ½ hours in individual study is a typical division. The 3 ½ hours commitment per credit holds as well as for students enrolled in research credits. Thus, students should multiply the course credits by 3 ½ to determine the demands the course will place on their time during a typical week of the semester.

Students who are supported by a graduate research assistantship (GA), graduate teaching assistantship (GTA), etc. are expected to perform work for the University at a rate of 20 hours per week (for a full appointment). The 20 hours per week are in addition to the amount of time the student spends working on the coursework or research credits that they are enrolled in.

d) Department and Student Commitment to Contracts

Contracts for graduate assistants commit the CEGE Department to offering training and fiscal support to students and likewise commit students to professional behavior with regard to their teaching and employment. In order to meet our teaching and administrative commitments, it is important that the CEGE Department staff classes with qualified assistants.

Students who find they must resign their positions during the year should make every effort to inform the Graduate Program Director and the appropriate supervisor as soon as possible, but not less than four weeks prior to the beginning of the semester. Students who are scheduled to teach in summer sessions should inform the Graduate Program Director and the appropriate teaching supervisor no later than five weeks prior to summer semester if they must relinquish their assignment.

3) Advisors

Advisors help students structure a program of study that addresses their needs and satisfies degree requirements. New students are initially assigned the Graduate Program Director/GRC Chair as their advisor. The GRC facilitates a student's selection of an advisor, which is dependent on the student's specialty area and, if appropriate, research interests. In general, all incoming MS students will be considered to be on the coursework path. However, a student can switch to the research path (thesis or report) if a research advisor is identified. Please be aware that the availability of any particular research project is governed by the availability of funds to support that research.

Once a research advisor is selected, an Advisory Committee is formed for each student. The Advisory Committee prepares a program of course study and research work that will lead to the desired graduate degree. It is up to the student and their advisor to fill out, get signed, and submit the appropriate forms for the Graduate School at the appropriate times (see this link for current forms and instructions): <https://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/>. In addition to Graduate School forms, Master's students must also complete the Departmental Advisor form and submit to the Graduate Program Assistant. See the timeline below dependent on degree path.

- Departmental Advisor Form – MS (Research): Due by end of the 7th week of first semester

- Departmental Advisor Form – MS (Coursework): Due by end of the 7th week of first semester
- Departmental Advisor Form – Accelerated MS: Due by the end of the 1st week of the student's first semester in the Accelerated MS program. The form should be emailed to the Graduate Program Assistant at the time the application to the Graduate School is submitted.

Most students in pursuit of a Ph.D., who when admitted into the graduate program do not already possess an MS degree or its equivalent, can readily obtain a Master of Science in Civil Engineering or Environmental Engineering degree along the way. Students wishing to terminate their graduate study with a Master's degree are strongly encouraged to pursue the thesis option. The report option is available to students under special circumstances.

a) Coursework MS Advisor

The GRC Chair assists in identifying an appropriate interim (temporary) coursework advisor for all entering MS students. Entering students prepare their fall-semester course schedules in consultation with their temporary advisor during orientation before the start of the first semester. By the end of the 7th week of their first semester, a student should have identified an appropriate advisor with whom a degree schedule can be created that satisfies all degree requirements and meets the student's needs. Students may register for classes after consultation with their advisor, and the Departmental Advisor form must be submitted to the Graduate Program Assistant. A student on the coursework path typically takes 3 to 4 courses per semester.

b) Research Advisors – Selection Process

A first-year student with a graduate teaching assistantship (GTA) or graduate research assistantship (GRA) typically takes three courses each semester. Course loads are substantially reduced in subsequent years when the bulk of the student's effort is devoted to research. The University requires that full time graduate students receiving stipends register for nine credit hours per semester. To be considered full time during the summer semester, students must register for a minimum of one credit or one course. Please consult with your advisor for updates regarding rules for support and full-time status, especially during the summer and in the semesters approaching graduation. Once students finish required courses, they may submit the petition to the Graduate School to enter research (<https://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/>). Students must still maintain full-time status but are eligible for a lower full-time research tuition rate. Students should check with the Graduate School in advance for the most up-to-date requirements.

Graduate teaching assistants are expected to devote 20 hours per week to their teaching assignment. Graduate research assistants are expected to work full-time on their research and studies. Graduate students supported financially by the CEGE department with a full GTA or GRA position may not be on the payroll of other departments. If this procedure is not followed, the graduate student will be billed for the tuition charges incurred.

c) Advisory Committee

The primary purpose of the Advisory Committee is to guide and monitor the research work of the student. Coursework MS students need only identify a single advisor to aid in developing their degree schedule. Research MS (thesis or report) and Ph.D. students will need to form an Advisory Committee. MS Advisory Committees typically consist of your primary research advisor, one additional faculty member within the CEGE Department, and one external member, occasionally external to the University. For the Civil Ph.D. program, the Advisory Committee consists at minimum of three members of the CEGE Ph.D. faculty and one graduate faculty member from a cognate department, or occasionally external to the University. In general, the primary

research advisor will act as chair of the Advisory Committee. Once the committee is formed, the Advisor and Committee Recommendation form should be filed with the Graduate School (<https://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/>)

d) Changing Advisors or Committee Members

While it is hoped that the student/advisor relationship will prove satisfactory for all concerned, in those instances where expectations are not met, it is possible for a student to change research advisors in consultation with the Graduate Program Director and the GRC. For student-initiated advisor changes, the student should notify the advisor of the desire to change their advisor as soon as possible. Then the student should identify a new advisor and complete the appropriate paperwork to declare the new advisor with the Graduate School (<https://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/>). For student-initiated committee member changes, the student should work with their advisor to change the committee.

e) Graduate Student Research Performance Evaluation Review

Graduate students will meet with their research advisor at least once per semester to discuss their academic progress. Students engaged in research will likely need to meet with their advisors much more frequently and follow the instructions given by advisors. At the end of each semester (Fall, Spring, or Summer), the advisor will complete the Graduate Student Research Performance Evaluation Review and submit it to the Graduate Program Assistant, and the graduate student should complete the form as a reflection exercise. The information provided in this review will be used to assign research grades and may be used to dismiss a student from the program, as stated in Section M of the Program Specific Information Section of this document.

4) Graduate Degree Requirements

a) Master's Form Submission Schedule

Please refer to the Graduate School Website and your [MyMichiganTech](#) account for deadline requirements (<https://www.mtu.edu/gradschool/policies-procedures/timelines/>).

b) Graduate Certificate

The Department of Civil, Environmental, and Geospatial Engineering (CEGE) encourages graduate students to explore the many graduate certificates in the Department and offered by other units on campus to build their Master's degree. Students are encouraged to "stack" certificates to achieve the 30 credit hours required to complete a master of science degree. A total of 18 credits, or two certificates, must be taken from the primary program of study, i.e., civil engineering, environmental engineering, environmental engineering science, and integrated geospatial technology. The remaining 12 credits may be completed using a combination of certificates or classes from other disciplinary areas, with permission from the student's graduate advisor or from the graduate director.

c) Master of Science (for each program within the department)

i) Thesis Option

This option requires a research thesis prepared under the supervision of the advisor. The thesis describes a research investigation and its results. The scope of the research topic for the thesis should be defined in such a way that a full-time student could complete the requirements for a Master's degree in one to two years. The thesis must be prepared following the current procedures.

At least two weeks prior to the oral examination, students must

- Schedule their final oral examination using the Current Students tab in [MyMichiganTech](#)
- Submit a draft thesis to the Graduate School
- Distribute the thesis to the examining committee

The Degree schedule form must be approved before a defense is scheduled.

Students must also report the results of the oral examination and submit a final thesis to the Graduate School prior to completing their degrees.

The minimum requirements are as follows:

Course work (minimum)	20 credits
Thesis research	6–10 credits
Total (minimum)	30 credits
Distribution of course work credit	
5000–6000 series (minimum)	12 credits
3000–4000 level (maximum)	12 credits

ii) Report Option

This option requires a report describing the results of an independent study project. The scope of the research topic should be defined in such a way that a full-time student could complete the requirements for a Master’s degree in one year to a year and a half. The report must be prepared following the current procedures.

At least two weeks prior to the oral examination, students must

- Schedule their final oral examination using the Current Students tab in [MyMichiganTech](#)
- Distribute the report to the examining committee
- Submit the report to the Graduate School

The Degree schedule form must be approved before a defense is scheduled.

Students must also report the results of the oral examination and submit the final report to the Graduate School using the current procedures.

Of the minimum total of 30 credits, at least 24 must be earned in course work other than the project.

Course work	24 credits
Report	2–6 credits
Total (minimum)	30 credits
Distribution of course work credit	
500–6000 series (minimum)	12 credits
3000–4000 level (maximum)	12 credits

iii) Coursework Option

This option requires a minimum of 30 credits be earned through course work. Some sample course plans are available on the CEGE Graduate Program website (<http://www.mtu.edu/cege/graduate/civil/ms/index.html>) under Course Work Option. These are samples and do not in any way preclude other possibilities. All students should work with an advisor to design their particular path to the Master's degree.

Distribution of course work credit

5000–6000 series (minimum)	18 credits
3000–4000 level (maximum)	12 credits

iv) MS Degree Without a BS in Engineering

If a student would like to enter a Master of Science program in Civil or Environmental Engineering and does not have a BS degree in an engineering discipline, the student should review the CEGE Graduate webpages regarding the Civil Engineering and Environmental Engineering degrees to determine the appropriate leveling options.

v) Timeline and Time Limit for Completion

The Graduate School states that the Master's degree must be completed within five years; however, students typically finish their degree in two years. Accelerated MS students and coursework students typically finish their degree in one year. For degree completion timelines for MS students, please review the Graduate School webpage (<https://www.mtu.edu/gradschool/policies-procedures/timelines/>).

d) Doctor of Philosophy—Civil Engineering

i) Ph.D. Form Submission Schedule

Please refer to the Graduate School Website and your [MyMichiganTech](#) account for deadline requirements (<https://www.mtu.edu/gradschool/policies-procedures/timelines/>).

ii) Coursework

A minimum of 30 course and/or research credit hours beyond the MS degree, or a minimum of 60 course and/or research credit hours beyond the Bachelor's degree are required for the Ph.D. degree. No formal coursework requirements are promulgated, although about 40 semester credit hours of coursework beyond the B.S. degree will usually be necessary for a properly prepared engineering graduate. Coursework is determined by the student's advisory committee and early discussions with the committee in this regard are recommended.

Once students have a research advisor they may enroll in Doctoral Research (CEE6999).

After all required courses are completed, and no later than the semester prior to the final oral examination, the Degree Schedule form should be completed, reviewed by the Graduate Program Director, and filed with the Graduate School.

iii) Qualifying Examination

The Qualifying Examination is administered by the Advisory Committee. The entire Civil Engineering faculty shall be invited to submit questions at least 30 days before the date of the exam. The invitation to submit questions must include a complete list of the graduate courses taken by the candidate to allow faculty to decide the appropriateness of questions they might

submit. However, the final decision as to the use or non-use of any question is the decision of the Advisory Committee. The Advisor will coordinate the examination. Each Advisory Committee member must contribute questions for the exam. Since the Ph.D. is a specialized research degree, the exam will test the student on the principles of the specialty area in which the research will be performed. If the student fails the examination, they may retake all or a portion of the exam once with the majority approval of the committee. However, the reexam must occur within six months and these results are final. A form documenting results of the Qualifying Examination must be filed with the Graduate School (<http://www.mtu.edu/gradschool/policies-procedures/timelines/dissertation/>).

iv) Research Proposal Examination

The Research Proposal Examination is taken after the Qualifying Exam has been passed. It is administered by the student's Advisory Committee for the purpose of reviewing and evaluating the student's proposed plan for research. Once a student has identified a research problem in consultation with their research advisor, has become familiar with the related literature, and has devised a plan for research, the Research Proposal Exam should be scheduled. A paper describing the proposed research should be distributed to the Advisory Committee one week prior to the scheduled exam. The student should prepare a 30- to 40-minute talk outlining both the problem and the proposed research methods. The remainder of the exam will be devoted to questions and answers related to the proposed research. The Report on Research Proposal Examination is filed with the Graduate School upon successful completion of the examination.

v) Doctoral Dissertation and Final Oral Examination

The final examination may be scheduled any time after a period of two academic semesters following the successful completion of the research proposal exam and upon completion of the dissertation in satisfactory form. It is the responsibility of the student to be aware of the most current policies and rules regarding graduation (check with the Graduate School and their website). Scheduling of a final oral examination is done through the Current Students tab in [MyMichiganTech](#). Two weeks prior to the final examination a completed draft of the dissertation, prepared in accordance with the manual "Instructions Concerning the Preparation of Theses and Dissertations", must be submitted to the Graduate School. . The dissertation is also distributed to the Advisory Committee at this time. The day of the defense, the student completes the Report of Final Oral Examination. Following the defense, the Ph.D. candidate incorporates all corrections and suggestions of the examining committee into the final dissertation. After all technical corrections are completed, advisors will submit the [Approval of Dissertation](#) via Google Forms to the Graduate School.

Students can familiarize themselves with the deadlines, dissertation submission policies, and necessary graduation forms via the Graduate School's website <https://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/>.

Note to International Students: Visa requirements for international students often change. International students should stay well informed of current visa requirements through the offices of International Programs or the Graduate School related to timelines and possible changes of status after graduation.

vi) Timeline and Time Limit for Completion

The Graduate School requires that the Qualifying Examination must be taken within five years, and all requirements must be completed within eight years, from the time of a student's first enrollment in the Doctoral program. For degree completion timelines, please review the Graduate School webpage (<https://www.mtu.edu/gradschool/policies-procedures/timelines/>).

5) Professional Development Opportunities and Support Services

a) Opportunities

i) Graduate Student Government

The Graduate Student Government (GSG) of Michigan Tech represents the professional, intellectual, and academic concerns of graduate students to the various governing bodies of the university and acts as an advocate for graduate students. GSG Representatives work with the CEGE Department Chair to provide programming for CEGE Graduate Students, faculty, and staff.

ii) CEGE Graduate Student Professional Development Grant

Graduate students in the Department of Civil, Environmental, and Geospatial Engineering are able to apply for travel grants to support graduate student development. The travel grants are competitive and each graduate student may apply for one travel grant per year. The Department will cover travel costs (airfare, hotel, ground transportation) up to \$750. Travel policies apply.

b) Support Services

i) The J.R. Van Pelt and Opie Library

Along with a growing collection of textual and electronic resources, the J. R. Van Pelt and Opie Library is connected to MELCAT & ILLIAD, so that students may retrieve sources from other institutions. The library also provides research and instructional support for all students. This modern and well-lit library has several group study rooms, computers, printing and photocopying areas, a buzzing café, University Archives and Historic records, and other amenities.

ii) Graduate School Thesis, Dissertation and Report Guide & Seminars

The Graduate School hosts professional development seminars for graduate students. Students are highly encouraged to participate in these professional development opportunities.