



UNIVERSITY of HAWAII at MĀNOA™  
**MECHANICAL ENGINEERING**

**DEPARTMENT OF MECHANICAL ENGINEERING**

**Graduate Program Handbook**

Department of Mechanical Engineering  
College of Engineering  
University of Hawai'i at Manoa  
2540 Dole Street, Holmes 302  
Honolulu, Hawaii 96822  
<http://me.hawaii.edu/>  
August 1, 2023

This handbook provides information on areas of specialization in graduate studies, procedures, and requirements for advanced degrees. The purpose of this handbook is to provide graduate students in Mechanical Engineering with information that does not appear in the General and Graduate information Catalog. This handbook is intended to supplement the Catalog, not to supersede or replace it. For additional information, the student should consult the *General and Graduate Information Catalog*, and *The Graduate Assistant Handbook* published by the University of Hawaii and available from <https://manoa.hawaii.edu/catalog/graduate/>.

## TABLE OF CONTENTS

|          |   |           |
|----------|---|-----------|
| <b>1</b> | <b>INTRODUCTION</b>   | <b>1</b>  |
| <b>2</b> | <b>GRADUATE PROGRAMS</b>  | <b>2</b>  |
| 2.1      | PROGRAM LEARNING OUTCOMES   | 2         |
| 2.2      | AREAS OF CONCENTRATION  | 2         |
| 2.3      | GRADUATE PROGRAM SHEET – DEPARTMENT OF MECHANICAL ENGINEERING                                     | 3         |
| 2.4      | CREDITS AND REGISTRATIONS FOR SEMINAR, DIRECTED READING OR RESEARCH, THESIS AND DISSERTATION      | 4         |
| 2.5      | SUBMISSION OF FORMS   | 5         |
| <b>3</b> | <b>THE MASTER OF SCIENCE DEGREE PROGRAM</b>   | <b>6</b>  |
| 3.1      | PREREQUISITES FOR ADMISSION   | 6         |
| 3.2      | ADMISSION TO PROGRAM  | 6         |
| 3.3      | INITIAL INTERVIEW AND MS FORM I (PLAN A)  | 6         |
| 3.4      | PROGRAM RESIDENCY REQUIREMENT, FULL TIME STATUS, AND TIME ALLOWED FOR DEGREE COMPLETION           | 7         |
| 3.5      | COURSE AND CREDIT REQUIREMENTS  | 7         |
| 3.6      | TRANSFER OF CREDITS   | 8         |
| 3.7      | PROGRAM COMMITTEE AND ADVISOR   | 8         |
| 3.8      | MS FORM II (PLAN A)   | 9         |
| 3.9      | THESIS (PLAN A) OR PROJECT (PLAN B) REPORT  | 9         |
| 3.10     | FINAL EXAMINATION AND MS FORMS III AND IV (PLAN A)  | 10        |
| 3.11     | PROCEDURES FOR MS STUDENTS  | 11        |
| <b>4</b> | <b>BACHELORS-AND-MASTERS (BAM) PROGRAM</b>  | <b>12</b> |
| 4.1      | PROGRAM REQUIREMENTS FOR BS/MS IN ME (BAM)  | 12        |
| 4.2      | APPLICATION AND OPERATION PROCEDURE   | 13        |
| 4.3      | APPROVED COURSES FOR DOUBLE-COUNTING  | 14        |
| 4.4      | FURTHER INFORMATION   | 15        |
| <b>5</b> | <b>CONTINUE TO DOCTOR OF PHILOSOPHY DEGREE PROGRAM AFTER THE MASTER OF SCIENCE DEGREE PROGRAM</b> | <b>15</b> |
| <b>6</b> | <b>THE DOCTOR OF PHILOSOPHY DEGREE PROGRAM FOR STUDENTS WITH A MASTER OF SCIENCE DEGREE</b>       | <b>16</b> |
| 6.1      | PREREQUISITES FOR ADMISSION   | 16        |
| 6.2      | ADMISSION TO PROGRAM  | 16        |
| 6.3      | INITIAL INTERVIEW   | 16        |
| 6.4      | PROGRAM RESIDENCY REQUIREMENT, FULL TIME STATUS, AND TIME ALLOWED FOR DEGREE COMPLETION           | 16        |
| 6.5      | COURSE AND CREDIT REQUIREMENTS  | 17        |
| 6.6      | QUALIFYING EXAMINATION AND PHD FORM I   | 17        |
| 6.7      | COMPREHENSIVE EXAMINATION AND PHD FORM II   | 18        |
| 6.8      | FINAL DISSERTATION DEFENSE EXAMINATION AND PHD FORMS III AND IV                                   | 20        |
| 6.9      | STUDENT TEACHING EXPERIENCE   | 20        |
| 6.10     | RULES GOVERNING EXAMINATIONS  | 21        |
| 6.11     | PROCEDURES FOR PHD STUDENTS   | 21        |
| <b>7</b> | <b>DIRECT DOCTOR OF PHILOSOPHY DEGREE PROGRAM</b>   | <b>23</b> |
| 7.1      | INITIAL INTERVIEW   | 23        |
| 7.2      | QUALIFYING EXAMINATION AND PHD FORM I   | 23        |
| 7.3      | COMPREHENSIVE EXAMINATION AND PHD FORM II FOR DIRECT PHD STUDENTS                                 | 24        |
| 7.4      | FINAL DISSERTATION DEFENSE EXAMINATION FOR DIRECT PHD STUDENTS                                    | 25        |

|           |   |           |
|-----------|---|-----------|
| <b>8</b>  | <b>LEAVE OF ABSENCE</b>                                       | <b>26</b> |
| <b>9</b>  | <b>FINANCIAL SUPPORT</b>                                      | <b>26</b> |
| 9.1       | GRADUATE TEACHING ASSISTANTSHIPS (GTA)                        | 27        |
| 9.2       | GRADUATE RESEARCH ASSISTANTSHIPS (GRA)                        | 27        |
| 9.3       | SCHOLARSHIPS  | 28        |
| <b>10</b> | <b>OTHER PERTINENT INFORMATION</b>                            | <b>29</b> |
| 10.1      | REGISTRATION PROCEDURES                                       | 29        |
| 10.2      | CHANGE IN COMMITTEE MEMBERSHIP                                | 29        |
| 10.3      | PREPARATION OF THESES AND DISSERTATIONS                       | 29        |
| 10.4      | ORIENTATION AND TRAINING FOR NEW GRADUATE TEACHING ASSISTANTS | 29        |
| 10.5      | RULES AND REGULATIONS CONCERNING INTERNATIONAL STUDENTS       | 29        |
| 10.6      | ACADEMIC PROBATION  | 30        |
| <b>11</b> | <b>GRADUATE PROGRAM CHECKSHEETS</b>                           | <b>31</b> |
| 11.1      | MS PLAN A CHECKSHEET  | 31        |
| 11.2      | MS PLAN B CHECKSHEET  | 33        |
| 11.3      | PHD CHECKSHEET  | 34        |

# 1 INTRODUCTION

The University offers course work leading to bachelor's, master's and doctoral degrees. UH Mānoa is one of the public universities classified by the Carnegie Foundation as a Research I university. It is also one of the few Sea Grant, Land Grant, and Space Grant Institutions in the United States of America.

The College of Engineering has three degree-granting departments: Civil and Environmental, Electrical and Computer, and Mechanical Engineering. Engineering degrees have been awarded since the founding of the University in 1907. The College's academic strengths in providing a high-quality education are demonstrated by the number of alumni who serve as presidents of regional engineering companies, senior project managers in national and international high-tech corporations and research centers, and senior managing engineers in government agencies.

The Mechanical Engineering Department (ME) has three areas of concentration: Materials and Manufacturing; Mechanics, Systems, and Controls; and Thermal and Fluid Sciences. The Department has a number of instructional laboratories as well as a machine shop. The dedicated and dynamic faculty together with excellent laboratory facilities offers engineering education and research opportunities of the highest quality.

## **2 GRADUATE PROGRAMS**

The Mechanical Engineering Department offers graduate programs leading to MS and PhD degrees in Mechanical Engineering. The program requirements are summarized in the program sheet in section 2.3, below. Students may also pursue the Direct PhD Program beyond a BS degree in ME or related fields. A combined BS and MS (BAM) degree program is also available to qualified undergraduate students.

### **2.1 Program Learning Outcomes**

In general, a student who has successfully completed the graduate degree requirements should be able to:

- Communicate both orally and in writing at a high level of proficiency in the field of study.
- Conduct research and analysis, or produce some other form of creative work.
- Demonstrate mastery of the concepts, methodology and techniques specific to the field of study.
- Perform ethically and responsibly in their field of study at a professional level.

### **2.2 Areas of Concentration**

The Department has the following three areas of concentration:

#### **MATERIALS AND MANUFACTURING:**

Mechanical properties, corrosion, phase transformations, marine materials, composite materials, and nanomaterials with applications in processing and advanced manufacturing engineering.

#### **MECHANICS, SYSTEMS, AND CONTROLS:**

Dynamics and controls, mechanics, vibration, and nanotechnology with applications in design, robotics, mechatronics, biomedical, renewable energy, and advanced materials.

#### **THERMAL AND FLUID SCIENCES:**

Thermodynamics, fluid mechanics, heat and mass transfer, and combustion, with applications in energy conversion, thermal environmental engineering, acoustics, design optimizations, biomedical, renewable energy, and nanofluids.

2.3 Graduate Program Sheet – Department of Mechanical Engineering

| Requirements                                   | MS Plan A  | MS Plan B   | Ph.D.  |
|--|--|---|--|
| Course credits                                 | 30 credits in 400-700 level courses  | 30 credits in 400-700 level courses   | 50 credits of 400-700 level courses beyond the BS degree (ME 800 does not count towards this requirement)  |
| Required classes                               | 1 credit ME 691<br>8 credits ME 700<br>12 credits in ME600 courses<br>9 credits in Technical Electives (400 or 600 level)  | 1 credit ME 691<br>2 credits ME 699<br>18 credits in ME600 courses<br>9 credits in Technical Electives (400 or 600 level) | 2 credits ME 691<br>4 credits ME 699, taken in semester of Qualifying Exam<br>5 credits ME 699, taken in semester of Comprehensive Exam, for only Direct PhD students<br>21 credits taken before the Qualifying Exam, of which up to 9 credits can be Technical Electives (400 or 600 level)<br>18 credits at the 600 level or higher<br><br>For students with MS degrees, up to 30 credits from their MS programs may be applied towards filling the credit requirements with departmental approval. At least 20 additional credits are required:<br>15 credits at 600 level or higher<br>4 credits ME 699, taken in semester of Qualifying Exam<br>1 credit ME 691 |
| Seminar  | 1 credit ME 691  | 1 credit ME 691   | 2 credits ME 691, taken in 2 separate semesters<br>Direct Ph.D. students - 1 credit taken in the semester of the Qualifying Exam<br>Students with M.S. degrees - 1 credit taken during or before the semester of the Qualifying Exam   |
| Research/thesis Credits                        | 8 credits ME 700   | 2 credits ME 699  | 4 credits ME 699, taken in semester of Qualifying Exam<br>5 credits ME 699, taken in semester of Comprehensive Exam, for only Direct PhD students<br>≥ 1 credit ME 800   |
| Qualifying exam                                | Not required   | Not required  | For students with M.S. in Mechanical Engineering, take exam by end of 2 <sup>nd</sup> semester<br>For Direct Ph.D. students, take exam by end of 4 <sup>th</sup> semester  |
| Form Thesis /Dissertation Committee            | Before enrolling in ME 700; usually at end of 2 <sup>nd</sup> semester; submit MS Form II  | Form project committee before enrolling in ME699  | Form Qualifying Exam committee before Qualifying Exam<br>Form Dissertation committee before Comprehensive Exam   |
| Comprehensive Examination                      | Not required   | Not required  | Take Comprehensive Examination after completing all required coursework<br>Submit Ph.D. Form II after passing  |
| Final Examination: Thesis/Dissertation Defense | Estimated end of 2 <sup>nd</sup> year  | ME 699 Culminating experience required  | Estimated end of fourth year<br>Submit Ph.D. Forms III and IV after passing  |
| Concentration                                  | Declare concentration, choose one of the following:<br>Materials and Manufacturing<br>Mechanics, Systems, and Controls<br>Thermal and Fluid Sciences   |   |  |
| Deficiency Courses                             | Depending on concentration, take additional undergraduate courses if equivalents not taken previously:<br>Materials and Manufacturing: ME 331<br>Mechanics, Systems, and Controls: ME 371 and ME 375; (CEE 370 may substitute for ME 371)<br>Thermal and Fluid Sciences: ME 311 and ME 322 |   |  |
| Additional Requirements                        | Submit MS thesis to committee at least 2 weeks before final examination  | Submit ME 699 final report to project examination committee at least 2 weeks before final examination                     | Submit dissertation to committee at least 2 weeks before final examination   |

## 2.4 Credits and Registrations for Seminar, Directed Reading or Research, Thesis and Dissertation

### Seminar (ME691)

The Department offers seminars throughout each academic year. ME691 Seminar is normally taken for credit during the last semester of the graduate degree. To earn one credit, students must attend 15 seminars and submit a report after each seminar. Students register for the course in the semester when they plan to complete their degree. Seminars can be attended for credit in different semesters prior to registration in the course (and from different departments with the prior approval of the faculty in charge of ME691 for that semester) provided the reports are submitted at the time the seminar is attended. Reports are to be submitted to the professor in charge of the seminar for a given semester. A letter grade will be given only when the student registers for credit. Students are required to take one credit of ME691 for the MS degree and one additional credit for the Ph.D. degree. For the Direct Ph.D. degree, two credits of ME691 are required (see Section 7 for details).

### Directed Reading or Research (ME699)

The function of ME699 is to permit a student to explore a thesis or dissertation possibility. Registration in ME699 is on a credit/no-credit (CR/NC) basis. Only credits that were registered under the academic advisor may be applied toward the thesis credits. To enroll in ME699, students must obtain a course number from the instructor. Students are required to submit a final written report in order to earn credits. With approval by the ME Graduate Chair, the academic advisor may permit ME699 credits to be applied toward the credits required for MS thesis (ME700), with the following limits:

- Up to 3 credits for MS students,
- Up to 4 credits for students pursuing the Direct PhD degree but who fail the Qualifying Examination, and
- Up to 8 credits for students pursuing the Direct PhD degree but who fail the Comprehensive or Final Dissertation Defense Examination.

### Thesis Research (ME700) and Dissertation Research (ME800)

Registration in ME700 (Thesis Research) or ME800 (Dissertation Research) is determined by the Graduate Division, with grading based on completion of the thesis or dissertation. MS students may register for ME700 only after their **MS Form II** is approved by the Graduate Division. PhD students may register for ME800 only after their **PhD Form II** is approved by the Graduate Division. To enroll in ME700 or ME800, students must obtain a course number from their thesis/dissertation advisor. These Forms must be approved by the student's thesis/dissertation committee members and the Graduate Chair before submitting to the Graduate Division for approval. The students must register for a minimum of 1 credit every semester even if they have already completed all the credits required for graduation. Eight (8) credits of ME700 are required as part of the 30-credit

requirement for MS (Plan A) students. ME800 credits are not counted toward the 50-credit requirement for PhD students. Students should register for credits of ME700 or ME800 after their Form II is approved. Students must be registered for ME700 or ME800 in the semester that they graduate, but they may also register for these credits in semesters before graduation.

## 2.5 Submission of Forms

Students are required to submit various Forms to the Graduate Division during their studies in order to report their progress. The schedule to submit these Forms will be described in subsequent sections. Graduate Division forms are to be submitted and approved online from <https://manoa.hawaii.edu/graduate/forms/>.

### Required forms for MS Plan A

- MS Form I
- MS Form II
- Graduate Application for Degree
- MS Form III
- MS Form IV
- Upload of final MS Thesis to archival service
- (If continuing to PhD, submit Admissions Application for PhD in ME)

### Required forms for MS Plan B

- Graduate Application for Degree

### Required forms for PhD

- PhD Form I
- PhD Form II
- Graduate Application for Degree
- Final Oral Examination Announcement (to be submitted to Graduate Student Services no less than 2 weeks prior to the defense date)
- PhD Form III
- PhD Form IV
- Survey of Earned Doctorate
- Upload of final PhD Dissertation to archival service



### 3 THE MASTER OF SCIENCE DEGREE PROGRAM

The MS program is intended to extend and broaden the students' undergraduate background and/or equip practicing engineers with state-of-the-art knowledge in their respective fields.

#### 3.1 Prerequisites for Admission

Applicants for the MS program must have completed a bachelor's degree in mechanical engineering or related programs such as other engineering fields, physics, chemistry and mathematics, from a reputable institution.

#### 3.2 Admission to Program

Completed applications are first screened by the Graduate Division. Only those applications that meet the minimum requirements established by the Graduate Division, including a minimum GPA of 3.0/4.0 and, for international students, satisfactory TOEFL score (see the Graduate Division website for more details and requirements), are forwarded to the respective graduate programs for further consideration. The Graduate Chair, on the basis of applicants' qualifications, including any potential deficiencies as well as a satisfactory General GRE Score, reviews applications and admits applicants to the program. Upon the Graduate Chair's recommendation, admission may be granted by the Graduate Division.

#### 3.3 Initial Interview and MS Form I (Plan A)

The purpose of the initial interview is to *determine undergraduate deficiencies*, if any, in the student's preparation for MS studies. The initial interview shall be conducted upon the student's arrival on campus and prior to initial registration. The student shall make an appointment with the Graduate Chair for the interview to be conducted by phone, zoom, or in person. For Plan A students only, **MS Form I** shall be completed at the conclusion of this meeting and submitted to the Graduate Division.

Deficiencies are undergraduate courses students should have passed, but may not have taken before their enrollment in ME. The deficiency courses are determined based on the student's area of concentration. They are the following courses:

- ME331 for Materials and Manufacturing;
- ME371 and ME375 for Mechanics, Systems, and Controls; and
- ME311 and ME322 for Thermal and Fluid Sciences.

Note: CEE 370 may substitute for ME 371. Also, the Graduate Division may have additional requirements.

### 3.4 Program Residency Requirement, Full Time Status, and Time Allowed for Degree Completion

**Program Residency Requirement:** The minimum residency requirement is an equivalence of two semesters of full-time work or four summer sessions at UH Manoa, as described at the [Graduate Division website](#). For part-time students, each 8 credits completed as a classified student is equivalent to one full-time semester.

**Full Time Status:** To maintain full-time status, research and teaching assistants must take 6 credits or more (if funded by a graduate assistantship), while others without assistantships must take 8 credits or more per semester. Plan A students may take 1 credit of ME700F to be considered full-time after all course and thesis credit requirements are fulfilled except for the final thesis examination.

**Time Allowed:** Candidates for the MS degree must complete all requirements within **seven (7) years** after admission to the program, although the normal expectation is completion of 30 credits in 2 years for full-time graduate students. Candidates who fail to complete all requirements in the specified time are dismissed from the program.

### 3.5 Course and Credit Requirements

Students in the MS program normally concentrate in one of the three areas described in Section 2.2. They must satisfactorily complete a minimum of 30 credits beyond the bachelor's degree. Courses from other departments are acceptable with the academic advisor's approval. Two degree options are available to students in the MS program: Plan A (thesis option) and Plan B (non-thesis option). Plan A is a combination of course work and research, culminating in the completion of a thesis. Plan B involves course work and the completion of a written project report. The credit requirements for these two plans are as follows:

#### **Plan A (thesis option)**

|  |          |
|--|----------|
| 4 courses in ME600 series <sup>(1)</sup> (C or better)   | 12       |
| ME691 Seminar  | 1        |
| ME700 Thesis (after <b>Form II</b> is approved)          | 8        |
| <u>3 Technical Electives<sup>(2)</sup> (C or better)</u> | <u>9</u> |
| Total Credits  | 30       |

#### **Plan B (non-thesis option)**

|  |          |
|--|----------|
| 6 courses in ME600 series <sup>(1)</sup> (C or better)   | 18       |
| ME691 Seminar  | 1        |
| ME699 Directed Reading                                   | 2        |
| <u>3 Technical Electives<sup>(2)</sup> (C or better)</u> | <u>9</u> |
| Total credits  | 30       |

(1) ME691 and ME699 cannot be applied to fulfill the course requirement.

(2) Technical Electives are 400-level or 600-level courses except for ME499, ME691 and ME699.

**Minimum GPA:** Students must maintain a minimum B grade point average (3.0/4.0 GPA) for all courses completed as a classified graduate student at UH toward the degree.

### 3.6 Transfer of Credits

Up to 14 credits may be transferred from: (a) an accredited institution, or (b) UH Manoa as an unclassified student.

- These credits must be at graduate level with a grade of B or higher and distinct from credits required for the bachelor's degree.
- Any ~99 courses and ME700 are not transferable.
- For UH Manoa graduates, excess credits earned at 400 or 600 level during the senior year may be transferred towards MS credits. More guidelines for Undergraduate Excess Credits, and the associated petition form, are provided here: <https://manoa.hawaii.edu/graduate/wp-content/uploads/ugcredit.pdf>
- An equivalent number of credits from other institutions may be transferred, as evaluated by the Graduate Chair.
- To transfer credits, students must submit the **Petition to Transfer Credits Form** to the Graduate Division for approval via the Graduate Chair during the first semester of enrollment, as described on the web page: <https://manoa.hawaii.edu/graduate/transfer-pbu-credits/>

### 3.7 Program Committee and Advisor

The selection of a thesis advisor for Plan A students and an ME699 (Directed Reading or Research) supervisor for Plan B students should be done as early as possible.

Plan A: For research assistants, the professor providing the assistantship generally becomes the student's academic and thesis advisor, and the student's thesis topic is usually related to the research project. For teaching assistants, individual faculty members and students agree for the faculty member to become a student's academic and thesis advisor. Other students may select their thesis topic and advisor after discussing possible thesis topics with professors in their major area of study.

Plan B: Students may select their ME699 (Directed Reading/Research) supervisor after discussing possible project topics with professors in their major area of study. The ME699 supervisor is also generally the student's academic advisor. Plan B students do not need to submit any Forms (including **MS Form I**).

For MS students who have not chosen an academic advisor, the Graduate Chair acts as the student's temporary advisor until the student has chosen an academic advisor.

The Thesis Committee for Plan A and the Project Committee for Plan B must consist of at least *three members of the graduate faculty*. *The committee chair should be the student's academic advisor. At least half of the committee members (excluding the committee chair) must be the graduate faculty or cooperating graduate faculty of ME.* The committee shall be formed by the student after consulting with his/her academic advisor.

### 3.8 MS Form II (Plan A)

A Plan A student should select a thesis title in consultation with their thesis advisor, and form a thesis committee, usually at the end of the 2nd semester. Students shall submit **MS Form II** with this information to the Graduate Division online. Plan A students may take ME700 credits only **after** this form is approved by the Graduate Division. If **MS Form II** is not approved, students may register for 3 credits of ME699 and request to have them applied toward ME700 later. Students must register for at least 1 credit of ME700/700F (if eligible) in the semester they will be graduating. They may register for 1 credit of ME700F to keep full-time status after all the requirements are satisfied, if another semester is necessary. To register for ME700F, student must submit the **Master's Petition to Enroll in GRAD 700F** Form to the Graduate Division for approval.

Both Plan A and B students should apply for graduation within the first 3 weeks of the semester they intend to graduate (or June 1 for graduation in Summer session; the UH Academic Calendar may vary from year to year but typically requires application for graduation at the start of June). They should defend the thesis/project report and submit the final version of thesis to the Graduate Division or project report to the Graduate Chair before the final day of instruction of the semester, although submission by the deadline listed in the UH Academic Calendar is preferable to allow sufficient time for administrative processing. If the students cannot meet the deadlines, they may request, in advance, for an extension from the Graduate Chair. Thesis submission during finals week will require postponement of graduation.

### 3.9 Thesis (Plan A) or Project (Plan B) Report

For a Plan-A student, copies of the MS thesis must be submitted to the members of the thesis committee at least two weeks prior to the date of the final examination. The format of the thesis should follow the *Style and Policy Manual for Theses and Dissertations* specified by the Graduate Division.

For a Plan-B student, copies of the ME699 final report must be submitted to the student's project examination committee at least two weeks before the date of the final examination.

### 3.10 Final Examination and MS Forms III and IV (Plan A)

MS candidates are required to pass a final oral examination. For Plan A students, the final examination will cover the thesis and related topics. For Plan B students, it will cover the project studied in ME699 and related topics.

All committee members must be present for the entire examination, including the presentation, questioning period, deliberation, and verbal voting until the committee decides whether a student has passed or failed the examination. At the conclusion of deliberations, the committee chair shall determine the outcome by voice vote. Every member must vote either “pass” or “fail” – there shall be no abstentions or neutral votes.

A student who fails the final examination may be permitted to repeat the examination once in the following semester at the discretion of the examination committee. A student who does not retake the examination in the following semester, or fails the examination for the second time is dismissed from the program, via Form II for Plan A students, or for Plan B students, via a memo to Graduate Student Services requesting for the student to be dismissed.

Plan A Students who pass the final examination shall submit **MS Form III** to the Graduate Division via the Graduate Chair with the thesis committee’s approval. **MS Form IV** shall be submitted by each MS Plan A student after the student’s thesis is submitted to the Graduate Division with all recommended revisions approved by the thesis committee.

Plan B Students who pass the final examination shall submit the final project report to the Graduate Chair with all recommended revisions approved by the project examination committee.

### 3.11 Procedures for MS Students

Listed below is a summary of the procedures leading to the award of an MS degree in ME. It is the *student's responsibility* to take the required steps during his/her course of study:

1. The newly admitted student meets with the Graduate Chair for an initial interview *prior to initial registration*. The student's undergraduate deficiencies are identified by the Graduate Chair. Plan A students shall submit **MS Form I**, which lists these deficiencies, to the Graduate Division at the conclusion of the initial interview.
2. Plan A students must select a **thesis advisor** while Plan B students must select a **ME699 supervisor**, who also serves as the student's **academic advisor**, as early as possible.
3. Plan A student submits **MS Form II** to Graduate Division via the Graduate Chair, usually at the end of the 2nd semester. The thesis title and committee members shall be included on this form. Plan A students may take ME700 credits only after this Form is approved by Graduate Division.
4. Apply for graduation within the first 3 weeks during the semester the student intends to graduate (or by June 1 for graduation in Summer session).
5. Defend and submit thesis before the last day of instruction. At least *two weeks* prior to the date of the final examination, Plan-A student shall submit copies of his/her **thesis** to the members of the thesis committee and announces the thesis defense publicly to the Department, while Plan B student shall submit copies of his/her **project report** to the project examination committee.
6. After the student passes the final oral examination satisfactorily, Plan A student submits **MS Form III** to Graduate Division, while the academic advisor of Plan B student sends a memorandum to the Graduate Chair informing that the student has passed the final examination. *Deadlines for submitting all the Forms can be found in the Academic Calendar (link: <https://manoa.hawaii.edu/registrar/academic-calendar/>)*
7. After the manuscript of the student's thesis (for Plan A) has been revised and approved by the thesis committee, and the format of the thesis meets the Graduate Division publication requirements, a revised thesis (electronic copy) shall be submitted to all committee members, **MS Form IV** is submitted, and the thesis is uploaded to the **ProQuest site** (<https://manoa.hawaii.edu/graduate/proquest-etd-submission-publication/>). For Plan B students, a revised report approved by the committee (bound or electronic copy) shall be submitted to all committee members and the Graduate Chair (following the same deadlines as Plan A).
8. The Graduate Chair checks and certifies that all the degree requirements are met. The student receives the MS Degree if all requirements are fulfilled.

## 4 BACHELORS-AND-MASTERS (BAM) PROGRAM

An accelerated BS/MS combined pathway degree program is offered through the University of Hawai'i at Mānoa Department of Mechanical Engineering. The key aspect of this program is that up to 9 credits of specific technical electives can be “double-counted” as credit towards both the BS and the MS degrees. This enables possible completion of an MS in Mechanical Engineering within a single year following completion of the BS degree.

The BS in Mechanical Engineering is an ABET-accredited four-year degree in Mechanical Engineering. This program requires completion of 125 credits for graduation. The MS program requires completion of 30 credits and includes both Plan A (thesis-based) and Plan B (non-thesis-based) options. The Bachelor's and Master's (BAM) pathway in Mechanical Engineering has the same ABET-accredited format of the current BS degree.

### 4.1 Program Requirements for BS/MS in ME (BAM)

- The BS/MS BAM pathway requires a total of 155 credits: 125 credits apply to the BS degree, 30 credits apply to the MS degree. Up to 9 credits are double-counted toward both the BS and MS degrees.
- Students must pass a gateway class, ME 311 Thermodynamics, with a B or better grade in order to be eligible for admission to this accelerated BS/MS pathway.
- Cumulative GPA must be 3.0 or higher at the time of application to the pathway and through the conclusion of the BS program for candidate students to be able to continue into the MS program in Mechanical Engineering.
- Students can apply to the BS/MS pathway only when they have no more than 2 semesters remaining for completion of their BS degree. Typically, this occurs after their fifth semester (junior year).
- Only specified courses taken after admission to the pathway are eligible for double-counting. Double-counted courses must be selected from the pre-approved list provided below in Section 4.3.
- Additional courses in excess of the 125 credits required for the BS and appropriate to the MS program may be applied to the MS degree by petition, but the number of excess credits applied to the MS is limited to a maximum of 14 credits (for BAM pathway students, this includes the 9 credits for double-counted courses).

## 4.2 Application and Operation Procedure

1. Prospective candidates for the Mechanical Engineering BS/MS (BAM) pathway should submit their UH ID number, expected BS completion date, and an unofficial transcript to the ME BAM program coordinator.
  - a. Students must have passed ME311 Thermodynamics with a grade of B or better.
  - b. Cumulative GPA must be 3.0 or higher at the time of application.
2. The ME BAM coordinator will review the transcripts for the ME311 and GPA requirements described above, to verify eligibility for the BS/MS program.
3. The ME BAM coordinator will send a memo including a list of names of students meeting these requirements to the Financial Aid, Registrar, and Graduate Student Services offices, and will inform the prospective pathway students to confirm that their names have been submitted.
4. After students receive confirmation that their names have been submitted to these offices, they should apply to the Mechanical Engineering MS graduate program.
  - a. Use the application available through the Graduate Division: <http://manoa.hawaii.edu/graduate/content/submitting-your-application>
  - b. Students should submit the same application documents as applicants to the regular MS program. Go to the following website for the application materials and more information about graduate programs in Mechanical Engineering at UH Mānoa: <http://manoa.hawaii.edu/graduate/content/mechanical-engineering>
  - c. Requirements for GRE scores and letters of recommendation are waived.
5. The Graduate Division and Mechanical Engineering department review applications for final admission, and the Graduate Division will notify students of admission to the ME BAM pathway.
6. Students may then take double-counted courses selected from the list below in Section 4.3.
7. Students in the ME BAM program should try to find an MS program advisor, from the list of ME faculty and cooperating graduate faculty, as soon as possible after enrolling and preferably before they finish their BS degree.
8. Students in the last semester of their BS degree must notify the ME BAM coordinator of their double-counted courses and their expected graduation date. This information should be provided to the ME BAM coordinator during the first two weeks of the last semester of the BS degree.
9. The ME BAM coordinator sends an additional memo of “Projected Candidates for Bachelor of Science in Mechanical Engineering” to the Financial Aid, Registrar, and Graduate Student Services offices, informing these offices of the expected



double-counted courses for ME BAM candidates who are completing their BS degrees.

10. Immediately upon completion of the BS degree, the student becomes an MS graduate student, and can continue working towards requirements of the MS degree.

### 4.3 Approved Courses for Double-Counting

Students enrolled in the Bachelor's and Master's program can take up to three double-counted courses (9 credits), either all at the 600-level or two at the 600-level and one at the 400-level. Students must achieve a grade of B or better in courses that are to be double-counted.

The list of courses available for double-counting is as follows:

600 level:

- **ME 626 Viscous Flows,**
- **ME 671 Continuum Mechanics, and/or**
- **ME 696\* Advanced Topics**

400 level:

- **ME 434 Materials Selection for Design,**
- **ME 446 Advanced Materials Manufacturing, or**
- **ME 491\* Special Topics**

Descriptions of these courses may be found in the UH Mānoa course catalog.

<https://manoa.hawaii.edu/catalog/category/engineering/me/>

**\* ME 696 Advanced Topics and ME 491 Special Topics courses are taken with pre-approval of the ME BAM coordinator, and only one section of each of these courses is allowed to be double-counted.** To request pre-approval of a specific section of ME 696 or ME 491, a student should send an email message to the ME BAM coordinator documenting the following:

1. Explain how the specific section topic will support the student's focus for graduate studies.
2. The student should also state whether they have found a potential MS program advisor and whether the advisor has approved of the proposed ME 696 or ME 491 section topic as supporting the student's focus for graduate studies.

Double-counting of ME 626, ME 671, ME 434, or ME 446 **DOES NOT** require the pre-approval of the BAM coordinator.

#### 4.4 Further Information

For further information or inquiries, the following resources and individuals are available:

- Combined Bachelor's and Master's degree pathways at UH Mānoa: <https://manoa.hawaii.edu/bam/>
- UH Mānoa Graduate Division: <http://manoa.hawaii.edu/graduate/content/contact-us>
- UHM College of Engineering: <https://www.eng.hawaii.edu/students/prospective/admit/>
- UHM Mechanical Engineering: [meoffice@eng.hawaii.edu](mailto:meoffice@eng.hawaii.edu)

## **5 CONTINUE TO DOCTOR OF PHILOSOPHY DEGREE PROGRAM AFTER THE MASTER OF SCIENCE DEGREE PROGRAM**

Plan A students may continue into the PhD program after the completion of MS program. They should submit an online application for admission to the Graduate Division during the semester they receive their MS degree as directed at the following site: <https://manoa.hawaii.edu/graduate/masters-to-phd/>. The deadlines are the following:

- (a) June 15 for Fall admission, and
- (b) November 15 for Spring admission.

The approval of the application will be based on a minimum of 3.0/4.0 GPA as well as the Graduate Chair and advisor's consent. After admission to the PhD program, students should follow the requirements listed in Section 6, below.

## 6 THE DOCTOR OF PHILOSOPHY DEGREE PROGRAM FOR STUDENTS WITH A MASTER OF SCIENCE DEGREE

The PhD program is designed to train students who will be prepared upon graduation to pursue an academic career in a university or to work as specialists or researchers in industry or government organizations. Such graduates must have acquired during their training, a sound knowledge of basic theory through course work and reading plus the capacity to do original research through the completion of a doctoral dissertation. An original contribution to the field of specialty through the dissertation research is required.

### 6.1 Prerequisites for Admission

Applicants for the PhD program must have completed the requirements for the MS degree in Mechanical Engineering at the University of Hawai‘i, or its equivalent from a reputable institution.

### 6.2 Admission to Program

Completed applications are first screened by the Graduate Division. Only those applications that meet the minimum requirements established by the Graduate Division, including a minimum GPA of 3.0/4.0 and, for international students, satisfactory TOEFL score (see the Graduate Division Web Site for more details and requirements), are forwarded to the respective graduate programs for further consideration. The Graduate Chair, on the basis of applicants' qualifications, including any potential deficiencies as well as a satisfactory General GRE Score, and the availability of departmental resources reviews applications and admits applicants to the program. Upon the Graduate Chair's recommendation, admission may be granted by the Graduate Division.

### 6.3 Initial Interview

The purpose of the initial interview is to *determine undergraduate deficiencies*, if any, in the student's preparation for PhD studies. The initial interview should be conducted upon the student's arrival on campus and prior to initial registration the same as those for the MS program (see Section 3.3). The deficiency courses are the same as those listed in Section 3.2.

### 6.4 Program Residency Requirement, Full Time Status, and Time Allowed for Degree Completion

Residency Requirement: The minimum residency requirement is an equivalence of three semesters of full-time work at the University of Hawaii at Manoa. An MS degree earned at UH in the same field may be considered to satisfy two semesters of the requirement, and

hence an additional semester at PhD level is required. For part-time students, each 8 credits completed as a classified student is equivalent to one full-time semester.

**Full Time Status:** To maintain full-time status, research and teaching assistants must take 6 credits or more, while others must take 8 credits or more per semester.

**Time Allowed:** Candidates for the PhD degree must complete all requirements within *seven (7) years* after admission to the program. Candidates who fail to complete all requirements in the specified time are dismissed from the program.

## 6.5 Course and Credit Requirements

Students in the PhD program are required to concentrate in one of the three areas of concentration (see Section 2.2).

Students must satisfactorily complete a minimum of 50 credits beyond the BS Degree. ME800 credits are not counted toward the 50 credit requirement.

With the approval of the Graduate Chair, students may be granted an equivalence of up to 30 credits of their MS programs toward fulfilling the PhD credit requirement.

- Among the 30 credits, up to 8 may be assigned for the MS thesis work and 1 may be assigned for the ME691 Seminar or its equivalent.
- The remaining 20 credits must be at 600-level, including five 3-credit (A-F) courses (i.e., 15 credits), four credits of ME699 during the semester the student takes the Qualifying Examination, and one credit of ME691.
- Out of the five 3-credit courses, at least three (i.e., 9 credits) must be in the student's major area of concentration (see Section 2.2) and one outside the major area of concentration.
- Courses from other departments are acceptable with the academic advisor's approval and a different area of concentration is acceptable with approval from the Graduate Chair. Students must take two credits of ME691 if they did not take an equivalent course in their MS program. The requirements for earning ME691 credit are described in Section 2.4.

**Course/Credit Transfer:** No other course or credit transfers are allowed.

**Minimum GPA:** Students must maintain a minimum of B average (3.0/4.0 GPA) for all courses completed toward the degree.

## 6.6 Qualifying Examination and PhD Form I

The purpose of the Qualifying Examination is to assess students' ability to conduct independent research at the doctoral level. Students should pass their qualifying examination no later than their second semester of enrollment (may be extended to the fourth semester with approval by the Graduate Chair) in their PhD program. To take the

qualifying examination, a student must register for 4 credits of ME699 Directed Reading or Research under the supervision of his/her academic advisor (in the student's major area of study). If the student holds a research assistantship, the professor providing the support will be the student's academic advisor. The student's ability to conduct independent research at doctoral level will be judged by a Qualifying Examination Committee at an oral examination prior to the end of the semester mentioned above.

*The Qualifying Examination Committee shall consist of at least three faculty in the student's major area of study, with the student's academic advisor serving as the committee chair. At least half of the committee members (excluding the committee chair) must be graduate faculty or cooperating graduate faculty of ME. The examination committee shall be formed by the student after consulting with his/her academic advisor.*

The student is required to complete a research project assigned by his/her academic advisor. Prior to the examination, the committee chair writes a memo to the Graduate Chair containing the names of the committee members, project title, and time of the qualifying oral examination. The student must submit a project report to members of the examination committee *at least two weeks* prior to the date of the examination. After the examination, the committee chair writes a memo to the Graduate Chair, with all committee members' signatures, informing the result of the examination and remedies if the student fails the examination. The qualifying examination includes the content of the student's project report as well as his/her fundamental knowledge relating to the project. The student passing the examination shall submit a copy of the Qualifying Examination Report to the Graduate Chair.

A student who fails the Qualifying Examination may be permitted to repeat the examination once in the following semester at the discretion of the Qualifying Examination Committee. A student who does not retake the examination in the following semester, or fails the examination for the second time is dismissed from the program.

*After passing the qualifying examination, the student will be admitted to the status of "Candidate" in the PhD program, and PhD Form I will be submitted to the Graduate Division.*

## 6.7 Comprehensive Examination and PhD Form II

The purpose of this examination is to ascertain the student's comprehension of areas of study relevant to his/her dissertation topic. Each PhD student must take the Comprehensive Examination after all the course requirements are fulfilled (except ME691), and at least one semester prior to the Final Dissertation Defense Examination.

*The Comprehensive Examination committee shall consist of at least five (5) graduate faculty with the student's academic advisor serving as the committee chair. Among the other members, at least 2 must be in the student's major area of study and 1 an outside member (not an ME graduate faculty or cooperating graduate faculty) to serve as the*

*University Representative.* Three of the committee members (including the committee chair) must be the graduate faculty or cooperating graduate faculty of ME. The University Representative represents the Graduate Division on the committee and ensures that correct procedures are followed, the standards and integrity of a dissertation are upheld, and that the student is treated fairly. While expertise is helpful in the topic area, it is not essential. Their primary role is not to contribute as other committee members do to the dissertation research. The committee shall be formed by the student after consulting with his/her academic advisor. A student shall pass the comprehensive examination upon a favorable recommendation by the majority of the committee members (i.e., chair, University Representative and at least one member).

The Comprehensive Examination covers the following two areas: 1) Fundamentals of the Course Work the student took in his/her PhD program; 2) PhD dissertation research proposal. The research proposal must be prepared in the form of a technical research report and submitted to members of the examination committee *at least two weeks* prior to the date of the oral examination. It must contain a clear statement of the problem to be investigated, a detailed explanation of the methodology to be employed, together with a statement of the anticipated results and an estimated date of completion. It must also demonstrate a scholarly investigation which will be an original contribution to the field of mechanical engineering. In addition, the student is required to compile a list of five graduate courses counting towards his/her PhD degree with majority of them in his/her major area of study. This list must be approved by the student's academic advisor and submitted to the examination committee with the dissertation research proposal.

Prior to the examination, the committee chair writes a memo to the Graduate Chair containing the names of the committee members, dissertation title, and time of the Comprehensive oral examination. After the examination, the committee chair writes a memo to the Graduate Chair, with the List of the Courses attached, informing the result of the examination and remedies if the student fails the examination. The student passing the examination shall submit a copy of the Comprehensive Examination Report to the Graduate Chair.

A student who fails the Comprehensive Examination may be permitted to repeat the examination once in the following semester at the discretion of the Comprehensive Examination Committee. A student who does not retake the examination in the following semester, or who fails the examination for the second time is dismissed from the program.

*After passing the Comprehensive Examination, **PhD Form II** shall be submitted by the student to the Graduate Division. Upon approval of Form II, the PhD student will be admitted to candidacy and the status of "ABD: All-But-Dissertation" in the PhD program if all other requirements (except the dissertation) are fulfilled.*

The student may register for 1 credit of ME800 and be considered full-time after the comprehensive examination is passed. The student must register for 1 credit of ME800 in each semester following the approval of Form II, including the semester he/she intends to graduate.

## 6.8 Final Dissertation Defense Examination and PhD Forms III and IV

*The Final Dissertation Defense Examination Committee shall consist of the same faculty members as the Comprehensive Examination Committee. The Committee Members may be changed with approval by the Graduate Division via the Graduate Chair. The Doctorate Petition to Revise Dissertation Committee Form must be used for this purpose.*

Prior to the examination, the committee chair writes a memo to the Graduate Chair containing the names of the committee members, dissertation title, and time of the Final Dissertation Defense Examination. The student must submit the dissertation to members of the examination committee at least two weeks prior to the date of the examination. Arrangements for the examination must be made at least one month in advance, and the examination must be conducted prior to the last day of instruction of the semester. The examination must be announced via the Graduate Division at least two weeks in advance and be open to the public.

The dissertation must contain results of an original contribution to the field of mechanical engineering, which will be suitable for publication(s).

Each PhD candidate will be required to pass the oral final examination based primarily upon his/her dissertation. The examination shall be administered by the student's full dissertation committee. Candidates shall pass the final examination upon a favorable recommendation by the majority of the committee members.

A candidate who fails the Final Dissertation Defense Examination may be permitted to repeat the examination once in the following semester at the discretion of the examination committee. A candidate who has not been given the opportunity to repeat the examination, does not retake the examination in the following semester without approval by the academic adviser and Graduate Chair, or fails the examination for the second time is dismissed from the program.

Candidates passing the Final Dissertation Defense Examination shall submit **PhD Form III** to the Graduate Division via the Graduate Chair with the dissertation committee's approval for passing the examination.

If required by the Dissertation Examination Committee, the candidate shall revise his/her dissertation incorporating comments and suggestions made by the committee. **PhD Form IV** shall be submitted with the dissertation to the Graduate Division with all recommended revisions approved by the committee.

## 6.9 Student Teaching Experience

In recognition that some PhD graduates will seek to enter the teaching profession, PhD students may be offered an opportunity to obtain teaching experience as part of their training in accordance with the following procedure. With the approval of the student's dissertation advisor, a PhD student may request the Department Chair to give the student a

teaching assignment for a particular ME course at the undergraduate level. The Department Chair will determine whether the student is qualified to teach the course requested and, if the student is deemed qualified, he/she may be given the assignment. Students who teach a course or courses shall take 3 credits of ME799 (Directed Instruction) under the Department Chair and will be awarded the credits towards their 600-level PhD course requirements if the teaching evaluations are satisfactory.

### 6.10 Rules Governing Examinations

All PhD examinations (qualifying, comprehensive, and final defense) are administered by committees. It is the duty of the chair of those committees to schedule the examinations with sufficient advance notice and at times convenient to all members of the committees and to the students. All members of a committee must be present for the entire examination, including the presentation, questioning period, deliberation, and verbal voting until the committee decides whether a student has passed or failed the examination. At the conclusion of deliberations, the committee chair shall determine the outcome by voice vote. Every member must vote either “pass” or “fail” – there shall be no abstentions or neutral votes.

If, for any reason, an examination needs to be terminated before all committee members are satisfied that the questioning has been sufficient to provide a basis for voting, the examination can be “adjourned for continuation.” In such a case, a concluding examination session must be scheduled within 15 days.

### 6.11 Procedures for PhD Students

Listed below is a summary of the procedures to be followed leading to the award of a PhD degree in Mechanical Engineering. It is the *student's responsibility* to take the required steps during his/her course of study.

1. The newly admitted PhD student meets with the Graduate Chair for an initial interview *prior to initial registration*. The student's undergraduate deficiencies are identified by the Graduate Chair. The undergraduate deficiencies must be made up by the students during their PhD studies and prior to the Comprehensive Examination.
2. For a research assistant, the professor providing the assistantship becomes the student's academic advisor. For teaching assistants, a faculty member may become the advisor of the student by mutual agreement. Other students may select their dissertation topic and advisor after discussing with professors in their major area of study. The Graduate Chair will act as their temporary academic advisor until they have chosen a dissertation advisor.
3. The student registers for 4 credits of ME699 (Directed Reading or Research) and form a **Qualifying Examination Committee** *no later than the second semester of attendance (may be extended to fourth semester with approval by*



- the Graduate Chair*). The student's academic advisor will be his/her ME699 supervisor and the Examination Committee Chair.
4. The student takes the **Qualifying Examination** described in Section 6.6 *prior to the end of the semester*, and submits **PhD Form I** to the Graduate Division via the Graduate Chair if passing the examination.
  5. The Candidate selects a **Comprehensive Examination Committee** after consulting with his/her PhD advisor.
  6. The Candidate takes the **Comprehensive Examination** *after completing all the course work*, and submits **PhD Form II** to the Graduate Division via the Graduate Chair if passing the examination. The student becomes a PhD Candidate. The Candidate will have **ABD (All but Dissertation)** status if all the requirements (except for the dissertation) are fulfilled. An ABD certificate may be requested as part of the Form II.
  7. The Candidate may register for ME800 only after **PhD Form II** is approved by Graduate Division.
  8. Apply for graduation within the first 3 weeks during the semester the student intends to graduate (or by June 1 for graduation in Summer session).
  9. The Candidate submits copies of the dissertation to members of the dissertation committee at least *two weeks* prior to the date of the final examination.
  10. At least *two weeks* prior to the date of the final examination, the Candidate should submit a **Final Defense Announcement Form** to Graduate Division Student Services, and should request the Department office to announce the date of the final examination. The Graduate Division requires that the final examination be held while the university is in session and is open to the public.
  11. After passing the final examination, **PhD Form III** is submitted to the Graduate Division.
  12. After the manuscript of the student's dissertation has been revised and approved by the dissertation committee, and the format of the dissertation meets the Graduate Division publication requirements, a revised dissertation (bound or electronic copy) with all committee members signatures shall be submitted to all committee members, **the PhD Form IV** is submitted.
  13. The Candidate should complete other requirements listed in the Graduate Division's graduate checklist, including submission of the final approved dissertation manuscript.
  14. The Graduate Chair checks and certifies that all the degree requirements are met. The student receives the PhD Degree if all the requirements are fulfilled.

## **7 DIRECT DOCTOR OF PHILOSOPHY DEGREE PROGRAM**

Students with a bachelor's degree in Engineering, Science, or related areas may be admitted to the Direct PhD Program in ME.

Current MS students are allowed to apply to the Direct PhD Program. These students shall submit an application to the PhD in ME to the Graduate Division.

Fifty (50) credits (plus any potential ME deficiencies) of courses beyond the bachelor's degree are required as described in the following sections.

### 7.1 Initial Interview

Students admitted to the Direct PhD Program shall schedule an initial interview with the Graduate Chair upon their arrival on campus and prior to their initial registration the same as those for the MS program (see Section 3.3). The purpose of the initial interview is to *determine undergraduate deficiencies*, if any, in the student's preparation for PhD studies. The deficiency courses are the same as those listed in Section 3.2. A Departmental PhD Deficiency Form shall be submitted to the Graduate Chair at the conclusion of the interview.

### 7.2 Qualifying Examination and PhD Form I

Twenty one (21) credits of ME courses must be passed before the student takes the Qualifying Examination, out of which three courses (i.e., 9 credits) can be technical electives as described in Section 3.5. Courses from other departments are acceptable with academic advisor's approval. Up to 12 credits may be transferred from an accredited institution or UH Manoa as an unclassified student. These credits must be graduate level with a grade of B or better and in excess of what are required for the bachelor's degree. For UH Manoa graduates, excess technical electives are transferable.

Students shall take the Qualifying Examination following the procedure described in Section 6.6 by the fourth semester (may be extended to the fifth semester with approval by the Graduate Chair). Students failing to take the Qualifying Examination according to this schedule are considered withdrawn from the Program and will be transferred to the MS Program.

Students should register for 1 credit of ME691 and pass the course as described in Section 2.4 in the semester when the Qualifying Examination is taken.

A student who fails the Qualifying Examination may be permitted to repeat the examination once in the following semester at the discretion of the Qualifying Examination Committee. A student who has not been given the opportunity to repeat the examination, does not retake the examination in the following semester without approval by the

academic adviser and Graduate Chair, or fails the examination for the second time will be transferred to the MS Program. The procedures and requirements for the MS program are described in Section 3.

The 4 credits of ME699 taken for the Qualifying Examination for a student failing the Qualifying Examination will be graded as incomplete. If the student decides to pursue Plan A MS program, these credits will be applied toward ME700. In this case, the student must take another 4 credits of ME700, write an MS thesis and defend it, to earn an MS Degree in ME. Furthermore, the student may have to take extra credits to maintain full-time status if necessary. If the student decides to pursue Plan B MS program, the ME699 credits will be changed to CR after passing the Plan B project examination.

Students who pass the Qualifying Examination shall submit **PhD Form I** to the Graduate Division. They are required to take an additional fifteen (15) credits of graduate (600-level or higher) courses. Courses from other departments are acceptable with academic advisor's approval. The PhD student's status will change to **PhD Candidate** after submitting **PhD Form I**.

### 7.3 Comprehensive Examination and PhD Form II for Direct PhD Students

The candidate should take five (5) credits of ME699 for the Comprehensive Examination according to the requirements described in Section 6.7. The Comprehensive Examination should be taken after the completion of all required courses and at least one semester prior to the Final Dissertation Defense Examination. Following Section 6.7 guidelines, a list of five graduate courses counting towards student's PhD degree with majority of them in his/her major area of study, approved by the student's academic advisor should be submitted to the comprehensive examination committee with the comprehensive examination report and dissertation research proposal. **PhD Form II** shall be submitted to the Graduate Division after passing the Comprehensive Examination.

The candidate should also register for 1 credit of ME691 and pass the course as described in Section 2.4, in the semester when the Comprehensive Examination is taken. The status will be changed to **ABD** after submitting **PhD Form II**.

A candidate who fails the Comprehensive Examination may be permitted to repeat the examination once in the following semester at the discretion of the Comprehensive Examination Committee. A candidate who has not been given the opportunity to repeat the examination, does not retake the examination in the following semester without approval by the academic adviser and Graduate Chair, or fails the examination for the second time will be transferred to the MS Program.

A candidate who fails the Comprehensive Examination and decides to pursue Plan A MS program will have the credits of ME699 that were taken for the Qualifying Examination be graded as incomplete and applied toward ME700. The student must write an MS thesis and defend it to earn an MS Degree in ME. If the student decides to pursue Plan B MS program, the 4 credits of ME699 that were taken for the Qualifying Examination will be

graded as CR and the student will be able to receive the MS degree in ME immediately. The Qualifying Examination Report that the student already passed will be accepted as the student's Plan B project report.

After passing the Comprehensive Examination, the candidate should take one credit of ME800 every semester until graduation.

#### 7.4 Final Dissertation Defense Examination for Direct PhD Students

Upon completion of the dissertation, the candidate shall take the Final Dissertation Defense Examination and submit **PhD Forms III** and **IV** as described in Section 6.8 and Section 6.11.

A candidate who fails the Final Dissertation Defense Examination may be permitted to repeat the examination once in the following semester at the discretion of the Final Dissertation Defense Examination Committee. A candidate who has not been given the opportunity to repeat the examination, does not retake the examination in the following semester without approval by the academic adviser and Graduate Chair, or fails the examination for the second time will be transferred to the MS Program. The Final Dissertation Defense Examination Committee may pass the failing dissertation as an MS thesis. In this case, the committee becomes the student's MS thesis committee and the student is able to earn his/her Plan A MS degree after all the MS Forms are submitted

If a student fails the Final Dissertation Examination and the dissertation is not considered as a sufficient MS thesis, the student may decide to pursue the Plan A MS program. In this case 8 credits of ME699 that were taken for the Qualifying and Comprehensive Examinations may be applied toward ME700. The student must write an MS thesis and defend it to earn an MS Degree in ME. If the student decides to pursue Plan B MS program, the student will receive the MS degree in ME immediately. The Qualifying Examination Report the student passed will be accepted as the students MS Plan B project report.

PhD students/candidates are allowed to switch to the MS Program anytime during the above-mentioned Direct PhD Program process. If they choose to pursue the PhD Program after the completion of their MS Degree, they must apply to the PhD Program.

The students who fail the Qualifying, Comprehensive, or Final Dissertation Defense Examination and are transferred to the MS program cannot be re-admitted to the PhD Program upon the completion of their MS Degree.

## 8 LEAVE OF ABSENCE

Students in good academic standing are eligible for up to one year or two separate semesters of a leave of absence. This leave is to be approved in advance, failure to maintain continuous enrollment (excluding summer session, unless graduating) is considered withdrawal from the university. While on an approved LOA, consulting faculty or using university facilities or staff services is not to be done.

Students requesting a leave of absence shall submit a **Petition for Leave of Absence** Form to the Graduate Division.

Failure to return and enroll within the approved date is considered as withdrawal from the University.

More information: <https://manoa.hawaii.edu/graduate/leave-of-absence/>

## 9 FINANCIAL SUPPORT

For qualified graduate students, the Department has a number of teaching and research assistantships available. These graduate assistantships enable graduate students to pursue full-time study at the University of Hawaii. With tuition exempted, the stipend of a graduate assistantship supports minimum living expenses. During the academic year, a graduate assistant's workload should balance out to about 20 hours, on average, per week on teaching or research work. Students supported by a GA may register for a maximum of 9 credits and a minimum of 6 credits per semester. Graduate Assistants who wish to enroll in more than 9 credits in a semester should complete a "Petition to Enroll in More than 9 Credits," available through the Graduate Division website: [[link](#)].

All current graduate students of ME and applicants to the ME graduate program are eligible for consideration for an assistantship. The assistantships are based on the availability of funds, and satisfactory performance. An assistantship shall be automatically terminated when a recipient completes his/her degree program (at the end of the semester of such completion), completely withdraws from the program (as of the date of such withdrawal), or enrolls as a part-time student. The assistantship may be terminated if a student falls below the required 3.0 GPA, if work performance is unsatisfactory, or if there is a lack of funding.

For more detailed information about assistantships, see *The Graduate Division Web Page* at <https://manoa.hawaii.edu/graduate/>.

## 9.1 Graduate Teaching Assistantships (GTA)

Graduate Teaching Assistantships are awarded to MS (Plan A) and PhD students by the Department on the basis of instructional needs, and also academic performance, experience, and background of the student. In general, a GTA is offered by the Department Chair. The duty of a GTA is to aid professors by leading laboratory and discussion sections, as well as grading projects, reports, and homework. The teaching performance of a GTA is evaluated by the instructor-in-charge at the end of each semester (research performance will be evaluated by the student's academic advisor).

Teaching assistantships may be renewed based on the availability of funds, satisfactory performance of teaching duties, maintenance of good academic standing (3.0 or better GPA), and satisfactory progress in research (thesis/dissertation) work. Normally, MS students may be appointed as a GTA for no more than three (3) semesters while PhD students for no more than four (4) semesters. The duty period for all teaching assistants is from one week prior to the start of the Fall semester through the end of Final Exam week of the Spring semester and for any grading or related work that is approved by the faculty supervisor. A GTA is required to be on duty for no less than 12 weeks during the academic semester in order to receive the tuition exemption benefit. Semester break and Spring recess are not considered to be off-duty periods for graduate assistants. The teaching assistantship has a 9-month duty and pay period per academic year that is pro-rated over 12 months. Depending on the availability of research funds and satisfactory performance of research work, a teaching assistant may receive a research assistantship from his/her academic advisor during the summer.

## 9.2 Graduate Research Assistantships (GRA)

Individual professors award research assistantships to students who aid them in their funded research. Renewal of a research assistantship depends on the availability of funds, satisfactory research work, and maintenance of good academic standing (3.0 or better GPA). Normally, research work performed by the GRA may be used as the students' thesis or dissertation. The duty period for a GRA is typically from the start of their GRA appointment. A GRA typically has an 11-month duty and pay period per academic year that is pro-rated over 12 months. The duty period for all research assistants is for 11 months working, on average, about 20 hrs/week during semesters and potentially up to 40 hrs/week during off-semester periods (with appropriate compensation). A GRA is required to be on duty for at least 12 weeks during an academic semester in order to receive the tuition exemption benefit. Semester breaks and Spring recess are not considered to be off-duty periods for GRAs. Depending on the availability of research funds and satisfactory performance of research work, a research assistant may receive overload during the summer to perform additional research.

### 9.3 Scholarships

The Department has a limited number of scholarships available to qualified graduate students. The competition for these scholarships is very keen, and the awarding of these scholarships is based on academic record and financial needs.

The East-West Center, a federal institution on campus, awards a number of scholarships to U.S. and International students to pursue full-time graduate study at the University of Hawaii. These scholarships cover tuition, room, and board.

More information may be found at the following Graduate Division website:

<https://manoa.hawaii.edu/graduate/financial-support/>

## 10 OTHER PERTINENT INFORMATION

### 10.1 Registration Procedures

Continuing graduate students receive registration packages (with detailed instruction on registration procedures) prior to the pre-registration period. It is recommended that students register for courses during the pre-registration period, which is usually held in April and November of each year. Graduate courses with insufficient pre-registration may be canceled before the semester begins. To ensure that a course will not be canceled because of low enrollment, continuing graduate students should register during the pre-registration period. Any student who has not utilized the Pre-Registration must register for classes during the Late Registration period. This usually begins on the first day of the new semester and extends for two weeks. There is a penalty fee for missing the deadlines. Enrollment in each semester is required at the appropriate number of credits (*i.e.*, any type of GA, or scholarship with a credit requirement), unless on an approved leave of absence.

Newly admitted graduate students should first report to the Department upon arrival on campus. They should enroll at the beginning of the semester during the new student registration period.

### 10.2 Change in Committee Membership

Changes in the committee membership may be made by petition to the Graduate Division via the Graduate Chair after Form II is approved. The **Petition to Revise the Thesis or Dissertation Committee** Form must be used for this purpose.

### 10.3 Preparation of Theses and Dissertations

The Graduate Division has specific instructions for the preparation of theses and dissertations. To ensure that the thesis or dissertation manuscript is acceptable to the Graduate Division, students should review the webpage titled *Thesis and Dissertation Guidelines* on the Graduate Division website before writing the manuscript.

### 10.4 Orientation and Training for New Graduate Teaching Assistants

An orientation and training program sponsored by the Graduate Division and Center for Teaching Excellence is usually held a few days preceding every Fall and Spring semester. All new graduate teaching assistants are required to participate in the program.

### 10.5 Rules and Regulations Concerning International Students

International students must have a minimum TOEFL score of 100 IBT, with 25 in each of the four categories, or equivalent test (*i.e.*, IELTS) approved by the Graduate Division, to be eligible for consideration for a graduate teaching assistantship. Other graduate students should also have satisfactory TOEFL or equivalent test scores.



Newly admitted international students should report to the International Students Services office (ISS) and the English Language Institute (ELI) before their initial registration. International students whose TOEFL score is less than 100 IBT are required to take an ELI Placement Test. Depending on their results, they may be required to take ELI courses to remedy their English deficiencies.

Newly admitted international students are required to take TB skin tests at the Student Health Center prior to registration.

Federal regulations require that each individual must have a social security number in order to receive compensation. International students, therefore, should apply for their social security numbers as soon as they arrive in Honolulu. They should also ask for a receipt when applying. It takes approximately two months to receive the social security number and another month for processing the paperwork for payroll at the University. Thus, an international student, although awarded a graduate assistantship, may not receive his/her initial paycheck until three months after arrival in Honolulu. To alleviate the financial burden, international students may apply for an emergency loan (equal to the amount they would receive as a graduate assistant) at the UH Federal Credit Union to cover their living expenses until they receive their first paycheck. To apply for the loan, a receipt showing their application for a social security number and a copy of the partially completed SF5B form are required.

All international students must purchase health insurance coverage while attending the university. Teaching and research assistants are eligible to participate in the State health insurance plan if they sign up for the plan within 30 days of employment.

Any international students considering any travel or any work outside of the university, or for any other questions, should first seek advisement from the International Student Services office: <https://www.hawaii.edu/issmanoa/>

## 10.6 Academic Probation

Students that don't maintain a 3.0 GPA after earning 8 credits or more will be subject to probation and lose their assistantships. If they remain under probation for a year they will be dismissed, and to be readmitted they have to raise the GPA through extra work to have grades changed by class professors, or extra classes taken as an unclassified student. The Graduate Division has additional information about disciplinary actions:

<https://manoa.hawaii.edu/graduate/disciplinary-actions/>

# 11 GRADUATE PROGRAM CHECKSHEETS

## 11.1 MS Plan A Checksheet

Instructions: This checklist is provided to students and advisors to help with MS Plan A (Thesis-based MS) degree planning, and to assist with review of students' progress towards completion of their degrees. Fill in data in each section to confirm that MS Plan A degree requirements have been met. Make sure to confirm that STAR shows completion of all requirements.

**Program Residency Requirement: Minimum of 2 semesters of full-time graduate work (≥8 cr/semester)**

List semesters:

*More semesters of enrollment required for part-time students; discuss with Graduate Chair.*

*Most BAM/BS-MS students should only need 2 semesters.*

**Time Limit: MS degrees should be completed within about 2 years**

Date Started as Graduate Student:

Anticipated Completion Date:

*All degrees have a 7-year time-limit but this is too long for MS degrees*

**Courses (30 Credits Total Required for MS Degree)**

| Semester(s) Taken | Course Number | Credit Hours | Course Name      | Requirement                          |
|-------------------|---------------|--------------|------------------|--------------------------------------|
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   | ME 691        | 1            | Graduate Seminar | ME 691 Seminar                       |
|                   |               | 3            |                  | Technical Elective, 400 or 600 level |
|                   |               | 3            |                  | Technical Elective, 400 or 600 level |
|                   |               | 3            |                  | Technical Elective, 400 or 600 level |
|                   | ME 700        | 8            |                  | ME 700 MS Thesis research            |
|                   |               |              |                  | ME 699 if needed                     |
|                   | Total         | 30           |                  |                                      |

- ME691, ME699 not allowed as Technical Electives
- Must have approved Form 2 before enrolling in ME 700; can split ME 700 credits over more than 1 semester
- Can take ME 699 before submission of Form 2, then petition to apply credits as ME 700.
- Only courses in which a grade of C or better was earned may be counted towards the degree.
- Must be enrolled in ME 700 or ME 700F during semester of graduation.
- Talk with Advisor or Graduate Chair regarding any potential transfer of credit
- Admission to BAM pathway allows designated courses to be double-counted for BS and MS (up to 9 cr.).
- Refer to Graduate Division website for more information on Course Applicability and other rules:  
<https://manoa.hawaii.edu/graduate/course-applicability/>

**Minimum GPA Requirement: Must be at least 3.0 to Graduate**

GPA:

*More info:*

<https://manoa.hawaii.edu/graduate/required-gdgp/>

<https://manoa.hawaii.edu/graduate/academic-progress/>

***GPA must not fall below 3.0 during any point before graduation either.***

**MS Plan A Required Forms:**

***Must be submitted in order to document progress through degree and completion of degree.***

All forms: <https://manoa.hawaii.edu/graduate/forms/>

| Completion Date | Forms   | Description              | Submission Procedure   |
|-----------------|---|--------------------------|--|
|                 | <a href="#">Form 1</a>  | Pre-Candidacy Progress   | Student contacts Graduate Chair, Graduate Chair submits                                      |
|                 | <a href="#">Form 2</a>  | Advance to Candidacy     | Student submits after working with advisor to establish Thesis proposal and Thesis Committee |
|                 | <a href="#">Checklist</a>   | Grad. Division Checklist | Review after submitting Form 2, before final semester  |
|                 | <a href="#">GradApp</a>   | Application for Degree   | Student submits early in final semester, by deadline in Academic Calendar                    |
|                 | <a href="#">Form 3</a>  | Thesis Evaluation        | Student submits after passing Thesis Defense   |
|                 | <a href="https://www.etdadmin.com/hawii">https://www.etdadmin.com/hawii</a> | Thesis Upload            | Student uploads final approved version of thesis   |
|                 | <a href="#">Form 4</a>  | Thesis Submission        | Student submits after uploading final approved version of Thesis                             |

*Form 1: Student and Graduate Chair talk within the first few weeks of starting as a graduate student.*

*Form 2: Submit Form 2 before the start of the final semester in MS program, as soon as the thesis proposal is approved*

**Forms 3 and 4, and Thesis Upload: University deadlines for thesis completion (and submission of Forms 3 and 4) are by early April for Spring, early July for summer, and early November for the fall semester. For more specifics, check the Academic Calendar:**

<https://manoa.hawaii.edu/registrar/academic-calendar/>

**\*\*\* All submissions MUST BE COMPLETED on or before the last day of teaching in the semester of graduation. \*\*\***

**(this is a HARD DEADLINE of the Mechanical Engineering Department, MUCH EARLIER submission is recommended)**

*Application for Degree: Academic Calendar deadline typically June 1 for Summer, or 3rd Monday of the semester for Fall & Spring.*

**Thesis Requirements: Committee, Oral Examination, Written Thesis**

**Thesis Committee**

| Name | Email Address | Affiliation (Dept, University) | Role                                       |
|------|---------------|--------------------------------|--|
|      |               |                                | Advisor/Committee Member 1/Committee Chair |
|      |               |                                | Committee Member 2                         |
|      |               |                                | Committee Member 3                         |
|      |               |                                | Additional Committee Members (if any)      |
|      |               |                                | Additional Committee Members (if any)      |

*Advisor and Member 2 must be approved Graduate Faculty for the Mechanical Engineering Department*

*Advisor and Committee Members 2 and 3 must be members of the UH Graduate Faculty.*

**Use the following information to do announcements:**

[meoffice@hawaii.edu](mailto:meoffice@hawaii.edu) Send title, Abstract, and short Biography to the ME office staff to announce to ME Department

**Written Thesis Requirements**

| Checklist/Date | Link  | Requirement   |
|----------------|---|---|
|                | <a href="#">Style and Policy Guide</a>                                    | Written thesis follows Graduate Division Style and Policy Manual              |
|                |   | Submit written thesis to Committee members ≥2 weeks before date of oral exam  |
|                |   | Perform final edits in response to Advisor and Committee                      |
|                |   | Obtain final approval from Advisor and Committee                              |
|                | <a href="http://www.etdadmin.com/hawii">http://www.etdadmin.com/hawii</a> | Upload final approved version of thesis                                       |
|                | <a href="#">Checklist</a>   | Confirm completion of Graduate Division Checklist for Masters Plan A Students |

## 11.2 MS Plan B Checksheet

Instructions: This checklist is provided to students and advisors to help with MS Plan B (non-thesis MS) degree planning, and to assist with review of students' progress towards completion of their degrees. Fill in data in each section to confirm that MS Plan B degree requirements have been met. Make sure to confirm that STAR shows completion of all requirements.

**Residency Requirement: Minimum of 2 semesters of full-time graduate work (≥8 cr/semester)**

List semesters:

*More semesters of enrollment required for part-time students; discuss with Graduate Chair.*

*Most BAM/BS-MS students should only need 2 semesters.*

**Time Limit: MS degrees should be completed within about 2 years**

Date Started as Graduate Student:

Anticipated Completion Date:

*All degrees have a 7-year time-limit but this is too long for MS degrees*

**Courses (30 Credits Total Required for MS Degree)**

| Semester(s) Taken | Course Number | Credit Hours | Course Name      | Requirement                          |
|-------------------|---------------|--------------|------------------|--------------------------------------|
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   |               | 3            |                  | ME 600 series                        |
|                   | ME 691        | 1            | Graduate Seminar | ME 691 Seminar                       |
|                   |               | 3            |                  | Technical Elective, 400 or 600 level |
|                   |               | 3            |                  | Technical Elective, 400 or 600 level |
|                   |               | 3            |                  | Technical Elective, 400 or 600 level |
|                   | ME 699        | 2            |                  | ME 699 Directed Reading              |
|                   | Total         | 30           |                  |                                      |

- ME691, ME699 not allowed as Tech. Electives
- Only courses in which a grade of C or better was earned may be counted towards the degree.
- With approval from the Graduate Chair and the UH Graduate Division, up to 14 credits may be transferred from some courses taken before enrollment in the MS program. Talk with Advisor or Graduate Chair for more information if needed.
- Admission to BAM pathway allows designated courses to be double-counted for BS and MS (up to 9 cr.).
- Graduate Division does not approve ME499 for graduate degrees.
- Refer to Graduate Division website for more information on Course Applicability and other rules:  
<https://manoa.hawaii.edu/graduate/course-applicability/>

**Minimum GPA Requirement: Must be at least 3.0 to Graduate**

GPA:

More info:

<https://manoa.hawaii.edu/graduate/required-gdgp/>

<https://manoa.hawaii.edu/graduate/academic-progress/>

**GPA must not fall below 3.0 during any point before graduation either.**

**MS Plan B Required Forms – only the Application for Degree is required, in the final semester**

All forms: <https://manoa.hawaii.edu/graduate/forms/>

|                         |                        |   |
|-------------------------|------------------------|---|
| <a href="#">GradApp</a> | Application for Degree | Student submits early in final semester, by deadline in Academic Calendar |
|-------------------------|------------------------|---|

*Application for Degree: Academic Calendar deadline typically June 1 for Summer, or 3rd Monday of the semester for Fall & Spring.*

## 11.3 PhD Checklist

Instructions: This checklist is provided to students and advisors to help with PhD degree planning, and to assist with review of students' progress towards completion of their degrees. Fill in data in each section to confirm that PhD degree requirements have been met. Make sure to confirm that STAR shows completion of all requirements.

---

### Residency Requirement and Time Limit: Minimum of 3 semesters of full-time graduate work (≥8 cr/semester)

List semesters:

*More semesters of enrollment required for part-time students; discuss with Graduate Chair.*

**PhD degrees should be completed within 7 years**      Date Started:      Anticipated Completion Date:

---

### Courses (50 Credits Total Required for PhD Degree)

| Semester(s) Taken | Course Number | Credit Hours | Course Name      | Requirement   |
|-------------------|---------------|--------------|------------------|---|
|                   |               | 3            |                  | *ME 600 series  |
|                   |               | 3            |                  | *ME 600 series  |
|                   |               | 3            |                  | *ME 600 series  |
|                   |               | 3            |                  | *ME 600 series  |
|                   |               | 3            |                  | **Technical Elective, 400 or 600 level  |
|                   |               | 3            |                  | **Technical Elective, 400 or 600 level  |
|                   |               | 3            |                  | **Technical Elective, 400 or 600 level  |
|                   | ME699         | 4            | Directed Reading | ME 699 taken during semester of Qualifying exam                                     |
|                   | ME 691        | 1            | Graduate Seminar | *ME 691 Seminar or equivalent   |
|                   |               | 3            |                  | ME 600 series   |
|                   |               | 3            |                  | ME 600 series   |
|                   |               | 3            |                  | ME 600 series   |
|                   |               | 3            |                  | ME 600 series   |
|                   |               | 3            |                  | ME 600 series   |
|                   | ME 691        | 1            | Graduate Seminar | ME 691 Seminar  |
|                   | ME699         | 5            | Directed Reading | ***ME 699 taken during semester of Comprehensive Exam, for Direct PhD students only |
|                   |               | 3            |                  | ***ME 600 series, for Direct PhD students   |
|                   |               | 8            | MS Thesis        | ***Up to 8 credits assigned for MS Thesis   |
|                   | Total         | 50           |                  |   |

\* With approval from the Graduate Division and Graduate Chair, some graduate-level courses may be transferred from the student's prior work at UH or another accredited institution. The student must have obtained a B or better and the credits must be in excess of bachelor's degree requirements. These courses can include courses transferred from a prior MS degree.

\*\* With approval from the Graduate Chair, these courses may be transferred from the student's prior MS degree at UH

\*\*\* Students with a prior thesis-based MS degree may apply up to 8 credits from the MS degree to the total number of credit hours counted toward the PhD degree. Students in the Direct PhD program must take 5 credits of ME 699 during the semester of the Comprehensive Exam, and must take an additional 3 credits of graduate level (600-series) coursework.

Please refer to other sections of the handbook for more details on course requirements.

- ME499, ME691, ME699 are not allowed as Tech. Electives
- Only courses in which a grade of C or better was earned may be counted towards the degree.
- Must be enrolled in ME 800 during semester of graduation. ME 800 credits are not counted toward the 50-credit requirement.
- Refer to Graduate Division website for more information on [Course Applicability](#) and other rules:

---

### Minimum GPA Requirement: Must be at least 3.0 to Graduate

GPA:

More info: <https://manoa.hawaii.edu/graduate/required-gdgp/>      <https://manoa.hawaii.edu/graduate/academic-progress/>

**GPA must not fall below 3.0 during any point before graduation either.**

PhD Required Forms: <https://manoa.hawaii.edu/graduate/forms/>

*Must be submitted in order to document progress through degree and completion of degree.*

| Completion Date | Forms   | Description                         | Submission Procedure   |
|-----------------|---|-------------------------------------|--|
|                 | <a href="#">PhD Form 1</a>  | Pre-Candidacy Progress              | Submitted by student after passing the Qualifying Exam   |
|                 | <a href="#">PhD Form 2</a>  | Advance to Candidacy                | Submitted by student after passing the Comprehensive Exam  |
|                 | <a href="#">Checklist</a>   | Grad. Division Checklist            | Review after submitting Form 2, before final semester  |
|                 | <a href="#">GradApp</a>   | Application for Degree              | Student submits early in final semester, by deadline in Academic Calendar  |
|                 | <a href="#">Dissertation Announcement</a>                                     | Final Oral Examination Announcement | Submit at least 2 weeks before scheduled date of Dissertation Defense  |
|                 | <a href="https://sed-ncses.org">https://sed-ncses.org</a>                     | Survey of Earned Doctorate (SED)    | Fill out the electronic Survey of Earned Doctorate (SED) and submit your Certificate of Completion to the Graduate Division Student Services Office in Spalding 353B |
|                 | <a href="#">PhD Form 3</a>  | Dissertation Evaluation             | Student submits after passing Dissertation Defense   |
|                 | <a href="https://www.etdadmin.com/hawaii">https://www.etdadmin.com/hawaii</a> | Dissertation Upload                 | Student uploads final approved version of Dissertation   |
|                 | <a href="#">PhD Form 4</a>  | Dissertation Submission             | Student submits after uploading final approved version   |

**Forms 3 and 4, and Dissertation Upload: University deadlines for dissertation completion (and submission of Forms 3 and 4) are by early April for Spring, early July for summer, and early November for the fall semester. For more specifics, check the Academic Calendar:** <https://manoa.hawaii.edu/registrar/academic-calendar/>

**\*\*\* All submissions MUST BE COMPLETED on or before the last day of teaching in the semester of graduation. \*\*\***

**(this is a HARD DEADLINE of the Mechanical Engineering Department, MUCH EARLIER submission is recommended)**

Application for Degree: Academic Calendar deadline typically June 1 for Summer, or 3rd Monday of the semester for Fall & Spring.

**Dissertation Committee**

| Name | Email Address | Affiliation (Dept, etc.) | Role  |
|------|---------------|--------------------------|---|
|      |               |                          | Advisor/Committee Member 1/Committee Chair                  |
|      |               |                          | Committee Member 2/University Representative/Outside Member |
|      |               |                          | Committee Member 3  |
|      |               |                          | Committee Member 4  |
|      |               |                          | Committee Member 5  |
|      |               |                          | Additional Committee Members (if any)                       |

Advisor and Members 3 and 4 must be approved Graduate Faculty for the Mechanical Engineering Department. Member 2 must be an approved graduate faculty from another department (not ME), who has previously supervised a PhD dissertation. Member 5 must be a member of the UH Graduate Faculty.

**Use the following information to do announcements:**

[meoffice@hawaii.edu](mailto:meoffice@hawaii.edu)

Send title, Abstract, and short Biography to the ME office staff to announce to ME Department

<https://manoa.hawaii.edu/graduate/final-defense/>

Final Oral Examinations for Doctoral Dissertations should be announced to the public using info at this link

**Written Dissertation Requirements**

| Checklist/Date | Link  | Requirement  |
|----------------|---|--|
|                | <a href="#">Style and Policy Guide</a>                                      | Written thesis follows Graduate Division Style and Policy Manual           |
|                |   | Submit written dissertation to Committee ≥2 weeks before date of oral exam |
|                |   | Perform final edits in response to Advisor and Committee                   |
|                |   | Obtain final approval from Advisor and Committee                           |
|                | <a href="http://www.etdadmin.com/hawaii">http://www.etdadmin.com/hawaii</a> | Upload final approved version of dissertation                              |
|                | <a href="#">Checklist</a>   | Confirm completion of Graduate Division Checklist for PhD Students         |