BYU
Mechanical Engineering Graduate Studies

PhD Student Handbook

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INTRODUCTION

This student handbook contains a summary of policies and procedures that PhD graduate students in the Department of Mechanical Engineering are expected to know and follow in the course of obtaining a degree; however, it does not cover every conceivable situation. Students are invited to counsel with their Graduate Committee Chair, the Graduate Advisor, or the Graduate Coordinator about special circumstances. Since timing is often important, students should discuss any concerns as soon as possible.

LEARNING OUTCOMES ESTABLISHED FOR THE MECHANICAL ENGINEERING PhD PROGRAM

1. Program graduates will develop an in-depth understanding of the fundamental principles related to a sub-discipline of mechanical engineering.
2. Program graduates will have demonstrated a mastery of a broad range of topics related to mechanical engineering, including applied mathematics, and an ability to study and learn independently.
3. Program graduates will have demonstrated the ability to perform independent research by completing a dissertation project which results in the creation of new knowledge and/or the advancement of the state of the art in a specific sub-discipline of mechanical engineering. The dissertation project will contain elements of design, experimentation and/or analysis and will require innovation and creativity.
4. Program graduates will develop technical writing and oral presentation skills.
5. Program graduates will demonstrate a pattern of living consistent with high ethical and moral standards.

STEPS FOR COMPLETING THE PhD PROGRAM

Apply online through the Graduate Studies website. Access the application through use of the Admissions menu. Applicants must have a BS in Mechanical Engineering or in an allied discipline (e.g., other engineering, physical, and mathematical science disciplines) with at least a 3.0 GPA in the last 60 hours of upper division coursework. (Previous 5-year average of those admitted: 3.64) Applicants with a BS in an allied discipline will be admitted provisionally and may need to take some or all of the undergraduate courses as outlined in the Policies & Procedures section of this handbook (See P&P 1). In addition to the application and other documents outlined in the application process, the Department of Mechanical Engineering requires three letters of recommendation from people who are familiar with the candidate’s abilities and potential to succeed in completing a PhD degree program and a brief personal statement of intent.

The Statement of Intent serves two major purposes: a) to facilitate admissions decisions, and b) to guide the application to potential dissertation advisors in the area of
the applicant’s interest. The primary audience of the Statement of Intent is the admissions committee which is composed primarily of professors in the Department of Mechanical Engineering and potential dissertation advisors.

Considerable latitude is granted in the content and organization of the Statement of Intent. However, the following information is expected to be included:

- **The purpose in pursuing a graduate degree in mechanical engineering at Brigham Young University.** This may include why the student has decided to pursue a graduate degree in mechanical engineering and how it fits into his/her career goals. Consideration may be given as to why the student is applying to study at Brigham Young University.

- **The intended area of study within mechanical engineering.** This may be as broad or as narrow as is applicable to the student’s current status. For example, if the student has already committed to complete research with a particular professor, that should be stated. If he/she is interested in a particular sub discipline (e.g. thermal science, design, materials, etc.), that should be mentioned also. On the other hand, if the student is still exploring various fields, he/she may list several areas that are of the most interest. The information provided in the Statement of Intent does not commit the student to a particular research area but helps guide the application to potential dissertation advisors.

Other information may also be applicable, including the following:

- **Description of special preparation, abilities, or motivation that will contribute to success in graduate studies.** This may include prior experiences that have prepared the student for graduate study and a career. Examples include prior research experience, publications, patents, and related employment.

- **Special considerations** that are not addressed elsewhere in the application. If there were special circumstances that explain problems or inconsistencies in the student’s records, they may be included.
  - Other information the applicant feels may be helpful in making admissions decisions. Students should be careful to provide information that is relevant to the application process. Evaluators prefer shorter, focused Statements of Intent over those that are too long.

**Take required entrance exams.** All applicants must take the general GRE exam. Average scores for students admitted during recent years are: V-512; Q-717; W-3.8. Students with scores below these numbers must show strength and aptitude through other means to be admitted. If English is not the student’s native language, and a four-year bachelor's degree (or higher) from an educational institution within the United States has not been earned, the student must also take the TOEFL or IELTS. **University minimum scores** are required. Scores for the entrance exams must be sent directly to Brigham Young University. Applicants should sit for the GRE exam and the TOEFL or IELTS exams, at least six weeks prior to the application deadline.

**Verify that all required information has been submitted.** Applicants for fall semester must submit a complete application by January 15th. Applicants for winter semester must submit a complete application by September 15th. Students who apply for fall semester may attend spring or summer term upon departmental approval, after acceptance into the graduate program.
Select Graduate Committee Chair (Advisor). The best time is during the admission process; otherwise, the selection must be made during the first few weeks after entrance into the graduate program. Graduate students should identify professors whose research interests align with their own by reviewing the profiles of faculty members. The Graduate Committee Chair must have graduate faculty status in the Department of Mechanical Engineering. He or she will provide information regarding the availability of RA or TA funding (See P&P 2). He or she will also assist in developing a Program of Study and supervise research and the completion of a thesis. A minimum of two additional faculty members with graduate faculty status must be selected as committee members. All committee members will assist in advising the student concerning course work, degree requirements and research.

Meet registration requirements.
Students should:
1. Register for at least two hours of credit in the first semester or term of admission. International students must register for 9 credits in Fall or Winter and 4.5 credits in Spring or Summer.
2. Register for at least two hours of credit during any semester (one hour during spring and summer terms) in which they use university facilities, consult with faculty, defend their thesis, graduate, or work as a TA or RA.
3. Register for at least six hours in an academic year or automatically be dropped from the graduate program.
4. Distribute dissertation credit hours (Me En 799R) reasonably throughout the graduate program, concurrent with the research being conducted. It is possible to register for as little as two dissertation credits per semester (one credit per term).
5. Fulfill residency requirement - at least two consecutive semesters of six or more hours of registration while living and conducting research in the general vicinity of the university, where the student has ready access to the research facilities.
6. Complete all requirements within eight years of enrollment in the program.

Pass the Comprehensive Qualifying Examination. A written examination must be taken within the first year of the PhD program. Exams are offered during the last week of March and September each year. Students will be notified one month beforehand. Exam topics and samples are available for study from the Graduate Advisor. Each candidate takes four exams:
- Math
- Three exams selected from any of the following subjects:
  - Applied mechanics area: dynamics, material science or strength of materials
  - Thermal science area: thermodynamics, fluid mechanics, heat transfer, or design
The mathematics exam is closed book, no notes nor calculator. All other exams are open book, open notes. Solution manuals are not allowed for any exam. The exams are evaluated by committees consisting of graduate faculty. There are three possible
scores: pass, marginal fail, fail. Exams may only be taken twice. All exams must be passed.

Possible paths after first sitting:
- pass all exams – student continues in program
- failure of any exam – student retakes failed exam(s)

Possible paths after second sitting:
- pass all retakes – student continues in program
- failure of any retake – student is terminated from program
- marginal fail of any retake – student takes an oral exam

Possible paths after oral exam:
- pass – student continues in program
- fail – student is terminated from program

Submit Program of Study (ADV Form 3). It is important for students to submit a Program of Study as soon as possible so that they can identify a proper course of study that will support their specific interests and lead to timely graduation. Registration for the second semester should not occur until a Program of Study has been submitted. Students must submit their Program of Study by the end of the first semester; otherwise, a HOLD may be placed on the student’s registration.

The Program of Study form and all other forms required for a graduate degree program are available online from the Graduate Studies Office. In consultation with their Graduate Committee Chair, students should list the coursework necessary to complete the degree program. A total of 66 hours beyond the baccalaureate degree is required, which may include up to 18 hours of dissertation credit (Me En 799R) and 30 hours of combined master’s course work and thesis credit. PhD students are required to take six credit-hours of approved courses toward strengthening their understanding of mathematics or statistics. These courses can be from the pre-approved list of courses or the student’s graduate committee can approve other courses to meet this requirement. A list of approved courses is available in the Policies and Procedures section of this guide (See P&P 3). Audit courses, online courses and/or independent study courses are not accepted. No undergraduate level courses may apply toward a doctoral degree (except those already applied to a master’s degree). Credit may be transferred from another university under certain circumstances. Please refer to the graduate catalog for details regarding transfer credits.

The Program of Study must be approved and signed by the Graduate Committee. Final approval of the Program of Study and the Graduate Committee by the Graduate Coordinator is required.

Students may change the Program of Study courses or the Graduate Committee members by completing a Request for Program of Study Change (ADV Form 3b). This form may be submitted at anytime during the degree program; however, approval from the Graduate Committee and the Graduate Coordinator should be obtained prior to taking coursework not on the previously approved Program of Study.

In order to graduate students must have a 3.0 GPA on their program of study courses. In no instance is a D credit accepted.
**Receive Biannual Evaluations.** The progress of each graduate student will be evaluated twice each year, in January and May. The student’s Graduate Committee Chair rates each student as making satisfactory, marginal, or unsatisfactory progress. The Committee Chair may consult with other members of the Graduate Committee when determining this rating. The committee chair reports the student’s progress to the Graduate Advisor. Students whose progress is rated as marginal or unsatisfactory will receive notification. The student should immediately sign and return the evaluation to the Graduate Advisor. The notification given to a student rating will include:

- Specific tasks the student must complete in order to regain a satisfactory ranking.
- Clear deadlines established for each of the specified tasks.
- A recommendation of which faculty member(s) they can contact for more information or support.

Marginal progress may include the following:

- Failure to submit a Program of Study and establish a Graduate Committee by the end of first semester
- Failure of initial round of qualifying exams
- Failure to submit a prospectus within six months from the time the qualifying exams were passed
- Poor performance in research or registering for dissertation hours when little or no work has been performed
- Minimal contact with committee chair

Unsatisfactory progress may include the following:

- Failure to submit a Program of Study since prior evaluation
- Failure of secondary round of qualifying exams
- Failure to submit an approved prospectus since prior evaluation
- Failure to resolve any problems or fulfill any requirements indicated in a previous marginal or unsatisfactory review
- Minimal or no contact with committee chair
- Poor performance in research or registering for dissertation hours when little or no work has been performed
- Program of Study GPA below 3.0 or Program of Study course grade below a C
- Unacceptable ethical or professional behavior

If a student receives a marginal rating and has not improved his or her performance by the time of the next evaluation, the student will be rated as unsatisfactory. If he/she receives a marginal and an unsatisfactory or two unsatisfactory ratings in succession, the department must either terminate the student’s program at the conclusion of the semester or submit a petition to Graduate Studies making a convincing case that the student be given another semester to demonstrate satisfactory progress. A copy of a contract listing student and faculty responsibilities and a time line is attached to any petition.

The biannual evaluation will also be used by the Financial Aid Department to determine eligibility for financial aid. Students who feel their rating is in error may file an academic grievance according to the Academic Grievance Policy (See P&P 4).
Defend and submit dissertation prospectus. PhD Students must submit and defend their prospectus within six months from the time the qualifying exams were passed, and it must be approved at least one year prior to the dissertation oral examination. Students should schedule the defense with the graduate advisor.

The purpose of the prospectus is to define the scope of the dissertation project. The prospectus establishes the minimum requirements for completion of the dissertation and helps prevent the student from undertaking an unrealistic project. When written early in the program, the prospectus provides focus that will help expedite completion of the dissertation. (See P&P 5 for an outline, title page and approval page of the prospectus) The student will be granted post-prospectus status and receive the accompanying pay raise, if applicable, once the prospectus has been approved and submitted to the graduate advisor. If the prospectus is not submitted on a timely basis funding may be temporarily withheld.

Present in Seminar. Graduate Seminar is held on a weekly basis during fall and winter semesters only. All PhD students are required to attend at least 75 percent (10 times per semester) for two semesters during their first year whether or not they attended as an MS student. Sometime during the final year in the program, each student will be scheduled to give a technical presentation in Graduate Seminar. The objective is to convince an engineering audience that something of value is being performed, and to convey enough information on why, what and how it is accomplished. The presentation should be understandable to an audience of engineers, avoiding jargon in a particular field.

An overall motivation for the work should be stated at the start. The use of pictures and graphs, meaningful to the audience, should take precedence over excessive wording on slides. Students should interpret their results and graphs for the audience – connecting them with the overall objective, remembering that the audience has not had the benefit of several months of studying the topic.

The seminar presentation should last 15 minutes with no more than 5 minutes allowed for questions following the presentation. Many presenters use a rule of thumb of approximately one slide per minute; however, this may vary according to style.

Example:
- Introduction of the problem including motivation and background information (3 slides)
- Review of pertinent literature (2 slides)
- Identification of holes in the literature that you will be addressing (1 slide)
- Your proposed research method (3 slides)
- Preliminary results (3 slides)
- Overall summary of parameters that will be explored and why (1 slide)
- Timeline of proposed work (1 slide)
- Summary of what will have been learned (1 slide)
Students should review the presentation with their advisor for feedback. It is recommended that students practice their presentation several times, including in front of their research group, to improve timing and wording. Students’ appearance and dress during the presentation should portray respect for the audience.

**Complete research and write dissertation.** All work toward the dissertation should be completely open for public review and publication. Any exceptions must have written approval from the department and college in advance of any work performed. It is possible to delay release of a dissertation for up to one year to allow time for patent applications or to otherwise accommodate confidentiality.

Students must follow university/college guidelines when formatting their document. A Word template or a LaTex template can be obtained from the graduate advisor. It is the student’s responsibility to make sure the proper formatting guidelines have been followed. (See P&P 6) Students should plan on submitting their best draft of the dissertation to their committee chair at least one month prior to their defense.

**Apply for graduation.** Application for graduation can be accessed through Route Y > School > Apply for Graduation. Please note that in order to apply students must have a) completed all course work or are currently taking remaining classes, b) submitted a current ecclesiastical endorsement, and c) received verbal permission from the Committee Chair. Application for graduation must occur prior to scheduling a defense.

**Defend and finalize dissertation.** Students must have approval of their Graduate Committee and the Graduate Coordinator in order to schedule the oral examination (defense), and should obtain their signatures on the Departmental Scheduling of Final Oral Examination (ADV Form 8c). Care should be given in establishing the date, time, and place of the defense. Once scheduled and announced it is binding and cannot be changed. The Graduate Advisor will perform a preliminary review of the dissertation format and schedule the oral examination. This must be done at least two weeks in advance of the exam date. Defending between semesters/terms is not permitted. For the exact deadline see Graduation Deadlines (ADV Form 8-2). Please allow at least one additional day for the scheduling process.

Members of the Graduate Committee will serve as the examining committee. Spouses, parents, and friends are welcome to attend the oral examination; small children should not attend. The examination always follows a set format:

- The student’s research is presented.
- The general audience is excused.
- Questions are asked by committee members.
- The decision (pass, pass with qualifications, recess or fail) is announced.

The presentation should last about 30 minutes, covering the main points. Consideration should be given to the following expectations:
1. A well thought-out, well-organized, cogent summary of the student’s work including
   a. An explanation of how the current work relates to the student’s discipline
   b. The rationale behind the project in the context of available literature
   c. If the student has been part of a research team or lab, an explanation of the student’s intellectual contribution to the project and a description of how the student’s work fits into the broader research conducted in this lab
   d. The questions or issues the current work was designed to address
   e. The way the design, method, and/or approach addressed those questions
   f. The analysis of data gathered
   g. The results, outcomes, final products, or performance
2. An interpretation of results, finds, contributions, insights, and conclusions and their significance. What does this work add to existing knowledge?
3. A discussion of implications the work suggests for future research or creative endeavor
4. A discussion of any applied or clinical implications suggested by the work
5. Thoughtful, well-founded responses to all questions the committee members might ask.

It is likely that the Graduate Committee will request revisions of the dissertation. Students should then discuss the revisions with committee members and do their best to comply with the requests. If the decision of the committee is “pass with qualifications,” Committee Chair will need to sign the Report of Committee Action for Final Oral Examination (ADV Form 10), indicating that all qualifications requested by the committee have been accepted.

**Note:** Students should allow at least a full week following their defense to finish all remaining requirements before leaving campus.

**Submit dissertation to Graduate Committee and Graduate Advisor.** After revisions to the dissertation have been made and approved, students should have each graduate committee member sign the *Approval for Submission of Dissertation, Thesis, or Selected Project* (ADV Form 8d). Once these signatures have been obtained, students should give their dissertation and ADV Form 8d to the graduate advisor who will do a final review of formatting and obtain the approval/signature of the graduate coordinator.

This final, departmental approval process may require at least one day. University deadlines for graduation are strictly enforced so students should plan well in advance to meet these deadlines. See Graduation Deadlines (ADV Form 8).

**Submit dissertation to College Office.** Students must then submit their signed dissertation and *Approval of Submission of Dissertation, Thesis, or Selected Project* (Form 8d) to the college office. Do NOT submit a color copy on bond paper. The college office administrator will again check the format and obtain the dean’s approval/signature. The college office will not be able to process these documents
immediately; therefore, students must plan well in advance in order to meet specified
deadlines. See Graduation Deadlines (ADV Form 8).

Submit ETD of dissertation and final printed copies to library. Students are
required to submit an electronic version of their thesis (ETD) to the library. For the exact
deadline see Graduation Deadlines (ADV Form 8). Current instructions for preparing
and submitting an ETD are available at http://etd.byu.edu/. Department and college
approval is required. Upon receipt of the final ETD status, “Library Offices,” students
may take their thesis documents to the library.

Lastly, students should make a two-sided color copy of their dissertation onto 24 lb.
bond paper. Copies need to be made on a high quality copy machine. Poor quality
copies are not acceptable and will have to be replaced. Students may use the BYU
copy center for copying; however, they are responsible for paying all copying costs.
(See Copy Machine use, Addendum 1) At least two copies of the dissertation are
required—one for the Graduate Committee Chair and one for the ME Department Chair.
All copies of the dissertation, ADV Form 8d, and payment for binding need to be taken
to the Administration Office (2060 HBLL). Please refer to specific instructions for
submission to the library on the Student Dissertation Submission Checklist (Form ADV
12b).

Note: Please be aware that binding of the dissertation is performed outside the
university and requires 6-8 weeks.

Submit Check-out Clearance – Before students permanently leave the BYU campus
they must receive clearance from the ME Projects Lab and the Checkout Room.

Submit Exit Survey – Students are given a survey to complete. Comments are used to
further strengthen the graduate program. These comments are kept confidential.

Walk for Commencement and Convocation – Students wishing to walk during
Commencement and Convocation need to order their cap and gown online at:
http://alumni.byu.edu/capsgowns/. Students are permitted to walk early as long as they
have had their oral examination. Students must submit a petition to walk early to the
Advisement Center in 264 CB. The petition form can be obtained from the graduate
advisor.
POLICIES & PROCEDURES

P&P 1 – ADMISSION POLICY FOR STUDENTS WITH A BS IN ALLIED FIELDS

Students with a BS in disciplines other than ME may be admitted provisionally to the graduate program. These students will be required to take some or all of the following courses. The applicant should work with the potential graduate committee chair and the graduate coordinator to determine exactly which courses will be required. Please note that none of these courses can be added to the Program of Study or count toward the PhD.

Math 302, 303, and Stat 361   11 hours
Ce 204      3 hours
Me En 321, 363, and 372    9 hours
Me En 335      3 hours
Me En 312 or 340     3 hours
Me En 373      3 hours

P&P 2 – FINANCIAL SUPPORT

The Department of Mechanical Engineering offers several opportunities to help qualified students with the cost of their graduate education. The majority of full-time graduate students receive financial support during their studies. Most financial support is in the form of employment as research assistants and teaching assistants. Fellowships based on academic potential and performance, are also available. Satisfactory progress in the program is required to maintain eligibility for funding support. Support is also contingent on availability of funds. With the exception of some teaching assistantships, most financial support is generally determined prior to beginning the graduate program.

Fellowships
Department of Mechanical Engineering Research Fellowships. A limited number of Research Fellowships are awarded to highly competitive applicants. These fellowships are intended to supplement other support. Research Fellowships are awarded based on academic potential as part of the admission process and no further action is required by the student to be considered for Research Fellowships.
PhD Fellowship – First Year. A limited number of fellowships are awarded to highly qualified first-year PhD students. These fellowships are intended to supplement other support. These fellowships are awarded based on academic potential as part of the admission process and no further action is required by the student to be considered for Research Fellowships.
Teaching Assistant (TA) Fellowship. A limited number of TA Fellowships are awarded to qualified students. Students are nominated by their faculty advisors for TA Fellowships, and selection is based on qualifications, performance, and department
needs. TA Fellowships are typically part-time positions, with approximately half the effort dedicated to performing teaching assistant duties for an assigned course, and the other half dedicated to research directed by the student’s Graduate Committee Advisor.

**Graduate Assistantships**

Research Assistantship. Graduate research assistantships are offered by individual faculty to students they advise. Assistantships are based on student research ability, student research performance, and availability of funds. Research assistantships are supported by external research contracts or grants administered by faculty. Students may check with individual faculty to determine availability of these opportunities.

Teachings Assistantship. Graduate teaching assistantships are offered by professors who have teaching assistant needs. The department gives first priority to PhD and MS-thesis students for teaching assistantships; however, the professor teaching the class has final authority to hire the teaching assistant for the class. Assistantships are based on student teaching ability and teaching performance. Students may check with individual faculty to determine availability of these opportunities.

**University Policies regarding Research and Teaching Assistants**

1. When employed as a research assistant or a teaching assistant, continuing students must be registered for two or more hours during fall and winter semesters, and one or more hours during spring and summer terms. Newly admitted students must be registered for two credits in the first semester or term of admission.

2. Full-time graduate students who are U.S. citizens may work up to 30 hours a week during fall and winter semesters if the work is related to their Program of Study. They may work only 20 hours a week if the work is not related to their Program of Study. During spring and summer terms and holidays, graduate students who are U.S. citizens may work up to 40 hours per week. International students must abide by the conditions of their visa regarding student employment. Federal regulations will not allow international students to work more than 20 hours per week during full-time school and up to 40 hours during their breaks.

3. A teaching assistant is a representative of the department and university and is expected to be professional in appearance and in executing his or her duties.

**Tuition Scholarships.** Tuition scholarships are available to qualified graduate students based on student performance and availability of funds. The scholarships are awarded by individual faculty and students may check with their Graduate Committee Advisor to determine availability.

**Other Financial Support**

National Fellowships. Competitive national fellowships are available for highly qualified students. The [BYU Office of Prestigious Scholarships and Fellowships](https://byu.edu/prestigious) provides information and search resources to help students identify these opportunities.
Some fellowship applications are due before graduate school applications, so early planning is advised.

Fellowships and Grants. Information on various scholarships for graduate students can be found on the BYU Graduate Studies website.

Loans. Graduate students who are U.S. citizens are eligible for Stafford loans. Information regarding eligibility requirements can be obtained from the Financial Aid Office, A-41 ASB. Graduate students may request verification of their enrollment status as full-time or part-time students, for loans or other purposes, from the Records Office, B-150 ASB. Registration for 8.5 or more credits during a semester (4.5 during spring or summer) constitutes full-time enrollment; however, students who have a) finished their coursework, b) are making satisfactory progress; c) are enrolled for at least two hours per semester, and d) are devoting 40 or more hours per week to fulfilling graduate degree requirements, can be certified as full-time students. This requires that a Petition for Graduate Full-Time Status (ADV Form 2a) be submitted to the Office of Graduate Studies.

Research Presentation Award (RPA). The Graduate Student Society offers a $400 Research Presentation Award, which is for the purpose of assisting students with traveling and presenting at conferences. The award can be applied toward conferences held from July 1, 2010 – June 30, 2010. Eligibility requirements and application can be found on the Graduate Student Society webpage.

### P&P 3 – APPROVED COURSES FOR PHD PROGRAM OF STUDY

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<td>Math</td>
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<td>Phscs</td>
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<td>Stat</td>
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<tr>
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<td>IT 548</td>
<td>Mechatronics</td>
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<td>MBA 639</td>
<td>Product Development</td>
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<td>Advanced CAM Programming</td>
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<td>Mfg 532</td>
<td>Manufacturing Systems</td>
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<td>Composite Materials and Processes</td>
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<td>Design for Manufacturing</td>
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<td>Advanced Tool Design</td>
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<td>Mfg 580</td>
<td>Manufacturing Simulation</td>
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NOTE: If any course on the Program of Study is not on the above list, the student must receive specific approval from his or her committee and if necessary, submit a petition to the department Graduate Committee. In no instance may a student include a 400 level course on the Program of Study.
The University catalog, listing all graduate courses, plus semester offerings can be found at: http://saas.byu.edu/classschedule/.

P&P 4 – GRADUATE STUDENT ACADEMIC GRIEVANCE POLICY

Despite the well-meaning efforts of students and faculty, there may be occasions when a graduate student feels his/her work has been unfairly or inadequately evaluated. Usually such differences can be amicably resolved on an informal basis between the student and the faculty member involved. If, for any reason, the faculty member is not available or the student believes that the grievance will not be dealt with fairly or will create the possibility of retribution, the student may direct the grievance to the Department Chair.

Please contact the Graduate Advisor for the complete Grievance Policy.

P&P 5 – PHD DISSERTATION PROSPECTUS PROCEDURES

The prospectus should follow the general outline described below. There is a fifteen-page limit, double spaced, for the body of the prospectus (problem statement through the anticipated contributions sections).

• Title page
• Signature page
• Problem Statement
  ▪ Provide an overview of the problem.
  ▪ Finish with an objective statement.
  ▪ Address the question: What work is being done?
• Background
  ▪ Briefly review the most relevant literature.
  ▪ Provide motivation for the proposed dissertation topic.
  ▪ Address the questions: What have others done? Why is it important? What are the challenges?
• Research objectives
  ▪ Briefly list the objectives. The reader should be able to make this list based on the background section.
• Proposed Research
  ▪ Describe the technical approach.
  ▪ Describe the scope of the project and note any delimitations if necessary.
  ▪ Describe the equipment and facilities required to complete the project.
  ▪ Describe any collaborative efforts.
• Anticipated Contributions
  ▪ Describe any publications, patents, or other scholarly products that are anticipated to result from the proposed project.
• References
TITLE

by

Student Name

A prospectus submitted to the faculty of
Department of Mechanical Engineering
Brigham Young University

Date
PROSPECTUS APPROVAL

Prospectus submitted by:

Student ___________________________ Date ___________________________

Following the prospectus defense, this prospectus has been approved by each member of the Graduate Committee:

Committee Chair ___________________________ Date ___________________________

Committee Member ___________________________ Date ___________________________

Committee Member ___________________________ Date ___________________________

Committee Member ___________________________ Date ___________________________

Committee Member ___________________________ Date ___________________________
P&P 7 – Formatting Guidelines for Thesis

Font – Times New Roman 12 pt. consistency throughout text and 10 or 11 point for tables and figures.

Margins
Preliminary pages (Title page, Abstract page(s), Acknowledgment page, Table of Contents, List of Figures, List of Tables)
1 inch on all sides
Body pages, beginning with Introduction
1 inch on all sides
Chapter title pages, Appendix title page, Reference title page
2 inches at top
1 inch at bottom and sides

Printing
Single-sided: Title page, Abstract page(s), Acknowledgment page
Two-sided: Table of Contents, List of Figures, List of Tables, Body, Appendix, References
Note: Table of Contents, List of Figures, List of Tables, Chapter title pages, References and Appendix pages must begin on the front side of a page.

Page Numbering
- Page numbers are centered at the bottom of the page.
- Counting begins with the Title page; however, back pages are not counted until the Table of Contents.
- Page numbers do not appear on the page until the Table of Contents (v).
- Use Roman Numerals (i, ii, iii ...) for the Table of Contents page and the pages thereafter until Chapter 1.
- Use Arabic numbers (1, 2, 3 ...) beginning with Chapter 1.
- Be sure numbers appear on all blank back pages once numbering begins.

Spacing
- Double-space text of body.
- Single-space abstract, captions, quotes, long chapter titles, headings, and subheadings.
- Table of Contents, List of Figures, List of Tables, and References can be single-spaced or double spaced.
- Double-space three times after chapter titles (48 pts).
• Double-space twice before subheadings (24 pts).
• Double-space once after subheadings (0 pts).
• Double-space once between two subheadings (0 pts).
• Double-space twice before and after figures (24 pts).
• Double-space twice before and after tables (24 pts).
• Double-space once before and after equations (0 pts).
• Do not leave a single line of text, a single-line equation, or a subheading alone on the top (widow) or bottom (orphan) of a page.
• Do not leave more than about 5 lines of white space remaining on a page unless it’s the end of a chapter.

FIGURES
• Figures are normally diagrams, graphs, maps, or charts.
• Center figures on the page.
• Center captions below the figure. If two lines are needed, the caption should be left justified at margin.
• A figure should be placed after the paragraph of reference. If it will not fit on the same page, continue the text and place the figure on the next page.

TABLES
• Tables contain numerical or statistical information.
• Center tables on the page.
• Center captions above the table. If more than one line is needed, center the lines in an inverted pyramid:
  Table 6.3 Comparison of roll rotation plots when node was displaced, and an X-direction off-axis force was applied.
• If placed in the landscape position, the top of the table should be on the left side of the page, with the caption above the table. The page number is placed in the standard location.
P&P 7 – GRADUATION CHECKLIST AND TIMELINE

☐ Choose a committee chair during the application process
☐ Submit program of study prior to second semester
☐ Take PhD qualifying exams during first year
☐ Submit dissertation prospectus within six months from the time the qualifying exams were passed
☐ Complete all provisions during first year (if admitted provisionally)
☐ Fulfill seminar attendance requirement during first year
☐ Present in seminar sometime during the last year in the program
☐ Complete all courses on program of study prior to applying for graduation
☐ Apply for graduation in semester of defense and by university deadline
☐ Submit best draft of dissertation to committee chair one month prior to oral exam
☐ Schedule oral exam two weeks prior to exam date and by university deadline
☐ Review dissertation format with graduate advisor prior to oral exam
☐ Pass oral exam
☐ Obtain department and college approval of dissertation by university deadline
☐ Submit EDT by university deadline
☐ Submit dissertation to library by university deadline
☐ Submit request to secure dissertation to library (if applicable)
☐ Submit Check-out Clearance
☐ Submit Exit Survey
☐ Submit Survey of Earned Doctorates to Graduate Studies Office
☐ Convocation and Luncheon
**ADDENDUM 1 – COPY MACHINE POLICY**

The ME department copy machine is not to be used for personal use nor should it be used to copy theses/dissertations. The copy machine may be used for RA and TA duties; however, students should not use the copy machine themselves. The secretaries will handle students’ requests.

**ADDENDUM 2 – BYU HONOR CODE**

Complete information concerning the Honor Code at Brigham Young University can be found at: [http://honorcode.byu.edu](http://honorcode.byu.edu). All who represent BYU are to maintain the highest standards of honor, integrity, morality, and consideration of others in personal behavior. As a matter of personal commitment, faculty, administration, staff, and students of BYU seek to demonstrate in daily living on and off campus, those moral virtues encompassed in the gospel of Jesus Christ. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating or other academic misconduct.

**Plagiarism**

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to disciplinary action administered through the university Honor Code Office. Intentional plagiarism is the deliberate act of representing the words, ideas, or data of another without providing proper attribution to the author through quotation, reference, or footnote.

Inadvertent plagiarism usually results from an ignorant failure to follow established rules for documenting sources or from simply being insufficiently careful in research and writing. Although not a violation of the Honor Code, inadvertent plagiarism can result in academic sanctions imposed by an instructor. Students who are in doubt as to whether they are providing proper attribution have the responsibility to consult with their instructor and obtain guidance.

Examples of plagiarism include:
- **Direct Plagiarism**—verbatim copying of an original source without acknowledging the source.
- **Paraphrased Plagiarism**—paraphrasing, without acknowledgment, of ideas from a source that the reader might mistake for your own.
- **Plagiarism Mosaic**—borrowing of words, ideas, or data from an original source and blending this original material with one’s own without acknowledging the source.
- **Insufficient Acknowledgment**—partial or incomplete attribution of words, ideas, or data from an original source.

Plagiarism may occur with respect to unpublished as well as published material. Acts of copying another student’s work and submitting it as one’s own individual work without proper attribution is a serious form of plagiarism.
Fabrication or Falsification
Fabrication or falsification is a form of dishonesty where a student invents or distorts the origin or content of information used as authority. Examples include:
1. Citing a source that does not exist.
2. Attributing to a source ideas and information that are not included in the source.
3. Citing a source for a proposition that it does not support.
4. Citing a source in a bibliography when the source was neither consulted nor cited in the body of the paper.
5. Intentionally distorting the meaning or applicability of data.
6. Inventing data or statistical results to support conclusions.

Cheating
Cheating is a form of dishonesty wherein a student attempts to give the appearance of knowledge or skill that the student has not obtained. Examples include:
1. Copying from another person’s work during an examination or while completing an assignment.
2. Allowing someone to copy from you during an examination or while completing an assignment.
3. Using unauthorized materials during an examination or while completing an assignment.
4. Collaborating on an examination or assignment without authorization.
5. Taking an examination or completing an assignment for another or permitting another to take an examination or to complete an assignment for you.

Other Academic Misconduct
Academic misconduct includes other academically dishonest, deceitful, or inappropriate acts that are intentionally committed.
Examples of such acts include but are not limited to:
1. Inappropriately providing or receiving information or academic work so as to gain unfair advantage over others.
2. Planning with another to commit any act of academic dishonesty.
3. Attempting to gain an unfair academic advantage for oneself or another by bribery or by any act of offering, giving, receiving, or soliciting anything of value to another for such purpose.
4. Changing or altering grades or other official educational records.
5. Obtaining or providing an un-administered test or answers to an un-administered test.
6. Breaking and entering into a building or office for the purpose of obtaining an unauthorized test.
7. Continuing work on an examination or assignment after the allocated time has elapsed.
8. Submitting the same work for more than one class without disclosure and approval.
ADDENDUM 3 – DISCRIMINATION AND/OR HARASSMENT

Brigham Young University does not allow unlawful discrimination based on race, gender, color, national origin, religion, age, veteran status, or disability in the academic or employment setting. This includes unlawful sexual harassment, which is a violation of university standards as well as state and federal laws and may be considered grounds for discipline. Persons who believe they have been unlawfully discriminated against or unlawfully sexually harassed should contact:

Equal Opportunity Office
D-282 ASB
Provo, UT  84602-1220
801/422-5895

ADDENDUM 4 – CONTACT INFORMATION

This student handbook provides a comprehensive summary of the policies and procedures that govern the graduate programs in the Department of Mechanical Engineering. When questions arise that are not addressed in this handbook, students should contact the Graduate Advisor or the Graduate Coordinator for assistance.

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801-422-2624
miriam_busch@byu.edu

Larry L. Howell, Graduate Coordinator
435 CTB
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lhowell@et.byu.edu