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1. INTRODUCTION

The School of Mechanical Engineering welcomes you to Purdue University and the ME graduate program. We expect your stay at Purdue to be a time of enriched learning, exploration and discovery, and professional and personal growth. We hope it will be an invigorating experience and foster a lifetime of learning.

This manual is intended to be a guide throughout your graduate program at Purdue. Hopefully, it will answer common questions that graduate students and sometimes faculty have about the ME graduate program. It is intended to explain the Purdue Graduate School’s required procedures, the policies applicable to the ME graduate program and the services provided by the ME Graduate Office. It provides information on registration procedures, preparing and updating a Plan of Study (POS), acceptable scholastic performance, thesis procedures, and various requirements that must be met in order to receive a graduate degree from the School of Mechanical Engineering. It is not intended to replace the “Policies and Procedures Manual for Administering Graduate Student Programs” (available on-line at www.gradschool.purdue.edu/faculty/publications.index) or other University or Graduate School policies and procedures. The reader is expected to be familiar with that document and the rules and procedures of the Purdue Graduate School. This manual is intended to support those policies and procedures and explain those requirements specific to the School of Mechanical Engineering.

Special situations will certainly arise which are not addressed here. We welcome the opportunity to discuss these situations in the ME Graduate Office in room ME1003. Timing is often an important factor and an early visit to the ME Graduate Office can sometimes save much effort and time for students and faculty.

We hope you find your time at Purdue challenging as well as rewarding. The ME Graduate Office staff looks forward to working with you. We wish you the best in your academic endeavors at Purdue and in the School of Mechanical Engineering.

2. DEGREE PROGRAMS IN MECHANICAL ENGINEERING

2.1 Master’s Degree

2.1.1 MSME

All students pursuing the master’s degree will be eligible to receive the Master of Science in Mechanical Engineering (MSME).
2.2 Master’s Degree Options

Students who are admitted to the Master’s program may choose to pursue either the thesis option or the non-thesis option. The Master’s degree requires completion of a minimum of 30 credit hours of graduate coursework and research; at least six credit hours (usually 2 courses) must be in applied mathematics.

2.2.1 Thesis Option

The thesis option is highly recommended because it includes independent research and a publishable thesis. Completing the thesis option Master’s program provides students with a significant advantage when applying for a PhD program or employment. Admission to the PhD program may require that the student provide evidence of the ability to perform independent research which is documented in a Master’s thesis. The thesis option requires a minimum of 21 credit hours of graduate coursework and a thesis. Research credit hours acquired through registration in ME 69800 (MS thesis research) fulfill the remainder of the requirement for a total of 30 credit hours. Research is always completed under the supervision of the Chair or Co-Chairs of the Advisory Committee (the Major Professor). This option is also available to distance education students, although an acceptable research topic and depth of study may require significantly more effort to complete.

2.2.2 Non-thesis Option

The non-thesis Master’s option requires 30 credit hours of graduate coursework. Not more than six credit hours of this work may be completed as independent project work (ME 59700 or ME 69700). Independent project work may be completed under the supervision of the Major Professor or any other member of the faculty, including members of the Advisory Committee. The predictable time for completion of coursework through the non-thesis option allows students to more accurately plan a graduation date. However, the non-thesis option does not have the benefits of the research experience and thesis publication of the thesis option. Students completing the Master’s degree by distance learning, in general, complete the non-thesis option.

2.2.3 Master’s Requirements

In addition to completing the requirement of a minimum of 30 credit hours of graduate work, the completion of requirements for the Master’s degree requires approval (certification) by an Examining Committee whose members are usually, but not necessarily, the same as the Advisory Committee. This requirement is met by thesis option students with the defense of thesis research in an oral examination and approval of the written thesis.
For non-thesis option students, this requirement is met through completion of graduate level coursework with a cumulative GPA of 2.85 or higher.

2.3 PhD Degree Program

2.3.1 PhD Coursework

The PhD requires a minimum of 21 credit hours of coursework beyond the Master’s degree. A minimum of 90 graduate course and research credit hours (including at most 30 credit hours from the Master’s degree) is required for graduation. At least nine credit hours (usually 3 courses) must be in applied mathematics. The mathematics requirement may be partially or fully satisfied by courses taken in the MS Program.

2.3.2 Area Examinations for the PhD Student

The PhD student must appear in the Area Examinations no later than the third semester of the ME PhD program at Purdue (excluding summer sessions). The student will be given a maximum of two chances to pass the Area Examinations. In the first attempt, the student must appear in all three exams in the same semester. Students who do not pass all three area examinations may be given a second chance by the graduate committee after review of rubrics and academic record. Any student unable to pass all the required Area Examinations in two attempts will be dismissed from the PhD program.

2.3.3 Area Examination Waivers

CENUT Area Exam Waiver Approved. —A student who has completed ME 50000 (Advanced Thermodynamics, West Lafayette campus) with a grade of B+ or better, prior to the Thermodynamics Area Exam will be considered to have successfully completed the requirements of the exam.

Fluid Mechanics Area Exam Waiver Approved. —With permission from the major professor, a student who has completed ME 50900 (Intermediate Fluid Mechanics, West Lafayette Campus) and ME 51000 (Gas Dynamics, West Lafayette Campus), each with a grade of B+ or better, prior to the first attempt at the area examination will be considered to have successfully completed the requirements of the area examination. These courses (ME 50900 and ME 51000) may also be included in the student’s Plan of Study.

Heat Transfer Area Exam Waiver Approved. —A student who has completed ME 505 (Intermediate Heat Transfer, West Lafayette campus) with a grade of B+ or better, prior to the Heat Transfer Area Exam will be considered to have successfully completed the requirements of the exam.
2.4 Direct PhD (DPhD) Degree Program

2.4.1 Qualifications

Students with strong performance in coursework and some research experience at the undergraduate level may be admitted in the DPhD program at the time of admission to graduate studies at Purdue. The student must have a GPA $\geq 3.50$ in the baccalaureate degree from a highly ranked university. The student also must have taken the GRE with minimum scores of 156 verbal, 161 quantitative and 4.0 analytical. The Graduate Committee approves DPhD applications.

A graduate student who enters the Master’s program but later wants to pursue the DPhD may submit a request to the Graduate Chair for approval by the Graduate Committee. The student must have an undergraduate GPA $\geq 3.60$, must have completed at least 12 credit hours of graduate coursework with a minimum GPA of 3.80 and must have minimum GRE scores of 157 quantitative and 4.0 analytical. The request also must include a written endorsement by the Major Professor. The request must be submitted to the Graduate Chair before the first semester after the student has completed at least twelve credit hours of graduate coursework.

If desired by the student and the Major Professor, the student may make a request to the Graduate Chair to change from the DPhD to the Master’s degree objective.

2.4.2 Optional Master’s Degree Along the Way

Students enrolled in the DPhD program have the option of seeking a Master’s degree “along the way” to the PhD. This option is available when the student meets ME’s and Purdue Graduate School’s requirements for a Master’s degree. The student will file a Master’s POS and will register for Master’s candidacy that semester. The Master’s plan can be for a non-thesis option and must satisfy ME’s requirements for a non-thesis Master’s degree.

2.4.3 Area Examinations for the Direct PhD Student

The D-PhD student must appear in the Area Examinations no later than the third semester of graduate studies at Purdue (excluding summer sessions). The student will be given a maximum of two chances to pass the Area Examinations. In the first attempt, the student must appear in all three exams in the same semester. Any student unable to pass all the required Area Examinations in two attempts will be dismissed from the D-PhD program. A D-PhD student failing the PhD Area Examinations may make a request to the ME Graduate Committee to change the degree objective to Master’s.
A student who changes to the D-PhD program after initial admission to Master’s degree will be notified in the change approval letter as to when the Area Examinations must be attempted.

2.4.4 Direct PhD Coursework

The DPhD program requires a minimum of 36 credit hours (usually twelve courses) of graduate coursework. At least nine credit hours (usually three courses) of the courses must be in applied mathematics.

2.5 Cooperative PhD Program with Indiana Univ.-Purdue Univ. at Indianapolis (IUPUI)

2.5.1 Area Examinations

PhD students in the cooperative program must appear in the Area Examinations no later than the third semester of enrollment (excluding summer sessions) of graduate studies at Purdue. The student will be given two chances to pass the Area Examinations. In the first attempt, the student must appear in all three exams in the same semester. The student unable to pass all the required Area Examinations in two attempts will be dismissed from the PhD program. If desired by the student and the Major Professor the student may make a request to the Graduate Committee to change from the PhD to the Master’s degree program.

2.5.2 Cooperative PhD Coursework

PhD coursework requires a minimum of 21 graduate credit hours beyond the Master’s degree, 12 of which must be coursework originating from the Purdue West Lafayette campus. A minimum of 90 graduate course and research credit hours (including at most 30 credit hours from the Master’s degree) are required for graduation. At least nine credit hours (usually three courses) of the 90 credit hours must be in applied mathematics. The mathematics requirement may be partially or fully satisfied by courses taken during the MS Program.

2.6 PhD Degree Title

Students who complete the requirements for the PhD or DPhD will receive a degree with the title “Doctor of Philosophy,” with the field of study noted as “Mechanical Engineering.” Note the degree awarded is not “Doctor of Philosophy in Mechanical Engineering.”

2.7 Stipend Levels

A student admitted to the DPhD program will initially have the same stipend as a student admitted to the Master’s Program. The student’s stipend level will be adjusted to the PhD level when the student...
passes all the required Area Examinations. The new stipend level will take effect in the semester following the semester of passing the Area Examinations.

The student admitted to the PhD program will have a larger stipend than those entering the Master’s program.

3. THE MAJOR PROFESSOR AND ADVISORY COMMITTEE

3.1 Selecting the Major Professor

All graduate students are required to select a Major Professor who acts as the Chair of their Advisory Committee and who agrees to supervise the student’s graduate study, research and thesis preparation, if applicable. All students are assigned a temporary advisor when admitted to the ME graduate program. Students are expected to choose a Major Professor before the end of their first semester. Those who are employed as a research assistant by ME work under the supervision of the faculty member(s) associated with that project. Major Professors are the faculty members supervising the research. When a student accepts a research assistantship the student also accepts the faculty offering the assistantship as the Major Professor. Students can consult with their temporary advisors and other faculty to determine the Major Professor. All students should identify their Major Professors on the POS before the end of their first semester.

Students may have a Major Professor who serves as the Chair of their Advisory Committee, or they may have two Co-chairs who share equally in the advisory role as Major Professors. Students cannot have a Chair and a Co-chair.

3.2 Selecting the Advisory Committee

The Advisory Committee should be established after the Major Professor is selected. The selection of the Advisory Committee members is usually done in consultation with the Major Professor. The student must seek the consent of all of the desired faculty members who are requested to serve on the Advisory Committee. The duties of the Advisory Committee are to assist the student in the preparation of the POS and to offer advice on graduate work, including research and thesis preparation. The Advisory Committee is formally established when the POS is submitted by the student and approved by the Purdue Graduate School.

3.2.1 Master’s Advisory Committee

The Master’s Advisory Committee (thesis option) consists of at least three members: the Major Professor, another professor who is interested in the student’s major field (usually from ME), and a
third professor representing a related area (usually, but not necessarily, from outside ME). Students with Co-chairs need to select only one other member to complete the Advisory Committee. For a non-thesis Master’s student, the Advisory Committee may consist of one faculty member from the school of Mechanical Engineering.

3.2.2 **PhD and Direct PhD Advisory Committees**

The PhD Advisory Committee consists of at least four members: the Major Professor, two other professors who are interested in the student’s major field (usually from ME), and a fourth professor representing a related area and required to be from outside ME. Students with Co-chairs need to select at least two other members to complete the Advisory Committee. All persons serving on the Advisory Committee of students must be regular or special graduate faculty, i.e., certified by the Graduate School to serve on the committees of graduate students.

Students may also include non-Purdue academics (faculty at other Universities), scientists at national labs, or researchers in industry on the Advisory Committee. These members require prior approval from the Graduate School in the form of a certification as special graduate faculty. If a student and the Major Professor contemplate including such a member in the Advisory Committee, the Major Professor must send a letter to the Graduate Chair requesting special faculty certification with a clear justification for the specific expertise that the outside member brings to the student’s research. An electronic version of the complete vita for the outside person being considered for Advisory Committee must be provided with this letter. This request must be submitted in one transaction. Do not ask the outside person to submit information directly to the Graduate Chair. This should be done by the ME professor.

3.2.3 **IUPUI-West Lafayette Cooperative PhD Program Advisory Committee**

The Advisory Committee consists of at least four members and must be co-chaired by one ME faculty member from IUPUI and one ME faculty member from the Purdue West Lafayette campus. These Co-chairs serve as the Major Professors who guide the student’s thesis research. The Co-chairs should work together in guiding the student’s thesis research. At least two members of the Advisory Committee (including a Co-chair) must be ME faculty at the Purdue West Lafayette campus. One committee member must be from a department/school outside of ME. This member can be from Purdue West Lafayette or IUPUI. All persons serving on the Advisory Committee of students must already be regular or special graduate faculty, i.e., certified by the Graduate School to serve on the committees of graduate students. Students may also can include non-Purdue academics (faculty at other Universities), scientists at national labs, or researchers in industry on the Advisory
Committee. These members require prior approval from the Graduate School in the form of a certification as special graduate faculty. In case a student and the Co-chair Major Professors contemplate including such a member in the Advisory Committee, the Co-chairs should send a letter to the Graduate Chair requesting this with a clear justification for the specific expertise that the requested member brings to the research to be conducted by the student. An electronic version of the complete vita for the person being considered for Advisory Committee must be provided with this memo. This request must be submitted in one transaction. Do not ask the outside person to submit information directly to the Graduate Chair. This should be done by the ME professor.

3.3 Changing the Advisory Committee

Similar to making changes to courses on a POS, requests for changes in the Advisory Committee are made electronically through myPurdue. Each request for a change must be accompanied by a rationale and signed by the student and each committee member whose status is affected by the request. The request must be approved by the Major Professor and the Graduate Chair.

4. REGISTRATION

4.1 Registration Regulations for the First Year

Students who are beginning their graduate program in ME should meet with their Major Professor (in the case of students with a research assistantship or Purdue fellowship) or temporary advisor (in the case of students with a teaching assistantship, external fellowship, or self-support) to discuss a tentative POS and to choose courses for registration. Students are eligible to register after they receive a formal letter of admission. Students are advised to register well in advance of the first week of classes. First semester students who have not submitted their official final transcript and proof of their prior degree, as specified as a condition of admission into Purdue’s graduate program, will be ineligible to register for the second semester.

All graduate students must have prepared a POS in consultation with their Major Professor and have it approved electronically by the Major Professor and Advisory Committee before registering for the second semester.

4.2 Regulations for Full-time Enrollment

Graduate students must be registered for at least eight credit hours during the fall and spring semesters and at least six credit hours in the summer semester. Various fellowships and sponsoring agencies may vary on definitions of full-time status, so students need to verify the requirements with their funding sponsors. ME students with funded research are required to enroll in twelve credit hours
(including ME69800 and ME69900) in fall and spring semesters and six credit hours in summer semesters to insure they have sufficient credit hours for completing their degrees.

Important Graduate School rules: Students with funded research must be enrolled in thesis research (ME69800 for MS or ME69900 for PhD and DPhD) every semester they have funding. Also, whether funded or not, thesis students must be enrolled in ME69800 or ME69900 as appropriate in the semester in which they enroll in candidacy for graduation.

Immigration laws require that an international graduate student maintain full-time enrollment throughout the academic year.

4.3 Registration for Off-Campus Students

Registration for courses available as distance learning courses takes place through the Division for Engineering Professional Education (ProEd) and the ME Graduate Office. The ME Graduate Office will provide the student’s PIN number for registration.

Off-campus students should consult the ProEd web site for course offerings. Fee payments for ProEd courses are through the Bursar’s Office. Questions concerning off-campus registration should be directed to ProEd at https://engineering.purdue.edu/ProEd/

Further information concerning fee, tuition rates and payment plans can be accessed at http://www.purdue.edu/Bursar/

5. FOREIGN LANGUAGE REQUIREMENT FOR DOCTORAL PROGRAMS

At the option of the Major Professor and Advisory Committee, proficiency in a foreign language may be required. Your Major Professor will designate the language most appropriate for your program, usually German, Russian, or French. The required foreign language is to be indicated on the POS. The method by which the language requirement is to be met shall also be stipulated on the POS.

Each student's Advisory Committee will specify in which of the following ways the student may satisfy the minimum language requirement:

1. Transfer or satisfaction of the foreign language requirement at some other graduate school.
2. Passing the fourth semester of Purdue's undergraduate course sequence in an acceptable language with at least a grade of "C-" in the last course or the equivalent of this requirement by transfer from another institution.
3. Examination. The student's Advisory Committee will notify the Department of Foreign Languages of the skill required (teaching, conversation, etc.) and will submit examination material to be approved by the foreign language examiner. The Department of Foreign Languages will then prepare, proctor, and grade an appropriate examination, and then transmit the results to the student's department. A student may not take this examination if he is currently enrolled in one of the corresponding foreign language courses. This examination may be repeated no more than twice.

4. Coursework. This option is currently available in French, German, and Russian. It consists of passing the appropriate 60300 or 60500 course with a grade acceptable to the student's Advisory Committee. Admission to either of these courses requires a grade of at least "C-" in the 60100 course in the same language or else the permission of the Department of Foreign Languages and Literatures. These courses may not be audited. Grades in these courses will not be counted in the student's grade index.

5. Taking the E.T.S. Graduate School Foreign Language Test and scoring 500 or better.

6. PLAN OF STUDY (POS)

6.1 Deadline for Filing the POS

All graduate students are required to file a POS before the end of the first semester of graduate study. Students failing to meet this requirement will not be permitted to register for the second semester. The POS may be modified as necessary after it is approved.

6.2 The Master’s POS

1. A thesis Master’s POS includes at least 21 credit hours of coursework in addition to research credit hours. Thesis option MS POS’s cannot include independent project coursework (ME59700 or ME69700).

2. A non-thesis Master’s POS includes 30 credit hours of appropriate coursework of which at most six credit hours may be independent project work (ME 59700 or ME 69700).

3. A non-thesis Master’s POS requires a minimum of one faculty (from ME) who holds a “Regular Faculty” appointment type. This faculty member will act as the student’s “major professor”. If desired, the student may include additional faculty members to the POS advisory committee.

4. All Master’s POS must include a minimum of six credit hours of applied mathematics, at least three of which must be taken from the Department of Mathematics.
5. Graduate level courses taken during an undergraduate program at Purdue may be included on a POS, provided they were not used to meet baccalaureate degree requirements, taken during the senior year and have grades of B- or better. At most twelve semester credit hours may be included in this manner. Only the credit hours, not the grade, will be counted.

6. One semester of successful completion of “ME 69100: ME Graduate Seminar” is required for the Master’s degree. It is not listed on the POS.

7. A combination as dual (40000, 50000) and/or (50000, 60000) level courses are allowed on a Master's POS. A combination satisfying the following rules will be allowed if supported by the student’s advisory committee:

   1. The subject matter of the courses is to be substantially different from that of courses previously taken or planned at Purdue or elsewhere.

   2. Up to six credit hours of 40000 level courses will be applicable toward the credit hour requirements for the Master's degree.

   3. Any departures from rule 1 and rule 2 above, may be approved following a request to the advisory committee. The student's advisory committee must submit a written request approved by the ME Graduate Committee. The request must include the following:

   - A POS that is forwarded to the advisory committee for that student. If a POS is already on file, the modification involved must be indicated.

   - An explanation of the relevance of the course to the student's program.

   - The request from the advisory committee should allow for the student to adjust his or her schedule.

6.3 The PhD POS

1. The PhD POS includes at least 21 credit hours beyond the Master’s degree. At least 90 course and research credit hours, including at most 30 credit hours from the Master’s degree, are required for graduation.

2. Only graduate level courses (50000 or 60000 numbers) that are “technical and quantitative in content” may be listed on a PhD POS. At least one of the courses must be at the 600 level. 

   **Independent project courses (ME 59700 or ME 69700) are limited to a maximum of three credit hours.**
All PhD Plans of Study must contain a minimum of nine credit hours of applied mathematics, at least six of which must be taken from the Department of Mathematics. The mathematics requirement may be partially or fully satisfied by courses taken in the MS Program.

8. Courses taken to satisfy a conditional pass of a PhD area exam may not be used toward the minimum POS coursework requirement for the degree. These courses must be taken as soon as possible after the area exam in which the conditional pass was set.

9. Two semesters of successful completion of “ME 69100: ME Graduate Seminar” are required for the PhD degree. ME 69100 taken during the MS counts for the PhD. This course is not listed on the POS.

10. You and your Major Professor may decide that additional courses not listed on the POS should be taken to strengthen your background in a particular area.

11. Students in the Cooperative PhD program with IUPUI must include at least four courses (12 credit hours) on the POS that originate from the Purdue West Lafayette campus.

### 6.3 The DPhD POS

1. A DPhD POS includes a minimum of 36 credit hours of coursework in addition to thesis research credit hours.

2. Only graduate level courses (50000 or 60000 numbers) may be listed on a DPhD POS. At least one of the courses must be at the 60000 level. Independent project courses (ME 59700 or ME 69700) are limited to a maximum of three credit hours.

3. All DPhD POS must contain a minimum of nine credit hours of applied mathematics, at least six of which must be taken from the Department of Mathematics.

4. Two semesters of successful completion of “ME 69100: ME Graduate Seminar” are required. This course is not listed on the POS.

5. You and your Major Professor may decide that additional courses not included on the POS should be taken to strengthen your background in a particular area.

6. Courses taken to satisfy a condition of a PhD area exam may not be used toward the minimum POS coursework requirement for the degree. However, the courses may be included on the POS provided there is a supplemental note explaining that the courses have been used to meet a condition of a PhD area exam.

### 6.4 Transfer Courses

Transfer courses placed on the POS receive the credit but the grade is not calculated into the GPA. The following rules apply for post baccalaureate or transfer courses on the POS:
1. All post baccalaureate and transfer courses used on the POS must have a grade of B- or better.
2. All thesis Master’s students must complete a minimum of nine semester credit hours of coursework after they are admitted to the graduate program in ME at Purdue.
3. All non-thesis option Master’s students must complete a minimum of 18 credit hours of coursework after they are admitted to the graduate program in ME at Purdue.
4. Courses taken during the semester when a student is admitted to degree-seeking status can be used as a part of the requirement above.
5. A maximum of twelve semester credit hours of graduate coursework may be transferred from another institution or degree awarding program. Completed courses must have a grade of B- or better and be approved by the Advisory Committee of the student and the Graduate Chair.
6. The credit hours of the transfer course are not recorded on the Purdue transcript until the course is listed on the approved POS and the official transcript from the institution has been accepted at Purdue.

6.5 Procedures for Filing a POS

Each graduate student admitted to a Purdue University degree program is required by the Purdue Graduate School to have a POS. All courses included on the POS for an ME degree must have be “technical and quantitative in content.” The POS must be completed during the first semester of graduate study after the student has a Major Professor and has established an Advisory Committee.

The POS can be created in myPurdue by selecting Graduate Student Database under Academic. The instructions are on myPurdue. Students may create and save a draft POS and return later to complete it. The POS address cannot be bookmarked. Important: the draft POS must be submitted as a “final” to be approved. The POS must be approved before the second semester of your degree program.

6.5.1 Completing the Non-course Section

The student must enter the student name and identification number as it appears in the admissions letter. Select Mechanical Engineering for the department. Select the correct degree title as described previously in this manual.

6.5.2 The Area of Specialization

For the Area of Specialization enter one of the following:

- Acoustics & Noise Control
- Bioengineering
- Design
- Mechanics and Vibration
- Fluid Mechanics and Propulsion
- Combustion, Energy Utilization and Thermodynamics
- Heat Transfer
- Manufacturing and Materials Processing
6.5.3 **The Primary Area**

The POS includes a primary area and may include one or more related areas that are chosen based on interests and needs. Courses in the primary area should have a reasonably close relation to the core subject. For example, if the primary area is heat transfer it might include courses in heat transfer, mass transfer, fluid mechanics and thermodynamics. Courses in the primary area also can come from departments other than ME. A significant number of the courses on the POS are expected to be from ME or directly related to it.

6.5.4 **The Related Areas**

The courses in related areas are outside of the primary area but still contribute significantly to the knowledge base of the student. These courses may come from ME or from other departments. A key determining factor for any graduate level course to be acceptable on a POS in ME is that it be “technical and quantitative in content.”

6.5.5 **Math Requirements for the Master’s POS**

All Master’s POS must contain six credit hours in applied mathematics, usually as a related area. At least three of these credit hours must be from the Department of Mathematics. A list of courses from outside of the Department of Mathematics approved for the ME applied mathematics requirement is given near the end of this document. These would be categorized as related.

6.5.6 **Math Requirements for the PhD POS**

All PhD plans must contain nine credit hours in applied mathematics, usually as a related area. At least six of these credit hours must be taken from the Department of Mathematics. A list of courses from outside of the Department of Mathematics approved for the ME applied mathematics requirement is given near the end of this document. These would be categorized as related. This requirement may be partially or fully satisfied by courses taken as part of the Master’s program.

6.5.7 **The Advisory Committee**

Select **Mechanical Engineering** and then the name of the Chair (Major Professor) or first Co-Chair of the Advisory Committee. Continue with each member of the Advisory Committee. Reminder: Each committee can have one Chair or two Co-chairs. An Advisory Committee cannot have a Chair and a Co-chair.
6.5.8 Changes to the POS

After Graduate School approval, the courses listed on the POS must be completed with grades of C- or better before certification for graduation can be granted. Changes to the approved POS are completed through the myPurdue account. This process may be used to change Advisory Committee members, to delete and/or add courses, or to change the choice of MS non-thesis or thesis options.

Courses may not be removed from the POS after a grade has been received. A course on the POS with a grade of lower than C- must be retaken.

Any changes required in the POS must be made before the end of the second week of classes of the semester in which the degree is expected.

6.6 Directions for Completing the Plan of Study

Each graduate student admitted to a graduate degree program must file a POS. A POS must be submitted and approved before the end of the first semester of graduate study for every degree. The POS guides a student’s academic degree progress. A POS is an academic contract among a student, the faculty members of the Advisory Committee and the Graduate School. All departmental and Graduate School policies related to the filing of a POS must be adhered to explicitly.

When you have completed your POS and it is ready for review by your Advisory Committee, submit your plan as a “Draft.” All plans of study must first be submitted as a Draft before you can submit the plan as Final. While your plan is in Draft status, review the information with your Advisory Committee and the ME Director of Graduate Programs to ensure that it satisfies department and Graduate School policies. Use your draft POS as a basis to discuss your academic and research goals with your Advisory Committee. The electronic process does not, in any way, replace the personal communication needed between a student and their Advisory Committee. Once you have received verbal approval of your POS from your Advisory Committee and the ME Graduate Administrator, return to the POS generator and submit it as “Final.” REMEMBER: you must submit a Draft POS as Final to begin the approval process.

After you submit your POS as final it will be electronically routed, reviewed and, if approved, digitally signed by the ME Director of Graduate Programs, your Advisory Committee, the Graduate Chair, and finally the Graduate School. You may check the status of your plan by returning to the POSG and selecting View.
Once the Graduate School has approved your POS, you should review it every semester to monitor your academic degree progress.
6.7 Applied Math Courses for the MS, DPhD and PhD Plans of Study

MS programs require a minimum of six credit hours of applied math courses. At least one of these must be a MA 50000 or 60000 level course. Three credit hours may be from the list of approved applied math courses offered in other departments at Purdue, listed below.

DPhD and PhD degree programs require a minimum of nine credit hours of applied math courses, usually three courses. At least two courses must be MA 50000 or 60000 level courses. Math courses taken during the MS may be included as PhD applied math courses.

Approved courses that may be used for the POS “applied math” course requirements:

Courses in ME:
- ME 58000 Nonlinear Engineering Systems
- ME 61200 Continuum Mechanics
- ME 58100 Numerical Methods in Mechanical Engineering
- ME 68100 Finite & Boundary Element Methods
- ME 61400 Computational Fluid Dynamics
- ME 60800 Numerical Methods in Heat, Mass and Momentum Transfer
- ME 59300 Introduction to Predictive Science for Scientists and Engineers

Courses from Other Schools:
- CE 59500 Finite Elements in Elasticity
- ECE 60000 Random Variables and Signals
- ECE 60200 Lumped System Theory
- STAT 51400 Design of Experiments
- STAT 51100 Statistical Methods
- STAT 51200 Applied Regression Analysis
- STAT 52200 Sampling & Survey Techniques
- A&AE 51200 Computational Aerodynamics
- A&AE 51600 Computational Fluid Mechanics
- A&AE 55300 Elasticity in Aerospace Engineering
- A&AE 55800 Finite Element Methods in Aerospace Structures
- A&AE 60300 Theoretical Methods in Engineering Science I
- A&AE 60400 Theoretical Methods in Engineering Science II
- PHYS 570Q Stochastic Processes in Physics
- PHYS 60000 Methods of Theoretical Physics I
- PHYS 60100 Methods of Theoretical Physics II

Courses NOT allowed on the Plan of Study to satisfy the Math course requirement:
- STAT 50100 Experimental Statistics I
- STAT 51300 Statistical Quality Control

August 2015
7. ACADEMIC AND DEGREE REQUIREMENTS

7.1 Requirements for Completing an MS in Mechanical Engineering

1. Complete all courses on the approved POS.
2. Successfully complete at least one semester of the “ME 69100: ME Graduate Seminar” course.
3. It is a requirement to attain a minimum cumulative index (GPA) of 2.85.
4. For thesis option: Complete the thesis to the satisfaction of the Thesis Examining Committee and the School of Mechanical Engineering.
5. Satisfactorily complete a minimum of 30 credit hours in coursework and research (ME69800).
6. Receive certification by the Advisory Committee.

7.2 Requirements for Completing a PhD in Mechanical Engineering

1. Complete all courses on the approved POS.
2. Successfully complete at least two semesters of the “ME 69100: ME Graduate Seminar” course.
3. It is a requirement to attain a minimum POS index of 2.85. The POS index for PhD students is based on courses taken at Purdue which apply toward the PhD and were not previously applied toward the Master’s degree.
4. Pass the PhD Area Examinations.
5. Pass the Oral Preliminary Examination.
6. Complete the dissertation to the satisfaction of your Examining Committee and the School of Mechanical Engineering.
7. Complete a minimum of 90 credit hours in coursework and research (ME69900).
8. Students in the IUPUI Cooperative PhD program must meet all of the above criteria. Note that students in this program must include a minimum of four courses (12 credit hours) on the POS that originated from the Purdue West Lafayette campus.

7.3 Requirements for Completing a DPhD in Mechanical Engineering

1. Complete all courses on the approved POS.
2. Successfully complete at least two semesters of the “ME 69100: ME Graduate Seminar” course.
3. Attain a minimum POS index of 2.85 (as explained in the previous PhD section).
4. Pass the PhD Area Examinations.
5. Pass the Oral Preliminary Examination.
6. Complete the dissertation to the satisfaction of your Examining Committee and the School of Mechanical Engineering.

7. Complete a minimum of 90 credit hours in coursework and research (ME69900).

7.4 General Academic Requirements

7.4.1 GPA Expectations

A graduate student is expected to maintain a graduation index of 2.85 or better. Students who earn a grade lower than C- in a course on the POS must re-take the course.

The student also is expected to earn satisfactory (S) grades in research (ME69800 for MS and ME69900 for DPhD and PhD).

A student with cumulative GPA below 2.85 and/or unsatisfactory research grades will receive a warning letter from the Graduate Chair and may incur action by the Graduate Committee.

7.4.2 Computing the GPA

The graduation index for graduate students includes all grades earned in 50000 and 60000 level courses taken while enrolled as a graduate student. Transfer courses or graduate courses taken as an undergraduate are not included in the GPA calculation. If a Purdue course taken by a graduate student is repeated for a grade, the new grade will replace the first provided that specific course was originally taken while the student was enrolled as a graduate student. A course may be retaken only once for a replacement grade.

7.5 Semester Grade Review

The ME Graduate Committee reviews the grades and research performance each semester of all students in the ME graduate program. Students who fail to perform in either coursework or research at a level acceptable to the Advisory Committee, to the ME Graduate Committee or to the Graduate School may be dismissed from the graduate program. The ME Graduate Office will send warning letters to those students not maintaining a 2.85 index and/or failing to make satisfactory progress in their research. A warning letter may include conditions to be met within a specified time period. Unsatisfactory coursework and/or research, if continued, may lead to dismissal from the ME Graduate Program. A student whose cumulative index is below 2.75 after completing twelve or more credit hours of coursework will be dismissed from the program. Should the student's Major Professor and Advisory Committee advise the ME Graduate Committee of unsatisfactory performance in research, the student may be considered for dismissal at the end of any semester.
7.6 Dismissals

The Graduate Committee will dismiss a student from the ME graduate program who fails to meet the grade requirements or has more than one semester of unsatisfactory research. The Committee’s action will take place after grade reports are received at the end of the semester. The Graduate Chair will determine the effective date of dismissal. Course registration will not be allowed after dismissal takes effect and registration for the current term may be canceled if classes have already begun. It is understood that dismissal from the graduate program includes termination of any assistantship or fellowship held by the student.

7.7 Appeal Process

If a student and the Advisory Committee feel that special circumstances are involved in the unsatisfactory performance of the student, the student may appeal a dismissal by making a written request to the Graduate Committee. A student whose Advisory Committee does not support an appeal may petition the Graduate Committee directly. An appeal may be successful only if evidence is presented to show that unusual circumstances were responsible for the student's performance, and a reasonable plan exists for the student to successfully complete the program.

7.7.1 Time Table for Appeals

1. When grades are posted after the semester, the ME Graduate Office will review all ME graduate students’ grades.
2. The ME Graduate Office will identify all students not meeting the academic grade and research requirements.
3. Students having a GPA below 2.75 after twelve or more credit hours will receive a letter informing them that they are being dismissed from the ME program. The letter will be sent via email to the student and Major Professor.
4. The student will be given a specified due date for submitting an appeal. The appeal must be a written letter to the ME Graduate Committee. Accompanying the student’s letter must be a letter written by a member of the student’s Advisory Committee, preferably the Major Professor, and preferably signed by the Advisory Committee members supporting the appeal.
5. The notification to the Purdue Graduate School and the effect on the coming semester’s registration will be delayed to allow for the appeal process to take place. If no appeal is made, or if the appeal is denied, the student’s registration will be canceled and the Purdue Graduate School notified that the student has been dismissed from the program.
Important: An appeal requires evidence (1) that explains the extenuating circumstances that were responsible for the student’s unsatisfactory performance, (2) that gives a clear plan for remedying past problems and proceeding forward, and (3) that shows a reasonable chance exists for the student to successfully complete the program.

8. TIME LIMITS FOR MECHANICAL ENGINEERING DOCTORAL PROGRAMS

8.1 Expected Time to Degree

Graduate study, particularly at the PhD level, is less rigidly structured than undergraduate study and the time needed for a particular student to complete a program depends on many factors. Nonetheless, a student who is actively pursuing a degree should be able to complete the coursework and dissertation in a reasonable length of time beyond which the relevance and originality of the research may diminish.

Accordingly, the School of Mechanical Engineering adopted the following policy effective August 15, 2005:

The total elapsed time for completion of a PhD in the School of Mechanical Engineering shall be no more than six calendar years from date of entry into the PhD program to final approval of the PhD thesis by the Examining Committee. The date of the entry is defined as the start of the semester following receipt of the Master's degree. For students in the Direct PhD program, the date of the entry is defined as the start of the semester in which the status is changed to that of a PhD student. This policy applies to all students including those who register for research in absentia.

An extension beyond the six year limit may be granted by the Graduate Committee upon recommendation of the student's Advisory Committee. However, such an extension will require re-approval of the POS and also may include requirements to re-take the Area Examinations and to have a research review examination similar in format to the Preliminary Examination. Only one-year extensions will be given.

8.2 Recommended Milestones for a PhD and DPhD

1. Selection of area of interest and Major Professor
   - 1st semester
2. Taking the PhD Area Examinations
   - In 3rd semester for students with an MS,
   - In 3rd semester for students enrolled as DPhD at admission, or
   - In the 3rd semester after the change to the DPhD is effective.
3. Identification of a thesis topic
• As early as possible.

4. Creation and approval of the POS must be done prior to registration for second semester courses.

5. Preliminary Examination
   • Before the end of 9th semester or three calendar years following admission into the PhD,
   • Or before the end of 12th semester, or 4 calendar years, for DPhD.

   • Preparation of at least 2 manuscripts for scholarly journal papers.

7. Defense of PhD Dissertation
   • Typically before the end of four years after entry into the PhD Program, or
   • Before the end of five years for students in the DPhD.

It is essential that students make steady progress toward a timely completion of the PhD. In cases where students have not completed the Preliminary Examination by the end of the student's 3rd year in the PhD program (4th year for DPhD students), the following steps may be required:

1. The Graduate Chair will inform the student and Major Professor of the need to convene the Advisory Committee for a review of the student’s progress.

2. The Advisory Committee will convene and review the student’s progress within a month of this request.

3. The Major Professor will summarize the results of the Advisory Committee review including the reasons for the delay and the plan developed with the student for completion of the Preliminary Examination. This summary will be submitted to the Graduate Chair for review.

4. The Graduate Chair will discuss the Advisory Committee’s summary with the Graduate Committee and may meet with the Major Professor and student to discuss the feedback from the Graduate Committee.

Students who have not completed the PhD by the end of 6th year (7th year for a DPhD student) in the ME Graduate Program may be dismissed from the graduate program. The student may submit a written request to the Graduate Committee documenting unusual and extenuating circumstances. If this request is approved by the Graduate Committee, the student may be reinstated in the PhD program.
9. AREA EXAMINATIONS

Before a student becomes an official candidate for the PhD degree, the Area Examinations and Preliminary Examination must be passed. The first attempt at the Area Examinations must be within three semesters after starting the PhD program excluding the summer semester.

9.1 Responsibility and Authority

The responsibility and authority for the implementation of the Area Examinations rests with the Mechanical Engineering faculty. Certain portions of this responsibility and associated authority are delegated to the ME Graduate Committee and the student's Advisory Committee.

9.2 Purpose

The Area Examinations exist to provide assurance that all PhD candidates have sufficient knowledge of fundamental principles in selected areas of mechanical engineering. Accordingly, these procedures apply to all PhD students, including those who do not have Bachelor’s and/or Master’s degrees in Engineering.

9.3 Options

The student is expected to demonstrate a firm command of fundamental principles in applied mathematics and at least two of the following approved areas of Mechanical Engineering: (1) acoustics, (2) applied optics, (3) control, (4) design, (5) dynamics, (6) fluid mechanics, (7) heat and mass transfer, (8) solid mechanics, (9) thermodynamics. The Area Examination topics are approved by the ME faculty with recommendations by the Graduate Committee. The level of command of these principles should at the baccalaureate, and in some cases, Master’s level.

9.4 Scheduling

Written examinations in these areas (including applied mathematics) will be offered each Fall and Spring semester. For the first attempt, the student must take all three Area Examinations during one semester. They must register for the examinations before the last week of classes in the previous semester, including summer.

1. Students in the PhD degree program must take the Area Examinations no later than the third semester (excluding summer sessions) as a PhD student in ME.

2. Students in the DPhD degree program must take the Area Examinations no later than the third semester (excluding summer sessions) as a DPhD student in ME.
A request by the student for an exception to these requirements must be in writing to the student’s Advisory Committee and should clearly indicate the unusual and/or special circumstances justifying the request. If the student's Advisory Committee approves, the approved request must be transmitted to the Graduate Chair in time for appropriate action. The request requires approval by the Graduate Committee in addition to the student's Advisory Committee.

Copies of previous area exams are available at the Boiler Copy Center in the Purdue Memorial Union. Study guides for the exams are available on the web at:

https://engineering.purdue.edu/ME/Academics/Graduate/currgrad.html

Students should review these early in the semester prior to the exam.

9.5 Registration for the Area Examinations

Early in the semester, the Graduate Office will announce registration for the Area Examinations. Students will receive the Area Examination schedule and registration form via email. The registration form will also be posted on the ME web site at:

https://engineering.purdue.edu/ME/Academics/Graduate/currgrad.html

Students planning to take that semester’s area exams must return the registration form, listing a minimum of three tentative Advisory Committee faculty members and signed by the Major professor, to the ME Graduate Office by the designated due date. Area Examinations are usually held during the 4th and 5th weeks of the semester. Each registered student will be given a schedule of the exams and is expected to appear in the room listed for that exam on the day and time scheduled. Each student must take the Math Exam during the first attempt for the Area Examinations, along with two other exams.

9.6 Grading and Reporting Exam Scores

Area Exam Committee Input: The student will be evaluated on performance in each Area Examination by the respective Area Exam Committee. Each Area Exam Committee Chair will report results for each student to both the Major Professor and Graduate Committee on a pass/fail/conditional-pass basis. For a “conditional pass” the Area Exam Committee will provide requirements for remedial action. Satisfying these requirements means the student passes the exam. Failing to satisfy the requirements means the student fails the exam.

Advisory Committee Input: The Major Professor of the student, in consultation with the Advisory Committee, will provide to the Graduate Committee with a written evaluation of the performance of
the student to date, including coursework, various components associated with research potential and progress of the student (interactions with group members, scientific contributions, development of experimental skills, theoretical developments, etc.), and the Major Professor’s intention to retain and financially support (given the availability of resources) the student for further PhD studies in ME. The Advisory Committee has the option to include additional information that is deemed relevant to Graduate Committee’s deliberations.

The Graduate Committee will evaluate the student’s overall performance in all three Area Examinations and the evaluation of the Advisory Committee. The results of this evaluation will be one of the following:

1. **Pass:** The student who has clearly passed the three Area Examinations and has a satisfactory input from the Advisory Committee will normally be allowed to continue in the PhD program, leading to the preparation of the PhD proposal for the Preliminary Examination.
2. **Fail:** A student not passing one (or more) of the Area Examinations on the first attempt may be allowed to retake it (or them) at the next offering of the examination(s) that were failed. When retaking the exam(s), the student may choose to take an exam in a different area (if not applied math); however, only one attempt will be allowed in this different area. Alternatively, the Graduate Committee may advise the student after the first attempt to transfer to the Master’s program. A student who fails a retake of an exam will be dismissed from the graduate program.
3. **Conditional Pass:** A student with lower than acceptable performance in an Area Examination may be required to remedy the deficiencies by taking an appropriate course. The course may be at the graduate level or at the undergraduate level. The minimum performance required to be achieved for meeting the requirements will be specified.

The student and Major Professor will be notified of the final decision of the Graduate Committee for Area Examinations (pass/fail/conditional pass) in each area as well as an overall pass/fail/conditional pass grade) in a letter from the Graduate Chair. Students not passing an exam are encouraged to discuss their performance with their Major Professors as well as the appropriate area exam chairs.

**9.7 Unsatisfactory Area Exam Results**

A student is given only two attempts to pass an Area Exam, subject to the process described above. The student who fails an area exam and is allowed to have a second attempt must retake that
examination the following semester. A student will be dismissed from the graduate program by the Graduate Committee if any Area Examination is failed twice.

An appeal of a dismissal may be made as a written petition to the Graduate Committee by the student with a supporting letter from the student's Major Professor and Advisory Committee. The petition must explain the reasons the student should be allowed to continue in the PhD degree program.

A student in the DPhD or PhD program who fails to pass all area exams may petition the Graduate Chair to change from the PhD to the Master’s program. After completing the Master’s degree, the student may apply to the PhD program. If accepted, the student will start over with Area Examinations.

Each semester, the Graduate Committee will review all students’ performance and actions taken by the various Advisory Committees and the Graduate Committee concerning the Area Examinations.

10. PhD PRELIMINARY EXAMINATION

The Preliminary Examination for the PhD degree program should be completed within one year after passing all of the Area Examinations.

IMPORTANT: Students are not eligible to take the Final Examination (thesis defense) until two full semesters (including summers) have been completed following the Preliminary Exam. Students must be registered for research (ME69900) for these semesters.

10.1 Responsibility and Authority

The responsibility and authority for the PhD Preliminary Examination rests with the student's Preliminary Examining Committee, which may or may not be the same as the Advisory Committee. The Preliminary Examination exists to provide assurance that all PhD candidates have in-depth knowledge of subject matter closely related to the student's research topic. It is the responsibility of the Preliminary Examining Committee to determine whether the student is qualified and ready to undertake or continue research and proceed toward the PhD degree.

10.2 Registration for the Preliminary Exam

To schedule a Preliminary Examination, the Graduate School Form 8: Request for Appointment of the Examining Committee must be submitted electronically no less than three weeks prior to the Preliminary Exam Date. The Preliminary Examination Committee must consist of at least three
members of the graduate faculty. The Preliminary Examination must take place before the last day of the semester to be considered as having been completed in that semester.

10.3 Preliminary Examination Format

The Major Professor establishes the format for the Preliminary Examination. In the Preliminary Examination the student should:

1. Demonstrate competency with fundamentals in areas that required remedial action as a result of the Area Examinations.
2. Demonstrate in-depth knowledge of subject matter related to the thesis topic.
3. Present a written research proposal containing a research plan for the thesis.

11. FINAL EXAMINATION AND EXAMINING COMMITTEE

11.1 Master’s Degree Final Requirements

To receive a Master’s degree in ME, the Advisory Committee of the student must certify that the student is eligible to be awarded the Master’s degree. This certification process depends on whether the student is registered for a thesis or non-thesis option.

11.1.1 Non-thesis Option Master’s Degree Certification

The Advisory Committee and the Major Professor have two options to certify the preparedness of the student. Although no final exam is required by the Graduate School, many Advisory Committees request that the student give an oral project presentation or write an essay on experiences as a Master’s student. A student completing the non-thesis Master’s degree program, whether on or off campus, should communicate with the Major Professor at the before of the final semester about the requirements to complete the program. Note, non-thesis master’s students may choose a minimum of one ME faculty member to be on the Advisory Committee.

11.1.2 Thesis Option Master’s Degree Certification

The MS Final Examining Committee consists of a minimum of three professors and is appointed at the request of the student’s Major Professor. The Examining Committee is normally the same as the student’s Advisory Committee and is responsible for reading the student’s thesis and conducting the Final Examination. A copy of the thesis should be submitted to the Examining Committee members and the Graduate Office for thesis format approval at least two weeks before the examination date. Students must be enrolled in thesis research during the semester prior to the Final Examination.
11.2 PhD Final Examination

At least two complete semesters must elapse between the Preliminary Examination and the Final Examination. Students must be enrolled in thesis research during the semester prior, and semester of, the Final Examination.

The Final Examining Committee consists of a minimum of four members and is appointed at the request of the student’s Major Professor. The Examining Committee is usually (but need not be) the same as the student’s Advisory Committee and is responsible for reading the student’s thesis and conducting the Final Examination.

12. PROCEDURES FOR FINAL EXAMINATION, THESIS FORMAT APPROVAL

12.1 Final Examination

The final exam must be held according the deadlines established by the Graduate School for that particular semester. To schedule a final examination (thesis defense), the Graduate School Form 8: Request for Appointment of the Examining Committee must be electronically submitted at least three weeks prior to the Final Exam Date. A copy of the thesis should be submitted to the Examining Committee members and the Graduate Office for thesis format approval at least two weeks before the examination date.

A Candidate Packet is available from the ME Graduate Office each semester. There is a hardcopy form in the ME Graduate Office and it is available on-line at the ME website in Graduate Programs: General Information for Current Graduate Students. Each semester’s deadlines and specific instructions are available in this packet.

12.2 Thesis Format Approval


The ME thesis format information is available on the ME website at: Academics>Graduate Programs>General Information for Current Graduate Students>ME Thesis Format Student Self-Checklist (https://engineering.purdue.edu/ME/Academics/Graduate/currgrad.html).
Students are responsible for observing the policies, rules, and regulations of Purdue University. These, in general, state the expectation that Purdue students will at all times conduct themselves as responsible citizens. Failure to show respect for established University regulations will be handled by the Office of Students Rights and Responsibilities in conformance with the various policies and regulations.

Purdue University Code of Honor

(From Vice President and Treasurer Memo A-16. Board of Trustees, April 30, 1970. Revised by the January 9, 1975, July 10, May 31, 1997.)

The purpose of the Purdue University academic community is to discover and disseminate truth. In order to achieve these goals, the university commits itself towards maintaining a culture of academic integrity and honesty. For this to be possible, self-discipline and a strong desire to benefit others must be present within each individual. Therefore, we students must follow the Regulations Governing Student Conduct of Purdue University out of a sense of mutual respect, rather than out of fear of the consequences of their violation.

This Code of Honor is on the Purdue web at:
http://www.purdue.edu/studentregulations/student_conduct/codeofhonor.html

Information on Academic Integrity and Academic Dishonesty may be found at:
https://www.purdue.edu/odos/osrr/academic-integrity-brochure/
13. RESPONSIBLE CONDUCT OF RESEARCH (RCR)

School of Mechanical Engineering Graduate Program

Responsible Conduct of Research—RCR
Completion required to pass ME 69100 Seminar Course

- The seminar course is offered only in the fall semester.
- Students admitted to the Master’s program must complete the seminar course once. Since PhD and DPhD students must complete the seminar course twice, certification of completion of the CITI modules must be submitted by the end of the first semester they’re enrolled in the seminar course.

In addition to meeting attendance requirement for the seminar course, students are to complete the Responsible Conduct of Research (RCR) modules through the Collaborative Institutional Training Initiative (CITI) on-line modules. Students must complete the CITI modules, along with attending the designated number of seminars, in order to receive a satisfactory "S" grade for the course.

Details on completing the RCR CITI modules will be distributed in the ME 69100 course.

14. SUPPLEMENTAL MATERIALS

14.1 ME Graduate Student Responsibilities

As a graduate student in the School of Mechanical Engineering, you need to be aware of the School’s expectations.

14.1.1 The Major Professor

Each graduate student is assigned a professor as a temporary advisor at admission. For students with a research assistantship the advisor will be the Major Professor.

For self-funded students, the temporary advisor will be a faculty member assigned to them based on their area of interest. During the first semester students with a temporary advisor should select a Major Professor to assist in planning their studies and directing their research. This professor may or may not be the temporary advisor assigned at admission. The deciding factor in selecting a Major Professor should be the research, not availability of a funded project. Selecting a Major Professor only because a funded project may be available often results in a strained and disappointing relationship. Students are often left without support in later semesters because they do not find the research interesting and therefore do not put in the time expected by the professor. Students need to select a Major Professor based on their level of interest in the research area.
14.1.2 Communication with the Major Professor and Absences

Students must communicate often with the Major Professor and have clear expectations. This includes discussions about research and academic progress, as well as regularly scheduled meetings and reporting of results.

The student should notify the Major Professor when leaving campus for any reason. The Major Professor and the ME Graduate Office must have a phone number, or email address, whenever you leave campus for longer than a weekend and are not in the company of the professor, such as going to a conference. Students leaving during the academic year need to receive permission from the Major Professor to do so and need to leave a forwarding address with the professor and the ME Graduate Office. The student with a research assistantship or a teaching assistantship needs to officially request a leave by completing the Form 33ABSENCE. This form is available on the web at http://www.purdue.edu/hr/Forms/ (see section “Other Leave Forms”).

14.1.3 Relationship with ME Graduate Office

All ME Graduate Students are expected to keep in close contact with the ME Graduate Office and to respond promptly to requests. Failing to respond to requests may result in missing Graduate School deadlines, which could require an additional semester before graduating.

The ME Graduate Office is the student’s liaison to the Purdue University Graduate School, and is responsible for maintaining all ME graduate student records and for assisting faculty to advise their students toward the completion of their degree.

It is important for PhD, Direct PhD and MS thesis option students to be aware that registration for summer terms is required if assigned a research or teaching assistantship. The Purdue Graduate School policy states that for PhD and Direct PhD students, two full semesters, with registration, is required between the semester the preliminary exam was completed and the semester of the final defense.

Students should review the ME Graduate Procedures Manual each semester to keep on schedule with degree requirements.

To avoid missing important announcements, be certain to report any changes in your address to the ME Graduate Office immediately. It is important for your safety to return the Emergency
Notification Form each semester with the registration form. The ME Graduate Office is available to assist students; however, ultimately it is the student’s responsibility for the timely completion of the degree requirements.

14.1.4 Working with the COE Employment Center

The COE Employment Center, engempreployment@purdue.edu, is responsible for managing all fellowship, research assistantship, and teaching assistantship payroll information and permission for payment for University-related travel. Not following University regulations may result in late payroll deposits or even loss of funds. Note: The offers of fellowship, research assistantship, and teaching assistantship appointments are made by the Head of the School on the recommendation of the faculty and Associate Head for Graduate Studies, and not the COE Employment Center. Also, the actual take-home stipend amount depends upon the tax status of the individual student.

All students with fellowship, research assistantship and teaching assistantship positions must review their payment information every paycheck.

To avoid late pay, report any changes in visa or I-20 status by bringing the needed documents to the COE Employment Center (Wang 4008) as soon as a change is approved. Also notify the center of any change in address; changing your address on myPurdue does not change it on payroll records.

Notify the COE Employment Center of any change in funding. Check with the COE Employment Center before each semester to make certain your Major Professor has reported the changes in your funding that you have discussed. Students should request the Major Professor also notify the ME Graduate Office when a change in funding level (e.g., half-time or quarter-time) or type (e.g., research assistantship to fellowship) is made. Travel on university business (attending conferences, meeting sponsors, etc.) must be approved by the Major Professor and the Head of the School before the trip and it must adhere to the regulations to obtain reimbursement for expenditures.

14.1.5 Expectations for Use of School Facilities

All ME Graduate Students are expected to treat building facilities with care.

It is expected you will:

• Keep their office and lab areas neat. Food items left overnight should be in tightly sealed containers.

• Any trash should be deposited in the wastebaskets on a regular basis.
• All chemicals must be labeled and disposed of correctly according to university regulations. Any spills must be cleaned immediately. There are proper chemical disposal regulations and safety regulations that must be followed.

• Clean up after use of all cooking equipment (microwave, coffee pots, etc.). This includes sinks, countertops and tables used in the Gatewood Railside Station student area. The janitorial staff is responsible only for the wastebaskets and floor surfaces in labs, offices and eating areas.

14.1.6 Computer and Printing Privileges

Computer facilities are to be used with discretion. Excessive use of printers and copiers for non-academic purposes will result in the loss of privileges. Thesis copies are not to be printed on School printing facilities. One final thesis may be printed in the School. All other required copies must be made outside and paid for by the student.

ME student shop equipment should be used under supervision or with permission of the shop staff, used correctly with proper safety precautions, and facilities should be left clean. Shop staff is available to provide instruction and advice.
14.2 Expectations for Research Assistants and Teaching Assistants

You are an employee of the School of Mechanical Engineering and are expected to behave appropriately and professionally: be on time, respect your supervisor and property of the school, do not miss meetings, and be responsible for your actions.

Remember: An assistantship position is not guaranteed beyond the dates of the original contract.

14.2.1 Research Assistants

1. You are an employee of Purdue and the School of Mechanical Engineering with your Major Professor as your supervisor.
2. Any student not reporting for the first day of employment will have her/his pay adjusted to account for the absence.
3. You must meet the job requirements of your Major Professor in the same way you would for your boss in another job.
4. You should be meeting regularly with your Major Professor at least once a week.
5. Know your professor’s expectations for your research and academic performance. Convey to her or him your own expectations from graduate study and research.
6. Always register for research credit hours (ME 69800 for Master’s and ME 69900 for PhD & DPhD).
7. Please keep in mind that research assistantship work may or may not align with your thesis research.
8. Grades of S or U apply to research credit hours. These grades are given by the Major Professor for each semester. Two unsatisfactory (U) grades will result in dismissal from the ME graduate program.
9. Office space is assigned at the research site by the appropriate staff person.
10. All research assistantship students must write a thesis.
11. Change of degree objective requires the approval of the Major Professor.

14.2.2 Teaching Assistants

1. You are an employee of Purdue and the School of Mechanical Engineering with the instructor-in-charge of the course as your supervisor for the semester.
2. Employment as teaching assignments begins one week prior to start of classes and ends the Tuesday following the final exams week.
3. Any student not reporting for the first day of employment will have her/his pay adjusted to account for the absence and will jeopardize future assignments.
4. Teaching responsibilities are usually assigned in the areas of research and study interest of the student, subject to the needs of the School.

5. Meeting these expectations will be taken into account when being considered for continuing support for subsequent semesters.

6. Nature of assignments
   
   • Teaching scheduled laboratory sections, maintaining office hours, grading homework and lab reports: ME 263, 315, 352, 363, 365, 440, 444, 475.
   
   • Teaching recitations and open labs, tutoring, conducting demonstration-type experiments: ME 200, 270/274, 309, 315, 323, 375.
   
   • Varied teaching/support responsibilities, as required by course supervisors: ME 452, 463.
   
   • Half-time teaching assistantship duties are 20 hours per week, including in-class time and preparation time. If the workload is substantially greater, talk to the instructor-in-charge, and then to the Graduate Chair.

7. Teaching Assistant Performance:
   
   • It is essential that you are always prepared for the class, recitation and tutorial. Be at your desk before the appointed time; expect to stay after hours as needed.
   
   • If you need help, ask the instructor-in-charge.
   
   • You are serving as an instructor to the undergraduate students. Students will fill out evaluation forms on your performance.
   
   • At the end of the semester, the instructor-in-charge will evaluate your performance. A satisfactory evaluation is essential for continued teaching assistant support in the School.

8. If you must miss a class for personal reasons:
   
   • Notify the instructor-in-charge.
   
   • Make prior arrangements with the instructor-in-charge or another teaching assistant in the same course.
   
   • In an emergency call Professor Jones (4-5691) or Professor Gore (4-0061).

9. Continuation of Teaching Assistantship Funding
   
   • For students enrolled for an MS, continued support as a teaching assistant can be expected only when undertaking thesis option MS and the evaluations are satisfactory.
• There is a maximum time duration for which a student will be supported as a teaching assistant: four semesters for Master’s students and six semesters for PhD students.
14.3 Mail, Supplies, Offices and Services

It is essential for graduate students to check their mailboxes regularly. Mail will come to that box from within ME, such as from the Graduate Office, and from other Purdue departments (library, parking, health services, etc.) It is suggested that you check the box at least weekly.

- Please let the Graduate Office, Room ME1003, know your Office Location (Building, Room Number and Phone Number) as soon as possible.

14.3.1 All Graduate Students

Mail is put into the mail drawer that is located in the Graduate Office.

14.3.2 Teaching Assistants

Please check your mail box on a daily basis for any homework assignments or other course related information.

14.3.3 Herrick and Zucrow Laboratories and Birck Nanotechnology Center

Students at these laboratories will receive their mail at their respective site. Please check with the appropriate secretaries.

14.3.4 Packages

You will be notified when any package or box too large for the mail delivery to ME 1003 is received. You will be expected to pick up the package within one day.

Regardless of the above, please make it a point to check your mail in on a regular basis for any mail that may have been misdirected. If you find any, please notify the ME Graduate Office.

14.3.5 Office Space

To sign up for office space, please go to ME 2007D and place your name on the clipboard located by the door. Available desks are filled based on type and level of your support. Recipients of spaces will be informed via email of their assignment.

14.3.6 Keys

Keys will be issued to those individuals with an office on a research account number (obtained from Major Professor).
14.3.7 Supplies

Research assistants: Supplies need to be ordered in the business office on a research account number obtained from the Major Professor.

Teaching assistants: Supplies needed for coursework can be obtained from the instructor in charge of the course or the area secretary.

14.3.8 FAX Machine

The fax machine in the ME Main Office (ME 2007) is for general use. You may send/receive faxes there, the number is (765) 494-0539. Please make sure that people sending you a fax have your name on them prominently displayed.

14.4 Emergency Warning Notification System - Purdue ALERT

Purdue is a large and complex institution, and people move about our campus freely. Despite advances in communication, there is no way to reach everyone instantly with a single message. However, the multi-layered approaches we have in place will help spread the word quickly, based on the circumstances.

The following communication methods make up the University's Emergency Communication Plan:

- **SIRENS AND ALARMS:**
  - *All Hazards Emergency Warning Sirens* mean to immediately seek shelter (*Shelter in Place*) in a safe location within closest facility/building.
    - "Shelter in place" means seeking immediate shelter inside a building or University residence. This course of action may need to be taken during a tornado, earthquake, release of hazardous materials in the outside air, or a civil disturbance.
  - *Fire Alarms* mean to **immediately evacuate** the building and proceed to your Emergency Assembly Area.

  *When you hear either emergency warning notification system you should immediately evacuate or go inside a building to a safe location (as applicable) and use all communication means available to find out more details about the emergency. You should remain in place until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.*

- **EMAIL:** An e-mail can be sent to all people with a Purdue.edu address.
  - Building Deputies (BDs) should receive the Mass E-mail notification and begin their internal notification procedures. However, if specific information needs to be "pushed out" to BDs then a Building Deputy E-mail Notification will be made. When BDs receive an emergency notification they will forward an e-mail to others in the building or go to offices or rooms in person. They also may post signs on doors or in hallways.
Parents who want alerts e-mailed to them at a non-Purdue account can sign up via the Purdue website for e-mail.

- **TEXT MESSAGING:** Purdue University faculty, staff and students may sign up to receive an emergency notification text message. You can sign up via the Purdue website for the text system.
- **WEB:** The Purdue home page (www.purdue.edu) is the focal point of the most complete information in all campus-related emergencies.
- **RESIDENCE HALLS:** University Residences has procedures for alerting people in individual halls via their resident assistants, phones, and signage.
- **MEDIA:** The University works with the news media - radio, TV, newspapers, and Internet to help spread the word.
- **FACEBOOK:** Individuals with a purdue.edu e-mail address can sign up for a Facebook account (www.facebook.com) and join the Emergency Notification Group, where security-related information will be posted.
- **THE BOILER TELEVISION EMERGENCY ALERTING SYSTEM:** The Boiler Television Emergency Alerting System will also broadcast emergency information.

### 14.5 Technical Facilities

To assist student, staff, and faculty with their classroom and research needs, Mechanical Engineering provides an array of facilities and staff. Technical Services includes electronics shop, computer labs and consultants and graphic artists.

#### 14.5.1 Student Machine Shop

The student shop is for student use that is supervised by machinists with help from several student technicians. Facilities include lathes, mills, grinders, drill presses, band saws and assorted hand tools.

Contact: Adam Krichbaum, Student Shop, 4-5655.

#### 14.5.2 Electronics

Engineers, technicians, and several student technicians are available to meet your electronic and computer hardware needs. Technical Services is responsible for computers and electronics in undergraduate and graduate laboratories. Electronic capabilities range from trouble-shooting a broken instrument to design and fabrication of custom analog and digital printed circuits. These services charge fees, so you must provide an account number when you request their services.

Contact: Herrick Labs and Chaffee: Mike Logan, ME 2042, 4-8755.

Contact: ME: Mike Logan, ME 2042, 4-8756.
14.5.3 **Computational Lab Support and Computer Consultants**

One system analyst and several student consultants provide you interface to the Engineering Computer Network (ECN). Their duties include creation of computer accounts, printer accounts, consultation on use of operation systems and application, problem reporting and request for new ports. Platforms supported include PCs, Macs, SUN, HP, IBM, and SGI workstations.

Contact: Mike Logan, ME 2042, 4-8755

14.5.4 **Graphic Artist**

Specialists are available for producing technical illustrations, plots, graphs, photography and dark room services. Enlist these staff members for help with classroom presentations and illustrations for your thesis.

Contact: ME: Michael Black, ME 2042, 4-5661

14.5.5 **Building Deputy-Shipping/Receiving**

The ME building deputy and staff are responsible for all deliveries to and from their respective buildings, and for the care of the building itself. If you have problems with your room A/C, heat, electricity, furniture, etc., call the building deputy.

Contact: Herrick Labs: Bob Brown, HERL 55, 4-2142
Contact: ME Rick Duvall, ME G044, 4-5654
14.6 Emergency Procedures

FOR ANY EMERGENCY: CALL 911

WHAT TO DO...

EVACUATION PROCEDURES—FIRES
- Activate the alarm
- When fire alarm is activated, evacuation is mandatory
- Call for help—dial 911
- Warn others
- Evacuate in accordance with the Building Emergency Plan or at the nearest exit
- Evacuate immediately—if possible take your belongings
- Evacuate to an area that does not impede responders
- Assist persons with disabilities, if possible
- DO NOT USE ELEVATORS
- Do not re-enter the building until authorized by Public Safety officials

SHELTER IN PLACE—TORNADO WARNING
- If the All Hazards Sirens are activated or you are notified of a warning, immediately seek shelter in nearest facility
- Proceed to the lowest level. If a basement is not available, seek an interior hallway or small interior room on lowest level, away from windows and doorways
- All clear will be announced over the local TV and radio stations or expiration of the initial National Weather Service warning

SHELTER IN PLACE—HAZARDOUS MATERIALS (HAZMAT) RELEASE
- If advised to shelter for a HAZMAT incident, immediately seek shelter in nearest facility
- Close and lock all windows exterior doors, and any opening to the outside
- If possible, move to an interior room above ground floor with fewest windows and vents
- Do not leave the building until authorized by Public Safety officials

NON EMERGENCY PHONE #s:
Purdue Police Department: 494-9221
Purdue Fire Department: 494-6919
Physical Facilities Services: 494-9999
Radiological & Environmental Management: 494-0371

SHELTER IN PLACE—ACTIVE SHOOTER
- If advised to shelter for an active shooter incident, immediately seek shelter in nearest facility
- If possible, secure yourself and others inside a room
- Do not leave your area until authorized by Public Safety officials

The Emergency Procedures Guide & your specific Building Emergency Plan provides more detailed information.

How you will be notified...Purdue ALERT
(Our emergency warning notification system)
- All-Hazards Emergency Warning sirens: (Shelter In Place)
- Fire alarms: (Evacuate the building)
- Text messaging: Sign up via the Campus Status Page to receive an emergency notification text message.
- Twitter: Follow @PurdueEmergency to receive information on emergencies.
- Desktop Popup Alerts: Alert will be sent to the majority of University classroom & lab computers.
- Alert Beacons: Alert will be sent to the beacons that are installed in large classrooms.
- Email: An e-mail will be sent to all people with a purdue.edu address.
- Web: Purdue Campus Status page, www.purdue.edu/eua, is the focal point of the most complete information in all campus-related emergencies.
- Boiler TV: The Boiler Television Emergency Alerting System may also broadcast emergency information.
- Local Media: The University works with the news media, radio, TV, newspapers, and Internet, to help spread the word.

FOR MORE INFORMATION: http://www.purdue.edu/emergency preparedness/

Sep 8, 2014
SEVERE THUNDERSTORM

The National Weather Service issues severe thunderstorm watches and warnings. Tornadoes are spawned from severe thunderstorms, so monitor NOAA weather alerts for thunderstorm watches and warnings.

TORNADO WATCH

A “Tornado Watch” is issued when atmospheric conditions are favorable for the formation of tornadoes in a given area. Under these conditions, stay informed via internet weather, or listening to radio or television.

TORNADO WARNING

A “Tornado Warning” indicates that a tornado has been sighted or radar has indicated intense low level rotation in the presence of atmospheric conditions conducive to tornado development and it poses a definite threat to an area. Go indoors and shelter in place immediately.

WARNING SIGNALS

- A NOAA weather alert radio will sound the appropriate alert
- Outdoor all hazards warning sirens will sound for approximately three minutes
- Consult local weather internet sites or listen to local radio (WBAA), Boiler TV or other local radio and television stations to determine the nature of the emergency
- A Purdue ALERT text message, Desktop Popup Alert, and an Alert Beacon activation will normally be sent advising of the warning and the expiration time

The warning expiration or ALL CLEAR signal is announced by Purdue Alert text, Desktop Popup Alert, Alert Beacon activation, radio and television stations. (No “all clear” is sounded by the sirens).

SHELTER IN PLACE

Proceed to the lowest level of the building away from windows and exterior doors; if possible go to the basement of any building that has a basement or subwalk. Position yourself in an interior corridor of the area away from glass. Be prepared to kneel facing a wall and cover your head.

OUTDOOR ALL HAZARDS WARNING SIREN TESTING

The outdoor all hazards warning sirens are tested at 11:00 a.m. on the first Saturday of every month except during periods of adverse weather conditions. The seven sirens located on campus are also tested once each semester.

Prepared by Carol Shelby Environmental Health and Public Safety 2/2015