Graduate Student Handbook

Department of
Mechanical Engineering – Engineering Mechanics

Michigan Technological University
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ME-EM Department of Mechanical Engineering – Engineering Mechanics (ME-EM) Overview

ME-EM is the largest department at Michigan Technological University and among the largest mechanical engineering departments in the US, both undergraduate and graduate. With that, there are many resources to help you be successful in your graduate education. There is much information that can be found on many web pages. A good starting place is:
http://www.mtu.edu/mechanical/index.html

ME-EM Department Graduate Leadership

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ME-EM FAQ
http://www.mtu.edu/mechanical/graduate/advising/faqs/index.html

Graduate Student Government
http://gsg.mtu.edu/

Student Programs and Services

International Programs and Services
https://www.mtu.edu/international/

Housing and Residential Life
https://www.mtu.edu/housing/

Student Financial Services Center
https://www.mtu.edu/student-billing/services/pay/

Registrar’s Office – Registration
https://www.mtu.edu/registrar/students/registration/
ME-EM Graduate Program Overview

Philosophy

There are several differences between the graduate program and what a student has experienced in an undergraduate program. The objective of the undergraduate program is to provide a student with a broad education and background in an engineering discipline. Also, a number of technical skills must be developed by the undergraduate so the student is capable of addressing engineering challenges associated with a given discipline, and contributing to the growth of that discipline whether by employment or more advanced education.

The graduate degree program prepares a student for a professional career in the design, research, and development of advanced engineering systems and technologies. In the case of the PhD, the preparation must also consider a possible career path as a scientist or faculty member. After earning a graduate engineering degree, a person will be given greater responsibility for directing and managing technical projects or research programs. It is inevitable and essential that the graduate-degree engineer becomes an independent thinker. The graduate student's goal should be to develop the ability to form critical judgments of others as well as themselves. Of course, it will be necessary to meet the requirements of a variety of advanced courses, but what matters most is whether the student can learn independently, how well the student can interpret, evaluate, and communicate technical information, and how well one is able to generate and critically evaluate ideas.

There are many online resources available on the Michigan Technological University Graduate School web pages. http://www.mtu.edu/gradschool/

There is a valuable FAQ for ME-EM graduate students at: http://www.mtu.edu/mechanical/graduate/advising/faqs/#faq48340

There is further information on the ME-EM Department located at: http://www.mtu.edu/mechanical/index.html

ME-EM Graduate Degree Program

Virtually all highly respected mechanical engineering departments have a strong graduate program. The reputation of a department is highly dependent on the vitality of its graduate program through the production of archival publications, success and placement of its graduate students, and research productivity. A quality graduate program positively impacts the ability of a department to recruit world-class faculty and students. The Department of Mechanical Engineering-Engineering Mechanics values its reputation and wishes to continue to attract the most capable people to the Department, so that our highly respected graduate program will continue to be a top priority. The Department offers a wide range of graduate courses and offers several graduate degrees and graduate certificates. The degrees offered by the Department are; the Master of Science in Mechanical Engineering (MSME), Master of Science in Engineering Mechanics (MSEM), and Doctor of Philosophy (PhD) in ME-EM.
Distance Learning MSME, MSEM, and PhD degree programs, as well as several graduate certificates in strategic focus areas, are also offered by the Department. More information on Graduate Certificates may be found at: https://www.mtu.edu/gradschool/policies-procedures/requirements/certificate/

Online courses are offered as part of graduate degrees, certificates, etc. Online courses are intended for online, off-campus students, including those on co-op. Most of the time, an online course is accompanied by an on-campus section. In these cases, on-campus students must take the on-campus section of the course, not the online section. If however, a course is offered ONLY as online then on-campus students may take the online course with instructor / department approval.

Summary of ME-EM Graduate Degree Requirements

Degree requirements are also placed and updated as needed on the web pages of the ME-EM Department located at: http://www.mtu.edu/mechanical/graduate/index.html

PhD Degree

Total Credit Requirements

A minimum of 30 credits are required for the degree beyond the Master’s degree, or 60 credits beyond the Bachelor’s degree, both in mechanical engineering or a closely related field. If the degree is not closely related, preparatory courses may be required to ensure the student is knowledgeable in the basics of the mechanical engineering discipline and to ensure they are prepared to succeed in advanced courses and research.

Advisor and Committee Selection – Timely Written Feedback

The selection of who will be your Advisor is YOUR decision! Seek a faculty member whose research interests match your own. A good student-faculty match of personalities is important. This relationship will last a number of years and your advisor will open many doors toward your career, even after you graduate. Make sure that the faculty member is someone you can work with for that long.

You should meet with several faculty members before selecting an Advisor. When making an appointment with a faculty member, first do your homework - know the faculty member’s interests and projects, and search for and read their recent publications. Allow enough time for a meaningful discussion. Indicate your research interests, background, and how the faculty member will benefit from supervising you. Establish mutual interest in working together. Explain your financial needs and explore avenues for meeting these needs. It is in your Advisor's best interest to help you find the financial and academic support that you need.
After you have selected an Advisor and the relationship has begun, you and the Advisor should jointly develop an Individual Development Plan (IDP). An IDP is a living document that helps you and your advisor maximize your potential during the PhD. The IDP helps track both degree and personal progress, scholarly maturity, and provides timely written feedback. Information and examples of an IDP can be found at: https://www.mtu.edu/gradschool/resources-for/students/professional/idp/ 

PhD Examination Committees

There are three major milestones in the pursuit of the PhD, each of which requires a committee of graduate faculty that is jointly selected by the advisor and the student.

PhD Written Qualifying Exam and Committee

The PhD Written Qualifying Exam will be given to determine the general knowledge appropriate to the student's program and the student's ability to use this knowledge. This examination will be a written examination, although it may be oral in part if recommended by the Advisory Committee. The qualifying examination should be administered prior to the end of the fourth academic-year semester in residence at Michigan Tech. It should be given at least two academic-year semesters before the dissertation oral defense.

ME-EM Written Qualifying Exam Content

1. A written exam covering graduate understanding of material will be given over a period of 3 hours, maximum. The exam should allow for interdisciplinary content, from within as well as from outside of ME-EM, as appropriate to the student's area of research.

2. The exam will consist of eight problems/questions. The exam will cover at least two topics chosen by the student, which have been approved by the student's Advisor which are relevant to the student's research.

ME-EM Written Qualifying Exam Committee

1. The exam committee will consist of at least three graduate faculty members and may include the PhD Advisor. The committee membership should reflect the interdisciplinary nature of the research area as appropriate, and may include members from outside of the ME-EM Department. The committee is usually faculty who taught the courses over which the student is examined. The Qualifying Exam Committee is usually not the PhD Advisory Committee (see below).

2. At least one committee member, other than the Advisor, must be from the ME-EM Department.

3. Each committee member may contribute problems/questions for the exam. If only two members of the committee develop the exam, the third member should review the exam to ensure that it is appropriate.

4. Each committee member will grade their problems/questions.
ME-EM Qualifying Exam Grading

1. Each exam problem / question will be assigned a pass or fail grade.
2. The committee will determine the overall exam grade as:
   **Unconditional Pass: 6 or more of 8 problems / questions passed;**
   **Conditional Pass: 4 – 6 of 8 problems / questions passed;**
   **Unsuccessful: 3 or fewer of 8 problems / questions passed.**

The exam committee may have an optional follow-up interview with the student to further assess the student’s performance on the written exam.

3. The exam committee will formally recommend to the Graduate Director additional tasks based on the exam performance to fulfill the “Conditional Pass” result. Upon fulfilling the “Conditional Pass” requirement, the student has then passed the exam.

4. A maximum of two attempts to pass the ME-EM Qualifying Exam will be allowed - failure to pass the exam after two attempts will result in a recommendation to the ME-EM Chair for dismissal of the student from the ME-EM PhD program, in accordance with the Graduate School policy.

PhD Proposal Oral Exam

The PhD Advisory Committee is composed of a minimum of four members of the Michigan Tech graduate faculty. All members must hold the PhD unless there is compelling evidence that a potential member with an MS degree has demonstrated experience by which they are considered an authority in the field of the research. At least one member must be from outside the student’s home department. An independent external member (such as from industry or a federal laboratory) can fulfill this requirement even if the external member’s background is in mechanical engineering. The purpose of the external member is to bring a perspective to the student that is independent of the student’s administrative department culture and environment. A committee member who is external to Michigan Tech must be appointed as a member of the Graduate Faculty. The process and forms for appointing and approving a member to the Graduate Faculty can be found on the Graduate School web pages. [http://www.mtu.edu/gradschool/](http://www.mtu.edu/gradschool/)

Appointment to the Graduate Faculty is a formally approved process and must be completed as early as possible. The PhD Advisory Committee should be formalized before the PhD Written Qualifying Exam.

The Research Proposal Exam is an oral presentation by the PhD student to the PhD Advisory Committee. The oral presentation is in the form of the research proposal, which after approval by the committee, forms a binding agreement as to what is still to be completed for the PhD. It is recognized that in any research endeavor, what is proposed may need to be modified due to many reasons. However, it is understood that the general scope of the research and the deliverables will be maintained in good faith.

While this examination is oral, there must be a written document to accompany the presentation and provided to the Advisory Committee no later than when the oral exam is scheduled. This document should provide the committee with the contents and summary of the research and a written record of the work yet to be completed for the degree. The format and length of this document is at the discretion of the advisor and PhD committee. However, it is recommended that the written document should conform to an NSF proposal body that has a maximum 15 page limit. This format is required to be altered if the proposal is being used to satisfy the requirements of the MS Report option described below.
Use of the PhD Proposal to Satisfy MS Degree Requirements

For those PhD students who want to receive the MS degree while working toward the PhD, the PhD oral proposal document and presentation can be substituted for the MS Report to satisfy the requirements of the MS Report option. All other requirements of the MS Report option must also be completed. While each degree is different, if the PhD proposal document and presentation is used for the MS degree, it must be a public presentation that requires the MS pre-defense form to be submitted and approved with the required timeliness. All other forms must be submitted and approved as if the student is seeking a stand-alone MS degree. In this case, the PhD proposal document must conform to Graduate School requirements for the MS Report. Additional information may be found on the Graduate School web pages. 
http://www.mtu.edu/gradschool/

PhD Dissertation Defense

The dissertation and public defense are the culmination of the PhD. One characteristic of the dissertation is that it adds to the “body of knowledge” and that it is worthy of being archived. An archival publication is a peer reviewed, foundational body of work upon which subsequent work can be reliably based, and therefore must be at the highest level of scholarship and integrity. The dissertation defense is to the PhD Advisory Committee and is open to the public. The public announcement is accomplished by submitting the pre-defense form in a timely manner. Requirements for the dissertation, its submission, and the defense, can be found on the Graduate School web pages. http://www.mtu.edu/gradschool/

MS Degree

The MS degree provides the opportunity for students to enhance their undergraduate education by either broadening it, focusing it, or both to some extent. The content of the MS degree, particularly the Coursework MS is largely up to the student and there is no standard template. Except for several required courses, the MS has flexibility to be tailored to the student’s interests. The MS has three options; Thesis, Report, and Coursework, each of which results in the same degree being awarded. Furthermore, the MS can be pursued in either Mechanical Engineering (MSME) or Engineering Mechanics (MSEM). The MSME is considered to be more applied in nature, while the MSEM focuses more on the science of mechanical engineering and has more structured requirements.

MS Thesis and MS Report (MSME or MSEM)

Thesis and Report MS requirements can be found at: 
http://www.mtu.edu/mechanical/graduate/index.html

Both options require a formal research component under the supervision of a faculty advisor, the generation of a formal written document, and the public defense of the work before the student’s advisory committee. These options require a total of 30 semester credits which are composed of both course credits and research credits. Each option requires a minimum of 12 course credits at graduate level, allows a maximum of 12 course credits at 4000-level, requires 3 credits of math at 4000- or 5000-level, and 2 credits of Graduate Seminar. No credits below 4000-level are permitted. No more than one credit
of Graduate Seminar can be replaced by co-op credits. Grades in MEEM courses must be a grade of B or higher to be counted. Up to 6 credits of BC or C grades may be counted in courses outside of MEEM. If a student pursues a course that is concurrently cross-listed with a course in another department (ECE for example), the course is considered to be MEEM.

Advisor and Committee Selection – Timely Written Feedback

The selection of who will be your Advisor is YOUR decision! Seek a faculty member whose research interests match your own. A good student-faculty match of personalities is important. This relationship will last a number of years and your advisor will open many doors toward your career, even after you graduate. Make sure that the faculty member is someone you can work with for that long.

You should meet with several faculty members before selecting an Advisor. When making an appointment with a faculty member do your homework - know the faculty member’s interests and projects. Allow enough time for a meaningful discussion. Indicate your research interests, background, and how the faculty member will benefit from supervising you. Establish mutual interest in working together. Explain your financial needs and explore avenues for meeting these needs. It is in your Advisor's best interest to help you find the financial and academic support that you need.

After you have selected an Advisor and the relationship has begun, you and the Advisor should jointly develop an Individual Development Plan (IDP). An IDP is a living document that helps you and your advisor maximize your potential during the MS. The IDP helps track both degree and personal progress, and provides timely written feedback. Information and examples of an IDP can be found at: https://www.mtu.edu/gradschool/resources-for/students/professional/idp/

Coursework MS (MSME or MSEM)

Coursework MS requirements can be found at: http://www.mtu.edu/mechanical/graduate/index.html

The Coursework MS requires a minimum of 30 semester credits of coursework. A minimum of 18 must be at graduate level, a maximum of 12 credits may be at 4000-level, and a minimum of 15 credits must be from MEEM courses. No credits below 4000-level are permitted, nor are research credits. Of the total, 3 credits must be math at 4000- or 5000-level, and 2 credits of Graduate Seminar. No more than one credit of Graduate Seminar can be replaced by co-op credits. Grades in MEEM courses must be a grade of B or higher to be counted. Up to 6 credits of BC or C grades may be counted in courses outside of MEEM. If a student pursues a course that is concurrently cross-listed with a course in another department (ECE for example), the course is considered to be MEEM. Except for these requirements, the courses taken are at the discretion of the student. The student’s coursework advisor can recommend courses and provide feedback on degree progress, at the student’s request as needed.

The Coursework MS does not have a formal research component, however, students can gain project experience through a Special Topic whereby the student works on a project of mutual interest with a faculty member. Special Topic credits are considered as MEEM course credits for the purpose of the degree and grades. Special Topics are not suitable for first-semester students. A student pursuing the
Coursework MS may take up to a total of 4 credits of Special Topics during their MS. These credits may be taken over at most 2 semesters, with a maximum of 3 credits and one Special Topic in any semester. Courses listed as MEEM 5990 with a specific course name are considered as regular classes and not Special Topics.

The Coursework MS provides flexibility in content and scheduling. The Coursework MS allows a student flexibility in undertaking a co-op work experience during their degree. Information on co-op experiences can be found at: https://www.mtu.edu/career/students/jobs-intern/co-ops/ and on page 11 below.

Coursework MS Advising

The advisor for Coursework MS students is the ME-EM Director of Graduate Studies. However, a student is free to select a different faculty advisor if they wish. If that is the case, the student must submit an advisor form to the Graduate School http://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/ The role of the Coursework MS advisor is to help the student select courses appropriate to their interests, their academic preparedness so they will be successful, and their goals. The advisor may also make the student aware of opportunities for research or a special topic in which the advisor is engaged. In any event, the advisor is the student’s choice. The advisor is responsible for signing all forms that require the advisor’s approval, including degree, CPT, and OPT forms.

Accelerated MS and Senior Rule

Michigan Tech ME-EM undergraduate students who will receive a BSME degree may be eligible to pursue the Accelerated MS degree. The Accelerated MS allows students to double-count up to 6 semester credits from their undergraduate technical electives toward the BS and MS degrees, with a grade of B or higher.

To be eligible for the Accelerated MS, a student’s cumulative GPA at the time the BSME is awarded must be 3.25 or higher. The student must also have applied and been accepted into the Accelerated MS prior to being awarded the BSME. The Accelerated MS reduces the post-BS semester credit requirements from 30 to 24 due to the 6 double-counted credits. The Accelerated MS is available in each of the three MS options, and has the same degree requirements for each of the options, except all grades counted toward the Accelerated MS must have a grade of B or higher. Students whose cumulative graduate GPA drops below 3.00 will not be permitted to continue in the ME-EM Accelerated MS program. They may instead revert to the traditional MS. These traditional programs do not allow for the double-counting of credits toward the MS.

A student should carefully plan courses if pursuing the Accelerated MS as the double-counted BS/MS credits will most likely be at 4000-level and will count as such toward the MS degree. Information on the Accelerated MS may be found at: https://www.mtu.edu/mechanical/graduate/accelerated/

Utilizing Senior Rule a BSME student may take courses, preferably graduate courses that count toward the MS while still pursuing the BS degree. Senior Rule credits are not double-counted toward both degrees, only the graduate degree. Senior Rule credits at 4000-level will count toward the maximum
allowed for the MS, so Senior Rule credits should be graduate level. Senior Rule credits with a grade of B or higher will count toward the MS in addition to Accelerated credits. By pursuing the Accelerated MS and utilizing Senior Rule credits as well, it may be possible to complete the MS in two semesters. Information on Senior Rule may be found at:
https://www.mtu.edu/registrar/students/registration/policies/senior-rule/

**Graduate Degree Timeline**

There is no firm timeline to a graduate degree. An MS Thesis or Report degree may take up to two years, depending on the nature of the research, the productivity of the student, and whether co-op is pursued. With these options, the time to degree is normally determined not just by credit count, but by the research.

The Coursework MS can be completed in three semesters (one calendar year) averaging 10 credits each semester. Most students pursue co-op, or take the summer off extending the time to degree by their choosing. If the Accelerated MS is pursued utilizing Senior Rule credits, the time to complete the MS could be reduced to two semesters depending on scheduling of courses. The allowable time to complete the MS degree is five years. If an MS student is pursuing a thesis or report option, they must file an advisor form as soon as the advisor has been selected and agreed.
http://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/index.html

MS students must fill and submit the MS Degree Schedule no later than the end of the semester prior to the graduation semester. If there are any issues that may delay graduation, they can be addressed during the final semester. http://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/index.html

The PhD is even more unpredictable in time to degree. If a student pursues the PhD directly from the BS degree, they often complete the requirements for the MS before being fully engaged in the research. If a student holds the MS degree prior to beginning the PhD, the time to degree is generally shortened but still a number of years due to the extensive nature of the research and the PhD exams. The allowable time to complete the PhD degree is eight years.

Each graduate student has a personalized web portal, “MyMichiganTech”. Students should consult their portal often, at least each semester, to understand what deadlines may be approaching. Detailed timeline information may be found at: http://www.mtu.edu/gradschool/policies-procedures/timelines/index.html

While the web page above provides detailed timeline information and should be used, a summary is provided below. This assumes the student holds an MS degree in ME or closely related field.
<table>
<thead>
<tr>
<th>What:</th>
<th>When (academic year semesters):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose a research advisor</td>
<td>Within 2</td>
</tr>
<tr>
<td>Complete required coursework</td>
<td>4 to 5</td>
</tr>
<tr>
<td>Choose a committee</td>
<td>2 to 4</td>
</tr>
<tr>
<td>Pass written qualifying exam</td>
<td>2 to 4</td>
</tr>
<tr>
<td>Pass research proposal</td>
<td>4 to 6</td>
</tr>
<tr>
<td>Enter Research Mode</td>
<td>4 to 6</td>
</tr>
<tr>
<td>Dissertation Defense / Final Oral Examination</td>
<td>6 to 10</td>
</tr>
</tbody>
</table>

**Industrial Co-Ops**

After successful completion of two full time semesters of study, a student is eligible for Curricular Practical Training (CPT), also known as co-op. A student must be in good academic standing and must not be under conduct probation. A co-op must be approved by the university and the advisor, is formal employment by a company, and is for a determined length of time. A co-op is normally for one academic semester, but may be extended. To conduct a co-op, a student must be registered for the appropriate UN5xxx co-op credit. This is a paid credit, carries a grade, maintains full time enrollment status, and can replace one required MEEM 6000 Graduate Seminar.

A student on a co-op may take no more than one online course concurrently with the co-op, and it is recommended that no courses be taken the first semester of a co-op. The student must quickly adapt to the corporate environment, culture, and work assignments. This normally takes more than the standard 40-hours per week. It is first important that the co-op student shows exemplary performance in the job duties. Co-ops many times lead to full time post-degree employment. The co-op student represents ME-EM and Michigan Tech and therefore substandard employment performance can tarnish the reputation of the university and the company may not seek future ME-EM students for co-op. It is important to note that there is a window of opportunity each semester to begin a co-op and this information is located on the Career Services website.

Careers Services is the central point of contact for co-ops and further information can be found at: [https://www.mtu.edu/career/students/jobs-intern/co-ops/](https://www.mtu.edu/career/students/jobs-intern/co-ops/)

**Changing Research Advisors**

As described above, the research advisor should be carefully chosen. It is important that there is continual and open communication between a student and their research advisor and that degree progress is formalized and tracked. This can be largely accomplished by developing an Individual Development Plan as previously mentioned [https://www.mtu.edu/gradschool/resources-for/students/professional/idp/](https://www.mtu.edu/gradschool/resources-for/students/professional/idp/)

Review and updating of the IDP at least twice each semester helps keep the student on track, and allows open discussion on degree progress. Certainly, the advisor and student will have near-daily communication in the pursuit of the research. However, as with all relationships not all are successful. Reasons for the relationship failing include:
• the student's research interests change,
• the student loses interest in the research,
• the student may not fit in with the advisor's research group,
• the student may feel the advisor is too demanding, or insufficiently demanding,
• the advisor sees that the student is not performing tasks required for the research and degree,
• the advisor recommends that the student seek another advisor for other reasons, or
• irreconcilable differences, academic and/or personal.

It is better for the student and advisor to recognize any of these problems, or others, as early as possible so neither invests time and resources in an endeavor that will not be successful. If a student feels that an advisor change may be necessary, they should have open and respectful discussion with the advisor to identify specifics so that it is not just a lack of communication or misunderstandings. If this can mend the relationship then it is important to document expectations and goals using the IDP.

If after this process the student and/or advisor feel they should part ways, the student should:
• make an appointment with the Director of Graduate Studies to confidentially discuss the situation. This must be an open and truthful discussion. The student should prepare a list of talking points or issues.
• the Graduate Director should then meet separately with the advisor, to better understand the situation from the advisor's perspective,
• the Graduate Director and department Chair may then call a meeting with the advisor and student to have an open discussion and seek a solution.

After this meeting, the student and/or advisor should again meet to seek a final remedy. If at last the relationship is over, the student must realize that they are still required to fulfill obligations to the advisor and research for which they have been compensated. All research logs, notes, software, hardware, etc that was generated by the research must be turned over to the advisor or misconduct action may result.

There are possible consequences for abandoning an advisor and seeking a different advisor. These include:
• is the new advisor conducting the same or very similar research as the prior advisor?
• if not, then what is the path forward for the student? Does the student need to start over in their research?
• does the new advisor have funding?
• will the student have to reorganize the advisory committee?
• if the student was supported as a GTA, or under a faculty member's startup, further funding may be jeopardized.

There are many consequences in changing advisors which is why all possible remedies should be pursued.
**Responsible Conduct of Research (RCR)**

All graduate students and postdoctoral fellows, regardless of their degree (MS, PhD, research-based, coursework) or source of funding (self-funded, internally funded, externally funded, employer funded) must complete both Basic RCR and Advanced RCR. This is a federal mandate for universities that receive federal funding.

Michigan Tech has developed several training programs to support graduate students and postdoctoral fellows in their professional development and fulfill obligations to sponsors of our research programs. For instructions specific to a student's status at Michigan Tech, please see the information located at:

[http://www.mtu.edu/gradschool/resources-for/students/academic/rcr/](http://www.mtu.edu/gradschool/resources-for/students/academic/rcr/)
[http://www.mtu.edu/research/administration/integrity-compliance/responsible-conduct/postdoctoral/index.html](http://www.mtu.edu/research/administration/integrity-compliance/responsible-conduct/postdoctoral/index.html)
[https://www.mtu.edu/research/administration/integrity-compliance/responsible-conduct/training/courses/](https://www.mtu.edu/research/administration/integrity-compliance/responsible-conduct/training/courses/)

**Academic Integrity**

The engineering profession demands the highest ethical conduct and integrity to protect the welfare of the public and the profession. Michigan Tech and ME-EM also demand a high level of academic integrity by students. Academic misconduct, whether by plagiarism, prohibited sharing of work, misrepresenting oneself to gain access to a class, or other actions that a mechanical engineering graduate student fully understands are academically inappropriate, are considered academic misconduct. The Michigan Tech standards for academic and community conduct are found at:

[https://www.mtu.edu/conduct/integrity-center/students/](https://www.mtu.edu/conduct/integrity-center/students/)
[http://www.mtu.edu/conduct/integrity-center/faculty/prevent-misconduct/](http://www.mtu.edu/conduct/integrity-center/faculty/prevent-misconduct/)
[https://www.mtu.edu/conduct/integrity-center/faculty/suspect-misconduct/](https://www.mtu.edu/conduct/integrity-center/faculty/suspect-misconduct/)

Every graded assignment, regardless of how inconsequential or what portion of the course grade it is worth, is subject to the same academic integrity standards. All ME-EM graduate students are required to read, understand, and follow the information above. A defense by students who claim to be unaware of these policies, will not be accepted. Academic misconduct is considered extremely unprofessional and as such has consequences for a ME-EM graduate student that go beyond university sanctions, and can include failure of the class.

- A student who is financially supported by ME-EM will have that support immediately terminated upon completion of a due-process hearing where misconduct is admitted or the student is found guilty,
- A student who is guilty of academic misconduct will not be eligible for future ME-EM financial support,
- A student who is guilty of academic misconduct will be placed on conduct probation and as such will not be eligible for CPT (co-op) or OPT (post-graduation) status.
Graduate Assistantships

There are three types of graduate assistantships; Graduate Research Assistant (GRA), Graduate Assistant (GA), and Graduate Teaching Assistant (GTA). Each has different demands and expectations but they all share a common characteristic. Each is employment with Michigan Technological University, they are not scholarships. Being university employment, each is available based on resources available and needs for the position, the same as with a company.

A GRA is a research assistant paid by a faculty member from external funds from a research sponsoring agency, such as a federal agency, a state agency, or a company. GRAs are heavily involved in research and are selected from among the most qualified students, by the faculty member who secured the external funds. These qualifications normally include already having an MS degree, having been in ME-EM long enough for the faculty member to assess academic performance, having worked with the faculty member on research prior to consideration for a GRA, and having developed sufficient oral and written communication skills to contribute to a research team. While these qualifications are required to be a GRA, they themselves will not ensure GRA funding as the funding is limited by external grants or contracts.

A GA is very similar to a GRA except the source of the funding is internal to ME-EM. The same expectations and qualifications are required as for a GRA. The difference is the source of the funding, not the qualifications or expectations.

A GTA is internally funded by ME-EM and supports the education / teaching mission of the department and university. A GTA will typically assist in laboratory instruction under one for more faculty members responsible for the course. A GTA must have excellent organizational and time management skills as the GTA duties are in addition to, and normally separate from, their degree. GTAs are hired for one semester at a time. Having been a GTA does not guarantee being rehired.

- Any student considered for a GTA must first have completed a spoken language assessment as Strong (preferred) or Acceptable. The assessment is conducted by the Michigan Tech - Jackson Center for Teaching and Learning.
- Any student considered for a GTA must have first completed, or concurrently with the first GTA assignment, the course ED 0510 GTA Training with a grade of B or higher. This course has no cost and does not count toward a graduate degree.
- Any student considered for a GTA must hold a degree higher than the course(s) for which they will GTA. For example, a student with only a BS degree may not be a GTA for a graduate level course.
- Any student considered for a GTA must have never been found guilty of academic misconduct. Academic misconduct immediately disqualifies a student to be a GTA.
- GTAs undergo student evaluation of teaching the same as all instructional faculty. Poor student evaluations may be a cause to not renew a GTA.
Safety

All on campus graduate students are required to complete basic safety training. This is most easily accomplished by attending Graduate Student Orientation at the start of each semester, or by taking the safety training and exam via online.

The ME-EM safety page at https://www.mtu.edu/mechanical/facilities/safety/ contains an extensive ME-EM Safety Manual, links and instructions on Safety Data Sheets (SDS), and the online safety orientation and exam.

Any graduate student who will work in a lab, whether in a research capacity (GRA or GA), or as a GTA, must pass additional safety training that is specific to that laboratory. This training must be provided by the lab supervisor and documented via the ME-EM Employee/Student Safety Orientation and Training Checklist located on the ME-EM safety page.

Accommodation / Disability

Michigan Tech complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. As such, there is support of various kinds for graduate students. More complete information can be found at:

https://www.mtu.edu/deanofstudents/disability/faculty/accommodations/
https://www.mtu.edu/deanofstudents/disability/
https://www.mtu.edu/gradschool/policies-procedures/academic/family-leave/