

**DEPARTMENT OF MECHANICAL, AEROSPACE
AND BIOMEDICAL ENGINEERING (MABE)**

**GRADUATE STUDENT HANDBOOK
MECHANICAL AND AEROSPACE ENGINEERING**

Fall 2014

COLLEGE OF ENGINEERING

THE UNIVERSITY OF TENNESSEE

KNOXVILLE

Department Head
Dr. Matthew M. Mench

Director of Graduate Studies
Dr. Kivanc Ekici

414 Dougherty Engineering Building
Department of Mechanical, Aerospace and Biomedical
Engineering
The University of Tennessee
Knoxville, TN 37996-2210

Tel.: (865) 974-5115

Fax: (865) 974-5274

E-mail: mabeinfo@engr.utk.edu

URL: <http://www.engr.utk.edu/mabe>

TABLE OF CONTENTS

	Page
1. WELCOME	3
2. INTRODUCTION	3
General University Requirements	3
Honesty and Professionalism	3
Administrative Structure	4
3. ADMISSION REQUIREMENTS AND APPLICATION PROCEDURE	4
4. FINANCIAL SUPPORT	5
Fellowships	5
Graduate Research Assistantships	5
Graduate Assistantships and Graduate Teaching Assistantships	5
5. REGISTRATION AND ADVISING	6
6. MASTER OF SCIENCE DEGREE PROGRAM	6
Thesis and Non-thesis Options	7
Thesis Option	8
Non-thesis Option	9
7. DOCTOR OF PHILOSOPHY DEGREE PROGRAM	10
Academic Advisor (Major Professor) and Proposed Course Plan	11
Departmental Qualifying Examinations	11
Advisory Committee	12
Dissertation Proposal and Oral Comprehensive Examination	12
Residence Requirement	13
Admission to Candidacy	13
Dissertation	13
Final Oral Examination	14
8. STUDENT APPEALS	14
9. DISMISSAL	14

APPENDICES

	Page
A. FORM FOR ASSIGNMENT OF INITIAL ACADEMIC ADVISOR	16
B. FORM FOR DECLARATION OF ACADEMIC ADVISOR	17
C. FLOW DIAGRAM FOR M.S. PROGRAMS	18
D. PLANNED PROGRAM OF STUDY, M.S. IN ME or AE	21
E. FORM FOR M.S. THESIS PROPOSAL	22
F. FLOW DIAGRAM FOR PH.D. PROGRAMS	23
G. PLANNED PROGRAM OF STUDY, PH.D. IN ME or AE	25
H. SAMPLE REGISTRATION FORM FOR PH.D. QUALIFYING EXAM	26
I. LINKS TO WEB PAGES	27
J. LINKS TO GRADUATE SCHOOL FORMS	29

1. WELCOME

On behalf of the faculty and staff of the Department of Mechanical, Aerospace and Biomedical Engineering (MABE), welcome to the 2014 edition of the Graduate Student Handbook for graduate programs in Mechanical Engineering or Aerospace Engineering. (Academic policies and procedures for students in Biomedical Engineering graduate programs are controlled by the faculty of the Institute of Biomedical Engineering.)

2. INTRODUCTION

In order to serve the mission and vision of the Graduate School and preserve the integrity of graduate programs at the University of Tennessee, Knoxville, information related to the process of graduate education in each department is to be provided for all graduate students.

Based on best practices offered by the Council of Graduate Schools, it is important that detailed articulation of the information specific to the graduate degrees offered in each department/program be disseminated.

This Graduate Student Handbook for students in Mechanical and Aerospace Engineering does not deviate from established Graduate School policies noted in the Graduate Catalog, which may be found here: [Catalogs](#), but rather provides the specific ways in which those policies are carried out.

General University Requirements

Graduate students are expected to be aware of and satisfy all regulations governing their work and study at the university.

The *Graduate Catalog* defines the academic requirements associated with graduate study. Only the most significant of these requirements are repeated below. *If any of the additional requirements set forth below is in conflict with the Graduate Catalog, the Graduate Catalog takes precedence.*

Other documents governing various aspects of graduate student rights and responsibilities include *Hilltopics* and the *Graduate Student Appeals Procedure Handbook*. Links to these and other publications of the Graduate School may be found at <http://gradschool.utk.edu/Publications.shtml>.

Honesty and Professionalism

The MABE Department adheres to established professional standards of honesty and professionalism. Absolute honesty is expected, and university-wide policies on this subject apply to all students. Professionalism implies a commitment to the application of sound engineering principles for the benefit of humanity. This commitment is expected of all students.

Administrative Structure

The Department of Mechanical, Aerospace and Biomedical Engineering (MABE) offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees with majors in Aerospace Engineering (AE), Biomedical Engineering (BME), and Mechanical Engineering (ME). This handbook describes the various policies, rules and regulations pertinent to the ME and AE programs and should serve as an aid for both professional and curricular planning. The policies, rules and regulations pertinent to BME are under the control of the Institute for Biomedical Engineering.

The ME and AE graduate programs are administered by the faculty through the department's Graduate Programs Committee (GPC). The chair of the GPC is normally the department's Director of Graduate Studies. BME graduate programs are administered through the Institute of Biomedical Engineering.

3. ADMISSION REQUIREMENTS AND APPLICATION PROCEDURE

Specific admission requirements are listed below. Admission to the Graduate School does not ensure acceptance into the MABE Department nor admission to candidacy for the degree desired.

Graduate School

Requirements for admission to the Graduate School may be found at [Admissions Requirements](#).

MABE Department

Requirements for admission to the MABE department are listed below.

- Minimum GPA of 3.00 (some exceptions exist).
- The GRE is required of all applicants to the department.
- International students must have at least a "B" average in undergraduate courses from a non-U.S. institute.

Students formally apply for admission to the Graduate School at [Online Application](#) .

At UTK, applicants for the M.S. degree in either ME or AE, whose previous degree is not in the major for which admission is requested, are welcome. It is MABE departmental philosophy that the employer of the recipient of a Master of Science degree in ME or AE will presume a broad-based background in the discipline. Therefore, the Director of Graduate Studies will decide upon a program of ME/AE undergraduate prerequisites appropriate to the student's background at the time of admission. This includes students switching from ME to AE (or vice-versa) for their M.S. programs.

At UTK, applicants for the Ph.D. degree in either ME or AE, whose previous degree is not in the major for which admission is requested, are also welcome. In this case, the degree recipient will probably be employed in research closely allied to the doctoral dissertation area and departmentally specified prerequisites may be inappropriate. The student and

his/her advisor will submit a planned program of study for approval to the Director of Graduate Studies.

Each applicant will be advised regarding any courses prerequisite for entering a program. The student's program of study must be approved by his/her advisory committee, the Director of Graduate studies, and must comply with the requirements of the Graduate School.

4. FINANCIAL SUPPORT

Many graduate students receive fellowships, research assistantships or teaching assistantships. The opportunities, stipends and application procedures are summarized below. **NOTE:** Except for graduate co-op students, M.S. students receiving financial assistance from the department or faculty must take the thesis option.

Fellowships

Students with a 3.60 GPA in all previous course work are eligible to apply for a *Hilton A. Smith Graduate Fellowship* and/or a *UT Graduate School Fellowship*. Information regarding these fellowships is available through the Office of Graduate Admissions and Records.

MABE departmental fellowships are occasionally available to outstanding applicants. No specific application procedure exists for these fellowships. Opportunities exist for students to apply for fellowships sponsored by their governments, industry, and technical societies. Information regarding these opportunities is posted at the department web site, <http://www.engr.utk.edu/mabe>.

Graduate Research Assistantships

Many ME and AE graduate students are supported with Graduate Research Assistantships (GRA's), principally funded by research contracts. A student may be assigned to a research project by mutual agreement with a faculty member who has a position available. The goal is to match the project to the student's interests, and to assign GRA's that correlate with thesis or dissertation activities.

The faculty administering the supporting funds determines the duration of a GRA. The assistantship includes payment of tuition, a monthly stipend and health insurance. Students with exceptional academic performance, especially Ph.D. candidates, are eligible for higher stipends dependent upon funding availability.

Graduate Teaching Assistantships

Graduate Teaching Assistantships (GTAs) are funded by the department and are normally restricted to doctoral students. These GTAs are normally offered by the department only when a faculty member strongly endorses an incoming student and does not currently have sufficient funds to support the student through their doctoral program. These are for a limited time to allow the faculty member to secure funding for the student's doctoral research. The GTA includes a tuition waiver, monthly stipend and health insurance. Some departmental duties will be assigned for this GTA during the fall and spring semesters during which the student is enrolled. There are a very limited number of GTAs available that require students to conduct an under-

graduate section of a laboratory course. These are limited to students with good communication skills and who normally have received their B.S. from UTK. Students seeking this GTA should contact [Gary V. Smith](#). A GTA is not meant to support the student through graduate school, and a GRA should be sought as soon as possible by the graduate student.

The Graduate School limits the duration that a student may hold a GTA as follows:

M.S. student: 3 years

Ph.D. student: 5 years after M.S. or 8 years after B.S.

Students holding a half-time assistantship may not simultaneously hold another job. Students holding a quarter-time GTA are eligible to also hold a quarter-time GRA. For further details, the student is referred to the Graduate School document on *University Policy for Administration of Graduate Assistantships*.

5. REGISTRATION AND ADVISING

Upon admission to the Graduate School and the ME or AE graduate programs, the graduate student is assigned an Initial Academic Advisor. (See form in the Appendices.) The student is required, by the end of his/her first term, to select a faculty member to be his/her Academic Advisor, who will also chair the student's advisory committee. (See form in the Appendices.) The student and Academic Advisor will jointly discuss proposed committee members, and the student will then ask these faculty members to serve on the committee. The Academic Advisor will serve as the student's Major Professor and direct the student's non-thesis M. S. course selection, M.S. thesis or Ph.D. dissertation research, meeting often with the student during the work period. Other members of the committee may assist in course selection or technical details of the work as needed. The Academic Advisor is primarily responsible for ensuring the quality of the student's work, and hence must approve the student's thesis or dissertation before it is submitted to the committee. The ME or AE student's Academic Advisor must be selected from MABE Department. All advisory committee appointments are subject to the approval of the MABE Director of Graduate Studies.

6. MASTER OF SCIENCE DEGREE PROGRAM

Suggested curricula for M.S. programs are available at the MABE web site. A flow diagram for M. S. programs is given in the Appendices. The flow diagram refers to the required Planned Program of Study, forms for which are given in the Appendices. The following requirements apply to *all* M.S. students in the MABE department.

1. Full-time students in the thesis option must register for ME/AE 595 Graduate Seminar for their first fall semester in attendance.
2. Upon admission to any M. S. program in ME or AE, the student is assigned an Initial Academic Advisor. (See form in the Appendices.) The Initial Academic Advisor bears no responsibility to advise the student after the first semester. The student is required, no later than the end of the first semester of enrollment, to select a faculty

member to be his/her Academic Advisor who will also chair the advisory committee. (See form in the Appendices.) It is the student's responsibility to find, based on common academic interests, a faculty member who will agree to serve in this capacity.

3. The student, in concert with his/her Academic Advisor, must complete the proposed course plan by the end of the first semester after entry into the ME or AE graduate program. The program plan may be changed (in concert with the Academic Advisor) as many times as necessary thereafter.
4. An advisory committee is required and must include at least one faculty member from the MABE department. The department head or GPC Director must approve the membership of the advisory committee, which must be formed no later than the first year of the student's entry into the ME or AE graduate program.
5. Only courses numbered 400 and above and listed in the Graduate Catalog may be counted toward graduate degrees.
6. No more than 10 hours of courses numbered below 500, including a maximum of one 3-hour course in engineering (only with prior approval), may be counted toward the M.S. degree.
7. A student must be admitted to candidacy for the M.S. degree. The completed *Admission to Candidacy* form may be submitted to the Office of Graduate Admissions and Records any time after completing at least 9 semester hours of graduate course work maintaining a GPA of **3.00** or higher. The form **must** be submitted no later than the semester preceding graduation. (The deadline in each semester is established by the Graduate School and listed at their web site, which is located at [Deadlines](#) .
8. The student must pass a final comprehensive examination. For the thesis option, the examination is based primarily on the student's thesis work but may include questions on any courses counted toward the degree. The student must schedule the exam through the MABE office. For the non-thesis option, the comprehensive examination is made up of a written examination over all course work counted for the degree as well as a project report that includes written and oral components.

Thesis and Non-thesis Options

In ME and AE, two M.S. options are offered. Option I requires a thesis. Option II does not require a thesis and provides graduate students, including co-op and other off-campus students, with the opportunity to focus their programs in special areas through extended coursework.

Credit requirements for M.S. in ME and AE are summarized below.

Category	Hours of Credit	
	Thesis	Non-thesis
Thesis	≥ 6	0
Course Work		
Courses in major (500 or above)	≥ 12	≥ 18
Mathematics (400 or above)	≥ 6	≥ 6
Engineering courses below 500	≤ 3	≤ 3
	Total	
	≥ 30	≥ 30

Any combination of courses that meets all the requirements listed above and is approved by the student's advisory committee and the Director of Graduate Studies is acceptable.

Thesis Option

In addition to the requirements listed above, the following requirements apply to students under the *thesis* option.

1. Once thesis work has begun, the student is expected to register for at least 3 semester hours of ME or AE 500 Thesis each semester until graduation. The number of semester hours registered for should reflect the student's activity level. Co-op students following the thesis option do not need to register for 500 Thesis during the semesters they work.
2. At least one semester before the final presentation of the thesis, each M.S. student taking the thesis option must present a thesis proposal (both written and oral) for approval by his/her advisory committee and the Director of the GPC. (See form in the Appendices.) The technical scope of the proposal is to be established by the committee. Changes in the technical scope require resubmission of the form in the Appendices.
3. The thesis must be written, must meet the standards of the Graduate School, must demonstrate independent research or design capabilities, and must be approved by the Academic Advisor before the final examination is scheduled. The thesis must be distributed to committee members at least **two weeks** prior to the final examination.
4. After consulting with the advisory committee, the student schedules the final examination through the MABE Department.
5. The committee conducts the final examination, which is oral and covers the thesis and course work submitted to satisfy degree requirements. The student's Academic Advisor directs the examination. The examination is held at a convenient time in a comfortable, adequately equipped room. Examination duration will not exceed four hours, and breaks may be taken as needed by the student. The possible outcomes of this examination are described below.

- i) Pass the examination with the thesis acceptable.
- ii) Pass the examination subject to making changes in the thesis as specified by the committee. A re-examination is not required.
- iii) Fail the examination. The student will be given instructions by the committee on the actions necessary to correct deficiencies. A re-examination may be scheduled no sooner than the following semester. Failure to pass the examination on the second attempt will result in the student's dismissal from the M.S. degree program.

The committee records its decision on the *Results of Final Examination* form (provided by the Graduate School), which is then signed by all members.

6. The student is responsible for obtaining original signatures of all committee members on the approval sheets that must appear at the front of the thesis. (It is best to have these sheets available at the final examination.) After receiving the committee's approval, the student submits the thesis to the Graduate School.

Non-thesis Option

As mentioned above (item 8 in the list at the beginning of section 6), each non-thesis student must pass a final comprehensive examination made up of a written examination over course work as well as a project report that includes written and oral components.

A student's examination committee for the written examination shall consist of the faculty who participate in the preparation and grading of the student's examination. The examination committee will be approved by the Graduate Programs Committee (GPC) early in the term in which the student takes the examination. The faculty comprising the student's advisory committee will be the same as those comprising the student's examination committee. (If the student's advisory committee is appointed before the GPC approves the examination committee, any difference in the membership of the two committees will be resolved by changing the advisory committee to match the examination committee.)

The written examination for non-thesis M. S. students is given in four parts. To pass the examination overall, the student's performance must be acceptable in at least three of the four parts. If the student's performance is acceptable in three parts but unacceptable in the fourth, the decision as to whether the student passes or fails the examination overall is left to the student's examination committee. If the student's performance in some part (or parts) of the examination is neither clearly acceptable nor clearly unacceptable, the examination committee may arrange for one or more oral examinations to clarify the matter. The written examination is given once in each of the fall and spring semesters. A student who will graduate in the summer must take the written exam in the previous spring.

The project report is normally performed in conjunction with any course taken under a departmental faculty member. This report is normally an extension of material covered in the course which requires some independent study by the student. The written report and oral presentation are evaluated by the faculty member teaching the course and are not factors in the student's course grade. The written report and oral presentation are graded on

a pass/fail basis and the student's performance is reported to the chair of the student's advisory committee. If a student fails either portion (written report or oral presentation) of the project report, he/she must either work with the faculty member to resolve the deficiency or complete another project in a different course.

7. DOCTOR OF PHILOSOPHY DEGREE PROGRAM

A flow diagram for Ph.D. programs is given in the Appendices. The flow diagram refers to the required Planned Program of Study, forms for which are given in the Appendices. Specific requirements for the Ph.D. degree include those listed below.

All students must complete a minimum of 72 semester hours beyond the bachelor's degree. These shall include a minimum of 24 hours in Doctoral Research and Dissertation. Specific requirements for required course work are:

- Students entering with an M.S. degree will be required to take a minimum of 12 hours of graduate course work, exclusive of ME or AE 601, dissertation credit or seminar courses.
- Students entering with a B.S. degree will be required to take a minimum of 42 hours of graduate course work, exclusive of ME or AE 601, dissertation credit or seminar courses.

This course work, including that taken for an MS degree, must include:

- A minimum of 9 semester hours of graduate work in mathematics courses numbered 400 or above with a minimum of 3 hours numbered 500 or above. The department may approve other courses with sufficient mathematical content to meet this requirement.
- A minimum of 21 hours of graduate course work in the major in courses numbered 500 and above. The department may approve other departmental courses to meet this requirement. A minimum of 6 semester hours of graduate course work is required at the 600 level. These are exclusive of ME or AE 601, thesis or dissertation credit. The total number of approved course work and dissertation hours must meet the university's requirement of a minimum of 72 hours.

Additional requirements for all students include:

1. Registration for ME or AE 595 Graduate Seminar for their first fall semester in attendance.
2. Meeting all departmental examination requirements, which include passing a written and oral comprehensive examination.
3. Presentation of a dissertation proposal to the student's advisory committee and approval of that proposal by that committee.
4. Successful defense of the dissertation.

Academic Advisor (Major Professor) and Proposed Course Plan

After a student is admitted to the ME or AE doctoral program, the Director of Graduate Studies will assign the student an Initial Academic Advisor for determining the course plan

for the first semester. (See form in the Appendices.) The Initial Academic Advisor bears no responsibility to advise the student after the first semester.

The student is required, no later than the end of the first semester of enrollment in a particular program, to select a faculty member to be his/her Academic Advisor, also referred to as Major Professor, who will direct the student's research and also chair the advisory committee. (See form in the Appendices.) It is the student's responsibility to find, based on common research interests, a faculty member who will agree to serve in this capacity.

The student, in concert with his/her Academic Advisor, must complete the proposed course plan no later than the second semester after entry into the MABE graduate program. The program plan may be changed (in concert with the Academic Advisor) as many times as necessary thereafter.

Departmental Qualifying Examinations

To be admitted to candidacy, a doctoral student must pass a Comprehensive Examination. In the Mechanical Engineering and Aerospace Engineering (MAE) Programs the Comprehensive Examination is made up of two parts: the Qualifying Examination (QE) and the Dissertation Proposal. The Qualifying Examination is discussed below.

The Graduate Catalog states "*Qualifying examinations are designed to test the student's progress, general knowledge of fundamentals of the field, and fitness to continue with the more specialized aspects of the doctoral program*".

A student who enters the doctoral program with an M.S. degree will normally take the QE no later than the second semester in the program (not counting the summer semester). A student who enters the doctoral program without an M.S. degree will normally take the QE in the fourth semester (not counting summer semesters) in the program. Exceptions to the normal times will require a petition by the student's Major Professor to the Graduate Programs Committee (GPC). The examination may be taken in either the fall or spring semester.

In MAE the QE is a 3 credit hour course titled Research Methodology (ME 601 or AE 601). A sample registration form for the Ph.D. Qualifying Examination is given in the Appendices. This course will not be lecture based but rather will require the student to develop a written preliminary proposal for a doctoral dissertation (which may or may not be the actual dissertation proposal topic) and to present the proposal orally to a faculty committee, the composition of which is described below. The topic of the proposal is determined by the student and the student's Major Professor subject to the approval of the faculty committee and the GPC. The proposal will include the following as a minimum:

- A concise statement of the problem.
- A thorough review chapter of prior related work with bibliography that is sufficient to judge the uniqueness of the proposed research.
- An assessment of the originality of the proposed topic.
- A chapter including a description of methods to be used to accomplish the work and estimated timeline. The chapter should include adequate depth to indicate the stu-

dent has a sufficient engineering background to identify and accomplish the research at a doctoral level.

- A chapter describing any preliminary work already accomplished that further establishes the legitimacy of the proposed research (not required).

A committee of faculty will be appointed to evaluate the written proposal and conduct the oral presentation. This committee, as a minimum, will be made up of the Major Professor, a member (or two members if deemed appropriate) nominated by the student and the Major Professor subject to the approval of the GPC, and a member selected by the GPC. This committee may or may not be the student's actual doctoral committee. The committee will assess:

- The student's ability to demonstrate a thorough knowledge of appropriate subject areas in the proposal.
- The depth, breadth and feasibility of the proposed research.
- The student's ability to articulate the fundamental science behind the proposed work as well as answer questions on the science and mathematics in the proposed research and related areas. This will include relevant topics at both the fundamental and advanced levels.
- The student's ability to define, organize and plan doctoral level research.

The Major Professor will report the grade recommended by each committee member to the GPC which will determine the student's final grade in the QE. A grade of B or better in the course is required to pass the QE, which will not count toward the required coursework for the PhD. A grade below a B indicates the student has failed the QE and will be dismissed from the doctoral program (i.e. the course cannot be repeated). The faculty committee may propose a final grade of incomplete, subject to GPC review and approval, for those cases where the student has completed the majority of the requirements, but has some deficiencies in particular areas. In such cases, the student will be allowed one more semester (not counting summer semester) to complete the course requirements. Under extenuating circumstances the Major Professor may petition the GPC for an additional amount of time.

Advisory Committee

An advisory committee is required and must be formed during the student's first twelve months of doctoral study. The department head at UTK must approve the membership of the committee. The committee must include at least four faculty members, with at least two from the MABE department and at least one from outside the department. The chair of the advisory committee of students majoring in ME or AE must be in the MABE Department. At least three members of the committee, including the chair, must be approved to direct doctoral research.

Dissertation Proposal and Oral Comprehensive Examination

All Ph.D. graduate students must complete original research as a degree requirement. The student must prepare a comprehensive proposal, which defines the dissertation research project. This proposal, when approved by the student's advisory committee, serves two purposes. First, approval indicates that the advisory committee agrees that the con-

tent and scope of the proposed research are appropriate. Second, the student has a formal agreement, which specifies a lower limit on the level of accomplishment required to satisfy the dissertation requirements. The proposal includes the following:

- A concise statement of the problem,
- A review of prior related work,
- An assessment of the originality of the proposed topic,
- A description of methods to be used to accomplish the work,
- A list of fundamental contributions expected,
- An estimated schedule of performance,
- A statement of the method by which the residency requirement will be met, and
- A bibliography pertinent to the topics of the proposed research.

The Academic Advisor may arrange an informal meeting with committee members, prior to the formal oral examination and proposal presentation, so that the student can respond to committee members' questions about the proposal.

The student's dissertation proposal presentation will take place coincidentally with the oral portion of the comprehensive examination. Passing of this oral examination and approval of the dissertation research proposal by the student's advisory committee are required for admission to candidacy for the Ph.D. degree.

If, for whatever reason, the scope of the proposed research deviates from the original proposal, a revised proposal must be submitted and approved.

Residence Requirement

The Graduate School requires a period of two consecutive semesters of residence. During this time, the student should make substantial progress toward the degree. The type of residence experience is determined by the student's advisory committee in the spirit of fulfilling the Graduate Council's definition of residence. A statement of how and when the requirement was met is included on the *Admission to Candidacy* form, and the department head at UTK certifies that the objectives of the residence requirement have been met.

Admission to Candidacy

For the Ph.D. degree the student must be admitted to candidacy by the Graduate School. The application form must be completed, signed by the student's advisory committee, signed by the department head at UTK, and then submitted to the Graduate School by their deadline in the semester preceding anticipated graduation.

Dissertation

The Academic Advisor must approve a dissertation, written to the standards of the Graduate School, before the final oral examination is scheduled. The completed dissertation draft must be submitted to all committee members at least two weeks prior to the oral examination.

Final Oral Examination

In consultation with the committee, the student formally schedules the final oral examination through the Graduate School.

The student's advisory committee conducts the final oral examination, which is open to the University community at large and covers the dissertation and all course work submitted to satisfy degree requirements. The examination is managed by the student's Academic Advisor, and will be scheduled at a convenient time in a comfortable, adequately equipped room. Examination duration will not exceed four hours, and breaks may be taken as needed by the student. The possible outcomes of this examination are described below.

- i) Pass the examination with the dissertation acceptable.
- ii) Pass the examination subject to completing minor changes in the dissertation as specified by the committee. A re-examination is not required.
- iii) Fail the examination. The student will be given instructions by the committee on the actions necessary to correct the deficiencies in the dissertation or examination. A re-examination may be scheduled no sooner than the following semester. Failure to pass the examination on the second attempt will result in the student being dismissed from the Ph.D. degree program.

The committee records its decision on the *Results of Final Examination* form, provided by the Graduate School, which is signed by all members when the oral defense of dissertation is accepted.

The student is responsible for obtaining original signatures of all committee members on the approval sheets that must appear at the front of the dissertation. (It is best to have these sheets available at the final examination.) After receiving the committee's approval, the student submits the dissertation to the Graduate School for their approval regarding form and organization.

8. STUDENT APPEALS

Grievances regarding any policy or action by the University or its personnel may be presented according to the *Graduate Council Appeals Procedure*, which is available from the Graduate School. Complaints regarding the MABE department, or its personnel, should be addressed directly to the MABE department head at UTK. The student may request a meeting with his/her Academic Advisor, the Director of the Graduate Programs Committee, the department head, and/or any other department personnel involved in a dispute. If a resolution satisfactory to the student cannot be achieved within the department, the student may present his/her case to the dean of the college, and then to the dean of the Graduate School.

9. DISMISSAL

The following statement can be found in the Graduate Catalogue under the heading Academic Standards.

“Graduate education requires continuous evaluation of the student. This includes

not only periodic objective evaluation, such as the cumulative grade point average, performance on comprehensive examinations and acceptance of the thesis or dissertation, but also judgments by the faculty of the student's progress and potential. Continuation in a program is determined by consideration of all these elements by the faculty and the head of the academic unit."

In keeping with the above policy, the faculty of the MABE department will periodically evaluate the progress and potential of MABE graduate students. Particular attention will be given to the following requirements and factors, which are among those for which the GPC may recommend to the department head the dismissal of a graduate student.

The student has not obtained an Academic Advisor by the end of the first semester of enrollment in the ME or AE graduate program.

The student has not formed a faculty advisory committee within twelve months of beginning the program.

The student has not submitted an approved plan of study within one semester (M. S.) or two semesters (Ph. D.) of beginning the program.

The student has not made reasonable progress toward completion of the plan of study.

A doctoral student has not taken the Qualifying Examination by the deadline specified in the Graduate Student Handbook.

In the judgment of the Graduate Programs Committee, in consultation with appropriate faculty, the student does not have the potential to complete his or her degree program.

APPENDIX A. ASSIGNMENT OF INITIAL ACADEMIC ADVISOR

I, _____, having been admitted to the
(PRINT NAME)

_____ M. S.

_____ Ph. D.

program in

_____ Mechanical Engineering

_____ Aerospace Engineering

at the University of Tennessee at the

_____ Knoxville

_____ UTSI

campus, understand that Dr. _____ has been assigned to be my Initial Academic Advisor. I understand that he/she is to advise me on course selection and other academic matters only for my first term in the program. By the end of the first term I am to have established a relationship with a faculty member who agrees to serve as my Academic Advisor. Identification of my Academic Advisor is required for continuation in the program.

Student Signature

Date

Director of Graduate Studies

Date

APPENDIX B. DECLARATION OF ACADEMIC ADVISOR (MAJOR PROFESSOR)

I, _____, have asked Dr. _____
(PRINT NAME) (PRINT NAME)

to serve as my Academic Advisor, and he/she has agreed to do so. I understand that if I should change my Academic Advisor in the future, I must resubmit this form. Having an Academic Advisor is required for continuation in the ME or AE graduate program.

Student Signature Date

Academic Advisor (Major Professor) Date

Director of Graduate Studies Date

APPENDIX C. FLOW CHART FOR M. S. PROGRAMS

Master's students normally follow the sequence of events given below. The student should consult with his/her Academic Advisor before deviating from this sequence.

Date	Step	Action	Notes
1st term	1	Initial Academic Advisor assigned by Graduate Programs Committee (GPC).	The GPC assigns an Initial Academic Advisor. You may change advisors as you define your program, but you must have an advisor approved by the GPC.
1st term	2	Obtain Academic Advisor (Major Professor).	It is the student's responsibility to establish a relationship with a faculty member, based on having academic interests in common, who agrees to serve as the student's Academic Advisor (Major Professor).
1st term	3	Select degree option: thesis/non-thesis.	The student has two options: thesis and non-thesis. The student's advisor will lead the student through the evaluation of potential options.
1st term	4	Develop program of study (see Appendices).	The student and his/her Academic Advisor should develop a course of study plan that satisfies all university and department requirements during the first semester. This plan must be submitted to the student's advisor and the Director of the GPC.
1st term	5	Select research/problem topic.	The topic selected is based primarily on the student's professional/career interests and goals. The Academic Advisor is normally from the MABE Department, however it is possible for the Academic Advisor to be from another department subject to the approval of the Department Head. Advisor changes must be approved by the GPC.

Date	Step	Action	Notes
	5a	Revise course of study plan if appropriate.	Selection of topical emphasis may necessitate modifying the original plan. The revised <i>Planned Program of Study for M.S.</i> (see Appendices) must be approved by the student's advisor and the Director of the GPC.
1st year	6	Choose advisory committee; file for admission to candidacy.	The student's committee is selected in concert with the Academic Advisor. The committee must have at least three members. Submit an <i>Admission to Candidacy Application</i> with approval of the student's advisory committee and Department Head. This form shows course work that will be used to fulfill the degree course requirements.
	7	Develop, submit and present thesis/selected problem proposal.	Proposal should be developed in concert with the Academic Advisor. Proposal must be submitted in writing and presented orally to the advisory committee for approval.
	8	Take courses and perform research.	A 3.00 GPA is required for graduation. Normally, ME/AE majors may use no more than one 400-level <i>engineering</i> course to meet minimum course requirements. Transferable credits are determined by the student's advisory committee. A student should register for 500 Thesis when he/she starts to work on his/her thesis. The student must be enrolled in 500 Thesis in the semester of graduation.
	9	Submit thesis for review and approval.	Thesis should be submitted two weeks prior to the date of the final examination.

Date	Step	Action	Notes
	10	Make arrangements for, and schedule, final examination.	For the thesis option, schedule the exam through the MABE office at least one week before the date of the examination. A written report on problems shall be available to the student's committee two weeks before the final examination. Students taking the oral examination (thesis option) must notify the MABE faculty one week in advance. This announcement must be made in writing.
	11	Take final examination.	Defense of thesis or course work conducted before the committee. A written examination, scheduled by the GPC, is required for non-thesis students.
	12	Pay graduation fees.	
	13	Submit thesis for review and approval.	Thesis must be approved and accepted and final examination reports must be submitted to Graduate Records. For deadlines for each semester, consult http://gradschool.utk.edu/CurrentStudents.shtml
	14	Clear any financial obligations with UTK. Attend Chancellor's reception.	The university is authorized to withhold a student's diploma and transcript for any outstanding fees at the time of graduation.
	15	Attend graduation.	Commencement ceremonies are held each semester except in summer. Contact the Graduate School for dates and information on graduation schedules and procedures.

APPENDIX D. PLANNED PROGRAM OF STUDY, M. S. IN ME or AE

Name: _____ Student ID: _____

Advisor: _____ Date: _____

Course Plan

No.	Course	Semester	Grade	No.	Course	Semester	Grade
1				7			
2				8			
3				9			
4				10			
5				11			
6				12			

Courses in major (12/18 cr. hr. min. req'd for thesis/non-thesis option) _____ hours

Math 4xx or 5xx (6 cr. hr. min. req'd) _____ hours

Engineering courses 4xx (max. 3 cr. hr.) _____ hours

Total 4xx courses (max. 9 cr. hr.) _____ hours

Total course work (24/30 cr. hr. min. req'd for thesis/non-thesis option) _____ hours

Thesis (6 cr. hr. min. req'd for thesis option) _____ hours

Student Signature _____ Date _____

Academic Advisor (Major Professor) _____ Date _____

Director of Graduate Studies _____ Date _____

APPENDIX E. MASTER’S THESIS PROPOSAL OUTLINE

(No more than two pages. Include headings as shown.)

Student:

Proposed Thesis Title:

Date Submitted:

Problem Definition

Provide short background/introductory information.
Describe the essential scope of the work to provide insight into the magnitude of the required effort.

Thesis Significance

Define the key challenges in the proposed work.
Discuss the engineering significance of the proposed work.

Schedule

Define major tasks/activities.
Define key milestones.
Display time-line in a Gantt chart.

Approvals

Student Signature	Date
Academic Advisor (Major Professor)	Date
Thesis Committee Member	Date
Thesis Committee Member	Date
Thesis Committee Member	Date
Director of Graduate Studies	Date

APPENDIX F. FLOW CHART FOR PH.D. PROGRAMS

Doctoral students normally follow the sequence of events given below. The student should consult with his/her Academic Advisor (Major Professor) before deviating from this sequence.

Date	Step	Action	Notes
1st term	1	Initial Academic Advisor assigned by Graduate Programs Committee (GPC).	The GPC assigns an Initial Academic Advisor. You may change advisors as you define your program, but you must have an advisor approved by the GPC.
1st term	2	Obtain Academic Advisor (Major Professor).	It is the student's responsibility to establish a relationship with a faculty member, based on having research interests in common, who agrees to serve as the student's Academic Advisor (Major Professor).
	3	Register for and take departmental qualifying examinations.	The student and his/her Academic Advisor should select an appropriate topic for the qualifying examination. Relevant information is given in Section 7 of this handbook.
1st year	4	Form advisory committee.	An advisory committee is required and should be formed in consultation with the Academic Advisor during the student's first year of doctoral study. The membership of the committee must be approved by the department head. The committee must include at least four faculty members, with at least one from the MABE department and at least one from another department. The Academic Advisor and at least two other members of the committee must be approved to direct doctoral dissertation research.
	5	Select research topic.	The topic selected is based primarily on the research interests shared by the student and his/her Academic Advisor (Major Professor).
	6	Establish course plan (see Appendices).	Select courses with approval of the advisory committee.

Date	Step	Action	Notes
	7	Prepare and present dissertation proposal.	Guidelines are given earlier in this handbook.
	8	Conduct research, satisfy University's residency requirement.	The residency requirement is described in the Graduate Catalog.
	9	File for admission to candidacy.	Submit an <i>Admission to Candidacy Application</i> with approval of the student's advisory committee and the department head.
	10	Complete research and write dissertation.	Guidelines are given in the Graduate Catalog.
	11	Submit dissertation to advisory committee for review.	Should be submitted two weeks prior to the date of the final examination.
	12	Make arrangements for and schedule final examination.	File <i>Recommended Arrangements for Final Examination</i> form with the Graduate School. This form must be filed at least one week before the date of the examination.
	13	Defend dissertation.	Oral presentation and defense of dissertation conducted before the advisory committee.
	14	Pay graduation fees.	
	15	Submit dissertation to graduate school.	Dissertation must be approved and accepted and final examination reports must be submitted to Graduate Records. For semester deadlines, consult http://gradschool.utk.edu/CurrentStudents.shtml .
	16	Clear any financial obligations with UTK. Attend Chancellor's reception.	The university is authorized to withhold a student's diploma and transcript for any outstanding fees at the time of graduation.
	17	Attend graduation.	Commencement ceremonies are held each semester except in summer. Contact the Graduate School for dates and information on graduation schedules and procedures.

APPENDIX G. PLANNED PROGRAM OF STUDY, PH.D. IN ME orAE

Name: _____ Student ID: _____

Advisor: _____ Date: _____

Course Plan

No.	Course	Semester	Grade	No.	Course	Semester	Grade
1				13			
2				14			
3				15			
4				16			
5				17			
6				18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Math 5xx or 6xx (3 cr. hr. min. req'd) _____ hours
 Math 4xx or above (9 cr. hr. min req'd) _____ hours
 Courses in major (21 cr. hr. min. req'd) _____ hours
 Courses 6xx (6 cr. hr. min. req'd) _____ hours
 Dissertation (24 cr. hr. min. req'd) _____ hours

 Student Signature Date

 Academic Advisor (Major Professor) Date

 Director of Graduate Studies Date

APPENDIX H. SAMPLE REGISTRATION FORM FOR PH.D. QUALIFYING EXAMINATION

I hereby request to take the PhD Qualifying Examination during the fall semester, 2013 and request enrollment in AE 601 ME 601 (circle one).

The subject area of the proposed topic is:

The engineering topics in the proposed area are (e.g. Heat Transfer, Control Systems, Vibrations, etc. Must contain at least two areas.):

Student (print)

Student (sign)

Date

Major Professor (print)

Major Professor (sign)

Date

Recommended Committee Member(s) (one or two):

The above form is to be submitted to the Chair of the Graduate Programs Committee (GPC).

Director of Graduate Studies

Date

GPC-appointed Committee Member

APPENDIX I. LINKS TO WEB PAGES

Best Practices in Teaching

http://gradschool.utk.edu/files/2009-10_BPIT-Flyer.pdf

Center for International Education

<http://web.utk.edu/~globe/index.php>

Counseling Center

www.utk.edu/counselingcenter

MABE Department and College

<http://www.engr.utk.edu/mabe/>

College of Engineering

<http://www.engr.utk.edu/>

Funding, Fellowships, Assistantships for Graduate Students

<http://gradschool.utk.edu>

Graduate School

<http://gradschool.utk.edu>

Graduate Catalog

<http://catalog.utk.edu/index.php>

Graduate Student Appeals Procedure

<http://gradschool.utk.edu/GradAppealHbook.pdf>

Graduate Student Senate

<http://web.utk.edu/~gss>

Graduate and International Admissions

<http://admissions.utk.edu/graduate/>

International House

<http://web.utk.edu/~ihouse>

Judicial Affairs

<http://web.utk.edu/~osja/>

Office of Equity and Diversity

<http://oed.utk.edu>

Office of Minority Student Affairs/Black Cultural Center

<http://omsa.utk.edu>

Research Compliance/Research with Human Subjects
<http://research.utk.edu/compliance/>

SPEAK Testing Program
<http://gradschool.utk.edu/speaktest.shtml>

Thesis/Dissertation Website
<http://web.utk.edu/~thesis/>

VolAware
<http://volaware.utk.edu>

Library Website for Graduate Students
<http://www.lib.utk.edu/refs/gradservices.html>

OIT
<http://oit.utk.edu/>

Housing
<http://uthousing.utk.edu/sutherland/sutherlandresources.htm>

APPENDIX J. LINKS TO GRADUATE SCHOOL FORMS

Graduate Student Deadline Dates

<http://gradschool.utk.edu/ddategraduation.shtml>

Admission to Candidacy Application – Master’s Degree

http://gradschool.utk.edu/forms/Master_Adm_Cand.pdf

Doctoral Committee Appointment Form

http://gradschool.utk.edu/forms/Doc_Comm_Appoint.pdf

Admission to Candidacy Application – Doctoral Degree

http://gradschool.utk.edu/forms/Adm_Candidacy_Docs.pdf

Scheduling Defense of Dissertation Form

<http://gradschool.utk.edu/forms/SchedDissDef.pdf>

Graduate Student Travel Award Forms (specific to department, college, and university)

[Graduate Student Senate](#)