

GRADUATE STUDENT HANDBOOK*



University of Idaho

Department of Mechanical Engineering

Degrees Offered

Master of Engineering in Mechanical Engineering (M.Engr.)

Master of Science in Mechanical Engineering (M.S.)

Doctorate in Mechanical Engineering (Ph.D.)

This information supplements general information in the current University of Idaho Catalog.
A summary of University requirements for graduate degrees can be found at www.uidaho.edu/catalog/.

November 14, 2019

Table of Contents

UNDERGRADUATE PREPARATION FOR GRADUATE STUDENTS IN MECHANICAL ENGINEERING	3
WITH A B.S. DEGREE IN MECHANICAL ENGINEERING FROM AN ACCREDITED U.S. PROGRAM	3
WITH A B.S. DEGREE IN A MAJOR OTHER THAN MECHANICAL ENGINEERING FROM AN ACCREDITED U.S. PROGRAM.....	3
WITH A B.S. DEGREE FROM A NON-ACCREDITED U.S. PROGRAM	3
INTERNATIONAL STUDENTS	4
ENGLISH REQUIREMENTS FOR STUDENTS WHOSE PRIMARY LANGUAGE IS NOT ENGLISH.....	4
INTERNATIONAL STUDENT CREDIT REQUIREMENT	5
GRADUATE STUDENT CODE OF RESEARCH AND SCHOLARLY CONDUCT	5
MASTER OF ENGINEERING (M.ENGR.) REQUIREMENTS	6
MASTER OF SCIENCE (M.S.) REQUIREMENTS	7
PH.D. IN MECHANICAL ENGINEERING REQUIREMENTS	8
OTHER REQUIREMENTS AND STEPS FOR MECHANICAL ENGINEERING GRADUATE DEGREES	9
GPA	9
ANNUAL REPORT OF PROGRESS AND PERFORMANCE	9
APPOINTMENT OF MAJOR PROFESSOR.....	9
GRADUATE COMMITTEE.....	9
<i>M.Engr. Committee</i>	9
<i>M.S. Committee</i>	9
<i>Ph.D. Committee</i>	9
STUDY PLAN	10
QUALIFYING EXAMINATION (PH.D. ONLY)	10
PRELIMINARY EXAMINATION AND ADVANCEMENT TO CANDIDACY (PH.D. ONLY).....	11
APPLICATION TO GRADUATE	11
REQUEST TO PROCEED TO FINAL DEFENSE (M.S. AND PH.D. ONLY)	11
FINAL PRESENTATION/PAPER OR DEFENSE	12
<i>Evaluation Rubrics</i>	12
<i>M.Engr. Final Presentation/Paper</i>	12
<i>M.S. Thesis Defense</i>	12
<i>Ph.D. Dissertation Defense</i>	13
SUBMISSION OF THESIS OR DISSERTATION	13
DEPARTMENT COPY OF THESIS/DISSERTATION	13
APPENDIX A. PLANNED GRADUATE COURSE OFFERINGS – U OF I	14
APPENDIX B. PLANNED GRADUATE COURSE OFFERINGS – WSU	14
APPENDIX C. GRADUATE FORMS	14
APPENDIX D. GRADUATE RESOURCES	15
APPENDIX E. SAMPLE DEFENSE ABSTRACT/ANNOUNCEMENT	16
APPENDIX F. EVALUATION RUBRICS	17
M.ENGR. DEGREE PROJECT EVALUATION FORM.....	17
M.S. AND PH.D. DEFENSE PRESENTATION AND THESIS/DISSERTATION EVALUATION FORM.....	18

For more information contact the Mechanical Engineering Department

Phone: (208) 885-6579

Fax: (208) 885-9031

email: medept@uidaho.edu

website: www.uidaho.edu/engr/ME

Undergraduate Preparation for Graduate Students in Mechanical Engineering

With a B.S. degree in Mechanical Engineering from an accredited U.S. program

Admission to the College of Graduate Studies is open to any student who holds a baccalaureate degree and who presents a scholastic record indicating probable success in graduate work. The General Catalog lists the University's GPA admission requirements. Admission to the Mechanical Engineering Graduate Program is open to any student with the above qualifications if his or her baccalaureate degree is with a major in mechanical engineering from an A.B.E.T. accredited U.S. program.

With a B.S. degree in a major other than Mechanical Engineering from an accredited U.S. program

Students with a B.S. degree from an accredited U.S. engineering program with a major other than mechanical engineering may also be admitted to the Mechanical Engineering Graduate Program. However, such students must demonstrate a basic proficiency in the areas of energy and mechanical systems. This generally requires the student to include courses on the study plan that are assigned as undergraduate deficiencies, in addition to the 30 credits of graduate courses required for the Master's degree. The subjects included in the following list define the areas for which proficiency is expected as an entrance requirement.

- a. Mechanical Systems: Statics (ENGR 210), Dynamics (ENGR 220), Dynamic Modeling of Engineering Systems (ME 313), and Mechanics of Materials (ENGR 350)
- b. Thermo-fluids: Thermodynamics (ENGR 320), Fluid Dynamics (ENGR 335), and Heat Transfer (ME 345)

Each applicant to the program is evaluated individually which may lead to exceptions and/or substitutions to the above requirements.

With a B.S. degree from a non-accredited U.S. program

Students who do not have a B.S. degree from an accredited U.S. engineering program may also be admitted to the Mechanical Engineering Graduate Program. However, such students must demonstrate a proficiency in the basic subjects included in an accredited B.S.M.E. program. This requires the student to include courses, in addition to the 30 credits of graduate courses required for the Master's degree, which are assigned as a part of the student's study plan as undergraduate deficiencies. The subjects included in the following list define the areas for which proficiency is expected as an entrance requirement.

- a. An appropriate combination of mathematics and basic science including multivariable calculus (MATH 275), ordinary differential equations (MATH 310), probability and statistics (STAT 301), chemistry (CHEM 111), and calculus-based physics (PHYS 211, 212, 213).
- b. Sixteen credits of humanities and social sciences including both breadth and depth.
- c. Forty-eight credits of engineering topics which include engineering science and engineering design. Engineering science will include mechanics (ENGR 210, ENGR 220, ENGR 350), thermodynamics (ENGR 320), electrical circuits (ENGR 240), materials science (MSE 201), and transport phenomena (ENGR 335, ME 345). Engineering design must include a meaningful, major engineering design experience built upon fundamental concepts of mathematics, basic science, humanities and social science, engineering topics, and communication skills. A capstone design experience like ME 424/426 is required.
- d. Appropriate laboratory experience such that the student is competent to conduct experimental work. Laboratory classes are required which include an instrumentation class like ME 330.
- e. Appropriate computer-based experience, including computational techniques, needed to solve specific engineering problems.

- f. Competence in written and oral English communication. This requires both English composition (e.g., ENGL 102) and English technical writing (e.g., ENGL 317).
- g. An understanding of the ethical, social, economic, and safety considerations in engineering practice. (See engineering design under item c above.)
- h. Appropriate classes in the energy stem and the mechanical systems stem of mechanical engineering, included under engineering science in c above.

The evaluation of equivalent classes will be done on an individual basis. If a student does not have the equivalent of one of the above classes (except capstone design), the student may take the class or challenge it after appropriate self-study. (See procedures for challenge in UI General Catalog.)

Graduate Record Examination and GPA

Graduate Record Examination (GRE®) test results are recommended but not required for applicants with an engineering baccalaureate degree from a U.S. ABET-accredited program. GRE® general test results are required for all other applicants. GRE scores and the applicant's grade point average (GPA) aid our faculty in estimating the applicant's scholastic abilities, which are suggestive of probable success in graduate work and are helpful in counseling students in their courses of graduate study. The GRE areas of interest and expected minimum scores are as follows:

GRE® Area	Suggested Approximate Scaled Score	Percentile Rank
Verbal (reading comprehension, scale of 130-170, one-point increments)	151	50th
Quantitative (basic Math and problem solving skill, scale of 130-170, one-point increments)	153	65th
Analytical Writing (critical thinking & writing, scale 0-6, half-point increments)	4.0	50th

For more information on the GRE®, see <https://www.ets.org/gre>.

International Students

English Requirements for Students Whose Primary Language is NOT English

The following are acceptable as proof of English competency for students for whom English is not their primary language. The substitutions are considered to be equivalent to a TOEFL® (Test of English as a Foreign Language) score of 550.

- TOEFL® (Test of English as a Foreign Language) minimum score of 550 on the paper test or 79 on the internet test. (see below)
- IELTS (International English Language Testing System) minimum score of 6.5.
- MELAB (Michigan English Language Assessment Battery) score of 77.
- UI American Language & Culture Program (ALCP) with a Level 6 Pass.
- U.S. Education earned degree at an accredited institution OR successfully completed English composition courses at the discretion of the Graduate Admissions Office.

TOEFL®

Area	Internet Based	Minimum Score
Listening	Score of 0 - 30	20
Structure/Writing	Score of 0 - 30	19
Reading	Score of 0 - 30	20
Speaking	Score of 0 - 30	20
Total	0 - 120	79

Test of Written English (TWE®)

A part of the TOEFL® paper-based test also reports an essay rating, the Test of Written English (TWE). This writing test provides information about an examinee's ability to generate and organize ideas on paper, support those ideas with evidence or examples, and use the conventions of standard written English. A minimum 70th percentile score of 4.2 is recommended.

For more information on the TOEFL®, see <https://www.ets.org/toefl>.

International Student Credit Requirement

International students must carry nine (9) credit hours per semester to be in compliance with the rules and regulations of the U.S. Immigration Service. Exceptions to this requirement permitted by the Immigration Service are:

- when a student is in his/her final semester and does not need full credit to graduate;
- for medical reasons, which requires verification from a doctor; and
- for graduate students who have completed all course work and have only thesis or dissertation work remaining.

Graduate Student Code of Research and Scholarly Conduct

The University of Idaho expects that students will engage in academic activity with high standards of honesty and integrity. The academic enterprise is dependent upon such behavior. These values are central to the educational process and are also cornerstone values for citizenship and professional conduct after students leave the University. Graduate students are responsible for learning about appropriate standards for ethical research and scholarly conduct and for following all university policies related to ethical research and scholarly conduct.

The University of Idaho has specific academic honesty expectations described in the Student Code of Conduct. These are minimum standards that are generally applied across the University. However, professors may more specifically define standards for their courses through information described in the course syllabus or other documents. Students must learn the expectations of each instructor since learning environments do vary both in content and teaching style. Sometimes the issues of academic integrity are obvious but other times a student may struggle with issues that appear to be less clear. Students should talk with the instructor if there are concerns about what is expected.

Student Code of Conduct:

<https://www.uidaho.edu/student-affairs/dean-of-students/student-conduct/student-code-of-conduct>

See detailed graduate student regulations in the U of I Graduate Catalog: catalog.uidaho.edu/colleges-related-units/graduate-studies/.

Master of Engineering (M.Engr.) Requirements

General university guidelines require:

- 30 credits are required for the M.Engr. degree in Mechanical Engineering. **Exactly 30 credits should be entered in the Study Plan.**

Off campus Student # Credits	On campus Student # Credits	Requirement
3	3	<input type="checkbox"/> Mathematics/Statistics/Numerical Methods <input type="checkbox"/> ME 541 Mechanical Engineering Analysis <input type="checkbox"/> ME 544 Conduction Heat Transfer, or <input type="checkbox"/> ME 580 Linear System Theory <input type="checkbox"/> 400 or higher-level course in mathematics, numerical methods or statistics approved by the Major Professor and Department Chair.
3	3	<input type="checkbox"/> Continuum Mechanics (ME 540 Continuum Mechanics)
15	15	<input type="checkbox"/> Mechanical Engineering Technical Electives
6	6	<input type="checkbox"/> Other Technical Electives
n/a	2	<input type="checkbox"/> ME 501 Graduate Seminar
3	1	<input type="checkbox"/> Approved Technical Elective or ME 599 Project (<u>Note</u> : ME 599 requires faculty approval in advance to allow an ME 599 section to be added to the schedule.)
		Final Presentation/Report
30	30	TOTAL CREDITS

- Grade of C or better is required in all courses used to meet degree requirements.
- Cumulative GPA of 3.00 in all courses, whether or not they are used toward the degree.
- Combined total of up to 12 non-degree credits, transfer credits, correspondence credits, and approved credits more than eight years old at the time the degree is awarded can be accepted for master's programs requiring 36 or fewer credits.
- Credits earned at an institution that does not grant graduate degrees cannot be transferred to the UI for graduate credit.

Additional Mechanical Engineering Information:

- At least 3 classes that consist primarily of subject material focused in mechanical engineering at the 500 level.
- At least 18 credits must be at the 500 level.
- No credits may be at the 300 level or lower.
- No classes required in our B.S.M.E. curriculum can be used as part of the graduate program, **except** graduate-level Technical Electives with approved Credit Reservation Request Form.
- ME 500 research credits will not count toward the M.Engr. Degree.

Master of Science (M.S.) Requirements

General university guidelines require:

- 30 credits are required for the M.S. degree in Mechanical Engineering. **Exactly 30 credits should be entered in the Study Plan.**

Off campus Student # Credits	On campus Student # Credits	Requirement
3	3	<input type="checkbox"/> Mathematics/Statistics/Numerical Methods <ul style="list-style-type: none"> <input type="checkbox"/> ME 541 Mechanical Engineering Analysis <input type="checkbox"/> ME 544 Conduction Heat Transfer, or <input type="checkbox"/> ME 580 Linear System Theory <input type="checkbox"/> 400 or higher-level course in mathematics, numerical methods or statistics approved by the Major Professor and Department Chair.
3	3	<input type="checkbox"/> Continuum Mechanics (ME 540 Continuum Mechanics)
9-12	9	<input type="checkbox"/> Mechanical Engineering Technical Electives
6	6	<input type="checkbox"/> Other Technical Electives
6-9	7	<input type="checkbox"/> ME 500 Research Credits (<u>Note</u> : Off-campus students can replace 3 credits of research with 3 credits of approved coursework.)
n/a	2	<input type="checkbox"/> ME 501 Graduate Seminar
		Thesis Defense
30	30	TOTAL CREDITS

- Grade of C or better is required in all courses used to meet degree requirements.
- Cumulative GPA of 3.00 in all courses, whether or not they are used toward the degree.
- Combined total of up to 12 non-degree credits, transfer credits, correspondence credits, and approved credits more than eight years old at the time the degree is awarded can be accepted for master's programs requiring 36 or fewer credits.
- Credits earned at an institution that does not grant graduate degrees cannot be transferred to the UI for graduate credit.

Additional Mechanical Engineering Information:

- At least 3 classes that consist primarily of subject material focused in mechanical engineering at the 500 level.
- At least 18 credits (including research credits) must be at the 500 level.
- No credits may be at the 300 level or lower.
- No classes required in our B.S.M.E. curriculum can be used as part of the graduate program, **except** graduate-level Technical Electives with approved Credit Reservation Request Form.

Ph.D. in Mechanical Engineering Requirements

Students must satisfy the U of I course requirements for the M.S. or M.Engr. degree. Additional details of the individual program for the doctoral degree are established by the student and the supervisory committee.

General university guidelines require:

- Minimum of 78 credits beyond the bachelor's degree. Exactly 78 credits should be entered in the Study Plan.
- At least 33 of the 78 credits must be in courses other than Doctoral Research / Dissertation.
- At least 39 of the 78 credits at UI while matriculated in the College of Graduate Studies.
- At least 52 credits in courses numbered 500 and above, including research and dissertation.
- Graduate GPA above 3.0.

Mechanical Engineering Department requires:

- Satisfy the U of I course requirements for the M.S. or M.Engr. degree.
- On-campus students** must take 3 credits Graduate Seminar (ME 501). **Off-campus students take 3 additional course or research credits.**
- At least one-third of credits beyond the bachelor's degree must be in research (26 cr).
- At least one-half of the credits beyond the bachelor's degree must be in M.E. courses.
- Maximum of 30 credits may be more than eight (8) years old when the degree is conferred, **if approved** by the major professor and committee.
- All other degree requirements must be completed no later than five (5) years after the date on which the candidate passes his/her preliminary examination.

Examination requirements are:

- Qualifying Exam**
- Preliminary Exam**

See detailed information in the Qualifying Examination and Preliminary Exam and Advancement to Candidacy sections in this handbook.

Other Requirements and Steps for Mechanical Engineering Graduate Degrees

Print the Steps to a Graduate Degree summary sheet and refer to it often: www.uidaho.edu/-/media/UIDaho-Responsive/Files/cogs/BrochuresHandbooksGuides/Steps-How-To.pdf. It provides answers to many common graduate student questions. Find additional information: www.uidaho.edu/cogs/degree-steps.

GPA

University of Idaho policy requires that graduate students maintain a 3.0 or higher GPA. If a student's GPA is less than 3.0 in any semester, the student is placed on probation; if it occurs for two semesters, the student is disqualified. (See detailed explanation in the U of I Graduate Catalog: catalog.uidaho.edu/colleges-related-units/graduate-studies/.)

Annual Report of Progress and Performance

Each year in the spring semester graduate students are required to meet with their Major Professor and complete the Annual Report of Progress and Performance form, which is available on the COGS website: www.uidaho.edu/cogs/forms. Students are responsible for completing the form and submitting it to the department. The deadline for the form is the second Friday in April.

Appointment of Major Professor

All degree-seeking graduate students are required by the department and the College of Graduate Studies to select or be assigned a major professor by the second semester of enrollment in the graduate program. Non-thesis students are strongly encouraged to do this even earlier; preferably by the end of the first semester. A student's major professor must be a member of the U of I Graduate Faculty. Complete the [Major Professor, Committee Member Appointment or Committee Changes](http://www.uidaho.edu/cogs/forms) form (www.uidaho.edu/cogs/forms) and submit it to the Mechanical Engineering Office for the department chair's approval. **Students must appoint a major professor before submitting the Study Plan.**

Graduate Committee

Choose a committee in consultation with the major professor. The committee must include the major professor as chair. Review faculty profiles, including research areas, on the Mechanical Engineering website. (<https://www.uidaho.edu/engr/departments/me/our-people/faculty>)

M.Engr. Committee

A committee is not required for the M.Engr. Degree. Students must appoint a major professor.

M.S. Committee

A thesis master's committee consists of at least three members, which includes the major professor who must be from the same administrative unit as the student. The remainder of the committee should be members who provide unique value and insight to a student's program.

Ph.D. Committee

A doctoral committee consists of at least four members, including the major professor from the same administrative unit as the student. The remainder of the committee must consist of individuals who provide breadth and depth to a Ph.D. candidate's program.

All members of graduate committees must be UI faculty, adjunct/affiliate faculty, or on the graduate faculty at another institution. The appointment of a committee member not meeting the aforementioned criteria can be granted on a case by case basis with permission of the Dean of the College of Graduate Studies. At least one-half of the committee members must be UI graduate faculty. Additional members may be appointed if desired. The appointment of a committee member not meeting the aforementioned criteria can be granted on a case by case basis with permission of the Dean of the College of Graduate Studies.

Use the [Major Professor, Committee Member Appointment or Committee Changes](http://www.uidaho.edu/cogs/forms) form (www.uidaho.edu/cogs/forms) to add or remove a major professor or committee member.

Study Plan

Completing a graduate degree requires submission of a Study Plan in Degree Audit on VandalWeb. Graduate students should complete the study plans in consultation with the major professor. The study plan must be completed and submitted in VandalWeb *before the end of the second semester* in the graduate program. For M.Engr. and M.S. degrees, enter exactly 30 credits. For Ph.D. degrees, enter exactly 78 credits. Corrections to the study plan are also submitted in VandalWeb. The best time to correct the plan is early in the semester of graduation. Study Plan help can be found at <http://www.uidaho.edu/registrar/graduation/audit>.

Qualifying Examination (Ph.D. Only)

The Ph.D. qualifying examination, administered **within the first year** and before completion of the majority of course work, is designed to evaluate preparation for doctoral course work and provide guidance in planning the Ph.D. program. The examination consists of a two-hour oral in specified subject areas at the advanced undergraduate level. Areas of expected qualification are:

- Thermo-fluids and Energy Systems - Thermodynamics, Heat Transfer, Fluid Mechanics, (Course preparation:* ME 322, ME 345, and ENGR 335 or equivalent)
- Mechanics and Mechanical Design - Statics, Dynamics, Mechanics of Materials and Machine Design. (Course preparation:* ENGR 210, ENGR 220, ENGR 350 and ME 325 or equivalent)
- Engineering Mathematics - Dynamic Systems, Linear Algebra, and Differential Equations. (Course preparation:* ME 313, Math 310, and Math 330)
- In lieu of the foreign language proficiency requirement, the ME department requires demonstrated proficiency in numerical methods and computer programming. This requirement may be satisfied by successful completion of courses, or other evidence of proficiency.

The department chair, in consultation with the major professor, will appoint examiner(s) in each area.

- Dates for the oral examination are to be arranged with personnel in the Mechanical Engineering Department office.
- Results of the examination must be communicated to the department chair in a memo from the committee chair. The memo is put into the student's file.

The possible outcomes of the Qualifying Examination are the following:

- Pass – continue in the PhD program.
- Fail - dismissal from the PhD program.
- Deferral - passing is contingent upon successful completion of one or more of the following: further oral examination, written exam, and/or prescribed coursework (with a grade of A or B).

Preliminary Examination and Advancement to Candidacy (Ph.D. Only)

The purpose of the preliminary exam is to ensure that the PhD candidate has achieved adequate technical knowledge, sufficient research progress, and adequate planning for the remainder of the research in order to successfully complete and defend the research dissertation.

The major professor, along with the committee, will administer the preliminary examination when the majority of the course requirements on the student's study plan have been completed, and sufficient research progress has been achieved by the PhD candidate. The Preliminary Examination must be completed **at least one year before anticipated graduation**.

The Preliminary Examination consists of the research proposal presentation (approximately 30 min. to 60 min.) to the graduate committee, followed by a session of questions by the committee members. During the Preliminary Examination, the graduate committee will also review the courses taken up to that point by the Ph.D. candidate, the grades obtained in each course, and the current GPA. The graduate committee will evaluate the research progress, and any publications resulted or planned from the dissertation research.

The possible outcomes of the Preliminary Examination are the following:

- Pass - advance to candidacy.
- Fail - do not advance to candidacy.
- Deferral - additional examination will be specified by the committee, such as a revised presentation of the proposed research.

At the conclusion of the examination, the *Report of Preliminary Examination and Advancement to Candidacy* form (www.uidaho.edu/cogs/forms) must be filled out and submitted to the College of Graduate Studies.

Application to Graduate

The best time to apply for graduation is within one semester of completing degree requirements. The application is on VandalWeb under "Apply to Graduate".

Request to Proceed to Final Defense (M.S. and Ph.D. only)

A *Request to Proceed to Final Defense* form (www.uidaho.edu/cogs/forms) must be submitted to the College of Graduate Studies before the defense. For Ph.D. students, the form must be submitted at least 10 working days before the defense. M.S. students do not have a specific deadline but must submit the form before the defense.

Bring completed form to the Mechanical Engineering Office for submission to COGS. (If students submit the form directly to COGS students should make a copy first and submit it to the Mechanical Engineering office.) The College of Graduate Studies will email the student a *Report of Final Defense* form which the student must bring to the defense. It will be signed by the committee after the defense and submitted to the College of Graduate Studies by the major professor.

In return for the completed *Request to Proceed with Final Defense of Dissertation/Thesis* form, COGS will provide the student with the *College of Graduate Studies the Final Defense Report* form to be signed by the committee after the defense. It will be submitted to the College of Graduate Studies by the major professor.

Final Presentation/Paper or Defense

Evaluation Rubrics

Rubrics are used to evaluate the final presentation/paper or defense. They are located in Appendix F.

M.Engr. Final Presentation/Paper

Students must be enrolled in the university the semester they complete their final presentation/paper. A committee of two professors who taught courses relevant to the topic will review the student's work, which may be presented/submitted in one of the following ways:

- An oral presentation of 20-25 minutes, given on campus, followed by a discussion to allow questions and comments between the committee and the student.
- An oral presentation of 20-25 minutes submitted electronically. Graduate students must then take part in a conference call to allow questions and comments between the committee and the student.
- A paper of no less than five pages of single spaced text in a 12-point font with 1-inch margins. (The inclusion of figures, equations, tables, and references is encouraged but does not contribute to the page count.) This will be followed by a conference call to allow questions and comments between the committee and student.

A one-hour follow-up examination may be required at the discretion of the committee.

The topic of the presentation/paper will be the student's choice, however it must be approved by the major professor. The topic should:

- Expand on a project or problem from a class or classes required for the degree, **or**
- Describe a project from your profession that used knowledge you gained from a class or classes required for the degree.

Non-Thesis Requirement Report Form

This form is available on the COGS website: www.uidaho.edu/cogs/forms. It will be completed by the major professor after successful completion of the final presentation then submitted to COGS.

M.S. Thesis Defense

Students must be enrolled in the university the semester they complete the Thesis Defense, either in a class or ME 500 Master's Research and Thesis.

The final thesis defense is scheduled in conjunction with the major professor. All graduate committee members must be present at the defense. Graduate students are responsible for determining a suitable date and time.

The thesis defense starts with a presentation (~30-60 minutes) describing the student's thesis research work, followed by time for questions. Following a short break, an oral examination may be given on course work and/or matters related to the thesis. After deliberation, the graduate committee may require additional research, thesis content, or edits to the thesis. In case of failure, students may be required to repeat the thesis defense.

A week before the defense students should provide a copy of the abstract to the Mechanical Engineering office so it can be posted. (See sample abstract in Appendix E.) A draft of the thesis should be submitted to committee members at least two weeks prior to the date of the defense.

Ph.D. Dissertation Defense

Students must be enrolled in the university the semester they complete the Dissertation Defense, either in a class or ME 600 Doctoral Research and Dissertation.

The final dissertation defense is scheduled in conjunction with the major professor. All committee members must be present at this examination. Graduate students are responsible for determining a suitable date and time.

The dissertation defense starts with a presentation (~45-60 minutes) describing the dissertation research work, followed by time for questions. After deliberation, the graduate committee may require additional research, dissertation content, or edits to the dissertation. In case of failure, students may be required to repeat the dissertation defense.

At least ten days before the defense students should provide a copy of an abstract to the Mechanical Engineering office so it can be posted. See sample abstract in Appendix E. A draft of the dissertation should be submitted to committee members at least two weeks prior to the date of the defense.

Submission of Thesis or Dissertation

Submission of the thesis/dissertation is mostly electronic. See: www.uidaho.edu/cogs/degree-steps and find "Thesis & Dissertation Resources, Preparing, Defending and Submitting Your Thesis or Dissertation."

Graduate students should contact the Thesis and Dissertation Advisor for the College of Graduate Studies with questions regarding the submission process, and to arrange review of a draft of their thesis document in ETD (<https://www.etsadmin.com/main/home?siteid=126>) for compliance to the requirements listed in the Thesis/Dissertation Handbook.

Department Copy of Thesis/Dissertation

One unbound copy of the thesis or dissertation, with a completed signature page, is required by the Mechanical Engineering Department. This copy doesn't have to be on bond paper and can be printed front-and-back (duplex).

If students would like a bound copy of the thesis for themselves or the major professor, be sure to make arrangements with the Mechanical Engineering office staff or with the U of I Copy Center.

Appendix A. Planned Graduate Course Offerings – U of I

See www.uidaho.edu/engr-me-future-course-plan for more information. Hard copies are available in the ME office.

Appendix B. Planned Graduate Course Offerings – WSU

See https://s3.wp.wsu.edu/uploads/sites/473/2019/06/MME_5_year_plan_2019-2024_draft.pdf for more information. Hard copies are available in the ME office.

Appendix C. Graduate Forms

Form	Located
Annual Evaluation and Performance Report	www.uidaho.edu/cogs/forms
Application for Advanced Degree	VandalWeb. Submit electronically.
Appointment of Major Professor and/or Committee	www.uidaho.edu/cogs/forms
Change of Curriculum	www.uidaho.edu/cogs/forms
Change of Registration	www.uidaho.edu/registrar/forms
College of Graduate Studies Academic Reinstatement	www.uidaho.edu/cogs/forms
College of Graduate Studies Petition	www.uidaho.edu/cogs/forms
College of Graduate Studies Re-enrollment	www.uidaho.edu/cogs/forms
Credit Reservation Request	www.uidaho.edu/registrar/forms
Non-Thesis Requirement Report	www.uidaho.edu/cogs/forms
Non-UI Faculty Committee Member Appointment	www.uidaho.edu/cogs/forms
Qualifying Examination Result Memo	Memo written by chair of the examination committee and sent to department chair.
Report of Final Defense	www.uidaho.edu/cogs/forms
Report of Preliminary Examination and Advancement to Candidacy	www.uidaho.edu/cogs/forms
Repository Agreement	www.uidaho.edu/cogs/forms
Request to Proceed to Final Defense	www.uidaho.edu/cogs/forms
Study Plan (Create/Change)	VandalWeb. Submit electronically.

Appendix D. Graduate Resources

Resource	Located
Dates and Deadlines	www.uidaho.edu/cogs/deadlines
PDF: Deadline Brochure	www.uidaho.edu/-/media/Uidaho-Responsive/Files/cogs/Thesis-and-Dissertation-Resources/spring-2019-fall-2019-dates-and-deadline-brochure.pdf
Fellowship Atlas	www.uidaho.edu/cogs/secure?destination=/cogs/secure/atlas
Funding Opportunities	www.uidaho.edu/cogs/student-resources/current-op
U of I Graduate Catalog	www.catalog.uidaho.edu/colleges-related-units/graduate-studies/
Graduate & Professional Student Association (GPSA)	www.uidaho.edu/cogs/student-resources/gpsa
Graduate Student Resources	www.uidaho.edu/cogs/student-resources
Newly Admitted Students	www.uidaho.edu/cogs/student-resources/newly-admitted
Research	www.uidaho.edu/cogs/student-resources/research
Steps to a Graduate Degree	www.uidaho.edu/cogs/degree-steps
PDF Guide: Steps to a Graduate Degree	www.uidaho.edu/-/media/Uidaho-Responsive/Files/cogs/BrochuresHandbooksGuides/Steps-How-To.pdf
Study Plan/Degree Audit Instructions	www.uidaho.edu/cogs/forms
Teaching/Research Assistant	www.uidaho.edu/cogs/student-resources/tara-resources
Theses and Dissertations	www.uidaho.edu/cogs/student-resources/thesis-dissertation
Workshops	www.uidaho.edu/cogs/student-resources/workshops

Appendix E. Sample Defense Abstract/Announcement

Experimental Determination of Young's Modulus in a Cantilevered Beam

A thesis defense by Joseph Nature
for the
Master of Science in Mechanical Engineering Degree

Thursday, March 23, 2017, 11:00 A.M.
CNR room 14

Abstract

This paper describes the experimental determination of Young's modulus using strain gauges on a cantilevered beam. The experimental apparatus consisted of a 30 cm long cantilevered steel beam with metallic strain gauges mounted to the top and bottom of the beam at the same distance from the fixed end. These two strain gauges were used to in half-arm Wheatstone bridge circuit to measure the strain from bending stress caused by hanging weights from the free end of the beam. At each loading of the beam, bending stress was calculated at the location of the strain gauges. Multiple loadings were performed, and the recorded data was used to create a stress vs. strain plot. A line was fit to the data using least-squares regression. The slope of this line, known as Young's Modulus, was determined to be 198 ± 5 MPa, which is consistent with the standard published value of 200 MPa.

Appendix F. Evaluation Rubrics

M.Engr. Degree Project Evaluation Form

Project Evaluation Rubric <i>(check one box in each row)</i>			4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
CONTENT	Research	Historical and modern approaches to problems found and considered.				
	Methods	Engineering analysis and/or experimental approaches applied.				
	Results and/or Deliverables	Delivered solutions, analysis, and/or deliverables.				
DELIVERY	Organization	Logically ordered for intended purpose with effective transitions between topics, sections and chapters.				
	Visual Aids	Graphics and/or figures as tools for communicating project concepts.				
	Style	Language and style conveys meaning to audience.				

M.S. and Ph.D. Defense Presentation and Thesis/Dissertation Evaluation Form

Defense Presentation Evaluation Rubric <i>(check one box in each row)</i>			4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
CONTENT	Context	Understanding of context, audience and purpose.				
	Organization	Organized for intended purpose, transitions between topics.				
	Evidence	Weaves together data and analysis to support conclusions.				
DELIVERY	Visual Aids	Graphics are tools for communicating presentation concepts.				
	Style	Language and style conveys meaning to audience.				

Thesis/Dissertation Evaluation Rubric <i>(check one box in each row)</i>			4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
CONTENT	Originality	Original treatment of, or new perspective on, the topic.				
	Research Approach	Research approach builds on previously published works, combining effective methods with novel and/or modern approaches.				
	Results	Data collection and assessment results are clear and logical, supporting the goals of the paper.				
	Scholarship	Content reviews and builds on appropriate prior work.				
	Relevance	The paper conveys the significance of its contribution.				
FOCUS	Goals	The goals are developed and explicitly stated.				
	Order	The order in which ideas are presented is clear, logical and effective.				
	Conclusions	The conclusions are supported by the data.				
LANGUAGE	Style	The paper is clear, concise, consistent, and is easy to read and understand.				
	Mechanics	The writing is absent of grammar and/or spelling errors.				