Department of Biomedical Engineering
College of Engineering
Michigan State University

Graduate Studies Handbook

Information on Masters and Doctoral Programs

March 2018
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1. Program Overview

The Department of Biomedical Engineering offers a Doctor of Philosophy (Ph.D.) degree in Biomedical Engineering, and under some circumstances a Master of Science (M.S.) degree in Biomedical Engineering. The circumstances for an MS degree depend on the needs of the student and are granted by the chair on a case by case basis. Outside of the departmental program requirements, these programs are designed to provide maximum flexibility in course requirements, so each student's course program can be customized to suit his or her academic background and research topic.

The Ph.D. graduate program in Biomedical Engineering is designed to develop research expertise needed for the graduate to serve as a principal investigator in industrial or academic research environments. The coursework expands the student’s knowledge of science and engineering principles and provides experience in translating these principles into improved biomedical technologies. In addition, thesis or dissertation research requirements train students to significantly advance their fundamental understanding of an important research topic. Research results are documented in a Ph.D. dissertation or M.S. thesis and research paper(s) for publication in peer-reviewed journals.

2. Master’s Degree Requirements

2.1 Master’s Degree - Plan A Thesis Option

The Plan A (thesis option) Master’s degree requires a total of 30 credits of course work at the 400 level or above, as approved by the faculty advisor. No more than 6 credits of 400-level courses may be counted towards the degree requirements. Courses below the 400 level are not acceptable toward a graduate degree. The student’s course program, which is established in consultation with a faculty advisor and the graduate program director, must include the following:

- **Required Courses:**
  1. BME 803 (Research Methods)
  2. BME 892 Biomedical Engineering Seminar)
- A minimum of four (4), but not more than eight (8), credits in BME 899 (Master’s Thesis Research)
- A passing grade on a Master’s Oral Examination (thesis defense)

Prior to graduation, a student’s transcript will show a grade of DF-Deferred for all CHE 899 credits taken. Upon graduation, the grade for the number of BME 899 credits that appears on the student’s Plan A course program will be changed to the grade that student received on his/her Master’s Oral Examination. The grade for any BME 899 credits taken in excess of those appearing on the Plan A course program will remain as DF-Deferred and will not affect the student’s grade point average.

Students supported by department research assistantships while under a Plan A program are expected to graduate under the Plan A program. Students having a Bachelor’s degree in a discipline
other than biomedical engineering may be required to pass one or more collateral course(s), whose credits will not count toward the 30-credit total.

2.2 Master’s Degree - Plan B Non-Thesis Option
The Plan B (non-thesis option) Master’s degree requires at least 30 credits of course work at the 400 level or above. Term papers will be required for each semester that the student is enrolled and these are under the direction of the faculty advisor, or the instructor of a course that the student is enrolled in for that semester. The term paper topics are of the students choosing, with approval from the faculty advisor, and are to be based on the primary literature in the field of biomedical engineering. The student’s course program is selected in consultation with a faculty advisor and the graduate program director. No more than 6 credits of 400-level courses may be counted towards the degree requirements. Courses below the 400 level are not acceptable toward a graduate degree. The Plan B program must include the following:

- Required Courses:
  1. BME 803 Research Methods (Core Course)
- Final oral examination on topics covered in the course program

Students having a Bachelor’s degree in a discipline other than biomedical engineering may be required to pass one or more collateral course(s), whose credits will not count toward the 30-credit total.

2.3 BME Graduate Program Requirements – Master of Science Degree

<table>
<thead>
<tr>
<th>Plan A (Thesis)</th>
<th>Plan B (Without Thesis)</th>
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<tbody>
<tr>
<td>• 30 credits</td>
<td>• 30 credits</td>
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<tr>
<td>• Course program selected in consultation with a faculty advisor</td>
<td>• Course program selected in consultation with a faculty advisor</td>
</tr>
<tr>
<td>• BME 803 Research Methods</td>
<td>• BME 803 Research Methods</td>
</tr>
<tr>
<td>• BME 892 Biomedical Engineering Seminar</td>
<td>• 4 to 8 research credits (BME 892)</td>
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<tr>
<td>• 4 to 8 research credits (BME 899)</td>
<td>• 4 to 8 research credits (BME 892)</td>
</tr>
<tr>
<td>• Pass a final oral exam in defense of the thesis</td>
<td>• Pass a final examination or evaluation</td>
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<tr>
<td>• MS Program Plan must be filed before end of 1st semester</td>
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<tr>
<td>• Must maintain GPA ≥ 3.0</td>
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<tr>
<td>• No more than 6 credits of 400-level courses may be counted towards the degree</td>
<td></td>
</tr>
<tr>
<td>requirements</td>
<td></td>
</tr>
<tr>
<td>• Courses below 400-level may not be used</td>
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</tbody>
</table>
2.4 General Master’s Degree Information

**Course Program:** Students admitted into the Master’s program will initially be advised by a member of the BME Graduate Studies Committee. Then, during the first semester, each Master’s student will be assigned a faculty advisor who will work with the student to develop the student’s course program. The advisor must approve the course program and any subsequent change(s) to it.

**Transfer Credits:** The department may accept credits earned at another institution. In such cases, the completed “Credit Evaluation for the Graduate Program” (See Addendum A) form must be included with the program. As many as nine credits of graduate course work (excluding research and thesis credits) may be transferred into a Master’s degree program from other accredited institutions, provided they are appropriate to a student’s program and were completed within the specified time limits for earning the degree. Transfer credits will only be given for courses in which a grade of 3.0 or higher was earned.

**Undergraduate-Graduate Dual and Linked Degree Options:** Current MSU undergraduate students have three options for pursuing a bachelor’s and Master’s degree in the MSU College of Engineering. Additional information on these programs is described on the College of Engineering website:

1. Apply for admission to a linked BS+MS degree program (the BS and MS are completed sequentially.)
2. Apply for dual enrollment in a MS program (the BS and MS are completed concurrently).
3. Apply for regular admission to a MS program (the BS and MS are completed sequentially). This is the normal option for most students.

Students wishing to pursue an Undergraduate-Graduate Dual or Linked Degree must submit a “Request for Dual Enrollment Status” (See Addendum B) form. Students interested in the Linked BS+MS program should contact the BME Graduate Program Director.

**Collateral Courses:** Students having a Bachelor’s degree in a discipline other than biomedical engineering may be required to pass one or more collateral course(s), whose credits will not count toward the 30-credit total required for graduation. A grade of 3.0 or greater in collateral courses is required. In some cases, domestic students may be granted provisional status in the graduate program until the collateral coursework has been satisfactorily completed. International students cannot be admitted on provisional status.

**Selection of Research Advisor for Plan A Students:** Advisor selection will take place in October (date to be announced). Faculty members will make a presentation on their open research projects and other potential research areas. Graduate students will arrange a meeting with the faculty members having projects of potential interest. Students are also encouraged to meet with the graduate students of potential advisors to learn more about how the research team functions. About two weeks after the presentations, students will submit four ranked choices of faculty advisor to the Graduate Studies Committee, which will then match students to advisors based on students’ preferences and faculty preferences.
Selection of Advisor for Plan B Students: Advisor selection will take place in October (date to be announced). The BME Graduate Director will assign an advisor to Plan B Master’s students.

Formulating Master’s Degree Guidance Committee and Course Program Plan: Students should meet with their faculty advisor to discuss establishing a guidance committee and course program plan that will help the student develop competence in biomedical engineering and satisfy the Master’s degree requirements. A three-person guidance committee is required for Plan A Master’s students, whereas the advisor serves as the guidance committee for Plan B Master’s students. Students will submit their course program plan through the Graduate Reporting System (GRS) system. The program plan will be approved electronically by the guidance committee, so the GRS system will not allow students to submit a program plan until they have submitted the names of their guidance committee members. Registration beyond the spring semester of the first year will not be permitted if the course program plan has not been submitted.

Proposed changes to the guidance committee or the course program plan must be submitted through the GRS database to the Graduate Secretary. The changes must then be approved electronically by the faculty advisor, the BME Graduate Director and the College of Engineering Associate Dean for Graduate Studies. NO COURSE MAY BE ADDED OR DELETED FROM A COURSE PROGRAM PLAN AFTER A GRADE (INCLUDING DF) HAS BEEN ASSIGNED. This includes courses that the student has dropped after the middle of the term and in which a grade of N has been given. The Master’s Degree Program Plan form may be accessed on the GRS.

Both the student and advisor have responsibilities to ensure a productive relationship. The responsibilities of the research advisor, as described in Guidelines for Graduate Student Advising and Mentoring Relationships, include the following:

- Ensuring that graduate students receive information about requirements and policies of the graduate program
- Advising graduate students on developing a program plan, including appropriate course work, research or creative activity, and on available resources
- Advising graduate students on the selection of a thesis or dissertation topic with realistic prospects for successful completion within an appropriate time frame and on the formation of a guidance committee
- Providing training and oversight in creative activities, research rigor, theoretical and technical aspects of the thesis or dissertation research, and in professional integrity
- Encouraging graduate students to stay abreast of the literature and cutting-edge ideas in the field
- Helping graduate students to develop professional skills in writing reports, papers, and grant proposals, making professional presentations, establishing professional networks, interviewing, and evaluating manuscripts and papers
- Providing regular feedback on the progress of graduate students toward degree completion, including feedback on research or creative activities, course work, and teaching, and constructive criticism if the progress does not meet expectations
• Helping graduate students develop into successful professionals and colleagues, including encouraging students to participate and disseminate results of research or creative activities in the appropriate scholarly or public forums
• Facilitating career development, including advising graduate students on appropriate job and career options, as well as on the preparation of application materials for appropriate fellowship, scholarship, and other relevant opportunities
• Writing letters of reference for appropriate fellowship, scholarship, award, and job opportunities
• Providing for supervision and advising of graduate students when the faculty advisor is on leave or extended absence

Change of Advisor: A student in good standing who desires to change advisors may consult with the BME Graduate Director and/or the Department Chair. If there is an agreement that a change of advisors is justified, all efforts will be made by the department to assist in making this change. However, it is the student’s responsibility to arrange for a new advisor. Once a new advisor is identified, the student will need to process a “change of advisor” form within the GRS database. Any additional modifications to the guidance committee and program plan must submitted and through the GRS system and then electronically approved.

Transfer to Ph.D. Program: The BME Graduate Director and the Graduate Studies Committee must approve transfers from the Master’s program to the doctoral program. Students wishing to transfer to the Ph.D. program after completing the Master’s program must submit an “Application to Transfer from MS to Ph.D. Program” (See Addendum C) form, a letter of intent, and resume to the BME Graduate Secretary during their fourth semester in the Master’s program.

Change of Major: A student may request to have a change of major by completing the “Graduate Change of Major/Degree” form (See Addendum G). Materials such as statement of purpose, academic purpose, transcripts, resume, GRE scores, TOEFL scores (if international student) must be attached to the change of major form and given to the BME Graduate Secretary. A review process will be carried out by the BME graduate review committee for a final decision.

2.5 Master’s Degree Graduation Requirements

Application for Graduation: The graduation application form can be located at https://reg.msu.edu/StuForms/GradApp/GradApp.aspx website and should be submitted during the first week of the semester in which the student plans to graduate. Summer graduates should submit the form by the first week of spring semester.

Thesis Formatting: The MSU Graduate School offers an online guide for Thesis/Dissertation Formatting Guide and a formatting tutorial. A formatted preliminary copy of the Thesis/Dissertation can be taken to the Graduate School (Chittenden Hall, 466 W. Circle Dr. 2nd floor) any time during the semester to ensure proper formatting requirements are met.

Final Master’s Oral Examination: A guidance committee consisting of at least three MSU regular faculty members will administer a Plan A student’s Master’s Oral Examination. The exam will consist of a presentation of the thesis research, followed by an oral examination. The exam must be
scheduled for a date not earlier than two weeks after the thesis has been submitted to the committee members. A favorable majority vote of the Committee constitutes a pass. The student will be allowed a maximum of two opportunities to pass. The second opportunity, if needed, must take place the semester following the first opportunity. Students must be registered during the semester in which the examination is taken. Upon completion of the exam, the faculty advisor must submit a completed form summarizing the exam results with all committee members’ signatures to the Graduate Secretary for further processing, and must sign the form “Record of Dissertation Defense for Doctoral Degree” (See Addendum F).

**Submission of Thesis to The Graduate School:** MSU only accepts theses and dissertations submitted electronically, as described on the web page “Thesis and Dissertation Electronic Submissions”. After the Master’s Oral Examination, revisions recommended by the faculty advisor and Examination Committee members must be made to produce a final unbound thesis manuscript. If the document is satisfactory, the faculty advisor will approve it by signing the Approval Form, obtained from the Graduate School. These materials are then submitted electronically to the Graduate School, whereupon the candidate is required to complete an Exit Survey.

The target date for the final approval of an electronic thesis or dissertation submitted to the Graduate School for graduating the semester of that submission is five working days prior to the first day of classes for the next semester. The review process is interactive, and final approval can take from hours to weeks, depending upon the extent of the revisions. Graduation during the semester of the electronic submission is not guaranteed if the document is NOT APPROVED on or before the date set by the Graduate School for that semester. Students must contact the Graduate School to confirm the date, as it varies from year to year.

ProQuest is a database used by MSU to electronically archive Theses and Dissertations. Submission of the thesis to an online archiving database like ProQuest does not mean that the University has accepted the document.

One hardbound copy of the thesis must be delivered to the research advisor, and another to the department. Granting agencies or other collaborators may require additional copies. Students are responsible for all thesis and dissertation preparation expenses. Departmental equipment or materials may not be used for this purpose.

**Commencement:** Commencement information can be obtained from http://commencement.msu.edu/.

**Student Departure:** Departing students are required to complete the Exit/Destination Survey, and to fill out the Termination-Separation Checklist. The checklist is provided to highlight issues that may need to be addressed when terminating MSU employment or otherwise separating from the Department. The research advisor and Graduate Secretary must sign the checklist.
3. Ph.D. Degree Requirements

Each Ph.D. student’s area of research should be selected in consultation with a faculty advisor. A course program should then be designed taking into account the area of research and the student’s background. At least 22 credits of course work beyond the Bachelor’s degree are required, in addition to at least 24 Doctoral Dissertation Research credits. No more than 6 credits of 400-level courses may be counted towards the degree requirements. Ph.D. projects will generally bestudents will select a track, or thematic specialty, within the field of biomedical engineering. The track could be selected from the list of established tracks below, or it could be of the student’s design, with the advisor’s approval. Students must complete the following:

- All of the following core courses:
  1. BME 803 Research Methods (3 credits)
  2. BME 841 Translational Innovations Laboratory (3 credits)
  3. BME 892 Biomedical Engineering Seminar (1 credit)
  4. At least 15 credits in thematic elective courses
- At least 24 credits of BME 999 Doctoral Dissertation Research
- A dissertation and final oral examination in defense of the dissertation.

Thematic areas (tracks) with faculty track directors and associated courses

Track 1: Synthetic biology—Assaf Gilad
BMB 801 Introduction to Molecular Biology

Track 2: Systems biology—Sudin Bhattacharya
BMB 801 Introduction to Molecular Biology

Track 3: Neuroengineering—Erin Purcell
Track 4: Biomaterials—Xuefei Huang

Track 5: Chemical biology—Tim Whitehead

Track 6: Biomechanics—Tammy Reed-Bush
Track 7: Bioimaging—Erik Shapiro

Track 8: Hardware, software and bioware—Wen Li

Track 9: Biomedical optics—Zhen Qui

Track 10: Protein structure and function—Kristin Parent
### 3.1 BME Graduate Program Requirements – Doctor of Philosophy (PhD)

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<thead>
<tr>
<th>Prescribed Coursework</th>
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<tbody>
<tr>
<td>• ≥ 22 credits of coursework beyond the Bachelor’s degree is required in additional to doctoral dissertation research</td>
</tr>
<tr>
<td>• BME 803 Research Methods</td>
</tr>
<tr>
<td>• BME 841 Translational Innovations Laboratory</td>
</tr>
<tr>
<td>• BME 892 Biomedical Engineering Seminar</td>
</tr>
<tr>
<td>• Must maintain a GPA ≥ 3.0</td>
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<table>
<thead>
<tr>
<th>Research Requirements</th>
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<tbody>
<tr>
<td>• ≥ 24 dissertation credits (BME 999)</td>
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<table>
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<tr>
<th>Qualifying Examination</th>
</tr>
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<tbody>
<tr>
<td>• Must be taken no later than end of 2nd semester</td>
</tr>
<tr>
<td>• Two parts: oral and written examinations (taken in same period)</td>
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<tr>
<th>Comprehensive Examination</th>
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<tbody>
<tr>
<td>• Must be taken at least 6 months before dissertation defense</td>
</tr>
<tr>
<td>• Must prepare and defend PhD proposal</td>
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<table>
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<tr>
<th>Dissertation Defense</th>
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<tbody>
<tr>
<td>• Must prepare and defend PhD dissertation</td>
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<tr>
<td>• Must take place no earlier than two weeks after the dissertation and abstract have been submitted to the guidance committee</td>
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</table>

<table>
<thead>
<tr>
<th>General</th>
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<tbody>
<tr>
<td>• Course program is selected in consultation with a faculty advisor and graduate program director</td>
</tr>
<tr>
<td>• Ph.D. Guidance Committee must be formed before submission of PhD Program Plan</td>
</tr>
<tr>
<td>• Ph.D. Program Plan must be approved before end of 2nd semester</td>
</tr>
<tr>
<td>• Student must be registered during the semester that the qualifying, comprehensive, and defense examinations are administered</td>
</tr>
<tr>
<td>• Courses below 400-level may not be used</td>
</tr>
</tbody>
</table>
**Collateral Courses:** Students may be required to take additional collateral courses to fill deficiencies in their academic background. Since BME is an interdisciplinary field, the collateral course work for each student is likely to vary. A grade of 3.0 or greater in collateral courses is required. In some cases, students may be granted provisional status in the graduate program until collateral coursework has been completed satisfactorily.

**Transfer Credits:** The department may accept credits earned at another institution. In such cases, the completed “Credit Evaluation for the Graduate Program” (See Addendum A) form must be included with the program. With approval of the BME Graduate Director, as many as nine credits of graduate course work (excluding research and thesis credits) may be transferred into a Ph.D. degree program from other accredited institutions, provided they are appropriate to a student’s program and were completed within the specified time limits for earning the degree. Transfer credits will only be given for courses in which a grade of 3.0 or higher was earned.

**Dual Enrollment:** Michigan State University offers doctoral students to work in conjunction with faculty mentors to develop a Dual Major Doctoral Degree program. Such a program will reflect the required courses and standards for both of the departments with a single dissertation. All dual major doctoral degrees must be approved by the Dean of the Graduate School. A request for the dual major degree must be submitted via MSU’s GradPlan website within the first two years of the student’s enrollment at Michigan State University. In order to receive a dual major, the following conditions must be met:

1. The intent to receive the degree in two areas must be outlined in the guidance committee report.
2. The Ph.D. degree plan must reflect the required standards for both departments.
3. The integrated course work must be satisfactory to both departments.
4. The comprehensive examination must be passed to the satisfaction of both departments.
5. A guidance committee including members from both departments must be satisfied that the dissertation represents a contribution meeting the usual standards in both areas.
6. There must be a single dissertation that represents an integration of the disciplinary areas.
7. Responsible Conduct of Research requirements will be as defined and approved by the guidance committee.

A “Request for Permission to Complete Two Degrees Concurrently” form must be processed and approved by both departments.

**Course program:** Students admitted into the Ph.D. program will either be assigned to an advisor before arriving or will be assigned a temporary advisor who is a member of the BME Graduate Studies Committee. Students with a temporary advisor will be assigned a permanent advisor during the first year via a process that is described in more detail below. The advisor will work with the student to identify an area of research, assemble a Ph.D. guidance committee, and then consult with the guidance committee to propose a Ph.D. course plan. The proposed course plan must be approved by the BME Chairperson and College of Engineering Associate Dean for Graduate Studies.
Course Changes: Once enrolled, classes can be dropped or added as outlined by the Office of the Registrar. The period allowed for adding and dropping generally runs from the time the first billing is mailed out until about the second week of the semester. After that period, the department that offers the course makes schedule changes.

To change a schedule by adding a course or change in credits already enrolled in after the drop and add period, students must complete either a add form “Add a Course” or “Enrollment Correction” (ex. change in thesis credits). Each of these forms are on the BME website https://www.egr.msu.edu/bme. Once the form is complete and signed, it needs to be turned into the graduate secretary for further processing and your enrollment will be updated online.

Paying for Classes: Students will receive a registration bill after enrolling for classes. The bill is mailed according to the Fee Payment Schedule. This bill will reflect tuition that is paid (or reduced) through assistantship appointments or fellowships.

3.2 Research and Selection of Advisor
A key activity in earning a Ph.D. is carrying out novel, creative research in association with a faculty research advisor. Based on factors such as student interests, faculty availability and availability of research funds, incoming Ph.D. students may be assigned a research advisor before beginning graduate study. Preferably, students may be asked to perform three research rotations in the laboratories of prospective advisors before being assigned an advisor. Each rotation would typically consist of seven to 12-weeks of research experience in the faculty member’s laboratory. Rotations of various lengths are allowed with permission of the Graduate Director. At the completion of the lab rotations, the student will select an advisor and the Graduate Studies Committee will make the final assignment of the student to an advisor.

Both the student and advisor have responsibilities to ensure a productive relationship. The responsibilities of the research advisor, as described in Guidelines for Graduate Student Advising and Mentoring Relationships, include the following:

- Ensuring that graduate students receive information about requirements and policies of the graduate program
- Advising graduate students on developing a program plan, including appropriate course work, track, research or creative activity, and on available resources
- Advising graduate students on the selection of a thesis or dissertation topic with realistic prospects for successful completion within an appropriate time frame and on the formation of a guidance committee
- Providing training and oversight in creative activities, research rigor, theoretical and technical aspects of the thesis or dissertation research, and in professional integrity
- Encouraging graduate students to stay abreast of the literature and cutting-edge ideas in the field
- Helping graduate students to develop professional skills in writing reports, papers, and grant proposals, making professional presentations, establishing professional networks, interviewing, and evaluating manuscripts and papers
• Providing regular feedback on the progress of graduate students toward degree completion, including feedback on research or creative activities, course work, and teaching, and constructive criticism if the progress does not meet expectations
• Helping graduate students develop into successful professionals and colleagues, including encouraging students to participate and disseminate results of research or creative activities in the appropriate scholarly or public forums
• Facilitating career development, including advising graduate students on appropriate job and career options, as well as on the preparation of application materials for appropriate fellowship, scholarship, and other relevant opportunities
• Writing letters of reference for appropriate fellowship, scholarship, award, and job opportunities
• Providing for supervision and advising of graduate students when the faculty advisor is on leave or extended absence

**Change of Advisor:** A student in good standing who desires to change advisors may consult with the BME Graduate Director and/or the Department Chair, ideally after discussing the situation with the current advisor. If there is agreement that a change of advisors is justified, BME faculty and staff will assist in making the change. It is the student’s responsibility to arrange for a new advisor. Once a new advisor has been identified, the student must submit a “change of advisor” form within the GRS database for electronic approval.

### 3.3 Ph.D. Qualifying Examination

Students must pass the Ph.D. Qualifying Exam before being admitted to Ph.D. candidacy. The purpose of this exam is to determine if the student is qualified to proceed in the doctoral program and to identify any weaknesses in the student’s background knowledge or skills needed to succeed in independent research. The Qualifying Exam should be taken in the spring semester of the student’s first year in the Ph.D. program. Students who do not pass their qualifying Ph.D. exam, may petition to enter the Master’s graduate program.

**Exam Format:** A Qualifying Exam Committee (QEC) will be appointed by the Graduate Studies Committee to administer the exam. The QEC will consist of the student's research advisor and two other departmental faculty members, at least one of whom is knowledgeable in the student’s academic discipline. The examination will include a written and an oral component.

Students should submit the written component to the graduate secretary by a specified date, which will be about two weeks before the oral presentations begin. The document should present a critical literature review on a research topic related to the advisor’s research program, and then use the literature review to define a compelling research problem or hypothesis suitable to advance fundamental understanding of the topic. The document should be no more than 15 pages, including figures, tables, and equations, but excluding the bibliography. The text should be double-spaced, with 12-point font. Formatting of tables, figures, references, etc. should be consistent with MSU’s [Thesis & Dissertation Formatting Guide](#).

The document should include the following sections:
• **Abstract:** The abstract should briefly (less than 300 words) summarize the contents of the paper.

• **Introduction and Background:** This section should describe the topic and its importance, and then critically review the relevant technical literature to analyze the current fundamental understanding of the topic. Areas should be identified in which current understanding is inadequate and/or further research is needed. The analysis should be supported with citations to the most authoritative technical literature.

• **Definition of a Significant Research Problem:** This section should clearly define an important research problem (or hypothesis) suggested by the literature review and should identify the underlying fundamental principles related to the research problem.

The oral component of the exam will consist of a roughly 30-minute presentation summarizing the literature review and its implications for research, followed by an oral examination by the QEC. This examination will test the depth of the student's knowledge of the research topic, the creative or innovative approach, as well as his/her general understanding of the foundations of the student’s discipline. The oral examination will be open to all BME faculty. However, only QEC members will participate in the questioning and the grading.

**Requirement for Original Work:** The topic of the proposal should not be directly related to ongoing research in the advisor's research group; this will ensure that the student contributes a significant amount of original content and writes in his/her own words. The student should not receive assistance or feedback from anyone on the written presentation, with the exception of the Abstract. The advisor may provide feedback on the Abstract to ensure that the research topic selected is satisfactory. The document’s cover page will include a signed certification statement that the student did not receive assistance writing or editing the document, other than the Abstract.

Students may practice their oral presentations and receive feedback prior to the qualifying exam. However, students are required to prepare their own presentation slides.

**Evaluation of Student’s Performance:** Primary criteria considered in the evaluation are:

- Depth of understanding of the research topic and its significance,
- Breadth of understanding of principles across the student's discipline,
- Ability to integrate fundamental principles in the analysis of a complex problem,
- Effectiveness of oral and written communication.

The QEC will use BME Grading Rubrics Worksheets to evaluate both the oral and written presentations. In addition to facilitating consistent and objective evaluations, the rubrics will also help identify areas of relative student strength and weakness. Grades will be assigned based on a benchmark of first-year graduate students who have gone on to complete the program's Ph.D. degree. Such students would be expected to score at least weakly positive, on average, in the areas evaluated. Thus, grades of weakly positive and strongly positive would indicate that the student’s performance meets or exceeds minimum expectations at the Ph.D. level. Grades of strongly negative and weakly negative would indicate that the candidate's performance falls below expectations of a successful Ph.D. student.
The grades for the oral and written presentations will be converted into numerical scores on a scale of 1.0 (strongly negative) to 4.0 (strongly positive). The numerical scores within each category (organization, content, and presentation) will be averaged to give an average score for that category. The following formula will then be used to calculate a composite score for the presentation.

\[
\text{Composite score} = 0.6 \times (\text{average content score}) + 0.2 \times (\text{average organization score}) + 0.2 \times (\text{average presentation score})
\]

For each QEC member, there will be one composite score for the oral presentation and one for the written presentation. These two composites scores will be averaged to give the overall score for the Qualifying Exam. If the overall score is 3.0 or higher, that QEC member will assign a passing grade. For a student to pass the Qualifying Exam, two of the three QEC members must assign a passing grade. In borderline cases, a discussion of the student’s performance may be warranted to help clarify whether the student should pass. Results of the exam should be recorded on the “Record of Qualifying Examination for Doctoral Students” form (Addendum D).

**Feedback Provided to Students:** Individual worksheets will not be released to the student. However, the faculty advisor will provide the student with a written summary of the QEC’s evaluations.

**Policy on Repeat Exams:** Normally only one opportunity will be given to pass the Qualifying Exam. However, a second opportunity may be offered with the approval of the QEC, Graduate Studies Committee, and departmental chair. The repeat exam should be scheduled at the earliest convenient time (e.g., in the summer semester of the first year).

Students who fail the Qualifying Exam for a second time will be removed from the Ph.D. program. However, these students may be allowed to continue to work towards an M.S. degree, either thesis or non-thesis, if they submit a request and it is approved by the Graduate Committee.

### 3.4 Formation of the Guidance Committee and Doctoral Degree Program

**Doctoral Guidance Committee:** Within two months (not counting summers) of passing the Qualifying Exam, the student shall form a doctoral guidance committee, with the research advisor serving as chairperson. The committee must consist of at least four regular MSU faculty members. At least two members must hold a nonzero percent appointment in the BME Department, and at least one member must hold a nonzero percent appointment in another department. Students wishing to request an exception to these committee membership rules should contact the Graduate Secretary for assistance in making the request.

Within two months (not counting summers) of passing the Qualifying Exam, the student and advisor shall file a guidance committee report that includes all graduation requirements and can be filed at [https://www.gradplan.msu.edu](https://www.gradplan.msu.edu). Students may obtain approval for the course plan to be included in
this report by meeting with the committee members either individually or collectively. Failure to file an approved guidance committee report by the required date will result in a hold on enrollment, which may affect the student’s future pay and ability to register for courses. The composition of the guidance committee may be changed with the permission of the research advisor, the BME Department Chairperson and the College of Engineering Associate Dean for Research and Graduate Studies. Although rare, it is possible for a graduate student to change research advisors, upon the approval of the BME Department Chairperson and the College of Engineering Associate Dean for Research and Graduate Studies.

The student shall meet with his/her doctoral guidance committee at least once a year to review the student’s academic and research progress. This meeting will be recorded on the BME Department Ph.D. Guidance Committee Annual Meeting Form, which is available from the BME Graduate Secretary. The completed form will be added to the student’s permanent file in the BME Department.

The responsibilities of the guidance committee are described in “Guidelines for Graduate Student Advising and Mentoring Relationships” and include the following:

- Advising graduate students on course work, research, and/or creative activities
- Providing at least one annual feedback and guidance concerning progress toward the degree
- Administering exams in a fair and professional manner
- Reviewing the thesis or dissertation in a timely, constructive, and critical manner

**Doctoral Course Program Plan:** The guidance committee must meet with the student for the purpose of formulating and approving a course program plan designed to develop the student’s competence in Biomedical Engineering and related fields. The electronic form for the Doctoral Degree Program Plan is located on [https://www.gradplan.msu.edu](https://www.gradplan.msu.edu). This course plan must be submitted for approval of the guidance committee, the BME Department Chairperson and the College of Engineering Associate Dean for Research and Graduate Studies by the end of the fall semester of the second year. Registration beyond the spring semester of the second year will not be permitted until this requirement has been met. Any changes in the program must likewise be submitted for approval to the guidance committee, the BME Department Chairperson and the College of Engineering Associate Dean for Research and Graduate Studies. **NO COURSE MAY BE ADDED OR DELETED FROM THIS PROGRAM AFTER A GRADE (INCLUDING DF) HAS BEEN GIVEN.** This includes courses that student has dropped after the middle of the term and in which a grade of N was given.

**3.5 Comprehensive Examination**

In the Doctoral Comprehensive Examination, the Ph.D. guidance committee evaluates the student’s progress on the project, interpretation of results to date, understanding of the underlying fundamental science and engineering principles, and plan for successfully completing the project in a timely manner. The student’s Final Oral Examination (Ph.D. Dissertation Defense) must take place at least a minimum of six months after passing the Comprehensive Examination.
By the end of the fifth semester in the Ph.D. program, if the student has not taken the comprehensive exam, the Graduate Secretary will send a message to both the student and the advisor stating that if the exam is not taken by the end of the second month of the following semester, the Graduate Secretary will put a hold on the student’s account. This hold will prevent the student from being paid in the subsequent semester. The examination may be taken no more than two times, no more than once per semester, and must be passed by the end of the 6th semester of enrollment in the Ph.D. program (excluding summer semesters).

The Comprehensive Examination is in the form of a research proposal defense and contains two parts:

1. **Written Proposal**: The written document is limited to a maximum of 30 double spaced pages with 1-inch margins, with a minimum of 12-point font size. Figures and tables are included in the 30-page limit. However, the bibliography is not included in the 30-page limit.
2. **Oral Examination**: The oral examination must be scheduled at least two weeks after the written proposal has been submitted to the guidance committee. The oral defense will be administered by the student’s guidance committee and will cover advanced technical topics related to the student’s Ph.D. thesis topic as well as the broader scope of the student’s field of study.

The guidance committee will evaluate the proposal for the following:

1. Tentative dissertation title;
2. Statement of the problem and its significance;
3. Background, including a comprehensive review of the literature;
4. Scope of proposed work (completed, in progress, and to be accomplished);
5. Expected outcomes and engineering significance.

Upon completion of the Comprehensive Examination, the student’s advisor and committee members must sign the “Comprehensive Examinations for Doctoral Degree” form (See Addendum E). Once signed, the form must be given to the BME Graduate Secretary.

Passing the comprehensive examination requires satisfactory performance on both the written proposal and the oral defense of the written proposal, as determined by a unanimous vote of the guidance committee.

Should the degree requirements not meet the eight-year limitation (see “Time Limitation” section below), the Comprehensive Exam must be retaken. The student must be registered for the semester in which the examination is taken. For students who enroll in the spring and take their comprehensive exams during the immediately following summer semester, the department can request a waiver of the requirement that the student be enrolled for at least one credit the semester of the comprehensive exam. These requests are to be directed to the Graduate School and must be endorsed by the student’s department and college.

After passing the Comprehensive Exam, a student may maintain full-time status by enrolling for a minimum of 1 credit each semester.
3.6 Ph.D. Degree Graduation Requirements

**Application for Graduation:** The graduation application form can be located at [https://reg.msu.edu/StuForms/GradApp/GradApp.aspx](https://reg.msu.edu/StuForms/GradApp/GradApp.aspx) website and should be submitted during the first week of the semester in which the student plans to graduate. Summer graduates should submit the form by the first week of spring semester.

**Dissertation Formatting:** The Graduate School offers an online Thesis/Dissertation Formatting Guide and a formatting tutorial on its website. A formatted preliminary copy of the Thesis/Dissertation can be taken to the Graduate School (118 Linton Hall) any time during the semester to ensure proper formatting requirements are met.

**Submit copy of dissertation to guidance committee:** The candidate must submit a dissertation in accordance with the University regulations for graduate programs. Essentially error free, readable copies of the document in temporary bindings must be distributed to all members of the guidance committee at least two weeks before the final Doctoral Oral Examination.

**Doctoral Candidate Information Form:** To publicize doctoral defenses, the College of Engineering requires doctoral candidates to complete the [Doctoral Candidate Information](#) web form at least two weeks before the actual date of the thesis defense. The form collects information about the student's academic background, accomplishments, publications, and the PhD dissertation itself.

**Final Doctoral Oral Examination:** The Doctoral Oral Examination, also known as the Dissertation Defense, is administered by the guidance committee to satisfy the requirements of the Graduate School. This exam can be taken no sooner than six months after passing the Comprehensive Examination. Students must be enrolled the semester they take the Doctoral Oral Exam. If the exam is taken during the summer, the student must register for at least one credit during that summer (unless a waiver is requested through the Graduate School and approved), regardless of their enrollment status during the preceding spring semester. The Doctoral Oral Examination must be scheduled for a date not earlier than two weeks after the dissertation and abstract have been submitted to the guidance committee members. After scheduling an examination date, the candidate needs to schedule a room from the Graduate Secretary and provide the secretary with the exam date, dissertation title, and abstract for posting. The student’s faculty advisor must process the “Record of Dissertation Defense for Doctoral Degree” form (See Addendum F) and retain all the student’s committee members’ signatures (usually right after the oral defense is complete) and give it to the Graduate Secretary for further processing.

**Submission of dissertation to The Graduate School:** MSU only accepts theses and dissertations submitted electronically, as described by the web page “[Thesis and Dissertation Electronic Submissions](#)”. After the final Doctoral Oral Examination, revisions and corrections recommended by the faculty advisor must be made by the student to produce a final unbound thesis manuscript. If the document is satisfactory, the faculty advisor will approve it by signing the Approval Form, obtained from the Graduate School. These materials are then submitted electronically to the Graduate School, whereupon the candidate is required to complete Exit surveys.
The target date for the final approval of an electronic Thesis or Dissertation to the Graduate School for graduating the semester of that submission is FIVE working days prior to the first day of classes for the next semester. Submission via ProQuest does not mean that the document has been accepted. The review process is interactive and final approval can take anywhere from a few hours to weeks, depending upon the extent of the necessary revisions and how diligent the author is when making the necessary revisions. Graduation on the semester of the electronic submission is only guaranteed if the document is approved on or before the target date for that semester. If there is an embargo required on a thesis or dissertation, ProQuest will hold the document no longer than 6 months. For further information about embargos contact the Graduate School.

One hardbound copy of the dissertation must be delivered to the research advisor, and another to the department. Granting agencies etc. may require additional copies. Candidates must show evidence that a manuscript based on their Ph.D. research has been submitted to an appropriate journal for publication.

Students are responsible for all dissertation preparation and expenses. Departmental equipment or materials may not be used for this purpose.

3.7 Additional University Ph.D. Degree Guidelines

Seminars: Graduate students are required to attend departmental seminars, even if they are not registered for a seminar course. A schedule with specific dates will be listed on the departmental web page and distributed via e-mail.

Dual Enrollment: A Ph.D. student can be enrolled simultaneously in another department’s master’s or Ph.D. program. A “Request for Permission to Complete Two Degrees Concurrently” (See Addendum B) form must be completed and approved by both departments. Students who are dually enrolled in two Ph.D. programs must send a copy of the Ph.D. program requirements for each department to the Dean of the Graduate School for approval.

Residency Requirement: MSU’s residency requirements specify that a minimum of 6 credits in the degree program must be earned in residence on the East Lansing campus or at approved Michigan State University instructional sites. Requests for waivers of this requirement must be submitted by the department or school responsible for the degree program to the appropriate college and then to the Dean of the Graduate School. To establish residency, MSU requires that the Ph.D. student complete 6 credits at MSU in each of two consecutive semesters (total of 12 credits). Both coursework and research credits count toward fulfilling the requirement.

Commencement: Commencement information can be obtained from www.commencement.msu.edu.

Time Limitation: All work in the master’s program including those courses for which credits were transferred must be completed in five (5) years; all work in the Ph.D. program including transfer credits must be completed within eight (8) calendar years of the student’s first enrollment in the doctoral program. Exceeding this time limit will result in dismissal from the graduate program.
Applications for extension of these time limits may be submitted by a student to the respective graduate program for approval by the Dean of Engineering and the Dean of the Graduate School.

**Student Departure:** Departing students are required to complete the Exit/Destination Survey, and to fill out the Termination-Separation Checklist. The checklist is provided to highlight the range of issues that may need to be addressed when terminating MSU employment or otherwise separating from a department. The research advisor and Graduate Secretary must sign the checklist.

4. University Procedures: Academic Performance

Students should refer to the most recent edition of the Academic Programs Catalog for a complete discussion of academic standards pertaining to the graduate program. The following is a summary of current policy on academic performance.

In order to be considered full-time, students must carry the minimum number of credits per semester as defined below:

- Master’s level: 9 credits
- Doctoral level: 6 credits
- Graduate-Professional level: 12 credits

Full time status for doctoral students is defined as a minimum of 1 credit for those students who:

- Have successfully completed all comprehensive examinations and are actively engaged in dissertation research OR
- Are doing department-approved off-campus fieldwork related to preparation of their dissertation.

**Annual Progress Report:** As described in “Graduate Student Rights and Responsibilities,” Section 2.4.8, graduate students have a right to periodic evaluations to assess their academic progress, performance, and professional potential. To this end, students are required to complete an Annual Report, including a self-evaluation using the Graduate Reporting System (GRS). The faculty advisor will then prepare a written evaluation in consultation with the student. January/February is the time frame for these evaluations, and the report must be complete by March 1. Failure to meet the March 1 deadline for completing and verifying the annual report will result in a hold being placed on students’ accounts. More information on Annual Reports is available here.

**Grade Point Average Calculations:** The grade point average (GPA) will be based on all programmed work, except for collateral work or transfer credits. If a grade of less than 2.0 is received, the course may be repeated; if a grade of 2.0 or 2.5 is received, the course may be repeated only with the permission of the College of Engineering Associate Dean of Research and Graduate Studies. For repeated courses, only the second grade will be used in the GPA calculation.

**Minimum GPA and Probational Status:** Grades of 2.0 or higher are acceptable toward the graduate degree. However, a minimum GPA of 3.0 is required for graduation. A candidate having a GPA below 3.0 will be placed on probational status. In such status, the candidate will not be allowed to carry
more than nine credit hours per semester or take any non-competitive, special problems courses as part of the program.

**Retention in Program:** Should a graduate student’s cumulative grade-point average fall below 3.0 after 16 or more credits of programmed work (not including collateral courses) have been accumulated, one semester on probational status will be allowed. Failure to remove the deficiency during this semester will result in dismissal of the candidate from the program.

Should a Ph.D. candidate’s cumulative grade-point average fall below 3.0 after having completed half of the courses in the approved guidance committee report, OR should the student accumulate more than 3 deferred grades (identified by the DF-Deferred marker), the student may be enrolled in probational status in the doctoral degree program for one additional semester. If at the end of the additional semester the student’s cumulative grade-point average is 3.0 or higher AND the student has no more than 3 deferred grades, the student may continue to enroll in the doctoral degree program. Otherwise, the student will be dismissed from the program.

**Credit-Non-Credit Registration:** All courses are open for Credit/Non-Credit registration. However, at least 22 credits on the master’s program or equivalent must be taken on the basis of the established numerical grading system (grade of 0 to 4). These 22 credits may include thesis credit, but not collateral course credit. Collateral courses taken to fill deficiencies in the student’s undergraduate background should be taken using a numerical grading system, and a grade of 3.0 or higher is required in these courses.

**DF-Deferred grades:** The required work must be completed and a grade reported within 6 months with the option of a single six-month extension. If the required work is not completed within the time limit, the DF will become U-Unfinished and will be changed to DF/U under the numerical and Pass-No Grade (P-N) grading systems, and to DF/NC under the Credit-No Credit (CR-NC) system. This rule does not apply to graduate thesis or dissertation work.

**Course Registration:** Students enroll using online enrollment. The student’s PID and PAN are required for the enrollment process.

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### 5. Financial Support

The BME Department strives to provide financial support to all Ph.D. students. Several types of financial support are available, including fellowships, research assistantships and teaching assistantships. Continued financial support is contingent upon availability of funds and the student’s making satisfactory progress toward completion of the degree. The department’s criteria for satisfactory progress include courses completed, the nature of the courses, grades received, passing the Ph.D. Qualifying Examination, and progress in completing master’s thesis or Ph.D. dissertation research. Funding is also dependent on the total number of semesters the student has been supported, availability of funds, and the needs of the department for particular services.
**Fellowships:** Fellowships provide financial support that is not associated with specific tasks other than making satisfactory progress toward completion of the degree. Fellowships are assigned based on availability of funds and the student’s qualifications and performance.

Receipt of externally funded fellowships by students who have written their own grant applications and worth at least $24,000 (direct costs) makes the student eligible for in-state tuition rate. The in-state tuition rate applies only to the semesters during which the student is supported by the fellowship. This policy applies only to grants funded through a competitive process by a US or international institution/agency/foundation. Funds obtained through non-competitive processes (e.g., need-based fellowships) do not qualify the student for in-state tuition rates. For more information, consult the Graduate School Funding Page.

**Research Assistantships:** Research assistantships are assigned by the research advisor based on criteria including the availability of research funds and the student’s qualifications, interests, and past performance. Students on research assistantships perform work needed to complete a funded research project. Often, but not always, the work is related to the student’s thesis/dissertation topic. Renewal of research assistantships is based on satisfactory performance and availability of funds.

**Teaching Assistantships:** Teaching Assistantships (TA) are assigned by the chairperson based on criteria including prior commitment to provide support, availability of other forms of support, number of semesters of previous support, and the student’s knowledge of the course material, teaching ability, and interest in teaching as a career option.

**Tuition Waiver, Fees, and Health Insurance:** Research assistantships and teaching assistantships include a tuition waiver (nine credits for fall and spring semesters and five for summer semester) matriculation and energy fees [http://ctlr.msu.edu/COSstudentAccounts/TuitionCalculator.aspx](http://ctlr.msu.edu/COSstudentAccounts/TuitionCalculator.aspx) and health insurance [https://www.hr.msu.edu/benefits/students/health](https://www.hr.msu.edu/benefits/students/health).

**Duration of Financial Support:** Ph.D. students should expect no more than 5 years of assistantship or fellowship support after admission to the Ph.D. program.

### 6. Work Related Policies and Procedures

The Department of Biomedical Engineering strives to provide an excellent learning and working environment for all of its graduate assistants. It is important that graduate assistants comply with University and Department policies concerning work schedule, health and safety, and appearance of office space to help maintain this environment.

**Responsibilities of the Graduate Student:** The responsibilities of the graduate student, as described in the MSU Guidelines for Graduate Student Advising and Mentoring Relationships, and include:

1. Learning and adhering to University and academic unit rules, procedures, and policies applicable to graduate study and research or creative activities, including those outlined in
**Academic Programs, Graduate Student Rights and Responsibilities or Medical Student Rights and Responsibilities, and Academic Freedom for Students at MSU**

2. Meeting University and academic unit requirements for degree completion
3. Forming a guidance committee that meets University requirements, as well as requirements that are outlined in the Graduate Handbook of the academic unit
4. Seeking regulatory approval for research in the early stages of thesis or dissertation work where applicable
5. Keeping the faculty advisor and guidance committee apprised on a regular basis of the progress toward completion of the thesis or dissertation

**Rights and Responsibilities of Graduate Teaching Assistants:** Students’ rights and responsibilities as a graduate teaching assistant can be found in the Graduate Employees Union at [http://www.geuatmsu.org](http://www.geuatmsu.org)

This contract also outlines MSU’s rights and responsibilities as an employer. The Graduate Secretary can provide a copy of the contract.

**Training and Professional Development of TAs:** The Department and supervising faculty members are responsible for establishing orientation and in-service training programs for all employees (TAs). Such programs will provide training in the teaching of subject matter, an introduction to course goals, grading criteria and practices, and classroom procedures, as well as periodic classroom visitations. The department will hold teaching assistant orientation and training in the fall semester as part of the Department's graduate student orientation. Supervising faculty will ensure that teaching assistants are qualified in the subject matter and are trained in the course goals, grading criteria and practices, and classroom procedures. The supervising faculty will also carry out periodic classroom visitations. Employees (TAs) shall, as part of their regular duties, participate in the orientation and training.

**Appointment Levels:** Three levels are established for graduate student appointments. The levels are determined as follows:

- **Level 1** requires that each of the following 3 criteria be met:
  - admitted MSU graduate student
  - Bachelor's degree
  - less than two semesters’ experience as a graduate assistant or full-support fellow.
- **Level 2** is required when each of the following 3 criteria is met:
  - admitted MSU graduate student
  - Master’s degree (a JD or LLB is equivalent to Master’s in determining level);
    - OR 30 or more grad semester credits or equivalent;
    - OR at least two semesters’ experience as a graduate assistant or full-support fellow.
  - level 3 required criteria have not been met
- **Level 3** is required for Teaching (TE) when each of the following 3 criteria is met:
  - admitted MSU graduate student
• a master's degree or equivalent.
• The graduate assistant experience must be in the employing unit or in a department considered relevant by the chairperson or employing unit. The minimum number of semesters shall be four (4), five (5) or six (6) but in any case no greater than department's current practice as stipulated in 2004.

• Level 3 is required for Research (R) or Teaching (TE) assistants when each of the following 3 criteria are met:
  o admitted MSU graduate student.
  o successful completion of doctoral comprehensive exams, as defined by the department in which the student is enrolled
  o 6 semesters as a graduate Research/Teaching (R/TE) assistant at MSU, or equivalent. The definition of equivalence is left to the discretion of the chairperson of the appointing unit, but it is expected that only experience in research-oriented assignments count toward the 6 semesters of experience as an RA.

(Level 3 is not acceptable for Research (R) or Teaching (TE) unless all 3 criteria listed above are met.)

Annual Evaluation: For each candidate, an evaluation of both academic progress and professional potential will be made by March 15 of each year. The Associate Dean of Engineering for Graduate Studies may dismiss a student whose performance does not meet the program’s acceptable standards of quality.

Work Calendar: Graduate assistants are paid for the period of August 16 to December 31 for fall semester, January 1 to May 15 for spring semester, and May 16 to August 15 for summer semester. Graduate assistants are expected to perform assigned duties on campus unless they have explicit permission from their supervisor to be away.

Vacation: University holidays include Labor Day, Thanksgiving, Christmas, and New Year’s Day. The research advisor should approve other vacation time well in advance.

Payroll Processing: Students should complete an I-9 form within three business days of date of hire, August 16, and present an original document(s) that establish identity and employment eligibility. Students may choose which identification document(s) (e.g., social- security card) to present from the list on the back of the I-9 form.

Social Security Card: Graduate assistants who do not have a social security card or whose card is lost, stolen or destroyed are required to apply for a card from the Social Security Administration. The local Social Security office is located at 5210 Perry Robinson Circle, Lansing, MI 48910. The phone number is 393-3876, and the operating hours are 9:00 a.m. to 4:00 p.m., Mon. - Fri. About eight to twelve weeks are required for processing the new card.

Enrollment Required: Paychecks will be held for graduate assistants who are not enrolled (i.e., fees paid) by the payday.
Direct Deposit Personal Entry: It is highly recommended that all employees enroll for MSU Direct Deposit to receive their payment. This will allow students to have paychecks automatically deposited to a bank account through the Enterprise Business System under the employee self-service tab.

MSU PayCards: The MSU PayCard program provides an alternative to payroll Direct Deposit. The PayCard program is a convenient and secure method of receiving your pay and expense reimbursements deposited directly to a reloadable VISA Debit Card, eliminating the need for paper checks. If you choose to select PayCard, your pay will be automatically deposited directly to your PayCard on pay day. You can access a detailed earnings statement on the Enterprise Business System under the employee self-service tab.

Hard Copy Checks: Hard copy paychecks may still be issued in rare cases, such as if there were an off cycle payment, manual pay disbursement, or the timing of a new employee’s hire. If this is the case, paychecks can be picked up in the departmental business office, 4000 IQ Building, after 3:00 p.m. every other Friday.

W-4 Form: Tax withholdings (W-4 form) should be submitted through the Enterprise Business System under the employee self-service tab. (Exception: some international students and scholars may be limited in their access capabilities. For example, some individuals are required by federal regulations to file their paperwork and related documents in person at the MSU Payroll Office.)

Parking: Graduate students with assistantships or fellowships are eligible for on-campus parking permits. Students may apply for a parking permit online with MSU Police or in person at the Public Safety Office, 870 Red Cedar Road. Car registration and insurance must be presented when applying for a parking permit at the office. Students living in Owen Hall must show proof of residency. Students living in University Apartments must show a leasing agreement.

Office Space: Graduate students are assigned cubicle space, typically during the first week of the semester.

Access Cards and keys: Graduate assistants are issued access cards and desk keys at the request of their faculty advisor. You will need to pick up these cards/keys from your faculty advisor.

Office Upkeep: Students are expected to maintain a clean and orderly office space. You are expected to empty your wastebaskets with the recycle bins found in the different areas throughout the facility. All offices are smoke-free areas.

Labs: No food or drinks are allowed in labs. Students are expected to maintain a clean and orderly lab space.

Ergonomics: Health problems can result from continuous and prolonged use of computer keyboards. Proper posture and periodic breaks are recommended.

Department Website, Email, and Mail: Notices regarding events of general interest are posted on the BME website. Email is widely used to communicate with students. Hard-copy mail for graduate
assistants will be distributed in mailboxes labeled with their lab’s name located on the 1st floor mailroom. There will also be a whiteboard where all current lab members’ names should be written. Please be sure that your name is listed under the appropriate lab on the board. Graduate assistants should check the BME website and their assigned mailbox at least twice a week; e-mail should be checked at least daily.

**Emergencies:** MSU buildings have evacuation alarms that are activated by the red pull handles found in the hallways. However, these handles only activate the alarm; they do not notify the fire or public safety departments. Thus, in case of an emergency that may require evacuation, such as a fire or dangerous chemical spill, students should both **activate the alarm and contact the Department of Public Safety (DPS) by dialing 911** on any phone.

**Non-emergency Assistance:** To summon non-emergency assistance, students should notify the Business Office, 4000 IQ Building, phone 884-7931 during business hours. If immediate attention is needed outside of business hours, notify the MSU telephone operator by dialing 0 on a MSU phone.

**Telephone:** Telephones have been installed in laboratories and offices for use by graduate students for local calls only. Personal long-distance calls must be made from the graduate student’s own cellphone or elsewhere. Business-related long-distance calls may be made in the business office with your advisor's approval.

**Purchases:** Graduate assistants engaged in research may purchase apparatus, chemicals, and other supplies for research purposes with the approval of their research advisor. These items should be purchased on campus through Spartan Marketplace, Biochemistry Stores, or Chemistry Stores and charged to a research account. The research advisor can provide the account number to use.

Graduate assistants who charge items on a University account must submit a receipt of purchase to the person/department who keeps records for that account. If you are not sure who that person is, please see Meredith Prince in the business office.

**Spartan Marketplace:** It may be possible to purchase items not sold on campus through a University approved vendor. These companies have special purchasing agreements with MSU. Purchases made through the Marketplace companies will route through the system for departmental approval. You can access the Marketplace through your EBS portal.

**Purchasing Requisition:** Items that cannot be purchased either through a campus facility or on Spartan Marketplace must be ordered on a requisition to the MSU Purchasing Department. To request staff assistance with placing a non-Marketplace order, please fill out the form located [here](#).

Orders should not be made through a direct call to the company.

**Copy Machine:** The copy machine must be used for department-related tasks only. Teaching assistants may be assigned a copier account number, which must be used only for the assigned course. When copying research-related material, the student’s research advisor will authorize a research account number. The department copier cannot be used for thesis/dissertation copying,
because of the large number of pages involved. On-campus copy centers are available that have copiers better suited for high-volume jobs.

**Travel:** A Michigan State University Pre-Trip Authorization (PTA) form must be completed and submitted to Brenda Lippincott at least one week before traveling on MSU-related business. The PTA form must be completed even if the travel does not involve reimbursement (this is for insurance purposes only; contact the business office for details). Described below is the procedure for completing an MSU PTA Form.

1. A Michigan State University Pre-Trip Authorization Form can be accessed on-line at the following URL: http://ctlr.msu.edu/download/forms/TVExpenseWkst.xls
2. Prior to the trip, the “Section A: Travel Authorization” portion of the form must be completed (an account number must be provided) and submitted to Brenda for approval.
3. After returning from the trip, submit your receipts to Brenda for completion of the “Reimbursement” portion of the travel voucher. University guidelines for reimbursement must be followed. Special note should be taken of requirements for receipts. In most cases, an original receipt showing what form of payment was used (cash, credit card, etc.) is required — under certain circumstances, a charge card receipt is acceptable.

Graduate Students are eligible to receive a travel fellowship through The Graduate School. The online travel fellowship application form (https://grad.msu.edu/travel) must be submitted several weeks prior to the trip. Follow instructions to apply for a travel fellowship and once student has completed the form and their advisor has signed and approved, you must submit it to Brenda Lippincott for further processing.

**Travel Abroad:**

1. Check with the [MSU Travel Clinic](http://ctlr.msu.edu/). They will let you know of any health risks or immunizations.
2. Check the [Travel Smart](http://travel.msu.edu/) website. The department or research grant supporting TAs or RA’s research are required to pay for all needed vaccinations and or medications, as determined by the MSU Travel Clinic. These costs may be included in applications for funds from the Research Enhancement or Travel Grant programs administered by the Graduate School.
3. Apply for assistance with travel funding via the [Graduate School](http://www.ctlr.msu.edu/). If the Graduate School provides funding, they will also provide a MEDEX emergency card.
4. Check the [International Studies and Programs](http://www.ctlr.msu.edu/). website for issues related to safety around the world.

For additional information regarding University travel, please refer to the following web site: [http://www.ctlr.msu.edu/](http://www.ctlr.msu.edu/).
**Business Office Hours:** The business office is open from 8:00 a.m. to 5:00 p.m. Monday - Friday. The phone number is 517-884-6976. The e-mail addresses for office staff members are available on the [department website](#).

7. **Integrity and Safety in Research and Creative Activities**

7.1 **Safety Training**
The MSU Office of [Environmental Health & Safety](#) (EHS) coordinates safety training. Graduate assistants are required to complete the following safety training:

- Required EHS training
- Right-to-Know video
- Laboratory-specific training
- Departmental Safety Seminar

7.2 **Responsible Conduct of Research (RCR)**
Guidelines on ethics and research integrity are described during the Research Methods course and during the RCR training that is required for all BME graduate students: [https://www.egr.msu.edu/academics/graduate/rcr](https://www.egr.msu.edu/academics/graduate/rcr)

In addition, each graduate student should review the document, “Guidelines for Integrity in Research and Creative Activities.” The following information is reprinted from that document.

Michigan State University considers the responsible conduct of research (RCR) as essential to all research activities associated with the University. Integrity in research and creative activities embodies a range of practices listed below:

- Honesty in proposing, performing, and reporting research
- Recognition of prior work
- Confidentiality in peer review
- Disclosure of potential conflicts of interest
- Compliance with institutional and sponsor requirements
- Protection of human subjects and humane care of animals in the conduct of research
- Collegiality in scholarly interactions and sharing of resources
- Adherence to fair and open relationships between senior scholars and their coworkers

**Honesty in Proposing, Performing, and Reporting Research:** The foundation underlying all research is uncompromising honesty in presenting one’s own ideas in research proposals, in performing one’s research, and in reporting one’s data. Detailed and accurate records of primary data must be kept as unalterable documentation of one’s research and must be available for scrutiny and critique. It is expected that researchers will always be truthful and explicit in disclosing what was done, how it was done, and what results were obtained. To this end, research aims, methods, and outcomes must
be described in sufficient detail such that others can judge the quality of what is reported and can reproduce the data. Results from valid observations and tests that run counter to expectations must be reported along with supportive data.

**Recognition of Prior Work:** Research proposals, original research, and creative endeavors often build on one’s own work and also on the work of others. Both published and unpublished work must always be properly credited. Reporting the work of others as if it were one’s own is plagiarism. Research advisors and members of guidance committees have a unique role in guiding the independent research and creative activities of students. Information learned through private discussions or committee meetings should be respected as proprietary and accorded the same protection granted to information obtained in any peer-review process. Unintentional plagiarism can be prevented using programs such as “iThenticate,” anti-plagiarism software available on the iThenticate Site as part of the “Turn-It-In” package. To learn more visit the Graduate School.

**Confidentiality in Peer Review:** Critical and impartial review by respected disciplinary peers is the foundation for important decisions in the evaluation of internal and external funding requests, allocation of resources, publication of research results, granting of awards, and in other scholarly decisions. The peer-review process involves the sharing of information for scholarly assessment on behalf of the larger disciplinary community. The integrity of this process depends on confidentiality until the information is released to the public. Therefore, the contents of research proposals, of manuscripts submitted for publication, and of other scholarly documents under review should be considered privileged information not to be shared with others, including students and staff, without explicit permission by the authority requesting the review. Ideas and results learned through the peer-review process should not be made use of prior to their presentation in a public forum or their release through publication.

**Disclosure of Potential Conflicts of Interest:** There is real or perceived conflict of interest when a researcher has material or personal interest that could compromise the integrity of the scholarship. It is, therefore, imperative that potential conflicts of interest be considered and acted upon appropriately by the researcher. Some federal sponsors require the University to implement formal conflict of interest policies. It is the responsibility of all researchers to be aware of and comply with such requirements. For more information regarding Conflict of Interest at MSU, please visit: https://coi.msu.edu/

**Compliance with Institutional and Sponsor Requirements:** Investigators are granted broad freedoms in making decisions concerning their research. These decisions are, however, still guided, and in some cases limited, by the laws, regulations, and procedures that have been established by the University and sponsors of research to protect the integrity of the research process and the uses of the information developed for the common good. Although the legal agreement underlying the funding of a sponsored project is a matter between the sponsor and the University, the primary responsibility for management of a sponsored project rests with the principal investigator and his or her academic unit.

**Protection of Human Subjects and Humane Care of Animals in the Conduct of Research:** Research techniques should not violate established professional ethics or federal and state requirements
pertaining to the health, safety, privacy, and protection of human beings, or to the welfare of animal subjects. Whereas it is the responsibility of faculty to assist students and staff in complying with such requirements, it is the responsibility of all researchers to be aware of and to comply with such requirements. The Office of Regulatory Affairs at MSU is composed of unit offices that provide regulatory oversight and/or operational management of research activities.

Collegiality in Scholarly Interactions and Sharing of Resources: Collegiality in scholarly interactions, including open communications and sharing of resources, facilitates progress in research and creative activities for the good of the community. At the same time, scholars who first report important findings are both recognized for their discovery and afforded intellectual property rights that permit discretion in the use and sharing of their discoveries and inventions. Balancing openness and protecting the intellectual property rights of individuals and the institution will always be a challenge for the community. Once the results of research or creative activities have been published or otherwise communicated to the public, scholars are expected to share materials and information on methodologies with their colleagues according to the tradition of their discipline.

Research advisors have a responsibility to respect and protect the intellectual property rights of their advisees. A clear understanding must be reached on who will be entitled to continue what part of the overall research program after the advisee leaves for an independent position. Advisors should also strive to protect junior scholars from abuses by others who have gained knowledge of the junior scholar’s results during the mentoring process, for example, as members of guidance committees.

Adherence to Fair and Open Relationships between Senior Scholars and Their Coworkers: The relationship between senior scholars and their coworkers should be based on mutual respect, trust, honesty, fairness in the assignment of effort and credit, open communications, and accountability. The principles used to establish authorship and ordering of authors on presentations of results must be communicated early and clearly to all coworkers. These principles should be determined objectively according to the standards of the discipline, with the understanding that such standards may not be the same as those used to assign credit for contributions to intellectual property. For example, the NCBI has published a document entitled, “Authorship policies of scientific journals” that provides guidelines for the types of contributions that warrant authorship. It is the responsibility of the faculty to protect the freedom to publish results of research and creative activities. The university has affirmed the right of its scholars for first publication except for “exigencies of national defense”.

It is also the responsibility of the faculty to recognize and balance their dual roles as investigators and research advisors in interacting with graduate students of their group, especially when a student’s efforts do not contribute directly to the completion of his or her degree requirements. Additional materials are available through MSU’s Research & Scholarly Integrity website.

Misconduct in Research Scholarly Activities: Federal and University policies define misconduct to include fabrication (making up data and recording or reporting them), falsification (manipulating research materials, equipment or processes, or changing or omitting data such that the research is not accurately represented in the record), and plagiarism (appropriation of another person’s ideas,
processes, results, or words without giving appropriate credit). Serious or continuing non-compliance with government regulations pertaining to research may constitute misconduct as well. University policy also defines retaliation against whistle blowers as misconduct. Misconduct does not include honest errors or honest differences of opinion in the interpretation or judgment of data.

The University views misconduct to be the most egregious violation of standards of integrity and as grounds for disciplinary action, including the termination of employment of faculty and staff, dismissal of students, and revocation of degrees. It is the responsibility of faculty, staff and students alike to understand the University’s policy on misconduct in research and creative activities, to report perceived acts of misconduct of which they have direct knowledge to the University Research Integrity Office, and to protect the rights and privacy of individuals making such reports in good faith.

7.3 Responsible Conduct of Research (RCR) Training
Graduate students must complete RCR training during each calendar year at MSU. Training must be completed between January 1 and December 31 to count for that calendar year.

MSU’s requirements are as follows:
• First Year Students
  o Minimum of 5 hours of RCR training
  o If you have a research advisor or major professor, then at least 1 of the 5 hours of training must be conducted in person with your advisor
• After the First Year
  o Minimum of 3 hours of RCR training each year or as required by a specific funding agency, whichever is larger
  o If you have a research advisor or major professor, then at least 1 of the 3 hours of training must be conducted in person with you advisor

Meeting the five-hour/three-hour training requirement can take many forms. Some possible methods to meet these requirements are:

1. Individual research group RCR training;
2. Workshops presented by the Graduate School;
3. College-level seminars;
4. RCR modules as part of graduate coursework;
5. Online training via the Collaborative Institutional Training Initiative.

All researchers are responsible for scheduling, completing, and logging their own RCR training. To track RCR training hours, log hours within the Research Training Tracking System (RTTS) provided by the College of Engineering.
8. Student Conduct and Conflict Resolution

**Student Conduct:** The University expects student conduct and behavior to reflect qualities of good citizenship, both in and out of the classroom. Details are given in the “Spartan Life” handbook and resource guide.

**Conflict Resolution and Grievances:** Conflicts involving graduate students may be handled informally or formally, depending on the preference of the involved parties. Students’ rights and responsibilities, including formal grievance procedures, are described in “Graduate Student Rights and Responsibilities.” The BME Department’s Hearing Board follows specific procedures to deal with such issues. The College of Engineering’s Hearing Board procedures can be found here. The Office of the Ombudsperson is a resource for additional information.

9. University Resources

**Academic Information**
- Academic Freedom for Students at Michigan State University: Academic Programs Catalog: [http://splife.studentlife.msu.edu/](http://splife.studentlife.msu.edu/)
- Academic Programs Catalog: [http://www.reg.msu.edu/AcademicPrograms/](http://www.reg.msu.edu/AcademicPrograms/)
- Graduation Application: [https://reg.msu.edu/StubForms/GradApp/GradApp.aspx](https://reg.msu.edu/StubForms/GradApp/GradApp.aspx)
- Doctoral Candidate Information: [http://www.egr.msu.edu/academics/graduate/doctoral-candidate-information-intro](http://www.egr.msu.edu/academics/graduate/doctoral-candidate-information-intro)
- Annual Progress Report: [https://www.egr.msu.edu/academics/graduate/graduate-student-annual-reporting-requirements](https://www.egr.msu.edu/academics/graduate/graduate-student-annual-reporting-requirements)
- Graduate Employees Union (GEU) Collective Bargaining Agreement: [http://www.geuatmsu.org](http://www.geuatmsu.org)
- Graduate School Funding: [http://grad.msu.edu/funding/](http://grad.msu.edu/funding/)
- Graduate Student Rights and Responsibilities: [http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities](http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities)
- Graduate Reporting System (GRS): [https://www.egr.msu.edu/grs/](https://www.egr.msu.edu/grs/)
- GradPlan: [https://www.gradplan.msu.edu/](https://www.gradplan.msu.edu/)
- BME Course Overides: [https://www.egr.msu.edu/bme/form/bme-override-request](https://www.egr.msu.edu/bme/form/bme-override-request)
- Online Enrollment: [https://reg.msu.edu](https://reg.msu.edu)
- Thesis/Dissertation Formatting Tutorial: [https://grad.msu.edu/etd/formatting-tutorial](https://grad.msu.edu/etd/formatting-tutorial)
- PREP program, for graduate student professional development: [https://grad.msu.edu/prep](https://grad.msu.edu/prep)
• Spartan Life: http://splife.studentlife.msu.edu/
• Commencement: http://commencement.msu.edu

Payroll Related
• Enterprise Business System: http://www.ebs.msu.edu
• Payroll Office: http://ctlr.msu.edu/COPayroll/default.aspx

Safety
• Environmental Health & Safety: http://www.orcbs.msu.edu

Travel
• International Studies and Programs Travel Information: http://www.isp.msu.edu/information-resources/international-travel/
• Travel Clinic: http://travelclinic.msu.edu
• Travel Smart: http://grad.msu.edu/travel/

Training
• Collaborative Institutional Training Initiative: http://www.citiprogram.org

Research Related
• Guidelines for Graduate Student Advising and Mentoring Relationships | Guidelines for Integrity in Research and Creative Activities: https://www.google.com/url?q=https://grad.msu.edu/sites/default/files/content/researchintegrity/guidelines.pdf&sa=U&ved=0ahUKEwintNan66rNAhUULVIKHatECnQQFggFMAA&client=internal-uds-cse&usg=AFQjCNgqo1zIP_3ZUN_XS84MvGjxJoNIPQ
• Procedures Concerning Allegations of Misconduct In Research and Creative Activities: https://www.google.com/url?q=http://rio.msu.edu/sites/default/files/June_2009_Procedures.pdf&sa=U&ved=0ahUKEwi4g8HV66rNAhVSPVlKHtKtCtcQFggFMAA&client=internal-uds-cse&usg=AFQjCNEvK05Ed-aGzysvPy30gJEaqSzQ
• Research Integrity Office: http://www.rio.msu.edu
• Research Training Tracking System: https://www.egr.msu.edu/secureresearchcourses/

University Organizations
• BME Department: https://www.egr.msu.edu/bme/
• College of Engineering: http://www.egr.msu.edu
• Graduate School: http://grad.msu.edu/
• Council of Graduate Students: http://cogs.msu.edu/
• Office for International Students and Scholars: http://oiss.isp.msu.edu/
• Vice President for Research: http://www.msu.edu/unit/vprgs/
• Office of the Registrar: http://reg.msu.edu
• University Stores: http://usd.msu.edu/university-stores/
• Ombudsperson’s Office: http://www.msu.edu/unit/ombud/
• Police: http://dpps.msu.edu

Departing from MSU
• Exit/Destination Survey (Masters): https://www.egr.msu.edu/masters/survey/
• Exit/Destination Survey (Doctoral): https://www.egr.msu.edu/doctoral/survey/
• Termination-Separation Checklist: http://www.hr.msu.edu/termsep/termsep_docs/TerminationChecklist.pdf

ADDENDA A - F
ADDENDUM A

MICHIGAN STATE UNIVERSITY
CREDIT EVALUATION
GRADUATE PROGRAM

Name ________________________ PID ________________________

Last M. First

Credit from ________________________ Date Taken ________________________

Total Credits Transferred ________________________ Equivalent number of MSU semester credits ________________________

College ________________________ Major ________________________ Degree ________________________

Entered ________________________ Date ________________________

EXPLANATION AND INSTRUCTIONS

Use this form for the evaluation of graduate credits earned at another accredited institution.

1. Listed in column (1) are graduate level subjects previously completed at another accredited institution.

2. In column (2) are the semester or term credits previously earned in subjects listed in column (1).

3. Column (3) is used for those departments and/or colleges which desire to make a specific subject listing for evaluation purposes. Three term credits equal two semester credits (e.g. Chemistry 800 – 6 term credits equal 4 semester credits).

4. In column (4) the department and/or college will indicated the number of semester credits to be accepted in transfer. Subject by subject or by total only. Should identify 400 level and 800 level courses here.

5. When the evaluation is complete and approved by the Dean’s Office, the original evaluation is sent to the Admissions Office with an official transcript from the institution. Copies should be filed by the Dean’s Office and the Departmental unit.

6. A copy of a transfer course summary worksheet will be sent to the student upon completion.

<table>
<thead>
<tr>
<th>(1) TRANSFER SUBJECTS</th>
<th>(2) TERM CRS.</th>
<th>(3) CORRESPONDING MSU SUBJECTS</th>
<th>(4) ACCEPTED MSU CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPT. OR COURSE TITLE</td>
<td>COURSE NO.</td>
<td>DEPARTMENT</td>
<td>COURSE NO.</td>
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<tr>
<td>SEM. CRS.</td>
<td></td>
<td>SEM. CREDITS</td>
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</tbody>
</table>

Advisor ________________________ Signature of Chairperson ________________________ Date ________________________

Signature of Dean ________________________ Date ________________________
REQUEST FOR DUAL ENROLLMENT STATUS

Dual enrollment provides an opportunity for academically talented undergraduate students to enroll in graduate courses and conduct research towards a graduate degree while completing the last two years of their bachelor's degree(s) programs.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Middle Initial</th>
<th>PID</th>
</tr>
</thead>
</table>

Term/Year Dual Enrollment Begins

Undergraduate Major
Undergraduate College

Undergraduate Degree Program Advisor

Graduate Major
Graduate College

Graduate Degree Program Advisor

Number of Undergraduate Credits Earned

Number of Undergraduate Credits Needed for Bachelor Degree

COURSES TO BE SHARED BETWEEN UNDERGRADUATE AND GRADUATE DEGREES
(Maximum 9 credits allowed)

<table>
<thead>
<tr>
<th>TERM/YEAR</th>
<th>SUBJECT</th>
<th>COURSE NUMBER</th>
<th>SECTION</th>
<th>CREDITS</th>
</tr>
</thead>
</table>

Students will be classified as an undergraduate student until the minimum number of credits required for a first bachelor's degree is completed. When the student is classified as a graduate student, eligibility begins for graduate assistantships, other forms of graduate student financial aid, or those services and prerogatives normally reserved for graduate students. For further detail regarding dual enrollment by undergraduates please refer to the Graduate Education section of the Academic Programs catalog.

Approved by:
Student Signature __________________________ Date ______________
Department Chairperson, Admitting Graduate Department __________________________ Date ______________
Associate Dean, Admitting Graduate College __________________________ Date ______________

RETURN THIS FORM TO THE OFFICE OF THE REGISTRAR
426 AUDITORIUM ROAD, ROOM 150, EAST LANSING, MI 48824
OR FAX TO (517) 353-1935

Michigan State University is an affirmative-action/equal-opportunity employer.
ADDENDUM C

Application to Transfer from MS to PhD Program
Department of Biomedical Engineering
College of Engineering

Name: _______________________________ PID: _______________________________ Date: _______________________________

E-mail Address: _______________________________

I expect to complete the requirements for my MS. degree during the ____________________ semester (and year)
with ____________________ as my academic advisor.

I am applying to the PhD program in Biomedical Engineering beginning the ____________________ semester (and year) with
______________________________ as my academic advisor.

Signature

Before submitting, the following materials must be attached to complete the application:
1. All transcripts
2. A current curriculum vita
3. An academic statement outlining your motivations and goals for doctoral study
4. A letter of support from your intended academic advisor recommending you for admission, indicating a willingness to
serve as your academic advisor, and outlining the financial support plan for your studies. Additional letters of
recommendation are optional.

Approved by:

______________________________ Date: _______________________________

Academic Advisor

Submission deadlines to the BME Graduate Secretary are no later than the following:
December 31 for enrollment as a PhD student beginning the following Summer or Fall semester if you wish full consideration
for financial assistance (including teaching assistantships and fellowships).
90 days before the start of the semester of first enrollment as a PhD student if other sources of financial support are available
(e.g. research assistantship with the intended advisor or government support awarded to the applicant)

Department Action:
The transfer to the Ph.D. doctoral program is approved or unapproved (circle one).

Provisional Requirement(s): ____________________________________________

______________________________ Date: _______________________________
Graduate Director

______________________________ Date: _______________________________
Associate Dean
RECORD OF QUALIFYING EXAMINATION FOR DOCTORAL STUDENTS

The following Ph.D. Qualifying Examination is complete with the indicated results.

Name __________________________ Date __________ PID __________

Major Focus Area __________________________

Research Potential Evaluation Subjects

<table>
<thead>
<tr>
<th>Method</th>
<th>Subject or Topic</th>
<th>Facilitator</th>
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Scholastic Potential Evaluation Subjects

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<tr>
<th>Area No.</th>
<th>Subject or Topic</th>
<th>Associated MSU Courses</th>
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Decisions of the Examination Committee

<table>
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<tr>
<th>Examiner</th>
<th>Area or Group</th>
<th>Signature</th>
<th>Pass/Fail</th>
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Overall Performance:  ☐ Passed  ☐ Failed

Comments: __________________________________________

________________________________________

Date ________  Graduate Advisor or Committee Chair

________________________________________  Date ________

Department Chairperson

PHDQU1A1
MICHIGAN STATE UNIVERSITY  
COLLEGE OF ENGINEERING

RECORD OF COMPREHENSIVE EXAMINATIONS  
FOR DOCTORAL DEGREE

Name ___________________________ Date ___________ PID ___________

Department ________________________ □ Check if this is a reexamination because of expired time limits.

Semester and Year of First Course Counted toward this Degree ________________

Result of Written Comprehensive Examination

<table>
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<th>Field</th>
<th>Examiner(s)</th>
<th>Exam Date</th>
<th>Pass/Fail</th>
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Result of Oral Comprehensive Examination

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<th>Field</th>
<th>Examiner(s)</th>
<th>Exam Date</th>
<th>Pass/Fail</th>
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Approved:

OVERALL PERFORMANCE

Guidance Committee Chairperson  Date  □ Passed  □ Failed

Department Chairperson  Date

Associate Dean  Date

Distribution: Registrar  
College (white)  
Department  
Guidance Committee  
Student

COMPREH
RECORD OF DISSERTATION AND ORAL EXAMINATION REQUIREMENTS FOR DOCTORAL DEGREE CANDIDATE

Department of: __________________________

Student's Name: _________________________ Student Number: _________________________

1. Dissertation Title: _________________________

2. Dissertation has been: □ Accepted □ Rejected □ Accepted subject to revisions (beyond minor editorial changes) required by the Committee.

3. Oral examination in defense of the dissertation was conducted on: _________________________
   The student □ Passed □ Failed Reason: _________________________

4. Dissenting opinions and signatures of dissenting examiners, if any:

5. Subject to the satisfactory completion of other requirements, this student is recommended for the degree Doctor of:
   □ Philosophy □ Education □ Musical Arts

__________________________  ____________________________  ____________________________
Signatures of Guidance Committee Members: Printed names of Guidance Committee Members:

__________________________  ____________________________  ____________________________
__________________________  ____________________________  ____________________________
__________________________  ____________________________  ____________________________
__________________________  ____________________________  ____________________________

6. Major revisions required: __________________________

7. Revisions, if any, approved: __________________________
   Chairperson of Guidance Committee: __________________________  Date: __________________________

   Approved: Department Chairperson: __________________________
   Associate/Assistant Dean: __________________________

MSU is an affirmative action/equal opportunity employer.