RICE UNIVERSITY
School of Engineering
Department of Bioengineering

Graduate Student Handbook

Effective August 16, 2021

Approvals

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PURPOSE OF THIS HANDBOOK

OVERVIEW

The mission of the Department of Bioengineering is to train the next generation of leaders in bioengineering. The Bioengineering department has created an innovative teaching program that transcends boundaries between bioengineering, basic sciences, and clinical medicine, integrating the academic, industrial, and societal perspectives. The department's hands-on approach to education is supported by a long-standing tradition of cross-disciplinary research and education.

The Rice Bioengineering program is a comprehensive training program that provides students with:

- A fundamental understanding of the life and medical sciences
- Advanced analytical and engineering capabilities
- Translational research capability for transferring biotechnical advances from bench to bedside.

With this educational background graduates will be prepared to participate in independent or collaborative research and development endeavors in industry or academia.

Graduate studies in bioengineering include areas such as biomaterials, biofabrication, and mechanobiology; biomedical imaging and instrumentation; cellular and molecular engineering and synthetic biology; and computational and theoretical bioengineering and biophysics. Research areas include biomechanics, biological systems modeling, bioinformatics, cellular and molecular engineering, controlled release technologies, metabolic engineering, spectroscopy, statistical mechanics, synthetic biology, systems engineering and instrumentation, thrombosis, tissue engineering, and transport processes.

The department's graduate degree programs collaborate with other departments at Rice, industry in Houston, and other institutions, including those in the Texas Medical Center.

GRADUATE PROGRAMS

The department offers the following degrees:

<u>Professional Masters in Bioengineering</u>
Applied Bioengineering (Course based)
Applied Bioengineering (Research based)
Global Medical Innovation (GMI)
MBE for Medical Students (Applied Bioengineering, course - or research-based or Global Medical Innovation)

<u>Master of Science in Bioengineering</u>
This degree is not generally offered to first-time students. Students are accepted into the Masters of Science program only in extraordinary circumstances. Exceptions that allow first-time students into the M.Sc. program are made on a case-by-case basis and only with approval of the Admissions Committee.

<u>PhD in Bioengineering</u>
PhD program
MD/PhD program (Students must first be accepted into the MSTP program at Baylor College of Medicine prior to being accepted into the Bioengineering PhD program.)
All graduate students are responsible for understanding the policies and procedures set forth by the Department of Bioengineering, the Office of Graduate and Postdoctoral Studies, and the University *General Announcements*.

This handbook contains the policies and relevant procedures that affect the Department of Bioengineering graduate programs including,

1. General Guidelines applicable to all Graduate Students
2. Doctor of Philosophy (PhD),
3. Medical Scientist Training Program (MD/PhD)
4. Master of Science in Bioengineering (MS)
5. Master of Bioengineering (Professional Degree)
    a. MBE – Applied Bioengineering Course Based (MBE-AB, CB.)
    b. MBE – Applied Bioengineering Research Based (MBE-AB, RB.)
    c. MBE – Applied Bioengineering MD/MBE (MD/MBE)
    d. MBE – Global Medical Innovation (MBE-GMI)

LIMITATIONS

This handbook supplements the *General Announcements,* Rice policies relevant to graduate students, and the policies and procedures of the Office of Graduate and Postdoctoral Studies. In case of error, omission, or conflict, policies of the *Rice General Announcements* supersede those stated within this handbook. It is the student's responsibility to become familiar with the rules, procedures, and requirements of his/her research group, the Department of Bioengineering and the resources mentioned above. When in doubt, the student should seek help first at the department level (Academic Program Administrator, Academic Administrator, and/or the Director/Chair of the student's graduate program) and then at the central administration level (Office of Graduate and Postdoctoral Studies) if necessary.

EFFECTIVE GUIDELINES

Graduate Students are expected to follow the responsibilities and requirements in effect when they matriculated. However, if the program requirements change during the students' tenure at Rice University, the student may elect to continue studies under those in place at the time of matriculation or the most current policies in effect at the time the student elects to switch to more recent requirements.

A student may not combine two separate sets of policies. Whichever policies the student elects to follow must be followed in full. If a student decides to follow updated policies rather than those in effect in the year he or she matriculated, the Academic Program Administrator (ges2@rice.edu) should be notified so the student's record can be updated.

POLICY REVISIONS

Generally, students are subject to the policies in effect when they first matriculate into the graduate program. Minor changes in policy that will not materially affect a student's progress towards their degree may be implemented immediately when it is determined to be in the best interest of students and/or the graduate program, or if the changes are required by a legislative or regulatory body. Any such changes, along with any other *substantive* changes will be communicated to students. (Email notification via the BIOE graduate student "listserve" is considered adequate communication.)

The Department reserves the right to correct grammatical or typographical errors in these policies at any time without notifying students.

GENERAL GUIDELINES (APPLIES TO ALL GRADUATE STUDENTS)

STUDENT RESPONSIBILITIES

Students are responsible for meeting all university and program requirements for their chosen program. In addition to agreeing with the regulations stated in this handbook, students must agree to follow the *General Announcements* (http://ga.rice.edu).

STANDARDS OF CONDUCT & HONOR CODE

Students are expected to live up to the high standards Rice sets for its community members, as described in the code of student conduct. Graduate students must follow the *Code of the Student Conduct* at all times. Information on this code can be found at https://sjp.rice.edu/. Bioengineering graduate students are also bound by the Honor Code. Information regarding the honor code can be found at: https://gradhonor.rice.edu/.

DEADLINES

Students must observe all deadlines listed in the Academic Calendar, *General Announcements*, and program guidelines. Although efforts will be made to alert students to deadlines, it is ultimately the student's responsibility to know all deadlines related to their program.

RESIDENCY AND ENROLLMENT REQUIREMENTS

The following table defines residency requirements:

Program	Residency	Study Pattern
PhD Program	4 full-time semesters (Fall & Spring)	Full-time study, 9 or more credit hours per semester (spring, summer, & fall)
Masters of Science	1 full-time semester (Fall or Spring)	Full time study, 9 or more credit hours per semester (spring, summer, & fall)
Masters in Bioengineering (Applied Bioengineering)	1 semester of full- or part-time study (Fall or Spring)	Full- or part-time study, 3 or more credit hours per semester (spring & fall)
Masters in Bioengineering (Global Medical Innovation)	1 semester of full-time study & internship during summer or spring	Full-time study, 9 credit hours per semester (spring and fall) and required Internship (6 credit hours) completed in the summer

CONTINUOUS ENROLLMENT

Students are expected to maintain continuous enrollment as required by their program unless an official leave of absence has been granted. Failure to register without a leave of absence granted by the Dean of Graduate and Postdoctoral Studies constitute a *de facto* withdrawal. Non-medical leaves of absence must be approved prior to the beginning of the semester.

If a student withdraws and later wishes to resume study, reapplication is required. Readmission is given only on the recommendation of the department and with the approval of the Dean of Graduate and Postdoctoral Studies.

INTERNATIONAL STUDENTS

International students must consult with the Office of International Students and Scholars (OISS) about the possible impact on their visa status if dropping below full-time status.

PREREQUISITE REQUIREMENTS

Three prerequisites are required for all graduate programs. These include,

1. Fundamentals of Systems Physiology
2. Cellular Biology or Physical Biology
3. Statistics

If a student does not have evidence of completion of a course that meets the prerequisite requirement on his/her undergraduate transcript, the student must take the prerequisite course(s) in addition to the courses required by their program curricula.

The following types of non-traditional coursework **cannot** count toward meeting prerequisite requirements:

- life experience; courses offered by non-collegiate sponsors such as businesses and government agencies, and labor unions, even if evaluated by the American Council on Education (ACE);
- equivalency examinations (e.g. CLEP); or
- MOOCs (massive open online course)

For the purposes of meeting a prerequisite requirement, non-bioengineering courses may be taken for a standard letter grade or pass/fail. University policy does not allow graduate students to take a course offered in their major (home department) on a pass/fail basis. All BIOE courses must be taken for a standard letter grade regardless of the reason for taking the course, including prerequisite requirements.

In specific cases, students may take a course to meet both a prerequisite course requirement and a required elective if the course is a graduate level course ($\geq$ to 500 level or above). For example, BIOE 539 may be taken to meet the prerequisite requirement for students with no statistics courses on their undergraduate transcript and still count BIOE 539 toward their graduate degree. This is an exception and must be approved by the director/chair of the student's program.

TIMELINE FOR COMPLETING PREREQUISITES

MBE students are expected to take prerequisite courses during their first semester and must take any required prerequisites prior to graduating.

PhD students are expected to take prerequisite courses during their first year of study and must complete all prerequisites within the first two years of study. Exceptions to this rule must be approved by the student's advisor and the Graduate Academic Affairs Committee.

NON-COURSE TRAINING

All students are expected to attend orientation. Orientation is expected to be in-person. In specific circumstances (e.g. COVID-19 epidemic) all or portions of orientation may be held remotely. Students will receive adequate notification of all changes in the orientation schedule.

The university requires all graduate students to complete specific non-course training. These training courses should be completed prior to matriculating. Courses must be completed by the deadlines determined by the Office of Graduate and Postdoctoral Studies (currently September 30). All courses may be completed online. Students will be notified how to access and complete the non-course trainings within the expected timeline as part of the pre-matriculation. Required training includes,

1. Preventing Sexual Harassment,
2. Responsible Conduct in Research, and
3. Lab Safety Training for all PhD and MS students as well as MBE students expecting to work is a lab
4.

TRANSFER CREDIT

Students are responsible for requesting and submitting transfer credit requests. There is no specific deadline for transferring credits, however, to better plan curricular responsibilities, students are encouraged to request transfer credit at the beginning of their graduate program. The following policies apply:

1. Courses must be from a regionally accredited U.S. institution or an international institution officially recognized by that country's ministry of education or equivalent.

2. A student must have received a grade equivalent to a B- (2.67) or above, based on the requirements of the school where the course was taken.
3. No course can be used to satisfy both an undergraduate and graduate degree. It is the student's responsibility to provide proof the course was not used for undergraduate degree requirements.
4. Courses to be transferred must be chosen from those that normally satisfy requirements for an advanced degree.
5. All courses must be identifiable as graduate level according to the school where the course was taken.
6. A course may not be counted toward a student's degree if it is substantially the same as one already counted, or one the student is planning to take, toward degree requirements. The decision regarding whether a course is substantially the same is made by the appropriate academic affairs committee.
7. Courses to be transferred should be matched with an equivalent course at Rice University.
8. In rare circumstances, students may transfer courses with no Rice equivalent. In such cases, the course may not be used to substitute for a required BIOE course. However, such courses may count toward the overall course credits required for the student's degree.
9. Non-BIOE courses may be transferred and can be counted toward the required coursework if there is a Rice course equivalent, if the course is in a discipline related to bioengineering, and the course can meet a requirement of the student's graduate program.
10. If courses are taken at a university with non-traditional grading scales (e.g. grading scale other than the standard 4.0 scale, competency grading, etc.), it is the student's responsibility to obtain an explanation of the prior school's grading policy and documentation that the grade received is equivalent to a B- (2.67) level or above. This information must come directly from the prior school.
11. All transferable credits from schools utilizing a system other than the semester hour (e.g. quarter hours or ECTS credits) will be converted to semester hours. In accordance with university guidelines and based on the external transcript, the Office of the Registrar will determine appropriate transferable credit hours. In no instance will a course transfer with credit greater than the semester hour equivalent originally earned for the coursework.
12. Non-traditional coursework offered by non-collegiate sponsors such as businesses and government agencies, and labor unions, even if evaluated by the American Council on Education (ACE), life experiences, equivalency examinations (e.g. CLEP); and MOOCs (massive open online courses) cannot be counted toward Bioengineering program degree requirements.
13. Courses identified as graduate level equivalents at Rice University must have been taken at the graduate level at the institution from with credit will be transferred.
14. Official transcripts must be submitted from the transfer credit institution to the Office of the Registrar either directly from the student's prior institution, by mail or electronically, or hand-delivered by the student in an official sealed envelope. Unofficial transcripts or transcripts that have been opened by the student will not be accepted.
15. Students seeking transfer credit must submit a Graduate Request for Transfer Credit form, along with required documentation to the department for approval. A course syllabus or detailed course description of the course the student wishes to transfer must be included with the transfer request form. If further information is required the student will be notified. Once a request is approved (or disapproved), all documents, including the approved transfer request form will be returned to the student. The student is responsible for submitting the form to the Registrar's office.
16. Courses taken at another institution are not automatically approved for transfer credit. Transfer credit is only granted with the approval of the BIOE Graduate Academic Affairs Committee or the Master's Program Chairs, depending upon the student's program. Courses for transfer must also be approved by the Office of Graduate and Postdoctoral Studies and the Office of the Registrar.

STUDENTS WITH ADVANCED DEGREE

If a student is entering Rice with a master's degree he/she may petition the appropriate committee to receive credit for graduate courses. PhD student may transfer up to 12 credit hours. MBE and MS students may transfer up to six credit hours.

INTERNATIONAL TRANSFER CREDIT

Students seeking transfer credit for courses taken at institutions outside the United States must present a professional course-by-course evaluation of the foreign official transcript. The professional evaluation must verify that the foreign

institution is equivalent to a regionally accredited U.S. academic institution and must include an explanation of credits earned (including U.S. semester hour equivalents), grade equivalents, and course levels (lower- or upper-level). If this information is not explained on the transcript, evaluations should be obtained from an official credential service (SpanTran or Education Credential Evaluators) and submitted to the BIOE Department. Payment for the professional evaluation is the responsibility of the student.

STUDENT STATUS

University policy requires students to maintain student status throughout their career at Rice University. Specific requirements are listed below.

PROFESSIONAL ENGINEERING MASTER'S OF BIOENGINEERING (MBE) STUDENTS

MBE students of the Applied Bioengineering (MBE-AB) specialization are required to register during the fall and spring semesters. MBE-AB students may, but are not required, to register during summer semesters. MBE-AB students in the research-based component may register for summer research courses.

MBE students of the Global Medical Innovation (MBE-GMI) specialization are expected to matriculate early for the summer semester prior to fall admission to the program in order to participate in a summer internship.

THESIS BASED MASTER'S OF SCIENCE (MS) STUDENTS

Masters of Science student are expected to register for the fall, spring, and summer semesters. Students must register for at least nine (9) credit hours in the fall, spring, and summer semesters to be eligible for a student stipend. Students who fail to meet these credit requirements will not receive a stipend and will be responsible for payment of their tuition.

In exceptional cases supported by a compelling reason, MS students may be allowed to take off during the summer semester(s). Such exceptions must be approved by the student's advisor and the Bioengineering Director of Graduate Studies. The student should not expect to be paid during the summer months he/she is not working.

DOCTOR OF PHILOSOPHY (PhD) STUDENTS

PhD students are expected to register for the fall, spring, and summer semesters. Students must register for at least nine (9) credit hours in the fall, spring and summer to be eligible for a student stipend. Students who fail to meet these credit requirements will not receive a stipend and will be responsible for payment of their tuition.

Students who are participating in summer internships are not required to register for courses during the summer, but will not receive their stipend during their internship.

COURSE REGISTRATION

All students are responsible for registering for courses and reviewing and confirming course selections are correct based upon their degree requirements. Registering for courses is done through ESTHER. Instructions for registering through ESTHER can be found at https://registrar.rice.edu/students/reg_instructions/.

Course Load. Graduate students must secure written permission from the dean of graduate and postdoctoral studies or his/her designee to register for more than 18 credit hours in a semester, including courses taken elsewhere.

REQUEST FOR REGISTRATION RESTRICTION OVERRIDE (AKA: SPECIAL REGISTRATION)

Some courses are closed to registration via ESTHER. These include courses that are at maximum enrollment, require department or instructor permission, have prerequisite requirements, and/or are requesting to be audited.

When a student encounters one of these situations, the student should contact the instructor of the course and request the limitation be overridden. Faculty can override a course through the "Registration Restriction Overrides" function in ESTHER. A faculty override does not automatically enroll a student in the course. Once approved, it is the student's responsibility to then register for the course via ESTHER.

INTER-INSTITUTIONAL COURSES

Under certain circumstances, inter-institutional courses may be taken at a participating institution including the Baylor College of Medicine, University of Texas Health Sciences Center at Houston, University of Texas Medical Branch at Galveston, and the University of Houston. The Inter-institutional Graduate Student Registration form and instructions can be found at https://registrar.rice.edu/online-forms . The following should be considered when taking inter-institutional courses:

- Students must be enrolled full-time at Rice to be eligible to take inter-institutional courses.
- MBE students may only take inter-institutional courses during the fall and spring semesters and only when enrolled full-time.
- Students should not take inter-institutional courses in their last semester since some institutions' may have later semester course end dates and grades may not be transferred to the student's Rice transcript in time for grades to be recorded by Rice deadlines for graduation.
- International students who wish to take inter-institutional courses should consult with the Office of International Students and Scholars (OISS) regarding any required additional steps.
- It is the student's responsibility to request courses be transferred to their Rice transcript. (Courses taken in this manner do not require GAAC approval, however, the student's advisor must still approve the transfer.)

DROP/ADD

During the first two weeks of classes, students may change their registration and add or drop courses without penalty. After the second week, the following conditional apply for both adding and dropping courses and credit hours. Graduate Students:

- May not add courses after the second week of classes, except in extenuating circumstances and with the approval of the Office of Graduate and Postdoctoral Studies. The student's request to add a course must first be supported and approved by the student's advisor and the course instructor and then forwarded to the dean of graduate and postdoctoral studies for consideration. A penalty fee per course will be assessed.
- May drop courses through the seventh week without penalty
- May not drop course after the end of the seventh week of classes except in extenuating circumstances and with the final approval of the Office of Graduate and Postdoctoral Studies. The student's request to drop a course must first be supported and approved by the student's advisor, the course instructor, and the director of graduate studies or the department chair. Afterward, it should be forwarded to the dean of graduate and postdoctoral studies for consideration. Students who receive approval to drop a course after the designated drop deadline will receive a grade of "W" for that course. A penalty fee per course will be assessed.

Graduate student that drop a class after the second week should keep in mind that there is no refund of tuition, assuming the student continues to be enrolled in at least one course.

Students should be aware that permission to drop a course after the seventh week of classes is predicated on extenuating circumstances that were out of the control of the student and for which the student made every effort to resolve. The expectation of a poor grade is not an acceptable reason for dropping a course. Since permission to drop a course is an exception to policy with a low expectation of approval, students should continue to attend classes until a final decision is made.

DOUBLE-BOOKING/OVERLAPPING COURSES

Double-booking or overlapping of courses is prohibited. Any deviation from this policy must be approved by both course instructors and the appropriate program director.

GRADING PROCEDURES

Instructors are required to report a grade for any student whose name appears on the class roster. In most courses, a standard grading scale (A-F) is used. Some courses are offered pass/fail or satisfactory/unsatisfactory. The differences in these grading scales is as follows:

- Pass/Fail: Courses taken for a pass/fail credit are courses that allow a student to receive a grade of pass if they complete and earn a passing grade in the course. Courses outside of degree requirements (e.g. prerequisites) may be taken pass/fail as long as the course is a non-BIOE course. A grade of pass/fail course may later be converted to a graded course by submitting the proper online form with the Office of the Registrar by the end of the second week of the following semester. It is important for students to remember that courses within their degree requirements cannot be taken pass/fail.
- Satisfactory/Unsatisfactory: S/U courses are those that not use traditional grading procedures and instead assigns a grade of S or U rather than a standard letter grade. Courses are designated by the instructor. With S/U courses, instructors report the S if the student successfully completes the course, or the U if they do not, based on course requirements. Students should be aware that while a grade of S or U does not affect their grade point average, no credit will be awarded if a grade of U is received. Courses with a grade of S will count towards total credits earned.
- Further information on grading policies can be found at https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#text.

FACULTY GRADING GUIDELINES

When students are graded for completed work, the evaluation of the student's performance in a course and a decision on the appropriate grade is the responsibility of the designated instructor(s) of the course. Instructors should be willing to give any student an explanation of his/her grade as consistent with the grading for the rest of the class.

Instructors **may not** change a semester grade after the grade has been submitted to the Office of the Registrar, except when there is a clerical error in calculating the grade. This is a long-standing university rule of which the faculty are reminded by the Office of the Registrar at the end of each semester. It is designed, in part, to protect the faculty from student pressure for grade changes. Faculty are under no obligation, and are in fact, prohibited from changing a grade after the grade is submitted except in cases of clerical error.

TRANSFER TO ANOTHER GRADUATE PROGRAM

Graduate students at Rice are admitted into a specific graduate program. Admissions criteria are program specific; therefore, students who wish to transfer graduate programs must follow specific guidelines.

TRANSFERRING FROM RESEARCH/THESIS TO A PROFESSIONAL/NON-THESIS PROGRAM

Students who wish to change from a thesis program to a professional/non-thesis degree program must

1. Petition through the appropriate committee requesting this change
2. Upon recommendation of the department and approval by the dean's office, the request is sent to GPS for consideration and final approval.
3. If approved, students who received tuition waivers while enrolled in the thesis program may be expected to repay the tuition before their professional degree is awarded.
4. The graduate program may, at its discretion, allow for courses previously taken toward the unawarded research degree to be applied to the degree requirements for the non-thesis degree.

TRANSFERRING FROM NON-THESIS PROGRAM TO A RESEARCH PROGRAM WITHIN THE DEPARTMENT

Non-thesis degree programs terminate when the degree is awarded. Students who wish to continue graduate study after completing a non-thesis degree must

1. Apply for admission into the research/thesis degree program.
2. Upon recommendation from the department, the request for admission is sent to GPS for consideration and final approval.
3. Some students may become eligible for tuition waivers in subsequent semesters.
4. Tuition waivers will not be awarded retroactively.
5. The graduate program may, at its discretion, allow for courses previously taken toward the unawarded non-thesis degree to be applied to the degree requirements for the research degree.

TRANSFERRING TO MASTER'S PROGRAM (NON-THESIS OR THESIS) AS A RESULT OF DISMISSAL FROM DOCTORAL PROGRAM

A graduate program may offer a non-thesis or thesis master's opportunity to student who are being dismissed from a doctoral program. Such decisions are made by the student's advisor. Students enrolling in a non-thesis program will be expected to pay tuition and will not receive a stipend. Students allowed to continue in a thesis master's program are eligible for a stipend.

TRANSFERRING DEPARTMENTS

Students in good standing and not on academic probation who wish to change their graduate program to another department must

1. Apply for admission to the new department's degree program
2. State they are currently a graduate student in another program at Rice
3. Be vetted through the regular admissions process

Applications for a transfer must also be approved by the dean of graduate and postdoctoral studies.

SECOND DEGREE PROGRAMS AT RICE

Graduate students may enroll in a second-degree program only with the approval of their home academic department. No course or credit hour may be used to satisfy the degree requirements of more than one degree.

Graduate students seeking concurrent enrollment at another institution should review the section of the *General Announcements* under "Concurrent Enrollment at Another Institution."

EMPLOYMENT

PHD, MD/PHD, & MS STUDENTS

Students receiving a stipend may accept other employment, within or outside of Rice, only with the approval of the Graduate Academic Affairs Committee (GAAC)*. Student working more than 20 hours per week are not normally eligible for full-time student status, hence may not receive a student stipend.

*Students hired to complete a special project limited to a period of one week or less that is outside the regular scope of work normally done by the student does not require GAAC approval, however, the student must have the approval of their advisor.

MBE STUDENTS (ALL SPECIALIZATIONS)

MBE students working in an hourly (B2) position with Rice may not work more than an average of 20 hours per week during the fall and spring semesters. Students may work 40 hours per week during the summer semester if they are continuing in their program the following fall semester. Students may not work for Rice after they have completed the MBE program requirements.

There are no restrictions to MBE students engaging in employment outside of Rice, however, students engaging in employment are cautioned to equally prioritize their academic-work-life balance demands to reduce stress, lower the risk of burnout, and create a greater since of well-being.

SALARY FOR RICE STUDENT EMPLOYEES (DOES NOT APPLY TO PHD STUDENT STIPENDS)

Hourly: Students' paid hourly (B2) must be paid be at least the federal minimum wage. Hourly rates cannot exceed $20.00 per hour or the market rate for the services performed. Hourly employees typically fill positions such as graders, laboratory research assistants, and clerical tasks.

Special Projects: Students who are hired to complete a special project outside the regular scope of work normally done by the student must be paid at least the federal minimum wage and not exceed $50.00 per hour or the market rate for the services performed. Special projects are limited to a one-week time frame and include, but are not limited to, such tasks as assisting with conference or short courses, photography, or editorial services.

All students who are paid through the B2 payroll must complete an on-line time sheet, even if services are rendered for a set term (e.g., $500 for specific service). The Academic Program Administrator or designee can assist students by creating a student position and helping with the completion of time sheets.

Degrees are conferred in the spring (May), summer (August) and winter (December). Commencement is held once a year in May. All students who have completed their degrees since the last scheduled commencement are invited to attend the commencement the following May.

DOCTOR OF PHILOSOPHY

INTRODUCTION

The Bioengineering PhD program is a comprehensive program providing a fundamental understanding of the life and medical sciences, advanced analytical and engineering capabilities, and translational research. With this educational background the student will be well prepared to participate in independent or collaborative research and develop endeavors in industry or academia.

PROGRAM LEARNING OUTCOMES

Upon completing the PhD degree in Bioengineering, the student will be able to (i) acquire a graduate-level understanding of foundations in bioengineering and apply this material across a variety of sub-disciplines, (ii) integrate knowledge from different sources to solve a defined bioengineering problem, acquire deep knowledge in a sub-discipline in which they will pursue their dissertation, and (iii) demonstrate professional skills in both oral and written communication.

RESEARCH AND SCHOLARLY ACTIVITIES

Research and other scholarly activities must conform to Rice University policies. Students should familiarize themselves with the policies listed below before embarking on research or other scholarly activities.

- Policy 324-00 Research Misconduct
- Policy 326-98 Human Health and Safety in the Performance of Research
- Policy 333 Software Policies, and
- Policy 334 Copyright Policy

ACADEMIC REQUIREMENTS

The university minimum requirements for a doctoral degree is 90 semester hours beyond the bachelor's degree. The student is responsible for completing the various phases of the graduate program within the prescribed time limitations. PhD students are required to complete their program, including thesis defense, within ten (10) years of initial enrollment in the degree program. Students have a limit of six additional months from the date of the defense to submit their thesis to the Office of Graduate and Postdoctoral Studies. These time boundaries include any period in which the student is not enrolled or enrolled part-time, for whatever reason. Failure to meet any university time to degree deadlines may result in the student not being able to continue their degree program.

The Department of Bioengineering, except in exceptional circumstances, expects students will complete their degree within five years (ten semesters, not including summer).

SPECIFIC REQUIREMENTS

The student's overall GPA must be 3.2. An overall GPA of less than 3.2 for two successive semesters may result in dismissal from the program.

- The student must earn a grade of B- (2.67) or above in all course work counted toward their degree program. Courses in which a student receives a grade below a B- (2.67) may not be used to fulfill degree requirements.
- During the first semester in residence, the student must take a minimum of twelve semester hours, including three advanced courses (9 credit hours) for a standard letter grade. (If a student received credit for graduate courses taken during prior studies, they may petition the Graduate Academic Affairs Committee (GAAC) to relax the

requirements for registering for nine hours of advanced courses during the first semester, assuming the student anticipates complete formal coursework by the end of the first year of study.)

- Students should register for a minimum of 9 credit hours during all semesters, including the summer semester to be eligible for a student stipend. Research credit hours count toward this minimum.
- Students may not take courses within their major (BIOE) on a pass/fail basis.
- Courses taken on a pass/fail in other disciplines or satisfactory/unsatisfactory basis do not count toward the nine credit hours required during the first semester.
- Students must also register for Colloquia (BIOE 698) during their first semester and BIOE 698/699 for five additional semesters for a total of six credit hours. Colloquia is generally completed in the first six semesters. However, if TA responsibilities or another class conflicts with the colloquia, BIOE 698/699 may be delayed for one semester.
- Beginning in the second semester, the student must be registered for a minimum of nine (9) credit hours in all semesters (fall, spring, and summer). Research hours (BIOE 500) are included when determining credit hours used to meet this requirement.
- Once a student is accepted into a lab, the student should register for 1-15 credit hours in BIOE 500 each semester during the terms he/she is engaged in research. The number of hours the student should register for depends on time spent in the lab. Hours in the lab should be estimated at the beginning of the semester, prior to registration. The basis of the calculation for BIOE 500 hours is a 3:1 ratio; each three (3) hours per week spent in the lab translates into one (1) credit hour of BIOE 500. The student should discuss the number of credit hours they will take with their advisor prior to registration.
- Students are expected to complete all formal coursework within the first year of residence to allow the student to commence thesis research on a full-time basis by the end of the second semester. If a student does not meet this goal, they should create a plan for completing formal coursework and share this plan with their advisor.

MD/PHD SPECIFIC REQUIREMENTS

MD/PhD students:

- May petition GAAC to relax the requirement for registering for nine hours of advanced courses during their first semester.
- Must register for one of the researches and reproducibility seminars offered by the Gulf Coast Consortia. Information on these courses can be found at https://www.gulfcoastconsortia.org/home/research/research-and-reproducibility-resource-page/.
- May waive up to 12 semester hours, based upon their coursework during medical school training. Waived credit hours will reduce the 30 semester credit hours of formal coursework required on an hours-by-hour basis. MD/PhD student must still take 15 credit hours of BIOE classes at the 500 level or above and an additional one (3 credit hour) advanced course $\geq$500 level in Bioengineering or another related discipline. This waiver is not automatic. To obtain this waiver, the student must petition the GAAC. MD/PhD students must still earn $\geq$ 90 credit hours, including research hours.
- Must provide a copy of their semi-annual progress reports to the MSTP program administrator at Baylor. MD/PhD students who do not fulfill this requirement may put their status with the MSTP program in jeopardy.
- Must meet with their thesis committee a minimum of once per year. MD/PhD students who do not fulfill this requirement may put their status with the MSTP program in jeopardy. Documentation of all meetings must be included in the student's semi-annual progress report.

CURRICULUM REQUIREMENTS

Students pursuing the PhD degree in the field of bioengineering must complete the following to satisfy degree requirements.:

- A minimum of 90 credit hours, which includes
    - **30 credit hours of formal coursework** (academic courses graded using a standard grading scale) including foundation, supporting, and advanced coursework at the 500-level or above.
        - Course Definitions:
            - Foundational: Courses that cover materials considered to be fundamental to bioengineering (BIOE 516, BIOE 517, BIOE 518, BIOE 519)
            - Supporting: Any course relevant to the student's research work or necessary for building his/her overall competence in the field of Bioengineering.
            - Advanced: Courses that provide in depth knowledge on a specific topic or discipline in Bioengineering or related fields. There is a large array of advanced specialty courses available to BIOE graduate students. Each student should, in consultation with their advisor, select the courses most appropriate for his/her research.
        - The following required courses counting toward the 30-credit total:
            - Three courses (12 credits) among the following foundation courses
                - BIOE 516: Mechanics, Transport & Cellular Signaling
                - BIOE 517: Instrumentation & Molecular Analysis
                - BIOE 518: Introduction to Computational Biology
                - BIOE 519: Biomaterials
            - BIOE 633: Life Science Entrepreneurship (1.5 credits) or BIOE 690, Professional Development for Bioengineering (1.5 credits). BIOE 690 is intended to be taken during a student's third semester or later. First year Bioengineering students may not enroll in BIOE 690. Exceptions are rare and require the explicit permission of the course instructor.
            - BIOE 539: Applied Statistics for Bioengineering and Biotechnology (3 Credits). (Although BIOE 539 is the preferred course, other 500-level or above Mathematics, Statistics, or Computational & Applied Math courses may be taken in place of BIOE 539.)
        - Students must also complete 15 credit hours of formal elective coursework designated as bioengineering courses at the 500-level or above, to fulfill the 30-credit requirement. Electives must be 500-level bioengineering courses or 500-level courses in a discipline related to bioengineering, graded using a standard grading scale, can be counted toward the 30 credit hours required. Bioengineering-related courses include, but are not limited to, chemical and biomolecular engineering, computational and applied mathematics, electrical and computer engineering, materials sciences & nanoengineering, mechanical engineering, statistics, biosciences, and chemistry.
    - The following courses are required but do not count towards the 30-credit requirement.
        - University 594: Training in Responsible Conduct of Research
        - Six credit hours of colloquia by registering for any combination of BIOE 698 and BIOE 699. Colloquia requirements are ideally completed during the first three years of study, however, when other courses or teaching assistantships conflict, the colloquia may be delayed for the semester.

- Fulfill teaching assistant requirements
- Submit and successfully defend a thesis proposal that provides evidence of the student's ability to carry out original research in a specialized area of bioengineering before the beginning of their fifth semester in residence
- Defend a thesis in a public oral examination

All curriculum requirements and teaching assistantships must be completed before the student can apply for candidacy which is required prior to the beginning of the student's seventh semester (not counting summer semesters). Students who had to delay BIOE 698/699 for a semester may still qualify to apply for candidacy, but must complete six credit hours in BIOE 698/699 before defending their thesis.

CURRICULA EXCEPTIONS

In specific instances, the student may petition the Graduate Academic Affairs Committee to waive or substitute an academic requirement.

If a student wishes to substitute one course for another, the student must explain why the class used as the substitution is better suited to their academic needs than the course being substituted. Substitutions are considered on a case-by-case basis.

An academic waiver is to waive a specific class. If and academic waiver is approved, the 30 required semester hours will be reduced on an hour-by-hour basis. However, waived courses do not reduce the requirement for taking 15 credit hours of 500-level or above BIOE course. In addition, student must still take a minimum of 18 credit hours of formal coursework at Rice. Waiving a course does not reduce the 90 credit hours required to meet the PhD degree requirements. All waivers are considered on a case-by-case basis.

All exceptions should be requested via a petition to the appropriate committee (PhD and MS: Graduate Academic Affairs Committee; MBE: Master's Committee).

SPECIALIZATION TRACK

Students may elect a specialization track during their graduate studies. To fulfill the requirements of a track, students must take three (3) supporting courses in the specific area of interest. Students should consult with their advisor regarding appropriate courses to support their chosen track. Four major tracks that reflect interests within the Bioengineering Department are recognized:

- Biomaterials, Biofabrication & Mechanobiology
- Biomedical Imaging & Instrumentation
- Cellular, Molecular and Genome Engineering & Synthetic Biology
- Computational and Theoretical Bioengineering & Biophysics

Specialization tracks are not documented separately on the student's transcript.

FIRST SEMESTER ADVISOR

During the first semester, the Bioengineering Director of Graduate Studies will serve as the student's interim advisor, except those who have already been assigned to his/her advisor. Once a student is officially assigned an advisor and joins a lab, his/her advisor takes over the primary advising role.

LAB ROTATIONS & CHOOSING A THESIS ADVISOR

To facilitate student matching to a research advisor and learning about various research projects and lab environments, first year students are required to participate in lab rotations, except those who have already been assigned to his/her advisor. The purpose of the lab rotations is to assist first-year students in choosing an advisor and a lab for conducting thesis research, and provide an opportunity for the student to explore research options other than their declared areas of interest.

TIME FRAME

Lab rotations will start at the beginning of the second week of the fall semester. Three laboratory rotation periods will be offered. Laboratory rotations will be administered via the BIOE504 course. A specific time table for submitting required documentation will be provided at the beginning of the semester. Typically, all students should have his/her advisor confirmed by November 30, 2021. Upon request, a three-week extension can be given by the Director of Graduate Studies.

LENGTH OF ROTATIONS

Students are expected to complete a minimum of one (1) and maximum of three (3) lab rotations. Each rotation will be four weeks in length with students expected to spend approximately ten (10) hours per week interacting with members of the prospective lab for each rotation. Students are allowed to have rotation concurrently in maximum two (2) different labs. Students cannot rotate in the same laboratory for more than one rotation period. If a student and a PI can reach an agreement after one rotation or two rotations, the student, with the approval of the BIOE Director of Graduate Studies, may receive permission to waive the remaining rotations and accept that position. Requests to join a laboratory can only be submitted after the end of each rotation period.

EXPECTATIONS

1. All students participating in the rotation process must register for BIOE 504 their first semester.
2. The student must reach out to advisors of interest to request the opportunity to rotate in his/her lab.
3. It is the students' responsibility to arrange a meeting with advisors to discuss what is expected during the rotation period. During this meeting, the advisor should make his/her expectations for the rotation known.
4. Students are expected to primarily rotate with advisors within the Department of Bioengineering.
5. A student must actively engage in the lab during the rotation period. Suggested activities include but are not limited to attending lab meetings, interacting with graduate students and post-docs, discussing research with the faculty member, and other reasonable activities at the discretion of the advisor.

ROTATIONS WITH POTENTIAL ADVISORS IN NON-BIOENGINEERING LABS

A student may choose one (1) rotation outside the Department of Bioengineering. The advisor for this rotation must be a faculty member whose primary appointment is in a department at Rice University, a faculty member at an institution other than Rice who has an adjunct faculty position in Bioengineering, or a faculty member at another institution who collaborates with a BIOE faculty member. If an advisor does not meet one of these criteria, the student must receive advance approval for the rotation from the Bioengineering Director of Graduate Studies

Students interested in rotating and joining a lab in a non-Rice institution

- must have a contingent advisor in a lab within the Department of Bioengineering prior to joining the non-Rice lab. Although not required, the contingent advisor should preferably be a faculty member who collaborates with the non-Rice advisor.
- It is the student's responsibility to find a BIOE faculty member willing to serve as their contingent advisor prior to joining a non-Rice lab.

- Non-Rice advisors will be expected to complete an advisor agreement form stating they will financially support the student. This form must also be signed by the student's contingent advisor.
- Students who do not have a contingent advisor will not be allowed to join a non-Rice lab.

Students may not have a non-faculty member at Rice or any other institution serve as their advisor.

WRITTEN REQUEST FOR ADVISOR

- Student must submit the advisor selection form by the deadline.
- The student will list three advisors with whom the student would consider working. This list should be in rank order with No. 1 being the most desirable advisor.
- Students who request an advisor outside of Rice must have a co-advisor whose primary appointment is in the Department of Bioengineering.
- The co-advisor's role is to provide financial support should student's external advisor decide to no longer support the student. The student must recognize that financial support by the BIOE co-advisor is based upon the pursuit of collaborative projects and available funding at the time the relationship with the non-Rice advisor.
- There are specific documents that must be completed if requesting an advisor outside of the BIOE department. Please see Gayle for assistance with this process.
- In consultation with the faculty advisors, decisions regarding final matches will be made by the Director of Graduate Studies and the Graduate Academic Affairs Committee.

WAIVER OF ROTATIONS

All students are expected to participate in the rotation process unless they receive a waiver. Waivers are approved in one of two circumstances,

1. The student's offer letter stipulates the student's advisor, or
2. The student is a MD/PhD student who has already selected a thesis advisor as part of the admission process under the MSTP program and has begun his or her research. (MD/PhD students who have not selected a thesis advisor must complete a minimum of two rotations. A waiver for the third rotation is not necessary.)

FINANCIAL SUPPORT

The student will be supported through November 30, 2021 as a fellow. Financial support after this date is dependent upon having an advisor, satisfactory performance, reasonable progress towards degree requirements, and the availability of funds. Stipends are subject to all the usual federal taxes.

Advisors will become responsible for a student's financial support effective December 1, 2021. Advisors are expected to pay 100% of the student's stipend and associated fees unless the stipend is funded by a fellowship, scholarship, training grant, or other source of funding which covers all or a portion of the stipend. The portion of the stipend not covered will be paid by the advisor.

Students are required to immediately notify the Department of Bioengineering of any fellowships or scholarships they receive, including awards received prior to matriculation.

The basic stipend for PhD students during the 2021-2022 academic year is $33,500.

SUPPORT LIMITATIONS

The normal limit of financial support for graduate students in the PhD program is ten semesters (excluding summer semesters). If a student anticipates taking longer than 10 semesters to complete their PhD degree, he/she must consult

with his/her advisor. The advisor may require the student submit a progress report in addition to other reports required by the program, including a summary of work accomplished since the presentation of the thesis proposal, specific information on remaining research, and the estimated time to completion of all work.

The advisor, in consultation with the student's thesis committee, shall consider factors including the student's progress and exceptional circumstances which justify continued funding. The availability of funding to support the student will also be considered when deciding if the student should continue to be funded for an additional specific period of time. Continued support shall be reevaluated annually or more often as deemed appropriate by the advisor and/or thesis committee. The decision to continue funding ultimately belongs to the student's advisor.

EXTERNAL FELLOWSHIPS/AWARDS & TRAINING GRANTS

Students are encouraging to seek external fellowships, awards, and training grants. The Office of Proposal Development (http://opd.rice.edu) offers an extensive array of proposal development services when developing and writing proposals for federal agencies and other entities to seek funding for research projects. Students are encouraged to take advantage of these services.

Students are awarded additional bonuses when receiving a fellowship, award, or training grant (all referred to as 'fellowship' below). The following table provides an overview:

Award Amount the Same as BIOE Basic Stipend	Award Amount Above BIOE Basic Stipend	Award Amount Below BIOE Basic Stipend
Student receives an annual bonus of $4,000 paid in equal amounts over a 12-month period during the fellowship.	Student receives fellowship stipend amount, even if it is higher than basic stipend. Student receives an annual bonus of $4,000 paid in equal amounts over a 12-month period during the fellowship.	Fellowship is supplemented to equal current basic stipend. If the award amount is larger than $10,000 per year, student receives an annual bonus of $4,000 paid in equal amounts over a 12-month period during the fellowship.

The student's advisor is responsible for paying the $4,000 bonus. Since the department does not have the ability to require advisors outside of the Department of Bioengineering, to support this additional $4,000 bonus, students with non-BIOE or non-Rice advisors should discuss this expectation at the time they join the lab or apply for fellowships, training grants, or scholarships to determine their advisor's willingness to provide this additional support. The Department of Bioengineering cannot support the $4,000 bonus if the advisor does not agree to provide the bonus.

If a student's fellowship, scholarship, or training grant is revoked during the student's studies at Rice, assuming the student is achieving satisfactory performance, reasonably progressing toward their degree, and funds are available, the student will receive financial support from their advisor at the stipend level provided by the Department of Bioengineering in effect at the time. The student will no longer receive the $4,000 annual bonus.

Students who are awarded fellowships through Rice institutes or specific programs will receive a stipend based upon the award. If the stipend is higher than the basic BIOE stipend, the student will receive the higher stipend. If the stipend is lower, it will be supplemented by the student's advisor to reach the basic department stipend. Supplemental bonuses are not offered to students who receive university-based awards.

TERMINATION OF FINANCIAL SUPPORT

Termination of financial support may be considered if a student,

- has completed more than ten semesters but has not yet completed their degree requirements, and has not provided a plan and received approval from their advisor to continue in a paid position,

- is on probation for a second consecutive semester, or
- is not making adequate progress towards their degree and has been dismissed from the advisor's lab.
- *Is not matched to a sponsoring advisor for any reason after the initial first-year rotation process is completed*

Because the termination of financial support to a graduate student, while not equivalent to a dismissal, is a serious action that could deprive students of their financial ability to continue graduate studies, the termination of financial support of a graduate student requires that a student be notified of the termination 15 days prior to the cancellation of support. Additional information regarding termination of financial support can be found in the *General Announcements at https://ga.rice.edu/*.

HOLIDAY AND PERSONAL TIME OFF

HOLIDAYS

During the first semester, PhD students observe the defined holidays listed in the Academic Calendar. Beginning the second semester (January 1, 2022), student observe designated staff holidays (found at http://people.rice.edu/benefits-rewards/holidays/).

Since Rice is not officially closed during spring recess and spring break, PhD students will not automatically receive time off for these events. All requests for time off during these dates must be approved in advance by the student's advisor.

EXTREME WEATHER OR ANOTHER EMERGENCY

In cases of extreme weather or other emergencies, the university may officially close. During such emergency situations, students should follow university emergency notifications. Generally, instructions will be the same as those followed by faculty and staff.

PERSONAL TIME OFF (PTO)

Personal Time Off (PTO) is based upon a calendar year. Students engaged in research receive ten (10) working days of personal time off (PTO) to be taken between January 1st and December 31st. Working days are defined as Monday-Friday.

Each lab has a specific policy for requesting and documenting PTO; students must adhere to their lab's policies. In general, students should request PTO a minimum of two weeks prior to the days being requested. Although all reasonable requests should be granted, it is at the discretion of the student's advisor to approve specific requests. Unusual circumstances that deviate from the PTO policy are considered on a case-by-case basis with approval at the discretion of the student's advisor.

In cases of illness or extraordinary circumstances such as family emergencies, that do not allow for prior notification, the student's advisor or designee should be notified as soon as possible, depending on the specific situations. A student may, at the discretion of the advisor, be required to submit proof of the extraordinary circumstance that led to the student's absence.

If a student is not present in the lab and carrying out required activities, as expected, for more than one week, without prior approval or notice of emergency that requires an absence of more than one week, the student will receive an immediate written warning. If the student is absent from required activities for a contiguous two weeks without permission or mitigating circumstances, the student may be judged as making inadequate progress and is subject to termination of financial support and/or dismissal from the PhD program.

TEACHING REQUIREMENT

TAs are defined as graduate students who help faculty with the delivery of courses. Services provided by teaching assistants include, but are not limited to grading, monitoring, leading labs and/or discussion sessions, offering office hours, and performing clerical tasks associated with course instruction.

TAs are supervised by the course instructor of record and are subject to established departmental policy. Students should arrange to meet with the instructor prior to the beginning of the teaching assignment to discuss expectations and deadlines Instructors will provide TAs sufficient instructions at the beginning of the TA assignment to assure the TA is aware of the instructor's expectations. TAs are expected to fulfill all reasonable requests made by an instructor. Conflicts that cannot be resolved between the instructor and TA should be discussed with the Bioengineering Director of Graduate Studies.

TAs should expect to attend scheduled classes for the course to which they have been assigned unless specified otherwise by the course instructor.

Students are required to fulfill three (3) teaching assignments, each consisting of eight (8) to ten (10) hours per week. More than one TA may be assigned to a class and are expected to work collaboratively with other TAs and graders. Students will not be assigned teaching responsibilities during their first semester in residence. Most students can expect to complete TA assignments during their second through fifth semesters. TAs will generally not be assigned more than one TA assignment during a single semester except in unusual circumstances. Exceptions must be approved in advance by the Director of Graduate Studies.

Students may not TA a course in which they are enrolled. Registering for courses that conflict with a TA assignment after the assignment is finalized is not permitted. If a student is assigned to a course that conflicts with colloquia (BIOE 698/699) registration for colloquia should be postponed until the next semester.

Students may not accept more than three (3) TA assignments unless express permission by the Bioengineering Director of Graduate Studies is given. If a student is planning to pursue an academic career, he/she is encouraged to request more involved TA assignments. Request for such assignments must be made to the Bioengineering Director of Graduate Studies prior to the end of the semester directly preceding the TA assignment. It may not be possible to accommodate all requests.

TA TRAINING

All PhD students serving as teaching assistants must complete the training required by the School of Engineering. Training must be completed prior to a student's first teaching assignment and on an ongoing basis as required by the School of Engineering. Specific training requirements will be provided by the School of Engineering.

TEACHING ASSISTANT RESPONSIBILITY

Individuals appointment as teaching assistants must abide by the policies stated in the *General Announcements*.

Although TAs are not members of the faculty, they are expected to conform to the same standards of conduct in the performance of their academic duties as are members of the faculty and shall respect the rights and opinions of students and uphold the academic standards of the university.

TAs are subject to the guidelines in the Consensual Sexual or Romantic Relationships in the Educational or Workplace Environment Policy (https://policy.rice.edu/829) as well as the Family Educational Rights and Privacy Act (FERPA) (https://registrar.rice.edu/ferpa/).

When serving in the role of a teaching assistant, graduate students are considered responsible employees under the University Title IX Policy (https://safe.rice.edu). As a responsible employee of Rice University, once a TA knows about any

incident of sexual assault, harassment, relationship violence, stalking, or another non-consensual interpersonal behavior, Rice Title IX personnel need to know so they can act to support the student and keep the community safe. TAs can gain access to the Title IX Navigator, Student Wellbeing, and the Rice Counseling Center by calling 713-348-3311. If a student wants to make a report thorough the university, wants Title IX accommodations without make a report, or isn't sure what to do, he/she may call 713-348-3311 or extension 3311 on campus.

If the student wants to make a report through the legal system or is considering making a report, or needs immediate assistance, he/she should call the Rice University Police Department (RUPD) 713-348-6000 or extension 6000 on campus.

TEACHING ASSISTANT BEST PRACTICES

The list below is recommendations considered important aspects of TA conduct. Not all suggestions below may be applicable in all situations. This list should be used as a guide only.

TAs in the Department of Bioengineering are advised to:

- Maintain professional distance
- Respect confidentiality of students
- Have integrity
- Respect diversity
- Treat students with respect
- Acknowledge boundaries
- Be fair, equitable, and refrain from favoritism
- Practice professional communication
- Be prepared for your duties as a TA
- Be on time and where you say you will be
- Respect student's privacy
- Embrace open door polices – do not leave doors closed when with a student, but be sensitive to a voice carrying to the outside corridor
- Honor the Rice Code of Conduct
- Mark and grade with consistent and transparent standards
- Respond to emails in a timely manner and keep copies of communication
- Be aware of ethics of behavior outside of the classroom
- Ensure discussion groups are inclusive
- Give constructive criticism on sensitive matters or to sensitive students professionally

TEACHING ASSISTANT EVALUATION

Teaching assistants will be evaluated at the end of the TA assignment by the course instructor. The student is responsible for submitting the TA Evaluation form to the class instructor.

THESIS PROPOSAL

The thesis proposal is a written summary of research progress up to the point of the date of the proposal and future research plans. Students in the PhD program must submit a thesis proposal to their committee that conforms with the guidelines of the department. The proposal must be approved prior to substantive work on the student's thesis. The proposal defense should be viewed as an opportunity for the student and his/her committee to assess the student's progress and knowledge of the research field, to assure the student has developed a coherent research plan, and to provide

the student with input from the members of the committee in time to incorporate useful suggestions in their thesis research.

A student's thesis committee should be formed at the beginning of their second academic year (third semester), before the last day in the month of October. Students should select their committee members in consultation with their research advisor. Students must confirm their committee member selection by e-mailing the list of their names to the department administrators. Committee members should be carbon copied on this email.

Students must present a thesis proposal (oral and written) prior to the beginning of their third academic year (August 15th of year 3). A student who fails to present their thesis proposal before this deadline is subject to their stipend being suspended until they successfully pass their proposal. Requests for extensions must be submitted to the Graduate Academic Affairs Committee, two months before the August 15th deadline. This request must be accompanied by a letter from the Student's advisor that describes the reason for the extension. Extensions will only be approved in extenuating circumstances where the student made a good faith effort but was unable to present their proposal for reasons outside of their control.

THESIS COMMITTEE

The thesis committee administers the oral examination for the student's thesis proposal defense and has final approval/disapproval authority for the written thesis proposal. This same committee will continue as the student's thesis committee and administer the student's oral defense. Students should, in collaboration with their advisor, carefully choose committee members.

The committee is composed of at least three members. Two must be members of the student's department faculty. One member must have his primary appointment in another department within the university. At least three members of the committee must meet one of the following requirements:

- Tenured or tenure-track members of the Rice faculty
- Research faculty holding the rank of assistant research professor, associate research professor, or research professor.
- Qualified individuals who have been certified as thesis committee members by the dean of graduate and postdoctoral studies.

In the event that a member of a student's thesis committee leaves their position at Rice University, they may continue to serve on the thesis committee if the student has met candidacy requirements. If a member of the student's committee leaves their position at Rice prior to the student achieving candidacy, the student must choose a new committee member so that the composition of the committee continues to meet university requirements. The original committee member may continue to serve as an "additional" member of the committee if they continue to have the support of the department chair (or in the case of interdisciplinary programs, the graduate program director) to serve in this capacity.

DEPARTMENT REQUIREMENT

The Department of Bioengineering requires that at least one committee member be a core Bioengineering faculty member. A core faculty is defined as a faculty member whose primary appointment is in Bioengineering. A joint faculty member may be the student's advisor and may serve as the second member form the Bioengineering department or the non-BIOE member of the committee. Adjunct faculty cannot fulfill a primary role on the committee, but may serve as additional members.

STUDENTS WITH THESIS ADVISOR FROM AN INSTITUTION OTHER THAN RICE

Students may have a faculty whose primary appointment is at another institution serve as their thesis director. However, in such cases, the student must also have a thesis chair that is either a tenured or tenure-track member and whose primary

appointment is in Bioengineering. The committee must also still meet university requirements (minimum of two BIOE and one non-BIOE Rice faculty members). In other words, the committee must have four members counting the outside advisor.

PhD candidates are responsible for keeping the members of their committee informed about the nature and progress of their research. They also must establish a schedule for thesis completion and review. The members of the committee, in turn, should review the thesis in a timely manner, approving a preliminary form of the thesis before scheduling the oral examination.

THESIS PROPOSAL FORMAT

The thesis proposal should follow the standard format of an NIH F31 application. Details on this format can be found at: https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/page-limits.htm.

- Proposals should include the following NIH F31 application sections, as a minimum: Project Summary / Abstract; Project Narrative; Specific Aims; Research Strategy; and Respective Contributions. The thesis committee will rate these sections with respect to NIH review criteria: ***background and significance, innovation and approach***, and an overall evaluation score (1-5, with 1 being the best).
- Students must also submit a curriculum vitae (CV) with their written proposal.

ORAL_THESIS PROPOSAL DEFENSE

Thesis proposals should be presented in-person with all members of the student's committee physically present. In extenuating circumstances, the student's advisor may authorize a student to present his/her thesis proposal virtually. Students will be expected to follow COVID-related safety policies that are in place at the time of their proposal defense. The student is responsible for obtaining the signature of all committee members prior to submitting the proposal forms to department. *

The committee will ask critical questions similar to that of an oral exam. Instead of pass/fail, each committee member should provide *scores* on ***background and significance, innovation and approach***, and an overall evaluation score (1-5, with 1 being the best).

Students who fail the thesis proposal defense must successfully complete a second thesis proposal defense before the end of the fifth semester to remain good standing on the program. Students who do not pass their proposal exam will be subject to dismissal from the program.

With these guidelines, there are three possible outcomes to a thesis proposal defense, pass without reservations, pass with stipulations, or fail.

Pass	Pass with Revisions	Fail
The student's presentation met or exceeded the committee's expectations	The student's presentation met most of the committee's expectations but some revisions are necessary	The student's presentation failed to meet the committee's expectations.
The student will continue research based upon their thesis proposal	The student's committee or thesis advisor will, within one week, provide the student a written explanation of deficiencies and allow him/her a reasonable time frame for correcting any identified deficiencies. If the student fails to correct the identified deficiencies within the defined time frame, he/she will be required to redefend the entire proposal by the end of their fifth semester or be subject to dismissal from the program.	The Committee may, by unanimous vote, allow the student to redefend within a reasonable time frame, but no later than the end of their fifth semester (December 15th of year 3). Students are allowed to redefend only once. If a student fails the thesis proposal defense a second time, he/she will be dismissed from the program.

[a]At their discretion, some advisors may choose to submit forms themselves. The student should comply with the advisor's decision.

In extraordinary circumstances, a decision by the committee may be appealed. Appeals should be submitted to the Bioengineering Graduate Academic Affairs Committee (GAAC) via the Academic Program Administrator (ges2@rice.edu). Grounds for a petition/appeal are based on procedural errors of academic or administrative personnel or special mitigating circumstances. Disagreements over evaluation of academic quality is not considered an appropriate basis for an appeal unless the evaluation is found to be patently unreasonable by the GAAC. The advisor must be notified and the petition must be submitted to the Bioengineering Graduate Academic Affairs Committee within 15 calendar days of the oral thesis proposal.

PRESENTATION OF RESEARCH

Students are expected to present their research in an official forum at least annually, beginning in their second year and thereafter. These presentations should ideally be in the form of a research talk at a local, national, or international conference. Students may also have an opportunity to present during the BIOE GSA "Breakfast Club" or at the annual Graduate Student Symposium. Poster presentations do not fulfill the research presentation requirement. Other opportunities for students to present research may be approved on a case-by-case basis. If a student does not have an opportunity to present their research, the student should inform their advisor so that additional opportunities can be arranged.

Students must document presentations on their semi-annual progress reports.

INTERNSHIP OPPORTUNITY

PhD students are encouraged to participate in an optional three to six-month internship experience. An internship provides an opportunity to gain real-world experience, increase the student's professional network, and learn new techniques and tools to apply to their research or gain substantial teaching experience. Students may choose to intern in industry, clinical labs, government national labs, international labs, or teaching institutions.

The internship training is managed through collaborative interaction between the student, the advisor, the host, and the bioengineering program. Students must notify their advisor of potential internship opportunities prior to the establishment of arrangements to participate in an internship.

All internships must have the approval of the student's advisor. It may not always be possible for a PhD student to perform an internship due to various factors beyond their control, such as timing of their research trajectory, research funding matters, external fellowship constraints, or other reasons. If a student is interested in an internship but it cannot be arranged for any reason, the student should reflect upon what they hope to gain through an internship and discuss their goals with their advisor. If the student's goals are networking, learning new techniques, etc., the advisor may be able to arrange for other opportunities for those activities, such as a research collaboration or involvement with the most relevant professional society.

The following apply when engaging in an internship:

- Generally, students do not receive a graduate student stipend while participating in the internship. The student should discuss details of financial arrangements with their advisor and have such details finalized prior to the internship.
- The student must determine how the financial arrangement could impact the intellectual property that is generated while they are participating in the internship.
- Decisions regarding stipends from external fellowships during an internship are based on the requirements of the fellowship/training grant. It is the student's responsibility to determine if the internship conflicts with the requirements of the fellowship or grant.

- In order to maintain continuous enrollment, students who participate in internships during the fall or spring semesters should register for BIOE 500. Success of the internship will be considered when determining the student's grade in BIOE 500.

PROGRESS REVIEW AND EVALUATION

Student progress is continuously evaluated. This evaluation is carried out by the advisor and the thesis committee. During the first two years, the student must meet with their advisor to discuss their progress at least once and more often if deemed necessary.

ANNUAL PROGRESS REVIEW POST CANDIDICY

Once a student has successfully passed their proposal defense, students must meet with their committee members annually to present their research progress; starting at the end of the student's third year in residence. The committee members will provide feedback on the student's development and guidance to improve research activities if necessary.

Students must submit a two-page summary of progress and the updated CV to their committee members prior to their committee meeting.

Committee members will complete evaluation forms that document the student's progress. The student is responsible for collecting these forms and submitting them to the department. Students must demonstrate adequate progress in their annual reviews to maintain good standing in the program.

MD/PhD students must meet with their thesis committee a minimum of once per year. MD/PhD students who do not fulfill this requirement may put their status with the MSTP program in jeopardy.

SEMI-ANNUAL PROGRESS REVIEWS

Twice per year, official annual progress reviews must be submitted. Reports are submitted, using a department-specific progress review form, on a calendar year basis and cover six-month time frames, January through June and July through December. Progress reports are due on January 31 (July through December) and July 31 (January through June).

- First year students are not required to submit progress reports covering their first semester in residence. A student's grades will be used to assess the student during the first semester. First-year students will submit their initial progress review in July covering the time-frame December through June. Progress reports thereafter will be on the normal six-month schedule.
- The progress review consists of two parts, a student self-evaluation and an advisor evaluation. Progress reports are submitted through CANVAS. Specific instructions on how to submit progress review reports for both the student and advisor will be provided by the Bioengineering Director of Graduate Studies.
- Once completed, a student must provide a copy of their self-review to their advisor. The advisor may feel it necessary to meet with the student to discuss the student's progress is more detail. The advisor should document recommendations made in this meeting on the advisor portion of the progress review report.
- Once the student has a thesis committee appointed, the student must provide a copy of their progress review to each member of the committee.

The BIOE Director of Graduate Studies will review progress reports and may take additional action, such as discussing the report with the student and/or the advisor as deemed appropriate.

RELATIONSHIP BETWEEN BIOE 500 AND PROGRESS REVIEWS

BIOE 500 (Graduate Research) and the semi-annual progress review are related in that both are indicators of the student's progress in research. However, the semi-annual progress review is more comprehensive and covers additional aspects of the student's progress. BIOE 500 is a course in which students earn a grade (satisfactory/unsatisfactory) based solely on their research and research-related activities during a specific semester. However, since each progress review period includes at least one semester, assessment of poor progress often coincides with an unsatisfactory grade in BIOE 500 during the semester included in the progress review period. When a grade of unsatisfactory is given for BIOE 500, it should be addressed in the advisor's portion of the next progress review

SATISFACTORY PERFOMANCE

Students are expected to make continuous satisfactory progress to remain in good standing in the Bioengineering program students must:

- Take a minimum of nine (9) semester hours of graduate level courses, graded using a standard grading scale, during the first semester in residence and a minimum combination of (9) semester hours of coursework and/or research thereafter.
- Maintain a cumulative grade point average (GPA) of 3.2 or better
- Remain matched with an advisor and assigned to a lab, and working on thesis research on a full-time basis
- Have a goal of completing all coursework (excepting colloquia) within the first 2 semesters in residence
- Successfully pass a thesis proposal exam before the start of the students second year.
- Present an annual progress review to the thesis committee oral presentation of research beginning in the third academic year of residence and each year thereafter.
- Submitting semi-annual progress review reports by the deadline
- Submitting a written copy of a thesis and presenting an oral defense of the thesis proposal before the beginning of the fifth semester in residence (excluding summer semesters)
- Petitioning for doctoral candidacy prior to the beginning of the ninth semester in residence (excluding summer semesters)
- Make continuous progress in research

ACADEMIC PROBATION AND DISMISSAL

The two most common grounds for dismissal of a graduate student are (1) inadequate academic progress and (2) a disciplinary violation.

Students are responsible for meeting program and university requirements in their program of education. A student who is failing to meet departmental or university requirements such as failing to secure an advisor by the end of their first semester, not meet grade requirements, failing to pass their thesis proposal defense, receiving two consecutive unsatisfactory grades in BIOE 500, receiving two unsatisfactory evaluations for their semi-annual review, or failing to advance to candidacy or defend her or his thesis within the required time is subject to dismissal.

ACADEMIC PROBATION

PhD students in the Department of Bioengineering must achieve and maintain an overall cumulative GPA of 3.2. Graduate students whose overall GPA falls below 3.2, their semester GPA falls below 2.67, or they receive an unsatisfactory grade in research credit hours (BIOE 500), are placed on academic probation by the department. The period of probation extends to the end of the next semester in which the student is enrolled. If at the end of the probationary semester (not counting summer semesters) the student's an overall GPA is below 3.2 or the semester GPA is below 2.67, the advisor has the prerogative to immediately dismiss the student from their lab or suspend financial support until their GPA is once again at

the 3.2 threshold. When a student's stipend is suspended, the student will become responsible for tuition costs during the time frame the stipend is suspended. If a student receives a second contiguous unsatisfactory grade in research, including summer semesters, the student may be dismissed from the advisor's lab and/or the Bioengineering program.

Students must receive a satisfactory grade in BIOE 500, and satisfactory faculty evaluations for their semi-annual reviews. Student who receive unsatisfactory grades or evaluations are automatically placed on probation, and will be required to address the issues raised be their advisor as describe below.

Graduate students whose overall GPA falls below 2.67 or their current semester GPA falls below 2.33 are placed on academic probation by the Office of Graduate and Postdoctoral Studies. The period of probation extends to the end of the next semester in which the student is enrolled. If that probationary semester results in an overall GPA below 2.67 or a semester grade point average below 2.33, the student may be dismissed without further warning. Additionally, graduate students with a cumulative GPA below 2.00 will be dismissed by the Office of Graduate and Postdoctoral Studies without a probationary period.

DISMISSAL

When a student is judged not to be making adequate progress, the department follows the following procedure:

1. The student is warned in writing of the possibility of dismissal and given clear and specific information about what must be done within a specified time period of no less than 21 calendar days to alleviate the problem. Email notification is considered to be "in writing." Expectations must be reasonable and consistent with expectations held for all students similarly situated in the program. The probationary period, at the discretion of the advisor, can be longer than 21 calendar days.
2. The student will be reevaluated at the end of the first probationary period.
    a. If the student's advisor determines the student has met expectations and is again making adequate progress towards meeting expectations, the advisor will notify the student in writing that he/she has returned to good standing and is no longer being considered for dismissal.
    b. If, at the end of the first probationary period, the advisor determines the student has not shown adequate progress towards meeting expectations, the student will be given a second written notice stating the specific expectations that must still be met. The probationary period is extended for no less than 21 calendar days. The probationary period, at the discretion of the advisor, be longer than 21 calendar days.
    c. Dismissal of a graduate student from the research group is at the discretion of the advisor. The student must be notified of his/her dismissal from the group. Such a notice is distinct from any earlier warning, which lets the student know of the possibility of dismissal.
    d. The second notification may precede a trigger for dismissal from the research group. The advisor can notify the student that, if specific expectations are not met by the end date of the second probationary period, the student may be immediately dismissed from the group.
    e. Termination of financial support is treated separately from dismissal from the research group. If financial support is to be terminated, this will be explicitly stated within the second warning and/or in a separate notification.
    f. After dismissal from the group, the advisor is not obligated to provide office space or supportive measures to the dismissed student.
3. Dismissal from a research group is not the same as dismissal from the program. Dismissal of a graduate student from a graduate program requires that the student be specifically notified of his/her dismissal from the graduate program. This notice of dismissal from the program must be in writing. This notice will normally coincide with the date of dismissal from the research group if included in the same or a separate written notification.

4. Students can consider seeking a different advisor / laboratory during the probation period. Students are advised to consult with the Graduate Program Director if they wish to explore opportunities for switching laboratories.
5. In general, students will be dismissed from a program at the end of a semester. Dismissals that take effect during a semester in which the student is enrolled are exceptional and require approval of the dean of Graduate and Postdoctoral Studies.
6. A decision to dismiss a student from the graduate program is made by the BIOE Director of Graduate Studies after consultation with the Department Chair.
7. Students who are dismissed from a doctoral program are not eligible for admission to other doctoral programs at Rice.

PETITION AND APPEAL TO DISMISSAL

A dismissal will be held in abeyance until the petition and appeal process is concluded, as students may petition for a dismissal from the graduate program to be revoked as described in the Dispute Resolution section of the *General Announcements.* The advisor or department is not required to provide financial support to a student during the petition and appeal process.

A dismissal from a program is an example of an academic judgement. If a petition is denied, one level of appeal is allowed. Petitions regarding requirements, regulations, or judgements of a graduate program will be handled at the department level. The one level of appeal is to the Office of Graduate and Postdoctoral Studies.

APPEALS

An appeal must be submitted within 15 days from receipt of the decision that is being appealed. Late appeals will be dismissed, except in unusual situations when a delay is justified.

Appeals should be resolved within 30 days of their submission. When such resolution cannot be achieved within 30 days, the student will be informed of the delay before the 30 days are over.

Additional information on the petition and appeal process can be found at https://ga.rice.edu/graduate-students/rights-responsibilities/dispute-resolution/.

PETITIONS

Petitions regarding academic decisions must be submitted in writing within 15 days from the time that the student knew or should reasonably have known of the decision being petitioned, or within 15 days after an informal effort to resolve the situation has not been successful. Petitions should be submitted to the Bioengineering Graduate Academic Affairs Committee.

Petitions should be resolved within 30 days of their submission. When such resolution cannot be achieved within 30 days, the student will be informed of the delay before the 30 days are over. A resolution to the petition within 60 days is an acceptable cause for an appeal.

If a petition is denied, a student is allowed only one level of appeal. In general, process will be resolved at the lowest level possible. When a petition is decided at the graduate program or department level, the appeal must be submitted to the Office of Graduate and Postdoctoral Studies.

VOLUNTARY CHANGE OF ADVISORS DURING PHD STUDIES

Once a PhD student affiliates with an advisor and lab, the student is expected to perform research with the same advisor until the PhD degree is awarded. If a student determines it is in his/her best interest to find a different thesis advisor, they

must notify the Director of Graduate Studies in writing and request a meeting to discuss why they made the decision to switch labs and their plan for finding a new advisor.

The student is responsible for finding a new advisor and should arrange to meet with and/or rotate in labs of potential advisors. Unless otherwise determined by the Director of Graduate Studies, the current advisor, or the chair, the student should continue working in their present lab while searching for a new advisor. As a courtesy, the student should notify their current advisor that they are investigating other labs.

A student may not change advisors more than once and may not have a total of more than two advisors, including their initial advisor, during their career as a graduate student in the Bioengineering graduate program. Exceptions to this rule are allowed only in extenuating circumstances and with the approval of the Director of Graduate Studies and the Graduate Academic Affairs Committee.

CANDIDACY

Candidacy marks a midpoint in the course of graduate education. Achieving candidacy signals that the student has

1. completed required coursework,
2. defended the thesis proposal defense, to demonstrate his/her comprehensive grasp of the subject area,
3. demonstrated the ability for clear oral and written communication, and
4. shown the ability to carry out scholarly work in his/her subject area.

Requirements for achieving candidacy for a doctoral degree are determined at the departmental level. The department is also authorized to grant waivers or substitutions of specific course requirements, but not to make exceptions to university requirements. University policy requires that a student achieves candidacy prior to the beginning of their 9th semester of enrollment at Rice.

Petitions for candidacy are submitted through the department. Steps to submitting the "Petition for Approval of Candidacy for a Doctoral Degree" are:

1. Student completing sections 1,3, and 4 of the candidacy petition.
2. Submit the candidacy petition to the academic program administrator (ges2@rice.edu).
3. The academic program administrator will complete section 2 and 5, attach the appropriate documents, and obtain the required signatures.
4. The academic program administrator will electronically submit the candidacy petition to Graduate and Postdoctoral Studies.
5. The student will be notified when the candidacy petition is electronically accepted and when approved.

EXTENSION FOR TIME TO CANDIDACY

Students who are unable to meet the university time boundary for candidacy may petition the Dean of Graduate and Postdoctoral Studies or his designee for an extension to time to candidacy. This can be done by completing the "Petition to Extend Time Boundary for Approval of Candidacy for Defense" form. Steps to submitting the petition are:

1. Student should complete the student sections of the form
2. Submit the form to their advisor to complete the "advisor comments" section and sign
3. Submit the completed form, signed by the student and the advisor to the academic program administrator (ges2@rice.edu).
4. Academic program administrator will electronically submit the petition to Graduate and Postdoctoral Studies.
5. The student will be notified with the petition is electronically accepted and when approved.

Student who exceed their time boundaries without an approved extension request will be charged a fee of $125 for reinstatement to good standing.

Extension to time to candidacy is not automatic. Students who exceed their time boundaries and do not receive an extension to their time to candidacy are subject to immediate dismissal by the Office of graduate and Postdoctoral Studies. Students should not assume an extension is accepted until they receive official notice.

THESIS DEFENSE

The public oral defense of a thesis is intended to be an examination of a completed body of work and should be scheduled only when the thesis is essentially completed. Students may take the final oral examination in defense of their thesis only after the dean of graduate and postdoctoral studies approves their candidacy. Detailed instructions for thesis defense can be found at https://graduate.rice.edu/current-students/defense.

The length of the oral examination and the subject matter on which the candidate is questioned are left to the judgement of the thesis committee.

The defense should be scheduled by the student after consultation with the thesis advisor, who agrees that the thesis is completed and ready to be defended.

All Oral thesis defenses must take place on the Rice University campus with the candidate and all thesis committee members in physical attendance. In exceptional cases, appeals to this requirement can be made in writing to the dean of graduate and postdoctoral studies. This appeal must be initiated by the student's advisor.

ACCEPTANCE OF THESIS AND THESIS SUBMISSION

Candidates who successful pass the oral examination of defense of the thesis must submit the thesis to the Office of Graduate and Postdoctoral Studies no later than six months from the date of the examination. If the thesis is not submitted by the end of the six-month period, the "pass" will be revoked and an additional oral defense will be required. Detailed instructions for submitting a thesis can be found at: https://graduate.rice.edu/current-students/candidacy-defense/thesis-submission.

TIMELINE

The following is the recommended timeline for PhD students. Areas indicated in red are milestones that must be met within a specific time frame.

Semester	1	2	3	4	5	6	7	8	9	10
Coursework										
Rotations and Advisor Selection	11/30									
Colloquia										
Semi Annual Progress Reports										
Research										
Thesis Proposal, Achieve Candidacy		Before 5th semester								
TA Assignments										
Annual Progress Reviews										
Thesis Defense								By end of 10th Semester		
Graduate								By end of 10th Semester		

DEGREE CONFERRAL AND COMMENCEMENT

Candidates receive the PhD degree after successfully completing:

- A minimum of 90 graduate semester credit hours of study at the 500-level and above (including thesis credit hours)
- Doctoral students must complete at least four full fall and/or spring semesters in full-time study at Rice University.
- An original investigation that is formalized in an approved thesis.
- As final evidence of preparation for degree, a public oral examination prior to submitting the approved thesis to the Office of Graduate and Postdoctoral Studies.

Degrees are conferred in the spring (May), summer (August) and winter (December). Commencement is held once a year in May. All students who have completed their degrees since the last scheduled commencement are invited to attend the commencement the following May.

PROFESSIONAL MASTER'S DEGREE (MBE) GENERAL GUIDELINES (APPLICABLE TO ALL STUDENTS)

REQUIREMENTS FOR THE MBE DEGREE

The MBE degree is a non-thesis master's degree. For general university requirements, please see Non-Thesis Master's Degrees. For additional requirements, regulations, and procedures for all graduate programs, please see All Graduate Students. Students pursuing the MBE degree must complete:
A minimum of 30-31 credit hours, depending on area of specialization, to satisfy degree requirements.

- A minimum of 30 credit hours of graduate-level study (coursework at the 500-level or above).
- A minimum of 24 credit hours must be taken at Rice University.
- A minimum residency enrollment of one fall or spring semester of part-time graduate study at Rice University.
- The requirements for the one area of specialization (see below for areas of specialization.) The MBE degree program offers two areas of specialization:
    - **Applied Bioengineering** (class-only) or **Applied Bioengineering** (research option): designed as a flexible degree for students who will pursue careers in research, medicine, or related fields. This area of specialization of the MBE degree is designed for students to transition to medical school or a Ph.D. program, or to advance their professional career in the biomedical industry; ***or***
    - **Global Medical Innovation**: designed specifically for students who will pursue a career in the global medical technology industry. This area of specialization of the MBE degree is designed to prepare engineers for careers in medical technology through education in innovation, emerging-market design projects and internships.
- A minimum overall GPA of 2.67 or higher in all Rice coursework.
- A minimum GPA of 3.00 or higher in all Rice coursework that satisfies requirements for the non-thesis master's degree with a minimum grade of a B- (2.67 grade points) in each course (for the Applied Bioengineering area of specialization), ***or*** a minimum GPA of 3.20 or higher in all Rice coursework that satisfies requirements for the non-thesis master's degree with a minimum grade of a B- (2.67 grade points) in each course (for the Global Medical Innovation area of specialization).

Both areas of specialization have the same prerequisites. More information about each of these areas of specialization can be found below. Curriculum must be approved by the Graduate Academic Affairs Committee and the Bioengineering Department. This is done on a case-by-case basis.

The Master of Bioengineering (MBE) degree is a professional non-thesis master's degree. Students who have a BS or BA degree in an engineering or science discipline may apply. Depending on their background, some students may need to take remedial engineering courses to earn the MBE degree. For more information, see the department website.

The courses listed below satisfy the requirements for this degree program. In certain instances, courses not on this official list may be substituted upon approval of the program's academic advisor, or where applicable, the department or program's Director of Graduate Studies. Course substitutions must be formally applied and entered into Degree Works by the department or program's Official Certifier. Additionally, these must be approved by the Office of Graduate and Postdoctoral Studies. Students and their academic advisors should identify and clearly document the courses to be taken.

Total Credit Hours Required for the MBE Degree	30-31

TIME TO DEGREE

The Department of Bioengineering expects students in the professional master's program to complete their degree within two to four semesters. All master's students are required by the university to complete their program within five years of initial enrollment. This time boundary includes any period in which the student is not enrolled or enrolled part time, for whatever reasons. Failure to meet any university time to degree deadline may result in the student not being able to continue in their chosen degree program.

PREREQUISITE REQUIREMENTS

Both areas of specialization, Applied Bioengineering and Global Medical Innovation, require the same prerequisites. Depending on their background, some students may need to take remedial engineering courses to earn the MBE degree. Waivers of prerequisites must be requested by petition to the MBE Committee. Advising sessions will be held before each semester at which time students should discuss specific requirements with the appropriate advisor included in guidelines specific to the areas of specialization and concentration.

COURSE SUBSTITUTIONS

In certain instances, courses may be substituted upon approval of the program's academic advisor. Course substitutions must be formally applied and entered into Degree Works by the program's official certifier. Additionally, these must be approved by the Office of Graduate and Postdoctoral Studies. Students and their advisors should identify and clearly document the courses to be taken. Course substitutions should be considered an exception and made only in specific circumstances where it is in the best interest of the student. All requests for course substitutions must be documented in the student's record.

CREDIT TRANSFER

MBE students may transfer a maximum of six (6) credit hours from a different institution. The following apply:

- The course must be chosen from those that would normally satisfy requirements for an advanced degree. (i.e., is equivalent to a Rice course).
- The course must not have counted toward another degree (e.g. undergraduate degree).
- The student must have made a B- (2.67 credit point) or higher to count the course toward their MBE degree.
- The student must provide proof from their undergraduate institution that the course is graduate level and was not counted toward their undergraduate degree. Generally, a transcript is sufficient, however, the Office of Graduate and Postdoctoral Studies or the Office of the Registrar may request additional information.

SATISFACTORY PROGRESS

Students must maintain a 3.0 (Applied Bioengineering) or 3.2 (Global Medical Innovation) GPA.

In accordance with the requirements of the Office of Graduate and Postdoctoral Studies, students will be assessed based upon their grades at the end of each semester. The department will review the student's transcript to determine if the student has met GPA requirements. If the student's overall GPA is below the standard set for their specific specialization, the student will be placed in a probationary status through the next semester in which the student is enrolled.

The student will have one semester to improve their grades. If the student falls below the required GPA for a second semester, the student may be dismissed from the program without further notice.

- Graduate students whose overall GPA falls below 2.67 or their semester GPA falls below 2.33, are placed on academic probation by the Office of Graduate and Postdoctoral Studies. The period of probation extends to the end of the next semester in which the student is enrolled. If that probationary semester results in an overall GPA below 2.67 or a semester grade point average below 2.33, the student may be dismissed without further warning. Additionally,

graduate students with a cumulative GPA below 2.00 will be dismissed by the Office of Graduate and Postdoctoral Studies without a probationary period.

Degrees are conferred in the spring (May), summer (August) and winter (December). Commencement is held once a year in May. All students who have completed their degrees since the last scheduled commencement are invited to attend the commencement the following May.

AREA OF SPECIALIZATION: APPLIED BIOENGINEERING (CLASS-BASED)

Students pursuing the Applied Bioengineering (class-based) area of specialization must complete:

- A minimum of 2 courses (3 credit hours) from the core requirements.
- A minimum of 9 courses[1] (27 credit hours) taken at the 500-level or above from selected course offerings.
  - A minimum of 6 courses (18 credit hours) from approved departmental (BIOE) course offerings.
  - A minimum of 1 course (3 credit hours) as a professional development elective course.
  - A minimum of 1 course (3 credit hours) as a quantitative elective course.
  - A minimum of 1 course (3 credit hours) from approved departmental (BIOE) course offerings or another department.
- A minimum GPA of 3.00 or higher in all Rice coursework that satisfies requirements for the non-thesis master's degree with a minimum grade of a B- (2.67 grade points) in each course.

Code	Title	Credit Hours
Core Requirements		
BIOE 627	MEDICAL INNOVATION INDUSTRY SEMINAR	1.5
BIOE 628	MEDICAL TECHNOLOGY DESIGN SEMINAR 2	1.5
Elective Requirements		
Elective Category: BIOE Departmental Electives		
Select 6 courses from approved departmental (BIOE) course offerings at the 500-level or above		18
Elective Category: Professional Development		
Select a minimum of 3 credit hours from the following:		3
ENGI 501	WORKPLACE COMMUNICATION FOR PROFESSIONAL MASTER'S STUDENTS IN ENGINEERING	
ENGI 510	TECHNICAL AND MANAGERIAL COMMUNICATIONS	
ENGI 515	LEADING TEAMS AND INNOVATION	
ENGI 529 / CEVE 529	ETHICS AND ENGINEERING LEADERSHIP	
ENGI 542	PROFESSIONAL COMMUNICATION FOR ENGINEERING LEADERS	
ENGI 555	ENGINEERING PERSUASION	
ENGI 610	MANAGEMENT FOR SCIENCE AND ENGINEERING	
ENGI 615	LEADERSHIP COACHING FOR ENGINEERS	
UNIV 594	RESPONSIBLE CONDUCT OF RESEARCH	

Code	Title	Credit Hours
Elective Category: Quantitative Requirement		
BIOE 539	APPLIED STATISTICS FOR BIOENGINEERING AND BIOTECHNOLOGY[2]	3
Elective Category: BIOE General Elective		
Select 1 additional course from approved departmental (BIOE) course offerings (or another department) at the 500-level or above		3
Total Credit Hours		**30**

AREA OF SPECIALIZATION: APPLIED BIOENGINEERING (RESEARCH-BASED)

Students pursuing the Applied Bioengineering (research-based) area of specialization must complete:

- A minimum of 2 courses (3 credit hours) from the core requirements.
- A minimum of 2 courses (9 credit hours) from the research requirement.
- A minimum of 8 courses[1] (22 credit hours) taken at the 500-level or above from selected course offerings.
  - A minimum of 5 courses (15 credit hours) from approved departmental (BIOE) course offerings
  - A minimum of 1 course (3 credit hours) as a quantitative elective course.
  - A minimum of 1 course (1 credit hour) as an ethics course.
  - A minimum of 1 course (3 credit hours) as a technical writing course.
- A minimum GPA of 3.00 or higher in all Rice coursework that satisfies requirements for the non-thesis master's degree with a minimum grade of a B- (2.67 grade points) in each course.

Code	Title	Credit Hours
Core Requirements		
BIOE 627	MEDICAL INNOVATION INDUSTRY SEMINAR	1.5
BIOE 628	MEDICAL TECHNOLOGY DESIGN SEMINAR 2	1.5
Research Requirement		
BIOE 507	GRADUATE RESEARCH COMPONENT I	3
BIOE 607	RESEARCH CONCENTRATION – COMPONENT II	6
Elective Requirements		
Elective Category: BIOE Departmental Electives		
Select 5 courses from approved departmental (BIOE) course offerings at the 500-level or above		15
Elective Category: Quantitative Requirement		
BIOE 539	APPLIED STATISTICS FOR BIOENGINEERING AND BIOTECHNOLOGY[2]	3
Elective Category: Ethics		
UNIV 594[2]	RESPONSIBLE CONDUCT OF RESEARCH	1
Elective Category: Technical Writing		
Select 1 course from the following:		3
ENGI 501	WORKPLACE COMMUNICATION FOR PROFESSIONAL MASTER'S STUDENTS IN ENGINEERING	

Code	Title	Credit Hours
ENGI 510	TECHNICAL AND MANAGERIAL COMMUNICATIONS	
ENGI 542	PROFESSIONAL COMMUNICATION FOR ENGINEERING LEADERS	
Total Credit Hours		**31**

1 Students may include up to 6 credit hours of BIOE 506 (*Graduate Independent Study*) within these 18 credit hours. Students choosing to complete the Applied Bioengineering (Research Based) Area of Specialization will take up to 9 credit hours of BIOE 507 and BIOE 607, which are more structured MBE research courses. For students taking BIOE 507 or BIOE 607, BIOE 506 may also be taken for additional research experience, but it will not be counted toward the 30 credit hours required for the MBE unless taken as an internship (under BIOE Rice Faculty supervision) at another institution (academic, clinical or industry).

2 BIOE 539 or an alternative quantitative-based BIOE course, taken at the 500-level or above, with the advisor's approval.

3 For students pursuing the MD/MBE dual degrees program (Applied Bioengineering or Global Medical Innovation specialization), up to 2 courses (6 credit hours) from the McGovern Medical School at the UT Health Science Center can fulfill MBE requirements: BIOE 695 *Transfer - Foundations of Medical Science* and BIOE 696 *Transfer - Doctoring 1: History and Physical Exam.*

AREA OF SPECIALIZATION: GLOBAL MEDICAL INNOVATION

Students pursuing the Global Medical Innovation area of specialization must complete:

- A minimum of 6 courses (15 credit hours) from the core requirements.
- An internship or independent study (6 credit hours).
- A minimum of 3 courses (9 credit hours) taken at the 500-level or above from selected course offerings.
    - A minimum of 1 course (3 credit hours) as a professional development elective course.
    - A minimum of 1 course (3 credit hours) as a quantitative elective course.
    - A minimum of 1 course (3 credit hours) from approved departmental (BIOE) course offerings or another department.
- A minimum GPA of 3.20 or higher in all Rice coursework that satisfies requirements for the non-thesis master's degree with a minimum grade of a B- (2.67 grade points) in each course.

Code	Title	Credit Hours
Core Requirements		
Medical Technology Design		
BIOE 527	HEALTHCARE INNOVATION AND ENTREPRENEURSHIP	3
BIOE 529	HEALTHCARE INNOVATION AND ENTREPRENEURSHIP LAB	3
Medical Technology Implementation		
BIOE 528	MEDICAL ENGINEERING AND DESIGN LAB	3
BIOE 530	MEDICAL ENGINEERING & DESIGN LAB 2	3
Industry Seminar Series		
BIOE 627	MEDICAL INNOVATION INDUSTRY SEMINAR	1.5
BIOE 628	MEDICAL TECHNOLOGY DESIGN SEMINAR 2	1.5
Internship or Independent Study [1, 2]		**6**
Select 1 from the following:		
BIOE 506	GRADUATE INDEPENDENT STUDY (2 semesters required, 1st semester)	
or BIOE 600	GRADUATE BIOENGINEERING INDUSTRY INTERNSHIP	
Elective Requirements		
Elective Category: Professional Development		

Code	Title	Credit Hours
Select a minimum of 3 credit hours from the following:		3
ENGI 501	WORKPLACE COMMUNICATION FOR PROFESSIONAL MASTER'S STUDENTS IN ENGINEERING	
ENGI 510	TECHNICAL AND MANAGERIAL COMMUNICATIONS	
ENGI 515	LEADING TEAMS AND INNOVATION	
ENGI 529 / CEVE 529	ETHICS AND ENGINEERING LEADERSHIP	
ENGI 542	PROFESSIONAL COMMUNICATION FOR ENGINEERING LEADERS	
ENGI 555	ENGINEERING PERSUASION	
ENGI 610 / NSCI 610	MANAGEMENT FOR SCIENCE AND ENGINEERING	
ENGI 615	LEADERSHIP COACHING FOR ENGINEERS	
Elective Category: Quantitative Requirement		
BIOE 539	APPLIED STATISTICS FOR BIOENGINEERING AND BIOTECHNOLOGY [3]	3
Elective Category: BIOE General Elective		
Select 1 additional course from approved departmental (BIOE) course offerings (or another department) at the 500-level or above [4]		3
Total Credit Hours		**30**

1 This will be considered on a case-by-case basis, and the student is responsible for obtaining and selecting an internship that best aligns with their career goals. Students typically take BIOE 506 *Graduate Independent Study* for 2 semesters (3 credit hours each for 6 credit hours total), or 1 semester of BIOE 600 *Graduate Bioengineering Industry Internship* for 6 credit hours during the summer.

2 For students pursuing the MBE/MD dual degrees program, up to 2 courses (6 credit hours) from the McGovern Medical School at the UT Health Science Center can fulfill MBE requirements: BIOE 695 *Transfer - Foundations of Medical Science* and BIOE 696 *Transfer - Doctoring 1: History and Physical Exam.*

3 BIOE 539 or an alternative quantitative-based BIOE course, taken at the 500-level or above, with the advisor's approval.

4 Students may complete a course offered by another department, but it must be relevant to the MBE degree.

MASTER OF SCIENCE (MS) THESIS BASED

INTRODUCTION

New students interested solely in the Master of Science (MS) degree are admitted only under special circumstances. MS students must satisfy the departmental and university course requirements, fulfill the teaching requirement, complete a research project, write a thesis and successfully defend their work in a public oral examination.

Masters students are required to complete their program, including thesis defense, within five (5) years of initial enrollment in the degree program. This time boundary includes any period in which the student is not enrolled or enrolled part-time, for whatever reason. Failure to meet any university time to degree deadline may result in the student not being able to continue their degree program.

PROGRAM LEARNING OUTCOME

Upon completing the MS degree in Bioengineering, the student will be able to acquire a graduate-level understanding of foundations in bioengineering and apply this material across a variety of sub-disciplines, integrate knowledge from different sources to solve a defined bioengineering problem, acquire knowledge in a sub-discipline in which they will pursue their dissertation, and demonstrate professional skills in both oral and written communication.

RESEARCH AND SCHOLARLY ACTIVITIES

Research and other scholarly activities must conform to Rice University policies. Students should familiarize themselves with the policies listed below before embarking on research or other scholarly activities. The following policies should be reviewed:

- Policy 324-00 Research Misconduct
- Policy 326-98 Human Health and Safety in the Performance of Research
- Policy 333 Software Policies, and
- Policy 334 Copyright Policy

ACADEMIC REQUIREMENTS

The university minimum requirements for a master's degree is 30 semester hours beyond the bachelor's degree. MS students are required to complete their program, including thesis defense, within five (5) years of initial enrollment in the degree program. This time boundary includes any period in which the student is not enrolled or enrolled part-time, for whatever reason. Failure to meet any university time to degree deadline may result in the student not being able to continue their degree program.

The Department of Bioengineering, except in exceptional circumstances, expects students will complete their degree within two to three years (4-6 semesters, not including summer).

SPECIFIC REQUIREMENTS

- The student's overall GPA must be 3.0 or higher. A grade of less than 3.0 for two successive semesters may result in dismissal from the program.
- The student must earn a grade of B- (2.67) or above in all course work counted toward their degree program. Courses in which a student receives a grade below a B- (2.67) may not be used to fulfill degree requirements.
- During the first semester in residence, the student must take a minimum of nine (9) semester hours, including three advanced courses for a standard letter grade. If a student received credit for graduate courses taken during

prior studies, they may petition the Graduate Academic Affairs Committee (GAAC) to relax the requirements for registering for nine hours of advanced courses during the first semester, assuming the student anticipates complete formal coursework by the end of the first year of study.

- Students should register for a minimum of 9 credit hours during the summer semesters to be eligible for a student stipend. Research credit hours count toward this minimum.
- Students may not take courses within their major (BIOE) on a pass/fail basis.
- Courses taken on a pass/fail in other disciplines or satisfactory/unsatisfactory basis do not count toward the nine credit hours required during the first semester.
- Although not required, students are encouraged to register for Colloquia (BIOE 698 and BIOE 699). Colloquia credit hours are in addition to the 30 credit hours required for the MS degree.
- The student should register for 1-12 credit hours in BIOE 500 each fall, spring, and summer semester during the terms he/she is engaged in research. The number of hours the student should register for depends on time spent in the lab. It is recognized that hours in the lab must be estimated, with the calculation of BIOE 500 hours based on a 3:1 ratio, that is. each three (3) hours per week spent in the lab translates into one (1) credit hour of BIOE 500. The student should discuss the number of credit hours they will take with their advisor prior to registration.
- Students are expected to complete a majority of classroom coursework within the first semester in residence to allow the student to commence thesis research on a full-time basis by the end of the first semester. If a student has not completed all coursework by the end of the second semester, they should create a plan for completing the remainder of the required credit hours in classroom coursework and share this plan with their advisor.
- Students must meet prerequisite requirements (see “Prerequisites” in Section 1).

ACADEMIC WAIVERS

In specific instances, the student may petition the Graduate Academic Affairs Committee to waive and academic requirement. If the academic waiver is to waive a specific class, the 30 required semester hours will be reduced on an hour-by-hour basis. However, waived courses do not reduce the requirement for taking 18 credit hours of 500-level or above BIOE courses. In addition, student must still meet the minimum requirement of completing 18 credit hours of classroom coursework. Waiving a course does not reduce the 30 credit hours required to meet the MS degree requirements.

All waivers are considered on a case-by-case basis.

CURRICULUM REQUIREMENTS

Students pursuing the MS degree in the field of bioengineering must complete the following to satisfy degree requirements:

> Candidates receive a master's degree after completing a minimum of 30 graduate semester credit hours of study, including a minimum of 18 credit hours of 500-level or above foundation and advanced topic classroom coursework graded using a standard letter scale and UNIV 594 (Ethical Conduct in Research). Other course hours should be research credit (BIOE 500).

In addition, the student must meet the following requirements:

- A minimum of 24 graduate semester credit hours must be taken at Rice University.
- A minimum overall GPA of 3.0 or higher in all Rice coursework.
- A minimum GPA of 2.67 or higher in each Rice course taken to satisfy degree requirements for the thesis master’s degree.
- A minimum residency enrollment of one fall or spring semester of full-time graduate study at Rice University.
- If receiving a department funded stipend, the student must fulfill a minimum of 1 teaching assistant assignment

- Original work reported in a thesis and a public oral examination, approved and submitted to the Office of Graduate and Postdoctoral Studies.

All courses must be relevant to the bioengineering field.

All curriculum requirements and teaching assistantships must be completed before the student can apply for candidacy which is required prior to the beginning of the student's fourth semester (not counting summer semesters).

TRANSFER CREDIT

A minimum of 24 of the 30 credit hours required for the MS degree must be taken at Rice. Hence, students my transfer a maximum of six (6) credit hours from a different institution. If the student has taken graduate level courses as an undergraduate, they may petition the Graduate Academic Affairs Committee (GAAC)to receive credit for these courses. Student should refer to the "Transfer Credit" in Section 1 for more information.

CHOOSING AN ADVISOR

In exceptional cases where a MS student is admitted directly to the MS program, the student must have an advisor prior to admission.

If a student is transferring from the PhD program to the MS program, the student will, in most cases, remain with their original PhD advisor. In rare circumstances where it is not in the best interest of the student to remain with the same advisor, the student follows the same policies and procedures as PhD students who change advisors.

FINANCIAL SUPPORT

The student's advisor Financial support is dependent upon satisfactory performance, reasonable progress towards degree requirements, and the availability of funds. Stipends are subject to all the usual federal taxes.

Advisors are responsible for the student's financial support beginning on August 16, 2021 for students matriculating in fall 2021. Advisors are expected to pay 100% of the student's stipend and associated fees unless the stipend is funded by a fellowship, scholarship, training grant, or other source of funding which covers all or a portion of the stipend. The portion of the stipend not covered will be paid by the advisor.

The basic stipend for PhD students during the 2021-2022 academic year is $33,500.

Students are governed by the same general financial support rules as student in the PhD program. (See PhD policies in Section 2).

HOLIDAY AND PERSONAL TIME OFF

HOLIDAYS

During the first semester, MS students observe the defined holidays listed in the Academic Calendar. Beginning the second semester (January 1, 2022), student will observe designated staff holidays (found at http://people.rice.edu/benefits-rewards/holidays/).

Since Rice is not officially closed during spring recess and spring break, students will not automatically receive the dates of these events off. All requests for time off must be approved in advance by the student's advisor.

EXTREME WEATHER OR ANOTHER EMERGENCY

In cases of extreme weather or other emergencies, the university may officially close. During such emergency situations, students should follow university emergency notifications. Generally, instructions will be the same as those followed by faculty and staff.

PERSONAL TIME OFF

Personal Time Off (PTO) is based upon a calendar year. Beginning January 1st and ending December 31st, students engaged in research receive ten (10) working days of personal time off (PTO). Working days are defined as Monday-Friday.

Each lab has a specific policy for requesting and documenting PTO and students must adhere to their lab's policies. In general, students should request PTO a minimum of two weeks prior to the days being requested. Although all reasonable requests should be granted, it is at the discretion of the student's advisor to approve specific requests. Unusual circumstances that deviate from the vacation policy are considered on a case-by-case basis with approval at the discretion of the student's advisor.

In cases of illness or extraordinary circumstances such as family emergencies, that do not allow for prior notification, the student's advisor or designee should be notified as soon as possible, depending on the specific situations.

If a student is not present as expected and carrying out required activities for more than one week, without prior approval, the student will receive an immediate written warning. If the student is absent from required activities for a contiguous two weeks without permission or mitigating circumstances, the student may be judged as making inadequate progress and is subject to termination of financial support.

TEACHING REQUIREMENT

If a student receives financial support from the department they must fulfill one teaching requirement. If the student receives no departmental support (e.g. support from the advisor only) the student us not required to fulfill a teaching assignment. When applicable, the same policies and procedures required of PhD students are followed by MS students. (Refer to "Teaching Requirements" in Section 2.)

CHOOSING A THESIS COMMITTEE

The composition of the thesis committee is the same as for PhD students (Refer to "Thesis Committee" in Section 2.)

APPROVAL OF RESEARCH TOPIC

MS students are not required to complete or defend a thesis proposal. However, students must have their research topic approved by their advisor prior to beginning research. Advisors, within reason, may have additional requirements.

SATISFACTORY PERFORMANCE

Students are expected to make continuous satisfactory progress toward fulfilling their degree requirements. Areas of performance include,

- Taking a minimum of nine (9) semester hours of graduate level courses, graded using a standard letter grade during the first semester in residence
- Maintain a cumulative grade point average (GPA) of 3.0 or better
- Submit progress review reports by the deadline
- Petition for master's candidacy prior to the beginning of the semester in residence
- Make continuous progress in research

PROGRESS REVIEW AND EVALUATION

Student progress is continuously evaluated. This evaluation is carried out by the advisor and the thesis committee. During the first two years, the student must meet with their advisor as deemed necessary by that advisor. Once the student has finalized their thesis committee, the committee and advisor should meet with the student on an annual basis or more often as deem appropriate by the advisor or committee. All meetings must be documented in the student's semi-annual progress report.

SEMI-ANNUAL PROGRESS REVIEWS

Twice per year, official semi-annual progress reviews are completed.

The BIOE Director of Graduate Studies will review progress review forms and may take additional actions, such as discussing the report with the student, as deemed appropriate.

RELATIONSHIP BETWEEN BIOE 500 AND PROGRESS REVIEWS

BIOE 500 (Graduate Research) and the semi-annual progress review are related in that both show the student's progress in research. However, the semi-annual progress review is more comprehensive as it covers additional aspects of the student's progress. BIOE 500 is a course in which students earn a grade (satisfactory/unsatisfactory) based solely on their research and research-related activities during a specific semester. When a grade of unsatisfactory is given for BIOE 500, it should be addressed in the advisor's portion of the next progress review.

ACADEMIC PROBATION AND DISMISSAL

Refer to "Academic Probation and Dismissal" guidelines under Section 2.

PETITION AND APPEAL TO DISMISSAL

Refer to "Petition and Appeal to Dismissal" guidelines under Section 2

VOLUNTARILY CHANGING ADVISORS DURING PHD STUDIES

Master's students, are direct admits under the mentorship of an advisor and are expected to carry out research with this advisor until the master's degree is awarded. Exceptions to this this rule are extraordinary and require a compelling reason why a change in advisors is warranted. All request for changing advisors will only be considered after consultation with the Director of Graduate Studies. A change in advisors must be approved by the Director of Graduate Studies and the Graduate Academic Affairs Committee (GAAC).

CANDIDACY

Candidacy marks a midpoint in the course of graduate education. Achieving candidacy signals that the student has

5. completed required coursework,
6. defended the thesis proposal defense, to demonstrate his/her comprehensive grasp of the subject area,
7. demonstrated the ability for clear oral and written communication, and
8. shown the ability to carry out scholarly work in his/her subject area.

Requirements for achieving candidacy for a master's thesis degree are determined at the departmental level. The department is also authorized to grant waivers or substitutions of specific course requirements, but not to make exceptions to university requirements.

Petitions for candidacy are submitted through the department. Steps to submitting the "Petition for Approval of Candidacy for a Master's Degree" are:

6. Student completing sections 1,3, and 4 of the candidacy petitions.
7. Submit the candidacy petition to the academic program administrator (ges2@rice.edu).
8. The academic program administrator will complete section 2 and 5, attach the appropriate documents, and obtain the appropriate signatures.
9. The academic program administrator will electronically submit the candidacy petition to Graduate and Postdoctoral Studies.
10. Student will be notified when the candidacy petition is electronically accepted and when approved.

EXTENSION FOR TIME TO CANDIDACY

Students who are unable to meet the university time boundary for candidacy may petition the Dean of Graduate and Postdoctoral Studies or his designee for an extension to time to candidacy. This can be done by completing the "Petition to Extend Time Boundary for Approval of Candidacy for Defense" form. Steps to submitting the petition are:

6. Student should complete the student sections of the form
7. Submit the form to their advisor to complete the "advisor comments" section and sign
8. Submit the completed form, signed by the student and the advisor to the academic program administrator (ges2@rice.edu).
9. Academic program administrator will electronically submit the petition to Graduate and Postdoctoral Studies.
10. The student will be notified with the petition is electronically accepted and when approved.

Student who exceed their time boundaries without an approved extension request will be charged a fee of $125 for reinstatement to good standing.

Extension to time to candidacy is not automatic. Students who exceed their time boundaries and do not receive an extension to their time to candidacy are subject to immediate dismissal by the Office of graduate and Postdoctoral Studies. Students should not assume an extension is accepted until they receive official notice.

THESIS DEFENSE

The public oral defense of a thesis is intended to be an examination of a completed body of work and should be scheduled only when the thesis is essentially completed. Students may take the final oral examination in defense of their thesis only after the dean of graduate and postdoctoral studies approves their candidacy. Detailed instructions for thesis defense can be found at https://graduate.rice.edu/current-students/defense.

The length of the oral examination and the subject matter on which the candidate is questioned are left to the judgement of the thesis committee.

The defense should be scheduled by the student after consultation with the thesis advisor, who agrees that the thesis is completed and ready to be defended.

All Oral thesis defenses must take place on the Rice University campus with the candidate and all thesis committee members in physical attendance. In exceptional cases, appeals to this requirement can be made in writing to the dean of graduate and postdoctoral studies. This appeal must be initiated by the student's advisor.

ACCEPTANCE OF THESIS AND THESIS SUBMISSION

Candidates who successful pass the oral examination of defense of the thesis must submit the thesis to the Office of Graduate and Postdoctoral Studies no later than six months from the date of the examination. If the thesis is not submitted by the end of the six-month period, the "pass" will be revoked and an additional oral defense will be required. Detailed instructions for submitting a thesis can be found at: https://graduate.rice.edu/current-students/candidacy-defense/thesis-submission.

DEGREE CONFERRAL AND COMMENCEMENT

Candidates receive the MS degree after successfully completing:

- A minimum of 30 graduate semester credit hours of study at the 500-level and above (including thesis credit hours)
- MS students must complete at least four full fall and/or spring semesters in full-time study at Rice University.
- An original investigation that is formalized in an approved thesis.
- As final evidence of preparation for degree, a public oral examination prior to submitting the approved thesis to the Office of Graduate and Postdoctoral Studies.

Degrees are conferred in the spring (May), summer (August) and winter (December). Commencement is held once a year in May. All students who have completed their degrees since the last scheduled commencement are invited to attend the commencement the following May.