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Introduction

With its internationally recognized faculty, world-class research facilities, and a spirit of innovation, collaboration, and discovery, the Graduate Program in Materials Science and Engineering is the heart of a dynamic department, integrating research and education while striving for transformational advancements in science, engineering, and technology.

The graduate program is built on a foundation of both theoretical and experimental research in thermodynamics, kinetics of phase transformations, mechanical behavior, physical properties, solid state science, surfaces/interfaces, and the structure and chemistry of materials. Advanced studies are offered in many areas of materials science and engineering, including the design and control of materials for structural, electronic, photonic, magnetic, optical, and biological functionality. The department awards M. Engr., M.S., and Ph.D. degrees in Materials Science and Engineering. An opportunity to complete and obtain a certificate in Nondestructive Evaluation (NDE) is also an option for students. Graduates of the program have a fundamental understanding of the critical aspects of the field and how they are applied to real materials systems. The M.S. and Ph.D. programs are highly flexible and research-oriented, where students work closely with their major professor in tailoring the various academic and research components to match their mutual interests.

Our graduates have the ability to address complex problems in materials science while considering the various constraints inherent to both academic and industrial environments; they are well prepared for a wide range of academic and research-related careers. They are skilled in carrying out independent and collaborative research, able to communicate effectively in formal and informal settings, and are proficient at writing technical articles and reports.

The department has excellent research facilities and maintains a wide range of laboratories across the ISU campus. In addition, departmental research is highly integrated with several Research Centers, such as the Center for Nondestructive Evaluation, the Microelectronics Research Center, the Center for Advanced Technology Development, the Center for Biopolymers and Bio-composites, and the Ames Laboratory, which includes the Materials Preparation Center, the Critical Materials Institute, and the Sensitive Instruments Facility. These laboratories offer excellent resources and opportunities for graduate student research.

It is the sincere hope of the MSE faculty and staff that all students who become affiliated with the Department enjoy a stimulating and productive education and research experience. To facilitate such an experience, this handbook is intended to provide a clear description of the requirements and regulations that govern the departmental programs.
Scope

This MSE Graduate Student Handbook outlines the special requirements and policies which have been adopted by the Department of Materials Science and Engineering with regard to its graduate program of study. This Handbook is intended to supplement the following university documents:

- The Graduate Catalog\(^1\) (incorporated into the ISU Catalog),
- The Graduate College Handbook\(^2\)
- The ISU Thesis Manual\(^3\)

It is the responsibility of the student to become familiar with the program requirements outlined in all of these documents. If questions arise that cannot be resolved with the information contained in these documents, the student is encouraged to contact one or more of the following individuals:

- The student’s Major Professor
- The MSE Graduate Program Coordinator (Ellie Mendoza)
- The MSE Director of Graduate Education (Ralph Napolitano)
- The MSE Graduate Student Advisor (Patrick Morton)

Graduate Degrees Offered by the MSE Department

The Department of Materials Science and Engineering offers the following graduate degrees:

- Master of Engineering in Materials Science and Engineering
- Master of Science in Materials Science and Engineering
- Doctor of Philosophy in Materials Science and Engineering

An appropriate background for entry into the MSE Graduate Program generally includes a B.S. degree (or higher) in materials science and engineering or a related field such as ceramic engineering, metallurgical engineering, or polymer engineering. However, the diversity of this field is such that students from a variety of backgrounds may be well suited for graduate studies in materials science and engineering. Accordingly, a background in physical sciences, life sciences, mathematics and computation, or in another engineering discipline may also be appropriate. It should be pointed out, however, that students from such fields may be required to take some basic coursework from the undergraduate MSE curriculum corresponding to the proposed field of graduate study. These courses would carry no graduate credit and would typically be taken concurrently with graduate level courses in the major area. In most cases this does not increase the duration of the graduate program.

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\(^1\) Available from the Registrar’s Office, 214 Enrollment Services Center

\(^2\) Available from the Graduate College Office (room 1137 Pearson Hall) or on-line at http://www.grad-college.iastate.edu/publications/gchandbook/homepage.html

\(^3\) Available from the University Bookstore, Memorial Union or on-line at http://www.grad-college.iastate.edu/publications/thesismanual.html
Application to the MSE Graduate Program
Application for admission to the MSE Graduate Program at Iowa State University is made through the Iowa State Graduate College application procedure described on the Graduate College website. The online application form is available at (http://www.admissions.iastate.edu/apply/graduate.php). Along with the application form itself, this page includes a “How to Apply” instruction set, Letter of Recommendation forms, and the Financial Statement form for international students.

Only complete application packages will be considered for admission to the Graduate Program. As indicated on the Graduate College website, a complete application to the MSE Graduate Program includes the following:

- ISU Graduate College application form
- Full resume or curriculum vitae
- GRE general test scores
- Three letters of recommendation
- Personal statement of purpose and research interests
- TOEFL test scores (This requirement applies only to certain students. See Graduate College guidelines. The Internet-based TOEFL test format is recommended.)

Please do not send admissions materials to the MSE Office. Any hard copy application materials are to be submitted to the University Office of Admissions at the following address:

Office of Admissions
Iowa State University
100 Enrollment Services Center
Ames, IA  50011-2011

Attn: Graduate Admissions

Admission to the MSE Graduate Program
In accordance with the minimum qualifications specified in the Graduate College Handbook, the MSE Department will consider for admission only those applicants holding (or scheduled to receive within one year) a bachelor’s or advanced degree from an accredited U.S. institution or from a recognized foreign institution where the requirements for the bachelor’s degree or its equivalent are similar to those at ISU. Applicants are required to submit scores from the Graduate Record Examination (GRE) General Examination. Applicants whose native language is not English are required to present a TOEFL (Test of English as a Foreign Language) score of 79 (internet-based test format) or higher; this requirement may be waived for students who have earned a B.S. or M.S. degree from an English-based-instruction university.
The minimum requirements for admission consideration can be found at http://www.grad-college.iastate.edu/academics/programs/apresults.php?id=75. Upon receipt of a completed application package, all applicants meeting the minimum requirements will be carefully considered for admission by the Graduate Studies Committee (GSC). In most cases, acceptance will require sponsorship from a major professor, and favorably evaluated applications will be forwarded to the MSE faculty for review. Therefore, applicants are encouraged to examine faculty research areas (www.mse.iastate.edu), to make inquiries regarding possible sponsorship, and to state preferences for a major professor in the personal statement of purpose that must accompany the application to the Graduate Program.

Upon preliminary acceptance by a sponsoring major professor, applicants will be notified of “intent to admit” by the MSE Office. Formal admission to the MSE Graduate Program can be granted only by the Graduate College, at the request of the MSE Department Chair or the MSE Director of Graduate Education (DOGE). Any other offer or statement of admission should be considered preliminary. Applicants not selected will be contacted and may be given the choice to either renew their application for circulation at a later date, withdraw their application, or enroll as self-supporting students without assistantship support. For international students, proof of financial means is required for admission as a self-supporting student.

BS/Graduate Concurrent Enrollment Program

A Concurrent Enrollment Program is available for qualified undergraduate students at Iowa State University who wish to begin a graduate program of study while completing a B.S. degree in Materials Engineering. Students in the concurrent degree program may apply up to 6 credits of major or non-major graduate credit courses, at a level of 500 or above, to both the B.S. degree and the graduate degree (M.S. or Ph.D.), subject to Program of Study Committee approval.

Admission to the concurrent enrollment program is based on demonstrated academic excellence where students must have a cumulative GPA of 3.50 or higher to be considered. Interested students may apply to the program during the Fall semester of the academic year prior to the academic year of graduation. Selection of students for admission to the program is announced during the Spring semester of that same year. Interested students are encouraged to speak to their undergraduate academic advisor prior to applying to this program. Each Fall semester (in the month of October), a general information session will be held for undergraduate students interested in applying to graduate school, including the concurrent enrollment program.

Applications for concurrent enrollment are due to the MSE Graduate Program Coordinator by 5pm on February 15 each year (or on the first subsequent business day if that day falls on a weekend or holiday. The application package must include the following items:
• A signed memo from a member of the MSE graduate faculty stating sponsorship in the Concurrent Enrollment Program, clearly indicating the level of financial support committed.
• A recommendation letter from the student’s undergraduate advisor.
• A completed MSE Concurrent Enrollment Approval form
• A completed Application for Concurrent Graduate Degree form
• A completed Concurrent Proposed Graduate Plan (CPGP)

Forms found at - http://www.mse.iastate.edu/undergraduate/program-of-study/concurrent-degree-program/

A student admitted to the Concurrent Enrollment program will be eligible for a ¼-time research assistantship. Students may qualify for ½-time graduate assistantship when all requirements for the B.S. degree are satisfied. It should be noted that this change from 1/4-time to 1/2-time assistantship is not automatic. The student must apply for the change in appointment by completing the Concurrent Assistantship Increase form and obtaining approvals from both the student's academic advisor and the student's major professor. The form can then be submitted to the Graduate Program Coordinator to initiate the increase.

Enrollment in this program may affect a student’s eligibility for certain types of undergraduate financial aid. Students receiving financial aid for undergraduate studies are advised to discuss the restrictions that may apply to their own situation with the Financial Aid Office.

MSE Graduate Student Responsibilities

Graduate students are responsible for submitting forms and documents in compliance with all policies of the Graduate College and the Department of Materials Science and Engineering. This section contains a list of these responsibilities. Students should refer to the ISU Graduate Handbook for more information regarding Graduate College requirements. The MSE Department requests that all forms are to be submitted through the Graduate Program Coordinator (GPC).

Graduate English Requirement

Graduate students whose native language is not English and who do not have an undergraduate degree from ISU or another English-speaking university are required to take the Graduate English Placement Test4 prior to the start of their first semester of enrollment. Students who do not pass this examination will be required to complete and pass one or more courses in English, as assigned by the Graduate College. This coursework must be completed during the first year of graduate enrollment.

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4 This test is administered by the Department of English. See the link https://apling.engl.iastate.edu/english-placement-test/ for details and schedules.
Sponsorship by a Major Professor

It is expected that all M.S. and Ph.D. students will obtain major professor sponsorship by the end of the first semester of enrollment. Authorization for graduate student registration beyond the first semester must be granted by the major professor. Students unable to obtain Major Professor sponsorship should contact the Director of Graduate Education (DOGE) for appropriate help and action. Under special circumstances, authorization to register for an additional term may be granted by the DOGE.

Program of Study and Committee Form

The Program of Study and Committee (POSC) form is the principle guiding document for a student’s graduate program and should be established/updated in close consultation with the major professor. This includes formation of a Program of Study Committee (POSC). By the end of the second semester of enrollment, the graduate student must submit the POSC form (using the online routing system in AccessPlus) for approval by the POSC, DOGE, and Graduate College. For all policies regarding the composition and responsibilities of the POSC Committee, the student is referred to the Graduate College Handbook.

Semester Progress Reports

All MSE graduate students are required to submit an MSE Graduate Student Progress Report (GSPR) at the end of each semester. The report will be submitted online using the GSPR form on the MSE Graduate Program Blackboard website, due Friday of final exam week. Additional reporting may be required by your specific Major Professor.

MSE 601 Materials Science and Engineering Seminar

The MSE 601 course is a seminar course intended to provide exposure to a broad range of research areas, materials applications, and methods of investigation. This course is graded on a pass/fail basis, and students earn 1 credit per semester. Total MSE 601 credit requirements vary by degree as follows: Ph.D. – 5 cr.; M.S. – 2 cr.; M. Eng. – no requirement.

MSE 699 Graduate Research

The M.S. and Ph.D. programs are research-based graduate programs. As such, students enrolled in these programs are required to register for at least one credit of MSE 699 (Research) during each semester.

5 Students seeking the M.Eng. degree do not have a major professor and should consult the Graduate Student Advisor, as needed, regarding the POSC form and program requirements.
Request for Preliminary and Final Oral Examinations

The student is responsible for scheduling oral examinations. (Please see the ISU Graduate College Handbook for scheduling rules and restrictions.) The student must electronically submit the "Request for Preliminary Oral Examination" or a "Request for Final Oral Examination" form. The student is required to give the Graduate Program Coordinator their title and abstract a minimum of two weeks before the exam. In addition, at least two weeks prior to the examination date, a draft proposal or thesis document must be submitted electronically (pdf format) to the DOGE and to the entire POSC Committee. This draft will be made available to the general faculty for review prior to the exam.

Reports of Preliminary and Final Oral Examinations

If the "Request for Preliminary or Final Oral Examination" form is approved by the Graduate College, a "Report of Preliminary or Final Oral Examination" form is sent back to the Graduate Program Coordinator, who will then forward the document to the student and major professor. At the conclusion of the oral examination, this form must be completed by the major professor and signed by all members of the POS Committee. It is the student's responsibility to ensure that this form is immediately submitted to the GPC, who will forward it to the Graduate College.

Application for Graduation

Any graduate student planning to receive a degree must submit to the Graduate College an "Application for Graduation" at the beginning of the semester in which they plan to graduate. Deadlines are frequently circulated by the GPC and posted on the Graduate College website. Please contact the GPC with questions.

Graduate Student Approval Form for Graduation

After the final oral examination and no later than the posted deadline date for the semester of graduation, graduating students must submit the "Graduate Student Approval Form" to the GPC. The form must have the signature of the student's major professor as well as the MSE Director of Graduate Education (DOGE). Students must obtain the signature of their major professor and bring the form to the GPC; the GPC will then secure the signature of the DOGE and forward the form to the Graduate College for final review.

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6 These forms are available through the Graduate College website.
MSE Graduate Program - Grade Average Requirements

All graduate students are required to maintain a cumulative GPA of 3.0 or higher out of 4.0 for all graduate coursework. Additional eligibility requirements apply to Ph.D. students; see specific requirements for the Ph.D. Program. Registration privileges may be suspended for any student who does not maintain a satisfactory GPA. Requests for probationary removal of the registration hold must be submitted in writing to the Graduate Program Coordinator. The request should describe the circumstances of the case contributing to the sub-standard performance and should outline any steps to be taken that are intended to lead to improved outcomes.

Specific Requirements for the M. Engr. Degree

Coursework
As a minimum, every M. Engr. POS in MSE must include:

- 30 total credits (none of which may be MSE 699)
- 9 core MSE credits (selection from MSE 510, 520, 530, and 540)
- 12 credits from MSE 5XX or 6XX courses (not including the 9 core credits)
- 9 non-MSE credits (300-level or above, in technical disciplines other than MSE7)

Creative Component
A creative component may be included as part of a M. Engr. Degree in MSE. If the student chooses to complete a creative component, a maximum of 3 credits of MSE 599 may be included in the 21-credit MSE course requirement.

Thesis and Oral Examination
No thesis is required for the M. Engr. Degree. A final oral examination is required only if a creative component is included in the program of study.

Specific Requirements for the M.S. Degree

Coursework
Every M.S. Program of Study in MSE must include a minimum of 33 total credits, satisfying the following requirements.

- The POS must include a minimum of 18 credits of coursework with:
  - a minimum of 9 credits of MSE 5XX or 6XX coursework
  - other coursework approved for graduate credit by the POSC and GSC.

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7 Graduate College policy on undergraduate coursework: (i) No 100- or 200-level classes may be used, but all 300- and 400-level classes at Iowa State (not undergraduate classes from other institutions) will be eligible. (ii) Up to three courses at the 400 level will be permitted, or a POS may include one 300-level class and two 400-level classes. (iii) If a 300-level class is used, it must be from outside of the student's major (see Graduate College Handbook for further information on courses outside of the major).
• The POS must include a minimum of 2 credits of MSE 601 (Seminar)\(^8\).
• The POS must include a minimum of 12 credits of MSE 699 (Research), with a minimum 1 credit per semester\(^9\).
• The POS must include 1 credit of GRST 565 (Responsible Conduct of Research in Science and Engineering).

M.S. Thesis
The M.S. thesis document must be prepared using the guidelines and formatting requirements of the Graduate College. A copy of the thesis and a title and abstract must be presented to each POS Committee member and the GPC (for public display) at least two weeks prior to the scheduled final oral examination. At this time, the oral examination date, time, and place will be submitted to the GPC. Final versions of the M.S. thesis will be submitted to the Graduate College in accord with the requirements listed in the Graduate College Handbook. One electronic copy of the final version of the M.S. thesis must be submitted to the GPC for department files.

M.S. Thesis Presentation and Oral Examination
No later than the published Final Examination Deadline for the semester of graduation, the student must complete and pass a final oral examination consisting of two parts: (1) a presentation of the thesis work in the form of a formal seminar that is open to the public, and (2) an oral examination by the POS Committee, which will immediately follow the seminar and which may include thesis topics and other topics, at the discretion of the POS Committee. (See also: Request for Oral Examination.)

Specific Requirements for the Ph.D. Degree

Coursework
Every Ph.D. Program of Study in MSE must include a minimum of 72 total credits, satisfying the following requirements.
• A minimum of 27 credits of graduate coursework, including:
  o 15 credit MSE core requirement\(^10\)
  o 5 credits of MSE 601 (SEMINAR)\(^11\)
  o non-MSE credits may be used, approved by the Program of Study Committee for graduate credit.

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\(^8\) M.S. degree students will be required to have 2 credits of MSE 601X (SEMINAR) to receive the M.S. degree. Students earn 1 credit for each semester of attendance at the seminars. Students with special circumstances that prevent them from attending a sufficient number of semesters of seminars to meet the requirement may petition the Graduate Studies Committee to have this rule waived.

\(^9\) The M.S. Degree is includes a research-based thesis, and the student is expected to be continuously engaged in research that is aimed at relevant publishable outcomes. Accordingly, M.S. students are required to be registered for at least one credit of MSE 699 in each semester of enrollment.

\(^10\) Students holding an M.S. in MSE from Iowa State University may apply credits earned during M.S. degree study toward meeting the Ph.D. course requirements, consistent with Graduate College guidelines.

\(^11\) Ph.D. degree students will be required to have 5 credits of MSE 601X (SEMINAR) to receive the Ph.D. degree. Students earn 1 credit for each semester of attendance at the seminars. Students with special circumstances that prevent them from attending a sufficient number of semesters of seminars to meet the requirement may petition the Graduate Studies Committee to have this rule waived.
• 1 credit of Responsible Conduct of Research in Science and Engineering (GR ST 565)
• A minimum of 36 credits of MSE 699 (research – graded as A,B,C,D,F)

Note: Eligibility for the Ph.D. Preliminary Examination requires a minimum grade point average of 3.30 for all MSE graduate coursework and for all MSE 699 credits (computed separately).

The Ph.D. Core Requirement

As a part of the coursework requirements, Ph.D. students are required to complete a 15-credit core. To satisfy the core requirement, a Ph.D. student must:

• Complete MSE 510, MSE 520, MSE 530, and MSE 540, earning a grade of "B" or better (not B-) in each course, as described in the next section, and
• complete one of the following courses: MSE 521, MSE 564, MSE 569, MSE 630, MSE 651, MSE 652x, or EM 516.

Ph.D. Qualifying Standard

Students wishing to become eligible for the Ph.D. Preliminary Exam (PE) must meet the Ph.D. Qualifying Standard (QS), which includes the following academic requirements:

• a grade of "B" or better (not B-) in each of the four core MSE 5x0 courses: MSE 510, 520, 530, and 540.12\,13
• a minimum GPA of 3.0 for all graded coursework,
• a minimum GPA of 3.3, averaged over all 500-level and 600-level MSE courses taken, not including MSE 699, and
• a minimum GPA of 3.3 averaged over all MSE 699 credits.

Ph.D. Preliminary Examination (PE)

The Ph.D. Preliminary Examination (PE) consists of a written document that is compatible with ISU dissertation template and approved by the POS committee, and a Preliminary Oral Examination. The PE is typically completed by the end of the fifth semester of enrollment or the third semester after receiving the M.S. degree. The PE is a public event with all MSE students and faculty members encouraged to participate in the discussion.

12 Transfer credits are not permitted as substitutes for MSE 510, 520, 530, or 540.
13 Students who receive a grade lower than "B" in a core course, may take the core course a second time. If a "B" or better grade is received on the second attempt in the course, that portion of the QS is considered to be satisfied. Alternatively, a student who has received a grade lower than a "B" in one or more of the MSE 5X0 core courses may satisfy this portion of the QS by requesting and passing a special oral examination to be administered by the MSE faculty in the appropriate “core” subject corresponding to the 5x0 course involved. A student who twice receives a grade lower than "B" in a given MSE 5x0 core course or who requests and fails a QS oral exam will not be permitted to continue as a Ph.D.-seeking student. In that event, the Major Professor will make a recommendation for dismissal from the program or continuation in the M.S. or M. Engr. Program.
All requests for the PE will be reviewed by the GPC to ensure that these requirements have been satisfied. A copy of the written Graduate Research Proposal must be delivered to each POS Committee member and the GPC (for public display) at least two weeks prior to the PE. At this time, the examination date, time, and place will be submitted to the GPC. (See also: Request for Oral Examination.)

The Ph.D. PE meeting will consist of two parts. The first portion of the meeting is devoted to public presentation and discussion of the research topic, literature review, preliminary research results, and the proposed final research plan. The second portion of the meeting will include an examination and discussion period conducted only by the members of the POS committee and is closed to the general public. This part will be focused on the fundamentals of materials science and engineering as related to the research field of the candidate. The examination questions will be derived largely from the student’s written proposal and oral presentation. The POS Committee will assign a single grade (pass, conditional pass, or fail) for the entire exam.

If a failing grade is assigned, the student may retake the examination. At least six months must elapse between the first and the second attempts (see Graduate College Handbook). If the student fails the second attempt, the student will not be granted Ph.D. candidacy, and the POS committee may recommend that the student pursue an M.S. or M. Engr. degree. If a “conditional pass” grade is assigned, then a schedule of specific student actions will be assigned by the POS Committee and monitored by the major professor. The specific actions and the criteria for “release of conditions” must be clearly stated on the “Report of Preliminary Oral Examination”.

The Ph.D. Dissertation Document
The written dissertation must be prepared according to the guidelines and formatting requirements of the Graduate College. A complete draft of the dissertation must be presented to each of the POS Committee members and the GPC (for public display) at least two weeks prior to the scheduled oral examination. At this time, the examination date, time, and place will be submitted to the MSE GPC. Final versions of the Ph.D. thesis will be submitted to the Graduate College in accord with the requirements listed in the Graduate College Handbook. One electronic copy of the final version of the Ph.D. dissertation must be submitted to the MSE Department Office for department records.

Ph.D. Final Oral Examination
No later than the published Final Examination Deadline for the semester of graduation, the candidate must complete and pass a final oral examination consisting of two parts: (1) a presentation of the dissertation work in the form of a seminar that is open to the public, and (2) an oral examination conducted by the POS Committee that is closed to the public that immediately follows the public seminar; this may include dissertation material and other topics, at the discretion of the POS Committee. To be eligible for the Final Examination, a student must have passed the Ph.D. PE. All MSE faculty and students are strongly encouraged to attend the Ph.D. final examination and participate in the public portion of the
examination. The Ph.D. defense will be graded by POS Committee members immediately after discussion (See also: Request for Oral Examination.)

Requirements for a Graduate Minor in MSE

Any student wishing to declare a formal minor in Materials Science and Engineering must take an appropriate complement of coursework as specified below. In addition, the POS Committee must include at least one MSE faculty member (to counsel the student regarding both coursework and research). Declaration of the Minor Program of Study must be made prior to completion of the PE.

<table>
<thead>
<tr>
<th>Degree</th>
<th>Minimum No. of MatE or MSE Credits</th>
<th>Stipulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.S.</td>
<td>8</td>
<td>Two or more of these credits from 500- or 600-level MSE courses</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>12</td>
<td>Eight or more of these credits from 500- or 600-level MSE courses</td>
</tr>
</tbody>
</table>

* To be selected from list of courses approved by MSE Department, for major or minor credit (See Graduate Catalog).

Graduate Assistantships

Many, but not all, of the graduate students in the MSE Department receive assistantship appointments. Most of these appointments are graduate research assistantships (GRA), supported primarily by research grants and contracts. In addition to traditional grants contracted through ISU, these may include contracts administered by the Ames Laboratory of the U.S. Department of Energy or by the ISU Institute for Physical Research and Technology (IPRT). All University, Ames Laboratory, and IPRT regulations applicable to C-Base (graduate student) appointees must be followed. These regulations and requirements are outlined in the Faculty Handbook, The Graduate College Handbook, and the employee's handbooks published by individual institutions. The graduate student is responsible for becoming fully informed about the obligations and privileges of his or her particular appointment. All graduate students on assistantship will be provided office or desk space and will have access to the equipment and facilities necessary to conduct the research associated with their assistantship and research assignments.

Research/Teaching Load and Course Load

Appointments are usually made for quarter-time or half-time research or teaching duties and are most often for a 12-month period. Renewal appointments will be made, contingent upon the availability of funds and the student’s satisfactory academic progress, as determined by
the major professor, the POS Committee, and the GPC. To remain eligible for an assistantship, the student must be registered for the appropriate amount of coursework every semester as described in the Graduate College Handbook section on course load requirements and limitations. The credit-hour limits for graduate students may be exceeded only in exceptional circumstances with the written recommendation of the major professor, the concurrence of the department chair, and approval of the dean of the Graduate College.

Assistantship Stipends

There are two assistantship stipend levels for MSE Graduate Research or Teaching Assistants (GTA) based on degree program, as indicated by the 1/2-time GRA or GTA stipends listed below.

<table>
<thead>
<tr>
<th>Program</th>
<th>Effective July 1, 2016</th>
<th>Effective July 1, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS</td>
<td>$1,900 ($22800)</td>
<td>$2,000 ($24000)</td>
</tr>
<tr>
<td>PhD</td>
<td>$2,083 ($25000)</td>
<td>$2,100 ($25,200)</td>
</tr>
</tbody>
</table>

Assistantship Obligations

Graduate Assistants are expected to work a minimum of 20 hours per week on the research or teaching activities to which they are assigned. The assistantship research is usually in the same area as the student's thesis work, and the results of the research may be used to help satisfy the academic requirements for the degree; however, the effort expended to meet the terms of the assistantship appointment must be over and above that which is required for the thesis research credits (MSE 699) being earned by the student. As a general guideline, three hours of work per week per credit of MSE 699 is expected. However, this rate varies somewhat with the nature of the research and the specific phase of the problem with which the student is involved. The criteria for earning MSE 699 credits will be determined by the major professor.

Fringe Benefits of the Graduate Assistantship

In addition to the stipend, graduate assistants have an opportunity to participate in the University group health insurance program, are assessed only in-state fees regardless of their residency status, and are eligible for tuition scholarships established by the University. Arrangements for a leave of absence are made between the graduate assistant and the major professor. Standard professional courtesy is expected from all parties with regard to absence requests.
Graduate Tuition Scholarships

Graduate students appointed to Graduate Assistantships (GRA or GTA) 1/4-time or more (except those also holding traineeships, fellowships, or contracts that provide funds for payment of tuition and/or fees), are assessed tuition at the full resident (in-state) rate. In addition, the Graduate College may pay a tuition scholarship covering a portion of the resident tuition for each eligible graduate assistant, except those students on restricted admission or on academic probation. The Graduate College tuition scholarships are not paid directly to the student, but are applied to the student’s tuition bill. The scholarship award amounts are listed below.

<table>
<thead>
<tr>
<th>Assistantship</th>
<th>M.S. Student</th>
<th>Ph.D. Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4-time GRA/GTA</td>
<td>25%</td>
<td>50%</td>
</tr>
<tr>
<td>1/2-time GRA/GTA</td>
<td>50%</td>
<td>100%</td>
</tr>
</tbody>
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For fall and spring semesters, a student must be on appointment for at least three months during the semester to qualify for a Graduate College tuition scholarship. For summer session, a student must be on appointment for at least six weeks during the term to qualify for a Graduate College tuition scholarship. For all terms, appointments must have been processed by the Graduate College before the end of the first full month of classes (i.e., usually around the fifth week of the fall or spring semesters). Graduate College tuition scholarships not used by the due date of the second fee payment installment will be forfeited.

Students who will not be on appointment for the summer session may still be eligible for the Graduate Assistantship tuition rate. This tuition rate is restricted to a summer session following a nine-month appointment. An eligible student must submit the "Application for Summer Resident Tuition Rate" form (on the Graduate College website) to the Graduate College after receiving departmental approval.

Graduate College Tuition Awards

Underrepresented students who are recruited to Iowa State University with offers of assistantship support are eligible for the Graduate College Tuition Award. The award pays for half of tuition for master’s students and Ph.D. students. These amounts will provide fully paid tuition when combined with the Graduate College Scholarship. The award requires a 3.0 GPA minimum.
The Major Professor

The major professor will serve as the principal student advisor for all matters related to research, academics, assistantships, and overall programmatic progress. The major professor will also serve as the primary evaluator of student performance and will be assisted by the Program of Study Committee and the MSE Graduate Program Committee.

Students may request a change in major professor assignment at any time. Such changes may result from a shift of the student's area of interest, medical problems that make the professor unable to continue serving as major professor, contract funding changes, personal incompatibility between the student and the professor, or other factors. However, a change of major professor made after an appreciable amount of time has been devoted to the initial program is likely to prolong the time needed to complete the degree requirements. Such an action should be considered carefully and requested only when clear and significant advantages to the student are apparent. Any student who feels that a change in Major Professor is desirable should immediately discuss the situation with the DOGE. When appropriate, the department will attempt to minimize financial disruption of assistantship support for students changing major professors, but it is not possible to guarantee continuation of GRA or GTA funding for students changing major professors.

The Program of Study (POS) Committee

The POS Committee is chaired by the major professor and meets annually starting the 4th semester to review performance and provide the student with critically important academic and research direction. The membership requirements for the Committee have been established by the Graduate College so that the student will receive the most comprehensive and effective assistance for his or her specific area of work. For all policies regarding the composition and responsibilities of the POS Committee, the student is referred to the Graduate Student Handbook.

Sources of Information and Assistance

Several sources of information are available to graduate students at Iowa State. These sources include the general references cited in the introduction section of this document and the listings of other offices and departments that provide a variety of student services. In addition, the individuals and materials described below are available to all MSE graduate students as sources of information and help. For specific contact information, see (www.mse.iastate.edu).

The Director of Graduate Education (DOGE)

This faculty member is the Chair of the Graduate Studies Committee and is responsible for overseeing the administration of the entire Graduate Program. Questions regarding any aspect of the Graduate Program may be addressed to the DOGE.
The Graduate Program Coordinator (GPC)
This staff member is responsible for maintaining all official departmental documentation of graduate student progress and serves as the administrative liaison to the Graduate College.

The MSE Department Website
All relevant information concerning the MSE Graduate Program, including this handbook, can be found at the MSE Department Website (www.mse.iastate.edu).

The Graduate College Website
All relevant information concerning the ISU Graduate College can be found at the ISU Graduate College Website (www.grad-college.iastate.edu).

Closing
This Handbook is intended to assist MSE Department graduate students in learning the procedures and regulations that apply to their academic programs. We welcome suggestions regarding ways in which future editions might be made more useful.

The faculty and staff of the MSE Department wish all students every success in their graduate and professional careers. We pledge our continuing efforts to help our students while they are with us and to serve them in any possible way after they graduate.