

Mechanical Engineering Graduate Student Handbook



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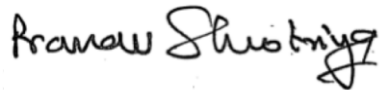
**Department of Mechanical Engineering
Iowa State University**

Welcome to the Mechanical Engineering Graduate Program at Iowa State University. We are excited to have you join our vibrant program and are eager to help your graduate educational experience be an enjoyable and rewarding one.

This student handbook is provided to give you general guidance about practices, policies and procedures related to your graduate career in our department and University. It is in accordance with the Graduate College Handbook which provides more detailed information on policies and can be found online at <http://www.grad-college.iastate.edu/publications/gchandbook/homepage.html>.

Since our Graduate Program continually seeks to improve, some changes may occur between annual printings of this handbook. Consequently, you should stay in close communication with your major professor at all times to verify important curricular and policy issues. We also encourage you to bring questions, comments and concerns to the Graduate Programs Office at any time. We look forward to helping you during your tenure here.

Best wishes



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Starting Out

Arrival and Check-in

Upon arrival in Ames, new graduate students must stop into the Mechanical Engineering Graduate Programs Office in 2019 Black Engineering Building. You can find your way around campus using the online maps page at <http://www.fpm.iastate.edu/maps/>. We will give you a welcome package, instructions on procedures to complete before the semester starts and answer any questions you may have. Please be sure to follow the procedures listed in the 'New Student Arrival Checklist' sheet also available online at <http://www.me.iastate.edu/graduate-program.html>.

New students will need to sign up for payroll in the Human Resources Office, 3810 Beardshear Hall and should sign up for an E-mail account in the Solutions Center of the Computation Center, 195 Durham Center as described in the New Student Arrival Checklist. Please note that students on assistantships must have a signed Letter of Intent (LOI) on file with the ME graduate programs office before the start of semester.

Your first paycheck for your assistantship or fellowship can be between two weeks to a month after you arrive due to procedural delays. Please plan for finances accordingly.

Orientations

New graduate students must attend several orientations during the week prior to start of classes. For new graduate students, the academic year begins with a mandatory ME Graduate Student Orientation event (usually the Friday before classes start) designed to introduce you to the ME department and its procedures as well as ease the transition to graduate study at Iowa State. This is a time to become acquainted with the Mechanical Engineering Graduate Program and its members, and to prepare for registration and the start of classes.

In addition to participating in the ME orientation events, students also will take part in the following orientation activities. International students should check with International Students and Scholars Office (ISS) for additional orientations (http://www.issu.iastate.edu/New_Students/). Please note that students who accepted a teaching assistantship (TA) must plan to attend the new TA orientation seminars conducted by the [Center for Excellence in Teaching and Learning](#). The university TA orientation seminars are held only fall semester. Students should refer to all schedules for information about Orientation activities.

Safety Training

All M.S. and Ph.D. students must attend Basic Safety training presented by the [Environmental Health & Safety \(EH&S\)](#) during the week prior to start of classes. This is a mandatory training required under state and federal law for all new employees and for any employees who have not received prior ISU training. More information can be found in the welcome package. The package also lists additional mandatory web-based training that new students must complete during the first semester. This training will be a mixed-media presentation using videotape and slides. Topics will include: OSHA Laboratory, Standard procedures, Material Safety Data Sheets, Prior Approval Procedures, Laboratory Hazards, Personal Protection, Housekeeping, Containers and Labeling, Hazardous Waste Disposal and Electrical Safety.

English Requirement

Students whose native language is not English MUST take a special examination called the English Placement Test (EPT) to assess suitability for classroom education at ISU. This test is held the week before classes start. Further information can be found at <http://apling.public.iastate.edu/engl101.html>. Students not passing this exam are placed in one or more of the courses in English 100 during the pre-registration process at orientation. These courses may be taken on a pass-not pass basis.

In addition international students having Teaching Assistantship (TA) appointments must also take the SPEAK/TEACH test (<http://www.grad-college.iastate.edu/speakteach/>). Successful certification is required to assume TA duties.


Major Professor

Every graduate student should select a major professor to work with. The role of the major professor is to act as a mentor to the student in all aspects of graduate study including research and guide the student's professional development. Most students who have accepted assistantship positions have already selected a major professor as explained in the admission letter. If you have been assigned a temporary major professor (usually the Director of Graduate Education), you are encouraged to meet with our department faculty during the first semester and select a major professor by the end of the first semester in the program. Selection should be based on matching of research interests, expectations and personalities. A list of faculty and their research expertise is available on page 25. Master of Engineering students are typically assigned a major professor to help guide their course selections – however they may choose a different major professor.

Appointments and Stipends

The terms of appointment are described in the original offer letter and in the Letter of Intent (LOI) Form the student has already signed. Please note that students on assistantships must have a signed LOI on file with the ME graduate programs office before the start of semester. The student's major professor will advise him or her of the duties of the appointment and the accountability procedure. All appointments are reviewed annually and the student will be advised of the nature of the next year's appointment prior to the end of the academic year or term of appointment. Please note that you must be registered for classes in order for you to be placed on appointment. Even if you have not decided on all classes, register for research credits (M E 699).

Registration for classes

Registration for classes must be done as soon as possible. Consult with your major professor regarding the courses you want to take for your first semester. Information on course offerings can be found on the online Schedule of Classes (<http://classes.iastate.edu/>). Students then register using the  registration system which is available on the ISU homepage (<http://www.iastate.edu>). Incoming students are encouraged to register for classes before arriving on campus. As a new student, enter your social security number (no hyphens) and month and day of your birth (mm/dd). International students who do not yet have a social security number should use the application identification number (ID) number assigned during

the application process. A \$20 late fee is assessed to students who wait until the first day of classes to register. The late fee goes up each of the following two weeks to a maximum of \$100.

It is important to register for classes early in the registration period. Students who have accepted assistantship offers must be registered for classes for the appointment to be electronically processed by the University (for stipend and tuition scholarships).

Incoming students please note that you **MUST** register for ME 600 during your first and every semester (except summer) as a graduate student (see below). Students with graduate assistantships are expected to take at least 9 credits (including research credits) each fall/spring semester and 6 credits during the summer semester.

Unpublished section information

Courses such as independent study (M E 590/690), creative component (M E 599) and research (M E 699) will not have reference numbers listed in the Schedule of Classes. Students will see a message to 'see department'. Students can obtain section and reference information from the main office, 2025 Black. The letter for independent study courses is part of the course number. Section and reference numbers are specific to faculty members and do not change each semester. Please see page 8 for more info on course requirements.

After initial registration, adjustments to a student's schedule (e.g. course adds and drops, section changes and credit changes) can be made using AccessPlus until the end of the first week of classes. After the first week, all changes must be submitted on a *Request for Schedule Change* or *Restriction Waiver* form (better known as an Add/Drop Slip), which is available in the ME Grad Programs Office.

Transportation

Bicycles

Bicycle racks are located throughout campus. Except for walks labeled as bike paths, bicycle riders are prohibited from using campus sidewalks. Bicycles used between sundown and sunrise must be equipped with a headlight, taillights or an adequate reflector and a warning device. To assist in recovering lost or stolen bicycles, students should register bicycles at Ames City Hall (515 Clark Avenue) or the ISU Department of Public Safety (Armory). Registration (free for bicycles) can also take place online at <http://www.dps.iastate.edu/parking/bikereg.html>.

Buses

CyRide is the Ames bus system. Students can ride all CyRide routes free of charge upon presentation of a current *ISU* card. During the school year, buses leave from most locations every 10-20 minutes. Schedules are widely available throughout the campus. Further Cy-Ride information can be found at <http://www.cyride.com>.

Cars and Parking

A copy of the ISU Traffic and Parking Regulations can be obtained from Public Safety, Parking Division, 27 Armory (also available online at <http://www.dps.iastate.edu/parking/rules.html>). Consult the handbook section pertaining to students.

Progressing Through the Degree Program

In working towards a graduate degree, ME students must fulfill the requirements of both the Graduate College and the Department. These include selecting an advisory committee, developing a Program of Study, passing Preliminary Examinations, and meeting coursework and other general requirements. (Graduate College requirements are discussed in more detail in the Catalog and the Graduate College Student Handbook (<http://www.grad-college.iastate.edu/publications/gchandbook/>)).

Advisory Committee Selection

Each graduate student, in collaboration with his or her major professor, shall identify the faculty members to serve on an advisory committee, also called the Program of Study (POS) Committee. This committee guides and evaluates the student during the period of graduate study.

Normally the student will ask individual faculty members to serve on the committee after consultation with the major professor. After the selected faculty members have agreed to serve on the committee, a Recommendation for Committee Appointment Form needs to be processed and sent to the Graduate College Office. The form is available on the Graduate College website under Forms (<http://www.grad-college.iastate.edu/forms/forms.html>). The form **should be submitted no later than the end of the first calendar year** of the student's graduate work. It is highly recommended that **Ph.D. students submit this form within 6 months** of starting graduate work.

Master of Engineering students do not require a committee – their major professor is their mentor and guide who helps them select the courses require for the degree.

Master's POS Committee Makeup: For a master's student, the committee must have at least three faculty members with at least two members from the department (one of which is your major professor) and at least one member from outside your area of emphasis (preferably outside ME). Such faculty members must be members of the graduate faculty (names are listed in the Catalog).

Doctoral POS Committee Makeup: For a doctoral student, the committee must have at least five faculty members with at least three members from the department (one of which is your major professor) and at least two from outside your area of emphasis (preferably outside ME). The faculty members must be members of the graduate faculty. If a student declares a minor, one of the outside committee members must be from the minor department. For dual majors and co-major professor information, please consult the Chapter 6 of the Graduate College Handbook (<http://www.grad-college.iastate.edu/publications/gchandbook/>).

If students need to change the membership of their committee, they must process a Change of Program of Study Committee Form.

Program of Study (POS)

After appointment of the POS Committee, the student and the major professor develop a Program of Study (POS). This is a list of the courses the student proposes to take during the period of graduate study. Courses that appear on the POS, and which are used to meet degree requirements, may not be taken in the pass-not pass system, and all courses used to meet degree requirements must appear in the Catalog. The POS is prepared after consultation with the major professor and is submitted on a POS Form. It is required for Ph.D. students, and recommended for M.S. students, that the student meet with the POS Committee to discuss the POS and the student's proposed research. This POS Form is submitted to the Graduate College Office after all members of the POS Committee, the student, and the DOGE has signed it. A copy of the POS Form is available on the Graduate College website under Forms (<http://www.grad-college.iastate.edu/forms/forms.html>).

Program of Study (Degree) Requirements

Master of Engineering: The M.Eng. degree is a course-work only professional graduate (Master's) degree that is well suited for working professionals and individuals seeking additional education beyond a bachelor's degree to become an outstanding engineer. A minimum of 30 graduate credits must be earned for the M.Eng. degree with the following requirements:

Credits

Mechanical Engineering Core

15

Any 500 or above level M E course as well as specific non-ME courses approved by the graduate committee. These courses are grouped according to disciplinary area emphasis (see Appendix A) to help student decide which courses to take based on interest.

Mathematics/Statistics

3

Any 300-level or higher Math or Statistics class labeled 'non-major graduate credit' (except MATH 307 and MATH 317) will count towards this requirement. Non Math/Stat courses with strong math or statistics content that are approved by the graduate education committee may also count towards this requirement. A current list of approved courses is shown in Appendix B.

Professional Development

3

ConE 380* Engineering Law
Econ 355 International Trade and Finance
HCI 594X* Organizational Application of Collaborative Technology
HG ED 561 College Teaching
I E 570* Systems Engineering and Project Management
M E 584* Technology, Globalization and Culture
MGMT 472 Management of Diversity
SCM 502* Supply Chain Management

Any Foreign Language courses labeled non-major graduate credit (pre-requisites may be needed which will not count towards the requirements). Other courses, as approved by the POS committee.

*indicates available online

Electives

9

500 or higher level ME courses, 400 and higher level courses outside ME labeled 'non-major graduate credit' including those listed under Professional Development.

Total 30 credits

Master of Science (Thesis): The M.S. (Thesis) degree emphasizes graduate research and culminates in the creation of a thesis and associated oral defense. A minimum of 30 graduate credits must be earned for the M.S. degree with the following requirements

Credits

Mechanical Engineering Core **9**

Any 500 or above level M E course as well as specific non-ME courses approved by the graduate committee. These courses are grouped according to disciplinary area emphasis (see Appendix A) to help student decide which courses to take based on interest.

Mathematics/Statistics **3**

Any 300-level or higher Math or Statistics class labeled ‘non-major graduate credit’ (except MATH 307 and MATH 317) will count towards this requirement. Non Math/Stat courses with strong math or statistics content that are approved by the graduate education committee may also count towards this requirement. A current list of approved courses is shown in Appendix B.

Electives **6**

500 or higher level ME courses, 300 and higher level courses outside ME labeled ‘non-major graduate credit’.

Total 18 course credits

Research credits **12**

ME 599

Total 30 credits

- Up to 6 credits of Independent Study (M E 590/690) may be included in the Program of Study to count towards the 18 total course credits. These 6 credits will by default count towards the elective requirements.
- As part of meeting their electives, students are encouraged to take at least one course that addresses skill sets aimed at professional development (e.g. teaching/research program building, project management, globalization, engineering law, communication etc.) for academia and/or industrial positions.
- Students must also meet ME 600 (Seminar) requirements in addition to the above

Doctor of Philosophy: The doctoral degree is the highest degree offered and recognizes scholarly contributions and impact of the candidate to their chosen field of study. The degree culminates with the successful defense of a dissertation. A minimum of 72 graduate credits must be earned for the Ph.D. degree with the following requirements.

Credits

Mechanical Engineering Core **15**

Any 500 or above level M E course as well as specific non-ME courses approved by the graduate committee. These courses are grouped according to disciplinary area emphasis (see Appendix A) to help student decide which courses to take based on interest.

Mathematics/Statistics **6**

Any 300-level or higher Math or Statistics class labeled ‘non-major graduate credit’ (except MATH 307 and MATH 317) will count towards this requirement. Non Math/Stat courses with strong math or statistics content that are approved by the graduate education committee may also count towards this requirement. A current list of approved courses is shown in Appendix B.

Electives **18**

500 or higher level ME courses, 300 and higher level courses outside ME labeled ‘non-major graduate credit’.

Total 39 course credits

Research credits **33**

ME 699

Total 72 credits

- Up to 12 credits of Independent Study (M E 590/690) may be included in the Program of Study to count towards the 39 total course credits. These credits will by default count towards the electives.
- As part of meeting their electives, students are encouraged to take at least one course that addresses skill sets aimed at professional development (e.g. teaching/research program building, project management, globalization, engineering law, communication etc.) for academia and/or industrial positions.
- Students must also meet ME 600 (Seminar) requirements in addition to the above

Acceptability of Independent Study/Special Topics (ME 590/690) courses for M.S. and Ph.D. Program of Study: Independent study/special topics courses can also count towards your degree as noted in the above requirements. In order for the DOGE to approve M E 590/690 courses, you must submit a 590/690 course plan to the grad programs office (available on the ME Grad Program Forms Website - <http://www.me.iastate.edu/graduate-program/procedures-and-deadlines.html#c16454>). The following graduate committee approved guidelines must be met for the DOGE to approve inclusion. Inclusion of the course in your program of study:

- 590/690 credits should be for graduate level educational activities that are typically outside the classroom experiences.
- Examples of appropriate activities include graduate coursework for a class not scheduled for a given semester and independent scholarly activities resulting in specific deliverables.
- Inappropriate activities include participation in undergraduate courses to rectify deficiencies and/or build necessary foundation for graduate study and literature review intended for inclusion in thesis/dissertation.
- The completion of a project in addition to undergraduate coursework will be considered only if the project scope and detail is at a sufficient level to match the credits. The undergraduate course in itself will not count at all to the study credits.

Transfer Credits: Students are allowed to transfer credits earned at the graduate level at another University and have them count towards the ISU degree. Transfer courses are approved through the POS form and must be included on the form upon submission. The POS committee will decide if the transfer credits are relevant towards your degree at ISU. The Graduate College will subsequently check to see that the courses are graduate-level.

For the master's degrees, up to 9 graduate-level course (not research) credits can be transferred to be applied to the ISU degree requirement. For the Ph.D. degree you may transfer up to 36 graduate-level course (not research) credits to be applied to the ISU degree requirement.

ME 600 - Mechanical Engineering Seminar Series

A hallmark of leading institutions in science and engineering research is technical seminar participation. The department hosts a series of seminars throughout the academic year which includes invited speakers who are leaders in fields related to mechanical engineering. Attending seminars benefits scientific and engineering students by expanding their horizons, learning about research at other venues and at the forefronts of a field and also provides opportunities to learn about effective (and non-effective) presentation techniques.

All on-campus students pursuing a graduate degree in Mechanical Engineering are required to register for ME 600 every semester. This is a graduation requirement. **Off-campus students and students pursuing Master of Engineering** are exempt from the seminar requirement

Course requirement details

1. Registered students must attend **at least 4 technical on-campus seminars that are part of the Mechanical Engineering Department Seminar Series** (or co-sponsored by the Mechanical Engineering Department). The graduate programs office will track this requirement. The course will be graded as satisfactory/unsatisfactory (fail). A fail may have adverse impact on your graduation.
2. This course will be a part of degree requirements for all graduate students as follows:
 - a. **M.S. students:** Need to register every semester up to graduation. Students who are only registered for GRST 600 are exempt from ME 600 for that semester.
 - b. **Ph.D. students:** Need to register every semester till successful completion of preliminary examination.
 - c. **Students in interdisciplinary programs (e.g. HCI and BRT):**
 - i. Students who are also obtaining a degree from ME (i.e. co-majoring in ME) will be required to complete the ME 600 seminar requirement in addition to the seminar requirements of their program with the following modification: These students need to attend at least 3 seminars that are part of the Mechanical Engineering Department Seminar Series (or co-sponsored by the Mechanical Engineering Department).
 - ii. Students who only have ME as their home department (and are not obtaining an ME degree) will be exempt from the ME 600 seminar requirement.
3. Peer presentation: Each PhD student is required to make at least one peer presentation before graduation. Peer presentations are organized by the Mechanical Engineering Graduate

Student Organization (MEGSO). M.S. students are encouraged to present but are not required to do so.

- Assignment of slots and dates will occur at the beginning of each semester with preference to students with upcoming presentations at conferences and defenses etc.
 - A student's own thesis defense does not count as a seminar presentation.
4. **Conflict with seminar time:** Students who have a conflict with the seminar time or meeting the requirement for a particular semester must still register for the course AND inform of the DOGE at the beginning of the semester. Conflicts will be addressed on a case by case basis.

Ph.D. Qualifying Examinations

All Ph.D. students must pass a qualifying examination in order to pursue the Ph.D. degree. This examination must be taken by the end of the first year (August for Fall and Summer Admits and January for Spring Admits) in the program. The primary goal of the PhD Qualifier exam is to identify if you have the technical foundation to pursue a PhD and if possible, to identify weaknesses in your background that can be addressed. The format of the qualifying exam is decided by your major professor and POS committee. The most common format is a written exam on several topics with associated reading material that is based on core mechanical engineering subjects at the senior undergraduate or introductory graduate level.

It is your responsibility to check with your major professor on format and scheduling of the exam. Once you have fixed a date, inform the ME Grad Programs Staff and they will prepare a Ph.D. Qualifying Examination Result Form for your major advisor to complete. Your performance in the exam is judged as Pass, Conditional Pass, or Fail. In the case of Conditional Pass, you are given some set of conditions to complete. This can include taking a class in a topic. In the case of a Fail, the committee will make a recommendation if you are allowed to take the exam again or asked to end your PhD program.

Ph.D. Preliminary Examinations

A student becomes a Candidate for the Doctor of Philosophy degree after successful completion of the Preliminary Examination. This is an oral examination conducted by the student's POS Committee; it is intended to assess whether or not the student: has met doctoral-level standards for general knowledge in mechanical engineering, in supporting subject areas, and particularly in the student's area of expertise; has developed the capabilities or facilities needed to complete his or her research project; and can demonstrate the ability to use such knowledge and to orally communicate it to others. A written research proposal, prepared by the student should be given to the committee at least a week in advance of the examination. The proposal should present the significance of the problem and the objectives of the research, a review of the present state of knowledge in the area, a description of the research plan, results to date, and plans for completing the project. The format for this proposal may be similar to that used for the final dissertation. Immediately prior to the Preliminary Examination, the student will present to the department and the POS advisory committee a public seminar describing the proposed research and any preliminary results.

The Preliminary Examination must be typically completed (written proposal, seminar and oral exam) within **2 years** of being admitted to the Ph.D. program. If the student is unable to

meet this timeline, the student must submit a memo to the Graduate Committee requesting a delay. The memo must explain the cause of the delay and be approved by the major professor. The Preliminary Examination must be completed no earlier than 6 months prior to the final defense. At least 2 weeks before the date of the Preliminary Examination, the student must submit a Request for Preliminary Examination Form to the Graduate Office. This form is available in the ME Grad Programs Office, 2019 Black. Following successful completion of the Preliminary Examination, the student is formally admitted to candidacy for the Doctor of Philosophy degree.

Changing Degree Tracks

Changing degree tracks, including changing between Master degree options, typically requires the approval of your major professor and the Director of Graduate Education as well as appropriate paperwork. If you are considering a change in degree track, please contact the Graduate Programs Office to learn about exact procedures for your case.

Distance Education Students

All the policies and procedures for the graduate program apply to students in the distance education program. The Engineering Distance Education staff and our Grad Programs Staff will be happy to assist you in preparing and routing forms for signatures.

Default major professor: A default major professor is established for the convenience of distance students who are pursuing the coursework only Master of Engineering Degree. You are free to choose another faculty member at the start of your program.

Failure to Maintain Academic Standing

Graduate students are expected to maintain a cumulative 3.00 grade point average on all coursework taken, exclusive of research credit. The Mechanical Engineering graduate program's policy for maintaining good academic standing is outlined below. The policies are in line with the Graduate College's policy.

Probation: A student who fails to maintain good academic standing will be placed on academic probation. While on academic probation a student will not be admitted to candidacy for a degree. To insure that registration does not take place without a review by faculty in the program, a hold is placed on future registrations for a student on probation. Before a student on probation registers for each term, there must be a review of his or her record and the DOGE must recommend whether the Graduate College should permit further registration.

Ph.D. students, M.S. (thesis) and students on assistantship:

- The first occurrence of probation will be waived. The student and major professor will be informed of the occurrence and encouraged to address the student's academic standing.
- The second occurrence of probation will entail a warning to the student and discussion between the student's major professor and DOGE to determine whether tuition scholarship and/or assistantship should continue (if performance is affecting assistantship duties). Measures to help student strengthen academic standing will be identified.
- A third occurrence of probation will automatically result in the student no longer

receiving tuition scholarship or assistantship (where applicable) till he/she regains good academic standing.

M.Eng. and self-funded students:

- Occurrence of probation will result in the student and the major professor being notified of the situation and being encouraged to address the student's academic standing.

Impact on graduation: Before graduation is approved by the DOGE and subsequently by Graduate College, the student must complete all courses listed on the program of study with a minimum grade of C and have achieved a 3.00 GPA or greater. Hence the department will not permit a student to graduate on probation. Exceptions must be recommended in writing by the student's POS committee and DOGE and approved by the Dean of the Graduate College.

Dismissal from program: Probationary status for three continuing semesters is grounds for dismissal from the program.

Graduate Minor in other disciplines

Students pursuing a mechanical engineering graduate degree may also pursue a minor in any discipline that has approved to grant a graduate degree. Pursuing a minor may be advantageous for students working on interdisciplinary projects with a particular emphasis on another specific discipline. For example, an ME Ph.D. student may pursue a minor in Materials Science and Engineering. Your degree certificate will state the minor degree as well. A student cannot minor and major in the same field.

General requirements: To obtain a minor, students must

- Fulfill the requirements of the disciplinary minor. In general this requires completing at least 12 credits in that discipline. These credits must be graduate level or approved for non-major graduate credit. Please check with specific requirements of the discipline of interest.
- Have a minor representative (someone other than the major professor) on the POS committee
- For Ph.D. students, all minor requirements must be completed before taking the preliminary examination.

Special Graduate Majors and Degree Programs

Opportunities also exist for majoring in more than one area of study (co-major, joint major, concurrent major or double degree). Please consult with the Graduate College Handbook for detailed requirements. It is an expectation that students will discuss such options in consultations with their major professor.

Engineering Internship

Graduate students may go on internships or co-operative education jobs (also called Curricular Practical Training or CPT) during the summer of any other semester during their

degree program. This is generally done after consulting with the major professor. Prior to going on internships or Co-ops, students **MUST** register for M E 697: *Engineering Internship* and submit the M E 697 Internship approval form (available online at <http://www.me.iastate.edu/graduate-program/procedures-and-deadlines.html#c16454>) to the Grad Programs Office. In order for us to submit a grade, after your internship, you are required to submit a 1 page summary of the work experience to the Grad Programs Office. You must include details on **WHERE** you did the internship including names of supervisory personnel, **WHAT DATES** you were at the internship, a **DESCRIPTION** of activities performed and a statement on how this experience benefited you. Please keep in mind the following regulations regarding internships

- Internship positions equal any work related to a student's major area of study for one semester and one summer maximum per academic year professional work period.
- You will need to complete an add/drop slip to register for M E 697.
- You may generally not hold an assistantship for longer than five days into the term that you will be gone on internship.
- While away from campus, please make arrangements for someone to pick up your mail at your campus mailbox. First class mail can be forwarded to you upon your request. Please notify the graduate programs secretary if you would like first class mail forwarded.
- International students must meet with an International Students and Scholars (ISS) counselor regarding curricular practical training (CPT). If extending your internship, you must discuss ramifications with ISS before completing the M E 697 form.
- After your internship, you are required to submit a 1 page summary of the work experience to the Grad Programs Office. Describe responsibilities and activities performed and a brief description of how the experience helped your professional development.

Professional Ethics and Academic Integrity

It is imperative that every student understands the ethical standards of engineering science and conduct his or her scholarly activities accordingly. Scientists and engineers, who commit unethical acts, whether from carelessness, ignorance, or malice, quickly lose the respect of the scientific community. Scientific misconduct includes such activities as:

- Falsification of data, ranging from fabrication to deceptively selective reporting, including the purposeful omission of conflicting data with the intent to falsify results
- Plagiarism: representation of another's work as one's own
- Misappropriation of the ideas of others: unauthorized use of privileged information
- Misappropriation of funds or resources for personal gain
- Falsification of one's credentials

At ISU, these acts are taken very seriously and constitute "academic misconduct". Individuals found guilty of academic misconduct may suffer a variety of penalties up to and including expulsion from the university.

If a student is aware of a potentially unethical situation, he or she should seek the advice of a trusted professor. Students may also contact the Director of Graduate Education (DOGE). All such discussions with the DOGE are considered and treated as confidential. It is very important to protect the rights of the individual whose actions are questioned. Frivolous

accusations of misconduct and vicious spreading of rumors are just as unethical as fabrication of data or plagiarism.

General Expectations as a Graduate Student

You are being given the responsibility to develop your educational program to best meet your career and educational goals. Many of us are here to help you in this process, but we expect you to take the lead in your education. We expect that you will

- work independently and responsibly in your area of research and show initiative
- ensure expectations between you and your major professor are clear through constant and clear communication
- broaden and enrich your education by attending talks and seminars in the department and on campus
- be aware of degree and assistantship requirements and deadlines and file paperwork in a timely manner
- represent yourself and the program with highest standards of integrity, ethics and professionalism

Completion of Program

Before graduation, the student must prepare a thesis or dissertation. The student and major professor must determine whether or not the results are to be published and what the student's responsibilities are in the publication process. Excellence in research is best exemplified in the form of publishable research and/or patent applications. It is normally expected that the student will at least complete the draft of one or more research (journal) papers prior to graduation. Besides thesis and research paper preparation, the student has other responsibilities.

The laboratory and office space occupied by the student should be left clean, with all equipment left or returned to storage in good condition. The student and major professor will decide to what degree experimental apparatus will be disassembled.

Keys are to be returned to the General Services Building. Any Marlock key or Locknetics key needs to be returned to 2079 Black.

If termination is at some other time than the end of an appointment period, the student must sign a resignation form and submit it to the Graduate Programs Office.

Diploma Slip Form

By the beginning of the semester of graduation, the student will submit a Diploma Slip Form to the Graduate College Office. This form is available at the Graduate College Website under Forms. It will be necessary to submit a new Diploma Slip Form if the student does not graduate in the indicated semester.

Thesis or Dissertation Preparation

Theses and dissertations are prepared electronically according to the *Graduate College Thesis Manual*, available on-line at: <http://www.grad-college.iastate.edu/thesis/homepage.html>. Students need to electronically submit to the ME Graduate Programs Office (DOGE) one electronic copy of their final thesis/dissertation prior to or along with submitting a Thesis/Dissertation Submission Form. Please consult with your major professor as to other copies that he/she may require you to submit.

Final Examination

As a part of the Final Oral Examination procedure, candidates for the M.S. or Ph.D. degree are expected to give a public seminar to present and defend their research dissertation. This Examination consists of a one-hour general presentation in a public seminar, followed immediately by a detailed examination by the candidate's POS Committee. The public seminar should be scheduled at a time during which the POS Committee and most of the graduate students and faculty can attend. The Graduate Programs Office will publicize scheduled final examinations to the department faculty and students. It is an expectation that all graduate students will attend several Final Oral examinations during their tenure as a graduate student.

The M.S. or Ph.D. student must submit a Request for Final Examination Form to the Graduate College Office **at least three weeks before the examination**. Copies of the form are available in the ME Graduate Programs Office. The Graduate College must approve changes in the membership of the Program of Study Committee before the Final Examination occurs.

Graduation Approval Slip Form

After the Final (oral) Exam, the student must complete a Graduation Approval Slip Form. Individuals from various offices sign this form to indicate that the student has completed the degree requirements and has met all other obligations to be eligible for the degree. The Graduate College will send this form to the student. The ME Graduate Programs Staff must initial this form before the chair of the department will sign it.

Check-Out Procedure

Each graduate student must arrange a check-out procedure within his or her group as established by the major professor. Students employed by other centers, institutes, or laboratories within the university must also comply with their check-out procedures.

Students should also return all keys issued to them. In addition students who were issued a purchasing card (see General Information section) must return the card to the Account Clerk in the main office (2025 Black).

All graduating students must meet with the Graduate Programs Staff for a brief exit interview before leaving campus.

Employment

Prior to graduation and departure, most students will be seeking employment. Employer representatives visit campus all during the year, but the prime interviewing season begins at the end of September and continues into January and February. Students should visit the Engineering Career Services Office, 308 Marston Hall for further information.

Many companies offer interview trips to prospective employees. Students should check with their major professor and supervisor (if a teaching assistant) before going on interview trips. Students on appointment must submit an Absence Request Form prior to departure.

Outstanding Graduate Student Awards

Research and Teaching Excellence Awards

The Graduate College and the Department of Mechanical Engineering sponsor two awards to graduate students for outstanding achievement in research and teaching:

Nomination Deadlines:

Nominations are made by department faculty – in the case of the research excellence award, it is usually the major professor of the nominee while in the case of a teaching excellence award, it is usually the course instructor. Forms are available online at <http://www.me.iastate.edu/graduate-program/procedures-and-deadlines.html>.

Nominations are typically due to the ME graduate programs office as indicated below:

Fall Semester	First Friday of October
Spring Semester	First Friday of March
Summer Semester	First Friday of June

Research Excellence Award

The purpose of these highly competitive awards is to recognize outgoing graduate students for outstanding research accomplishments as documented in resulting peer-reviewed publications, theses and dissertations. These students are also expected to be academically superior and able to not only do research, but develop a well-written product. The program is administered by the Graduate College with additional administrative support from the Graduate Student Senate. Awards are offered each semester and summer session, depending on departmental allocations and prior awards.

Each Research Excellence Award will consist of a letter of commendation from the ISU President, a certificate of achievement from the Dean of the Graduate College and a cash award. Recipients will be recognized in the ISU Commencement Program; documentation will also be made on each student's transcript. Each term a formal photograph will be taken of recipients with the ISU President, the Provost and/or the Dean of the Graduate College. This photograph will appear in *Research and Graduate Education* along with an accompanying article.

Teaching Excellence Award

The purpose of these awards is to recognize and encourage outstanding achievement by graduate students in teaching. The program is administered by the Graduate College with additional support from the Graduate Student Senate.

Each Teaching Excellence Award will consist of a letter of commendation from the ISU President, a certificate of achievement from the Dean of the Graduate College and a cash award. Recipients will be recognized at the time of graduation – each will be given an honor cord, cited in the ISU Commencement Program and recognized during the ceremony. Documentation will

be made on the student's transcript. Each term a formal photograph will be taken of recipients with the ISU President, the Provost and/or the Dean of the Graduate College. This photograph will appear in *Research and Graduate Education* along with an accompanying article.

Previous Research Excellence Award winners:

Name	Degree	Major Professor	Semester Awarded
Lewis, Jeffrey	PhD	Pletcher	Summer 85
Huang, Shou-Heng	PhD	Nelson	Summer 94
Waller, David	MS	Brown	Spring 95
Clover, Christopher	PhD	Bernard	Spring 96
Halstead, David	PhD	Okiishi	Fall 96
Hoffmeister, Kurt	MS	Bernard	Spring 97
Dailey, Lyle	PhD	Pletcher	Fall 97
Wen-Yu Ho	MS	Pate	Fall 99
Fan, Maohong	PhD	Brown	Spring 00
Cerney, Melinda	MS	Vance	Spring 03
Killion, Jesse	MS	Garimella	Summer 03
McCorkle, Doug	MS	Bryden	Fall 03
Whitmer, Christopher	MS	Kelkar	Fall 03
Joshi, Shailesh	PhD	Pate	Spring 05
Mitchell, Andrew S.	MS	Shrotriya	Fall 05
Tang, Chengzhi	PhD	Heindel	Fall 05
Feng, Hua	PhD	Olsen	Summer 06
Schwartz, Christian	PhD	Bahadur	Summer 06
Fischer, Andrew	PhD	Vance	Fall 06
Sun, Jin	PhD	Battaglia	Spring 07
Pai, Gurpura Madhusudan	PhD	Subramaniam	Summer 07
Porumamilla, Hemanth	PhD	Kelkar	Fall 07
Doug McCorkle	PhD	Bryden	Spring 08
Mark Wright	MS	Brown	Summer 08
Ying Xu	PhD	Subramaniam	Summer 08
Kanaga Subramaniam	PhD	Sundararajan	Fall 08
Karra, Pavan	PhD	Chandra	Spring 09
Yan, Yan	MS	Zou	Spring 09
Garg, Rahul	PhD	Subramaniam	Summer 09
Li, Yuanhong	PhD	Kong	Summer 09
Wu, Ying	PhD	Zou	Fall 09

Previous Teaching Excellence Award winners:

Name	Degree	Semester Awarded
Bittle, Robert	PhD	Spring 94
Huang, Shou-Heng	PhD	Summer 94

Lund, Yvonne	PhD	Summer 95
Hossain, Forhad Md.	PhD	Summer 98
Bernhard, Adriana Rindiani	MS	Spring 03
Yirong Jiang	PhD	Spring 03
Yongjun Hou	PhD	Fall 03
Muff, David	MS	Spring 05
Feltes, Steve	MS	Spring 05
Groen, Michael W.	PhD	Fall 05
Hua Xu	PhD	Fall 06
Hemanth Porumamilla	PhD	Spring 07
Corns, Steve	PhD	Fall 07
Gent, Steve	PhD	Spring 08
Denis Dorozhkin	PhD	Fall 08
Shrestha, Som	PhD	Spring 09
Ma, Xiao	PhD	Fall 09
Markutsya, Sergiy	PhD	Spring 10

Zaffarano Prize for Graduate Student Research

Award deadlines

Nominations are due in early March to the Graduate College, 1137 Pearson Hall. Winners are notified mid-April and presented the award at the annual Sigma Xi banquet in April.

The Graduate College in conjunction with Sigma Xi presents and at the bequest of Dr. Daniel Zaffarano (Vice President for Research and Dean of the Graduate College at Iowa State University from 1971-1988) present this annual to recognize superior performance in publishable research by an ISU graduate Student. A check for \$1,500 and a plaque will be presented to the winner. For the purpose of this award, publishable research is defined as work written and accepted for publication in a national or international refereed journal. Both the quality and the number of publications produced during the student's time at ISU will be considered. The awardees must either be currently enrolled at ISU for the Spring semester of the nomination, or have graduated in the 2 preceding semesters. In all cases he or she must be available to receive the award in person.

Nomination procedure

Major professors and faculty make nominations to the Dean of the Graduate College by March 1, submitting them to the Graduate College, 1137 Pearson Hall. Each should include a professional resume with copies or reprints of all publications authored by the student while enrolled at ISU. When the student is not the senior author, a note of explanation by the major professor or coauthor describing the student contributions to the published work is needed. The nomination should also include a letter from the student's major professor and an endorsement from either the departmental chair or the director of graduate education (DOGE).

General Information

Office space

Office and laboratory space is made available for each graduate student on a research assistantship in the ME Department. Office space is assigned by the department chair and the Graduate Programs Assistant. The Graduate Programs Assistant will notify new students of their office desk allocations upon check-in. Laboratory space is the responsibility of your major professor.

Each graduate student is responsible for maintaining a neat and safe environment in the assigned office and laboratory as per campus regulations. Safety and housekeeping inspections are held frequently by the department safety officer and violations are dealt with severely.

Keys

Key request forms are available in the main department office (2025 Black). The department will assist you in filling the form and ordering your keys. Signatures are required from your major professor and the Manager of Technical Services. Keys are issued to students for three, six or twelve months. If keys are required beyond the due date, a renewal key request may be submitted. Key authorization forms can be obtained from the Departmental Office, and then taken to the General Services Building where keys are issued. For entrance to the building and instructional labs (for TAs) please see the assistant to the department chair in 2025 Black. Graduate students needing to switch keys with another graduate student should stop in 2025 Black and fill out a Transfer of Key Form. Any lost or stolen keys can be replaced for a \$25.00 fee.

Mail

Graduate students have mailboxes in 95D Black. Mail is delivered daily around noon. Students should check their mailbox regularly (at least weekly) for department announcements. Campus mail can be mailed from 2013 Black. Personal mail should **NOT** be delivered to the department nor should personal outgoing mail be mailed from the department office.

Telephones

Local telephone calls, i.e. within Ames, may be made from the office telephones in Black. Dial 8 to get an outside line. ISU phone numbers (those with a 294, 296 or 572 prefix) may be reached by dialing the last number of the prefix and the last four digits. Long distance calls for research and professional purposes, such as university business, may be made from your office phone using an access code that you may obtain from your major professor, with permission.

Office Hours

The ME main office, 2025 Black, is open from 8:00 a.m. to 5:00 p.m. The telephone number is 515/294-1423; the fax number is 515/294-3261. Administrative offices on campus are also open during these hours. The ME Graduate Programs Office, 2019 Black, is open from 8 a.m. to 5 p.m. The telephone number is 515/294-0838. Summer and break hours for department offices may change to 7:30 a.m. to 4:00 p.m.

Copiers

The copy machine in the main office may be used for teaching or research-related material approved by your major professor; **they should not be used for personal use.** The copiers at the Library may be used for personal copying. **Students should use the copy centers on campus for copies of theses and dissertations.**

Purchase of Equipment and Supplies

Iowa State University has launched the CyBuy program, <http://www.purchasing.iastate.edu/cybuy>. This program has been designed to allow for the procurement of supplies from contracted vendors in a streamlined marketplace available through AccessPlus. Higher limits, less paperwork, and faster receipt of orders are just a few of the benefits. For more information and purchases outside the university, please contact the main office staff. The student must secure permission from the major professor before making any purchases. Graduate students are responsible for their own office supplies. There are often old file folders available for student use from the main office if needed (see the secretary in 2025). Supplies for teaching purposes (for Teaching Assistants) can be obtained from the main office.

Purchasing Card: Graduate students on assistantships are eligible to obtain a department-issued credit card for approved supplies purchases. Please contact the Account Clerk in the main office (2025 Black) to apply for one. It is the student's responsibility to monitor spending on the card – note that all spending must be approved by the major professor.

Other Services

The College of Engineering and other university centers or laboratories offer a variety of services to aid the graduate students. These include shops for construction of equipment and analytical laboratories. Arrangements for using these services must be discussed with the student's major professor.

Absences from Campus

The major professor must approve graduate student absences (other than University Holidays) in advance. Graduate students on any type of research or teaching appointment must fill out an Absence Request Form if they plan to be out of town on normal working days.

Job Postings

Job postings are available on ISU CMS through the Engineering Career Services Office and posted on a bulletin board located opposite 2004 Black. This board also has faculty and post-doctoral opportunities as well. Graduate students are encouraged to sign up for career assistance in 308 Marston Hall.

ME Graduate Student Organization (MEGSO)

The ME Graduate Student Organization (MEGSO) was founded for the purpose of promoting interaction among the students of the department. The organization strives to create a friendly working atmosphere between students and faculty. MEGSO also

2010-11 MEGSO Cabinet

Joseph Holub, President
Ravi Kolakalvri, Vice President
Najeeb Kuzhiyil, Treasurer
Matthias Veltman, Board Member
at Large

Faculty Advisor: Pranav Shrotriya

promotes professional activities and interacts with faculty candidates.

Events during the year such as BBQ picnics, potluck dinners, bowling and sports teams provide an excellent way for MEGSO members to interact in a social setting. MEGSO members show prospective graduate students around the campus and city during visits. Enrollment is currently limited to ME graduate students, although members are encouraged to bring guests to the functions. To participate in MEGSO, simply watch for an announcement as to when and where the meetings will be held.

Conference and Research-related Travel

EXPLANATION OF OUT-OF-STATE TRAVEL AUTHORIZATION AND PROFESSIONAL ADVANCEMENT GRANT FORMS

For students planning on attending a conference, some (if not all) of the following information will apply to you so please read carefully.

Travel Professional Advancement Grant (PAG) forms are filled out by the grad student to request funding from the ME Department and the Graduate and Professional Student Senate (GPSS) to help support your trip expenses. Each graduate student is eligible to receive one Travel PAG per fiscal year (July 1 through June 30 – NO EXCEPTIONS). Half of the GPSS funds are allocated before December 31, and half are allocated after January 1. (GPSS funds are usually depleted by November 15 for the first funding period and by April 1 for the second). All graduate students are eligible for up to \$100 per fiscal year from the GSS.

Travel requests should be submitted 4-6 weeks prior to departure and **MUST** be received at the Graduate College **NO LATER THAN TWO WEEKS PRIOR TO DEPARTURE**. If you have any questions, please ask or view the “PAG Funding” section on the GPSS website at <http://www.grad-college.iastate.edu/gpss>.

Procedures for attending a conference are:

1. Check with your major professor regarding the conference you wish to attend. Obtain his or her approval before proceeding with the next step.
2. You will need to set up your own travel arrangements. Currently there are two options. (a) You may call one of ISU’s contracted travel agencies to set up your own travel arrangements. The travel agency will then e-mail you your travel itinerary. Please note that your ticket is not actually ordered until Department Staff have completed step 3; (b) you may purchase your airline tickets via the Internet (please see Department Staff or your major professor for details).
3. Fill out an ME Out-of State Travel Authorization Form providing the account number to be used to order your airline tickets. Submit the completed Out-of-State Travel Authorization and e-mailed itinerary to Department Staff. The ticket will then be ordered. Please indicate if the ticket has a deadline in which to receive the rate that you have been quoted.
4. Fill out sections I, II and III of the Professional Advancement Grant form (the indicated sections must be filled out completely). Attach copy of abstract or paper as well as proof of acceptance. Submit this application to the Graduate Programs Office. We will fill out section IV to indicate department support and forward it for submission to the Graduate College. Department support is prioritized for applicants who will be presenting their work.

5. Once the appropriate departments have reviewed the PAG, a copy will be returned to you indicating the amount of support for which you are eligible.

All forms mentioned above are located in the University Forms file in main office.

Additional information about graduate studies at Iowa State University may be obtained from the Graduate College Website (<http://www.grad-college.iastate.edu>).

Mediation of Student Disputes and Grievances

When graduate students become involved in disputes with their mentors that cannot be resolved by direct communication, the Graduate Programs Office will serve as informal or formal mediator depending on the particular circumstances. Students should feel free to contact the DOGE should such disputes arise. All such conversations are strictly confidential and the DOGE will work with the student to help resolve the dispute. Several formal avenues of appeal are available to graduate students to handle grievances concerning grades and instruction and for grievances related to scholarly and professional competence. All procedures start at the department or program level and lead through a series of steps to higher appeal channels. All such grievance procedures must be initiated within 3 weeks after end of semester during which the alleged grievance occurred. The Mechanical Engineering's grievance procedure is outlined below. Information for appeals at higher levels can be found in the Graduate College Handbook.

Grievances about Grades and Instruction: Grievances arising out of classroom or other academic situations should be resolved, if at all possible, with the individual instructor involved. If resolution cannot be reached, the student should discuss the grievance with the instructor's department executive officer (chair) and submit it in writing to him or her. The department executive officer will discuss the grievance with the instructor involved and/or refer it to a department grievance committee. The department executive officer should respond in writing to the student within five class days.

Grievances Related to Scholarly and Professional Competence: Judgment of professional competence as demonstrated in such matters as qualifying, preliminary and final oral examinations, and other clearly stated program requirements concerning competence in the field of study is the responsibility of the academic program and Program of Study (POS) committee.

If a student feels that his or her scholarly or professional competence has not been evaluated fairly, he/she should first discuss the complaint with the person or persons most directly involved in the matter: a faculty member, major professor, POS committee, director of graduate education (DOGE), or department chair. If these discussions are unsuccessful and further adjudication is desired, the student may request (in writing) that the grievance be handled by the department grievance committee.

Department grievance committee: The DOGE shall appoint a grievance committee to handle student grievances. The committee will comprise of equal representation from faculty and graduate students. The DOGE will serve as a non-voting member of the committee. The committee shall review the grievance and present its recommendation in writing to the DOGE within one week after all necessary information is provided to them. The DOGE will then provide a written response to the student.

Graduate Timetable

Upon arrival:

- Check in with the ME Grad Programs Office (2019 Black Engineering) - receive welcome package and ME Guide for Graduate Students
- International students – Check in with Office of International Students and Scholars at 3248 Memorial Union
- Get your ISUCard in 0530 Beardshear Hall
- Sign up for an E-mail account in the Solutions Center, 195 Durham Center
- Students on assistantships - Sign up for payroll in the Human Resources Office at 3810 Beardshear Hall (take a copy of your official Letter of Intent, and an ID other than ISUCard)
- Students on assistantships - Sign up for benefits at Student Insurance, 0570 Beardshear Hall
- Meet with major professor to discuss classes to take and register
- International students (non-native speakers of English) should take the English Placement Test
- International students on TA appointments should take the SPEAK/TEACH Test
- Attend Orientations
 - All students should attend ME New Student orientation and welcome reception (mandatory)
 - Students on TA appointment should attend New TA orientations conducted by CELT.
 - Students should attend Basic Safety Orientation conducted by EH&S.
- Receive key forms for pertinent office, lab and exterior door key from Department Office
- Obtain keys (after 24 hours) from the Key Issue Office, General Services Building

During the first semester:

- Register for and attend M E 600 all semesters as per guidelines
- Receive Safety Training
- Identify major professor (students for whom the DOGE is assigned as temporary major prof.)
- Register for and take English Placement test AND the SPEAK/TEACH TEST (international students)

Within two semesters:

- Finalize (POS) Committee Appointment with major professor. Complete and submit Recommendation for Committee Appointment Form.
- Fill out and submit Program of Study Form.
- Ph.D. students should do both of the above within the first six months of starting the program. Ph.D. students should arrange a meeting with their committee members to get above paperwork completed.

Within one year of entry:

- Ph.D. students should complete the Qualifying examination. This is arranged in discussion with your major professor.

Within two years after being admitted to the Ph.D. program:

- Fill out Preliminary Examination Form
- Give seminar on research/submit report (part of Prelim Exam)
- Take Preliminary Examination

During semester before graduation:

- Fill out Final Examination Form
- Complete Diploma Slip Form
- Take Final Examination

Before departure:

- Fill out Checkout Form in the ME Grad Programs Office
- Complete Graduation Approval Form

All Done!

Forms and Deadlines

General procedure for forms

It is your responsibility to fill out your form and get signatures from your major professor first and then from your POS committee members (where necessary). Attach any required additional material and submit the form to the ME Grad Programs Office Staff. Do not submit it directly to the DOGE. The staff will verify all information and obtain the DOGE's signature. If information on the form needs to be clarified or changed, you will be contacted by the staff or the DOGE. If the form is approved and signed by the DOGE, the graduate programs staff will forward the form to the Graduate College and distribute copies to you and your major professor. The table below lists the most common forms used and where to access them. For forms not listed here, please stop by the ME Grad Programs Office (2019 Black Engineering) to pick them up.

The Grad College Forms Website is <http://www.grad-college.iastate.edu/forms/forms.html>

The ME Grad Program Forms page is <http://www.me.iastate.edu/graduate-program/procedures-and-deadlines.html#c16454>

Form	Deadline	Form available at
POS Committee	Before end of second semester in program	Grad College Forms Website
Program of Study		
ME 590/690 Independent Study Approval form	Prior to registering for ME 590/690 course	ME Grad Program Forms Website
PhD Qualifier Exam Result and Report	Before end of 1 st year in degree	
POS Modification (if necessary)	Before submitting request for final oral exam	Grad College Forms Website
POS Committee Change Form (if necessary)	Changes to POS must happen before filing request for PhD Prelim Exam	Grad College Forms Website
Request PhD Preliminary Exam	3 Weeks Before Exam Exam should typically be taken at the end of the second year in PhD program	ME Graduate Programs Office
Request for Final Oral Exam	3 Weeks Before Exam Exam is during final semester	ME Graduate Programs Office
Application for Graduation Form	Friday of the first week of classes for fall and spring semester; last day of spring semester classes for summer graduation	Grad College Forms Website
Over Age Course Memo (if necessary)	When submitting POS form	Your major professor writes the memo to the DOGE

Request to Continue on for a PhD	Semester Graduating with MS and after final Oral Exam for MS	Grad College Forms Website
ME 697: Engineering Internship Approval Form	Prior to registering for ME 697 and departing for internship	ME Grad Program Forms Website
Travel authorization	Two-three weeks prior to conference departure	
Professional Advancement Grant Application	Two-three weeks prior to conference departure	http://www.grad-college.iastate.edu/gpss
Thesis/Dissertation Approval Form	Prior to thesis submission deadline, generally two weeks before end of semester	http://www.grad-college.iastate.edu/thesis/homepage.html
Electronic copy of thesis to ISU and DOGE	Generally two weeks before end of semester	N/A
Graduation Approval Form		Grad College Forms Website

Deadlines

Please take note of the deadlines associated with the various forms in the table. Note that these deadlines pertain to receipt of the completed form at the Graduate College. Please plan to allow two days or so for processing and submit accordingly. Please treat the deadlines seriously. Failure to comply can and will result in delays to graduation, degree progress and in the case of committee, POS, PhD qualifier and PhD Preliminary forms, registration holds for subsequent semesters.

Additional Information and Resources

ME Grad Programs Website

<http://www.me.iastate.edu/graduate-program.html>

- *Graduate College Student Handbook* –<http://www.grad-college.iastate.edu/publications/gchandbook/homepage.html>.
- *Graduate Education Handbook*: <http://www.grad-college.iastate.edu/gpss/rules/handbook2006-2007.pdf>
- *University Catalog/ISU Bulletin* –<http://www.iastate.edu/~catalog/>.
- *Distance Education Resources* –<http://www.distance.iastate.edu/>
- *International Students and Scholars Office*: <http://www.isso.iastate.edu/>
- *SPEAK/TEACH Program*: <http://www.grad-college.iastate.edu/speakteach/>
- *English Placement Test*: <http://apling.public.iastate.edu/engl101.html>
- *Center for Excellence in Learning and Teaching*: <http://www.celt.iastate.edu>
- *Teaching Assistant Handbook*: <http://www.celt.iastate.edu/teaching/TAhandbook.html>
- *Graduate Student Teaching Certificate*: <http://www.celt.iastate.edu/gstc>
- *Preparing Future Faculty Program*: <http://www.celt.iastate.edu/pff/>

Appendix A: Mechanical Engineering Graduate Core Courses grouped by Disciplinary Area

Design and Optimization			
ME 517*	Advanced Machine Design	EE 547	Pattern Recognition
ME 525*	Mechanical Systems Optimization	IE 566	Applied Systems Engineering
ME 557*	Computer Graphics and Geometric Modeling	IE 577	Human Factors
ME 580*	Virtual Worlds	Math 525 -	Numerical Analysis of High Performance Computing
ME 625	Surface Modeling	Math 554 -	Introduction to Stochastic Processes
AerE/IE 565	Systems Engineering and Analysis		
Dynamic Systems and Controls			
ME 508	Filter Design and Applications	ME 573*	Random Signals and Kalman Filtering
ME 511*	Advanced Control Systems Design		
ME 518	Advanced Dynamics of Machinery	ME 574*	Optimal Control
ME524	Digital Signal Processing	ME 575	Introduction to Robust Control
ME 543	Random Vibrations	ME 576*	Digital Feedback Control Systems
ME 549*	Vehicle Dynamics	ME 577	Linear Systems
ME 552	Advanced Acoustics	ME 578	Modern Control Systems
		Math 501	Introduction to Real Analysis
Materials Processing and Mechanics			
ME 520*	Material and Manufacturing Considerations in Design	ME 561	Scanning Probe Microscopy
		ME 563*	Nanomechanics
ME 521*	Mechanical Behavior and Manufacturing	ME 564	Fracture and Fatigue
	of Polymers and Composites	EM 510	Continuum Mechanics
ME 527*	Mechanics of Machining and Finishing	EM 516	Mechanics of Deformable Solids
	Processes	EM 525	Finite Element Analysis
ME 528*	Nanomanufacturing and MEMS Technology	MSE 540	Mechanical Behavior of Materials
		MSE 552	Scanning Electron and Auger
ME 560*	Surface Engineering	Microscopy	
Thermo-Fluid Sciences			
ME 530*	Advanced Thermodynamics	ME 546*	Computational Fluid Dynamics and Heat Transfer I
ME 532*	Thermodynamics of Compressible Flow		
		ME 547	Computational Fluid Dynamics and Heat Transfer II
ME 535*	Thermochemical Processing of Biomass	ME 632	Multiphase Flow
ME 536*	Advanced Heat Transfer	ME 639	Two Phase Flow and Heat Transfer
ME 538	Advanced Fluid Flow		
ME 540*	Solar Energy Systems		
ME 542*	Advanced Combustion	AE 504	Instrumentation for Agricultural and Biosystems Engineering
ME 545*	Thermal Systems Design		

*indicates available online

Appendix B: Approved Courses for Math/Stat requirement

- All Statistics Courses 400 and higher labeled non-major graduate credit.
 - Popular courses are STAT 401 – Statistical Method for Researchers and STAT 495* - Applied Statistics for Industry
- All Math courses 300 and higher labeled non-major graduate credit EXCEPT Math 307 and 317.

Optimization (linear, nonlinear, and integer programming; global optimization methods)

I E 510* - Network Analysis

I E 534 - Linear Programming

I E 631 - Nonlinear Programming

I E 632 - Integer Programming

Econ 500/600 - Quantitative Methods in Economic Analysis I/II

Econ 509 - Applied Numerical Methods in Economics

Modeling and Simulation (Physical modeling through differential equations and their solution, computer visualization)

E M 425 - Introduction to Finite Element Methods

E M 525 - Finite Element Analysis

E M 526 - Boundary Element Methods in Engineering

Phys 480/481 - Quantum Mechanics I/II

Phys 531 - Statistical Mechanics

Phys 564 - Advanced Classical Mechanics

Phys 591/592 - Quantum Physics I/II

M E 546*/547 - Computational Fluid Dynamics and Heat Transfer I/II

M E 557* - Computer Graphics and Geometric Modeling

Com S 477/577 - Problem Solving Techniques for Applied Computer Science

Aer E 647: Advanced High Speed Computational Fluid Dynamics

Aer E 572: Turbulence

Ch E 545 – Analytical and Numerical Methods

Mathematical Theory

Linear & abstract algebra, real & functional analysis

E M 510 Continuum Mechanics

E E 570 - Systems Engineering Analysis and Design

E E 674 - Advanced Topics in Systems Engineering

Phys 534 - Symmetry and Group Theory in Physics

Probability and Statistics (outside of statistics department)

I E 513 - Analysis of Stochastic Systems

I E 533 - Reliability

Econ 500- Quantitative Methods in Economic Analysis I

Econ 509 - Applied Numerical Methods in Economics

Econ 571 - Introductory Econometrics

Econ 671/672 - Econometrics I/II

*indicates available online

Appendix C: Mechanical Engineering Faculty and Staff Directory

Name	Phone	Office	Email ID	Title
Agba, Emmanuel	4-3005	2066 Black	Eagba	Senior Lecturer
Bernard, James	4-0360	1620E Howe	bernard	Anson Marston Distinguished Professor of Engineering and Interim College of Engr Dean
Bilstad, Mary	4-1431	2025 Black	mbilstad	Program Coordinator
Birney, Denise	4-4932	2043 Black	short	Secretary, Kiewit Undergraduate Student Services Center
Brown, Robert	4-8733 4-7934	411 Marston 2094 Black	rcbrown	Anson Marston Distinguished Professor of Engineering
Bryden, Kenneth "Mark"	4-3891	1620 Howe 2104 Black	kmbryden	Associate Professor
Carver, Amy	4-0838	2019 Black	acarver	Graduate Programs Assistant
Chandra, Abhijit	4-4834	2106 Black	achandra	Professor
Couture, Larry	4-0569	1051 Black	couture	Teaching Lab Coordinator
Dautremont, Jim	4-6590	1049 Black	dautremo	Lab. Mech. Technologist
Faidley, LeAnn	4-1692	2036 Black	faidley	Assistant Professor
Feve, Sebastien	4-0069	2076 Black	sfeve	Lecturer
Ganapathysubramanian, Baskar	4-7442	2100 Black	baskarg	Assistant Professor and William March Scholar in Mechanical Engineering
Hagge, Mathew	4-4877	2624 Howe 2098 Black	fforty	Lecturer
Heindel, Ted	4-0057	3026 Black	theindel	Interim Department Chair Bergles Professor in Thermal Science,
Heise, Jim	4-3857	2078 Black	jheise	Senior Lecturer (cellphone - 515 290-1991)
Jensen, Nate	4-9415	2072 Black	njensen	System Support Specialist
Kelkar, Atul	4-0788	2038 Black	akelkar	Professor
Kim, Gap-Yong	4-6938	2034 Black	gykim	Assistant Professor
Knutson, Carol	4-7455	2025 Black	knutsonc	Account Clerk
Kong, Song-Charng	4-3244	2014 Black	kong	Assistant Professor
Levitas, Valery	4-9691	2028 Black	vlevitas	Shaefer 2050 Challenge Professor
Luecke, Greg	4-5916	2016 Black	grluecke	Associate Professor
MacDonald, Erin	4-3298	2020 Black	Erinmacd	Assistant Professor
Mann, J. Adin	4-2877	2074 Black	jamann	Associate Professor
Maxwell, Gregory	4-8645	2012 Black	gmaxwell	Associate Professor
Meyer, Terry	4-1805	2030 Black	trm	Assistant Professor
Miranda, Janelle	4-1054	2025 Black	jmiranda	Undergraduate Programs Assistant
Molian, Palaniappa	4-2101	2088 Black	molian	Professor
Morrow, W. Ross	4-4690	2104 Black	Wrmorrow	Assistant Professor
Nelson, Ron	4-6886	2024 Black	ronn	Professor

Oliver, James	4-2649	1620G Howe	oliver	Larry and Pam Pithan Professor of Mechanical Engineering Director, CyberInnovation Institute Director, Virtual Reality Applications Center
Olsen, Michael	4-0073	2008 Black	mgolsen	Associate Professor and Associate Chair for Undergraduate Study
Osgerby, Kevin	4-6066	2068 Black	osgerby	Academic Advisor
Schroeder, Deborah	4-1423	2025 Black	daschroe	
Shrotriya, Pranav	4-9719	2026 Black	shrotriy	Associate Professor
Starns, Gloria	4-9946	2032 Black	gkstarns	Senior Lecturer
Steed, Robert D. (Hap)	4-7367	2079 Black	hap	Manager Technical Services; Cell 290-8756
Strawn, Jessi	4-1423	2025 Black	jlstrawn	Communication Specialist
Subramaniam, Shankar	4-3698	2080 Black	shankar	Associate Professor
Sundararajan, Sriram	4-1050	2019 Black	srirams	Associate Professor and Associate Chair for Graduate Studies and Research
Vance, Judy	4-9474	2624B Howe	jmvince	Professor
Wagner, John	4-3686	2064 Black	Jdwagner	Academic Advisor
Wang, Xinwei	4-2085	2010 Black	xwang3	Associate Professor
Wickert, Jonathan			wickert	Dean, College of Engineering James and Katherine Melsa Professor in Engineering Professor, Department of Mechanical Engineering
Winer, Eliot	4-7383 4-1640	1620 Howe 2070 Black	ewiner	Associate Professor
Wolfe, Johna	4-6187	2066 Black	jswolfe	Academic Advisor
Wright, Denise	4-0356	2025 Black	dmwright	Administrative Specialist to Chair
Zhang, Song	4-0723	2096 Black	song	Assistant Professor

Appendix D: Mechanical Engineering Faculty Research Areas

Mechanical Engineering						
	Design and Manufacturing Innovation	Biological and Nanoscale Sciences	Clean Energy Technologies	Complex Fluid Systems	Simulation and Visualization	
	*	*	*			Robert Brown
	*	*		*		Mark Bryden
	*			*		Timothy Bigelow
*		*		*		Abhijit Chandra
*	*			*		LeAnn Faidley
*		*	*	*		Baskar Ganapathysubramaniam
	*	*	*			Ted Heindel
				*		Atul Kelkar
*	*					Gap-Yong Kim
		*	*	*		Song-Charng Kong
*	*			*		Valery Levitas
*		*		*		Greg Luecke
*						Erin MacDonald
	*	*	*	*		Adin Mann
	*	*		*		Gregory Maxwell
		*	*	*		Terry Meyer
*	*					Pal Molian
*		*				W. Ross Morrow
		*		*		Ron Nelson
*				*		Jim Oliver
*	*	*	*			Mike Olsen
*	*			*		Pranav Shrotriya
*	*		*	*		Shankar Subramniam
*	*	*				Sriram Sundararajan
*				*		Judy Vance
*	*	*		*		Xinwei Wang
*	*	*		*		Jonathan Wickert
	*			*		Eliot Winer
*				*		Song Zhang

Faculty Research Areas of Expertise