

# **Student Handbook**

## **Academic Year 2017-2018**

**Department of Bioengineering**  
**George R. Brown School of Engineering**  
**Rice University**



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## SCOPE OF POLICY

The policies outlined in this document pertain to graduate studies in the PhD, MD/PhD, MS, and MBE (Applied Bioengineering and Global Medical Innovation tracks) programs in the Department of Bioengineering. In case of error, omission, or conflict, policies of the Rice *General Announcements* supersede those stated within this handbook. If the policies of the program change during a student's tenure at Rice University, the student can elect to continue studies under the complete set of policies in place at the time of his or her matriculation or may choose to follow the updated policies in full. Students may not choose some regulations from one set of policies and some from another.

In rare cases, the faculty may apply a new regulation to all students who have not passed a specific milestone (e.g., candidacy) in their program if such a change will not materially affect the progress of the students. Students will be notified of such revisions. The Graduate Academic Affairs Committee reserves the right to correct typographical errors in these policies at any time without giving students the above choices.

It is the student's responsibility to be familiar with the rules, procedures, and requirements of the Bioengineering Department, the Office of Graduate and Postdoctoral Studies, and Rice University. It is the ultimate responsibility of the student to know and follow all policies and timelines to allow for a timely graduation.

When in doubt, student should seek help first at the graduate program level (academic program administrator, director of graduate studies, and/or department chair) and then at the central administration level (office of graduate and postdoctoral studies).

## GRADUATE STUDENT RESOURCES

The first help resource for graduate students is Gayle Schroeder, the staff graduate program administrator. She is the contact for graduate student records, student stipends, graduate forms, required milestones, submission of petitions and all other graduate related issues. Gayle's direct backup is Peggy Scheier.

Bioengineering students are welcome to ask any of our staff for assistance at any time. This page provides information on department personnel providing direct services to students.

Title	Name	Phone	Email	Responsibility
Academic Program Administrator	Gayle Schroeder	5063	<a href="mailto:ges2@rice.edu">ges2@rice.edu</a>	Graduate student records, student stipends, graduate forms, required milestones, submission of petitions and all other graduate related issues.
UG Academic Program Coordinator and Graduate Program Assistant	Peggy Scheier	3253	<a href="mailto:pms4@rice.edu">pms4@rice.edu</a>	Primary back up for Academic Program Administrator (see above)
Research Administrator	Valda Adams	3682	<a href="mailto:Valda.R.Adams@rice.edu">Valda.R.Adams@rice.edu</a>	Assisting students who are applying for independent funding and/or other scholarships and fellowships, or whose advisors submit federal grants for their funding.
Research Administrator	Cham Pham	5013	<a href="mailto:cdp1@rice.edu">cdp1@rice.edu</a>	Assisting students who are applying for independent funding and/or other scholarships and fellowships, or whose advisors submit federal grants for their funding.
Accounting Assistant	Lisa Boykin	5854	<a href="mailto:Lisa.J.Boykin@rice.edu">Lisa.J.Boykin@rice.edu</a>	Lab purchases and Concur reports (please seek instructions from your lab mates first)
Accounting Assistant	Aaron Santos	3676	ams6 @rice.edu	Lab purchases and Concur reports (please seek instructions from your lab mates first)
Science Write & Web Specialist	Shawn Hutchins	4793	<a href="mailto:Shawn.E.Hutchins@rice.edu">Shawn.E.Hutchins@rice.edu</a>	Advertisement of accomplishments (articles in major publications, awards, etc.)
Department Operations Manager	Ashley Grundvig	4445	amg4@rice.edu	Building Access and other related issues
Program Coordinator	Sheretta Edwards	2871	<a href="mailto:shereta@rice.edu">shereta@rice.edu</a>	Primary resource for MBE Program, GMI track students

**FACULTY COMMITTEES**

Bioengineering Director of Graduate Studies

Robert Raphael, PhD

Graduate Academic Advising Committee

Chair: Tony Mikos, PhD  
 Gang Bao, PhD  
 Issac Hilton, PhD (Spring 2018)  
 Herbert Levine, PhD  
 Robert Raphael, PhD  
 Eric Richardson, PhD  
 David Zhang, PhD

MBE Academic Advising Committee

Chair: Oleg Igoshin, PhD  
 Caleb Bashor, PhD (Spring 2018)  
 Michael Diehl, PhD (Spring 2018)  
 Robert Raphael, PhD  
 Eric Richardson, PhD  
 Tomasz Tkaczyk, PhD

BIOE Student Grievance Committee

Graduate Academic Affairs Committee serves this function concurrently with ad hoc members as necessary

**BIOENGINEERING GRADUATE STUDENT ASSOCIATION (BIOE-GSA)  
 Academic Year 2017-2018**

POSITION	NAME
Chair	Satya Bellamkonda
Internal Assistant Chair	Alyssa Shapiro
External Assistant Chair	Manuela Sushnitha
Treasure	Maria Chen
Communications Chair	Letitia Chim
Social Chairs	Sean Bittner & Madeleine Gomel
Affiliate Chairs	Madeline Monroe & Melody Tan
Faculty Advisor	Junghae Suh, PhD

[https://www.facebook.com/pg/RiceBioEGSA/posts/?ref=page\\_internal](https://www.facebook.com/pg/RiceBioEGSA/posts/?ref=page_internal)

## **CHALLENGES AND GOALS OF GRADUATE STUDY**

### **Program Learning Outcomes for the PhD Degree Program in Bioengineering**

Upon completing the PhD degree in Bioengineering, students will be able to:

1. Work as independent researchers.
2. Acquire a graduate-level understanding of foundations in Bioengineering and apply this material across a variety of sub-disciplines.
3. Integrate knowledge from different sources to solve a defined Bioengineering problem.
4. Acquire deep knowledge in a sub-discipline in which they will pursue their dissertation.
5. Demonstrate professional skills in both oral and written communication.

### **Program Learning Outcomes for the Master of Bioengineering Degree (MBE)**

#### Program Learning Outcomes for the Applied Bioengineering Track

Upon completing the MBE degree, students pursuing the Applied Bioengineering track requirements will be able to:

1. Apply and integrate advanced knowledge of bioengineering topics in at least one of the following areas: Biomaterials and Drug Delivery, Biomedical Imaging and Diagnostics, Computational and Theoretical Bioengineering, Tissue Engineering and Biomechanics, or Systems and Synthetic Biology.
2. Apply knowledge from engineering and other disciplines to identify, formulate, and solve novel and complex problems that require advanced knowledge in bioengineering.
3. Select and apply quantitative analytic techniques to analyze bioengineering data.
4. Gain admission to a graduate or professional program, if students want to pursue further education.

#### Program Learning Outcomes for the Global Medical Innovation track

Upon completing the MBE degree, students pursuing the Global Medical Innovation track requirements will be able to:

1. Apply knowledge of bioengineering topics in at least one of the following areas: Biomaterials and Drug Delivery, Biomedical Imaging and Diagnostics, Computational and Theoretical Bioengineering, Tissue Engineering and Biomechanics, or Systems and Synthetic Biology.
2. Develop effective medical products, from concept to commercialization, within a team environment.
3. Comprehend and navigate the global medical technology industry by leveraging an internship experience.
4. Gain employment or advance professionally in a technical field related to bioengineering.



## **Student Responsibilities**

Students are responsible for meeting all program requirements of their individual program and the university requirements. In addition to being in agreement with the regulations stated in this handbook, students must be in agreement with the General Announcements (<http://ga.rice.edu/>) as well as the Code of Conduct (<http://www.students.rice.edu/students/Conduct.asp>). A student failing to meet department or university requirements is subject to dismissal from the program. In cases where there is conflicting information, university-wide regulations take precedence over department-wide regulations, which take precedence over research group-wide regulations. When in doubt, students should first seek help at the department level (academic program administrator) and then at the central administration level (Office of Graduate and Postdoctoral Studies).

## **Academic Standing**

In order to remain eligible to continue in a degree program and /or receive various types of financial assistance, a graduate student must maintain good academic standing and be making satisfactory progress toward the degree.

The following are minimum requirements:

1. To remain in good academic standing, PhD, MS students must maintain the established grade point average (GPA) for the program in which they are enrolled. If a student's GPA is below this established requirement, the student will be placed on probation. If a student's cumulative GPA falls below the minimum GPA for their program for two consecutive semesters, they may be dismissed from the program.
2. If the student's GPA falls below 2.33 for two consecutive semesters, including the summer semester, the student will be immediately dismissed without further warning in accordance with University policy.
3. Courses for which a student receives a grade lower than B- may not be counted toward degree requirements. The course may be retaken to achieve a higher grade and the credit. However, the original grade earned also remains on the student's record and is counted toward the student's GPA.
4. Incomplete grades must be completed in accordance with the University policy on incompletes as detailed in the *General Announcements*.
5. The completion of all degree requirements must take place within the time limits established by the department and in accordance with University policy.

Deviation from any of the above requirements constitutes evidence that the student is making inadequate degree progress and is no longer in good academic standing. The student will be officially notified of their status and program specific procedures will be followed regarding corrective action or dismissal.

## Academic Integrity

Bioengineering graduate students are bound by the Honor Code. The *General Announcements* explains the honor code as follows:

*The honor system, one of the oldest and proudest traditions at Rice, is administered by the Honor Council, those student members are elected each year by the student body. Adopted by a student vote in 1916, the honor system has remained essentially the same since that time but for changes in the procedures and membership of the Honor Council.*

*Students take all written examinations and complete any specifically designated assignments under the honor system. By committing themselves to the honor system, all students accept responsibility for assuring the integrity of the examinations and assignments conducted under it. The Honor Council is responsible for investigating reported violations and for conducting a hearing when the facts warrant. The Office of Student Judicial Programs, which reviews the results of the investigations and hearings, considers the council's recommendations when issuing penalties.*

The Honor Council conducts an ongoing program to acquaint new students and faculty with the honor system. The Honor Code and other related information and resources are located at the homepage of the Honor Council: <http://honor.rice.edu/>.

### Honor Code Policy on Plagiarism

The Honor System Handbook (<http://honor.rice.edu/honor-system-handbook/>) defines plagiarism quoting, *paraphrasing, or otherwise using another's words or ideas as one's own without properly crediting the source.* All specifically designated written assignments are conducted under the Honor System. In preparing written work, research and the utilization of another person's words or ideas is in many cases essential. The Honor Council assumes that, unless otherwise credited, all work submitted by the student is intended to be considered as his or her own work. Any time a student draws particularly or generally from another's work, the source should be properly credited. What is meant by proper crediting is left to the discretion of the professor. A professor, when assigning a paper, should make known to the students what is expected in the researching and referencing of the paper. However, it is the student's responsibility to find out from each professor how work for that professor should be credited. Neglect of proper citation shall be considered academic fraud.

(<http://honor.rice.edu/files/2010/11/Academic-Fraud-and-the-Honor-System-wwh52d.pdf>)

### Honor Code Policy on Multiple Submissions

*Multiple submissions are the resubmission of any work by a student that has been used in identical or similar form in fulfillment of any academic requirement at this or another institution. Under certain conditions a student may be permitted to rewrite an earlier work or to satisfy two academic requirements by producing a single piece of work, more extensive than that which would satisfy either requirement on its own. In such cases, however, the student must secure*

*prior permission from each instructor involved. If the student has revised an earlier essay, the earlier essay should be submitted with the final version. If a single extended essay has been written for more than one course, the fact must be clearly indicated at the beginning of the essay. Thus, submitting the same work for credit in more than one class, either concurrently or consecutively, without prior permission from the professor shall be considered academic fraud. (<http://honor.rice.edu/files/2010/11/Academic-Fraud-and-the-Honor-System-wwh52d.pdf> )*

#### Honor Code Policy on False Citation

*A false citation is any attribution to, or citation of, a source from which the referenced material was not in fact obtained, including use of a quoted reference from a non-original source while implying reference to the original source. This shall be considered academic fraud. (<http://honor.rice.edu/files/2010/11/Academic-Fraud-and-the-Honor-System-wwh52d.pdf> )*

#### Honor Code Policy on False Data

*False data are data that have been altered or contrived in such a way as to be deliberately misleading. The submission of such data shall be considered academic fraud. (<http://honor.rice.edu/files/2010/11/Academic-Fraud-and-the-Honor-System-wwh52d.pdf> )*

#### **Academic Grievances**

Any student who has a conflict with a faculty member or a student colleague is first encouraged to seek to settle the conflict directly. Should this not be possible or should the conflict remain unresolved, the student may file a grievance with the Director of Graduate Studies. Graduate student grievances and problem resolution at the department level will be handled by the Director of Graduate Study in consultation with the Graduate Academic Affairs Committee. If the student's advisor, members of his or her thesis committee, or other faculty involved in the conflict are members of this Committee they should recuse themselves during grievance procedures. Additional faculty members may be asked to serve in ad hoc positions to assure the student's grievance is heard by an adequate number of committee members.

Appeals, grievances, and problem resolution are determined in accordance with the *Guidelines for Dismissal, Petitions, Appeals, Grievances, and Problem Resolution* found at <http://graduate.rice.edu/dismissals/>.

#### Grievance Process

Problems or conflicts may arise during a student's graduate education, and students must take responsibility for informing faculty. Depending on the problem, students should feel free to ask for advice from their advisor, members of their thesis committee, any department faculty member with whom they feel comfortable. It is best to move to resolve any conflicts quickly and amicably. However, if attempts to resolve the problem informally are unsuccessful, the following grievance procedure should be followed.

1. The student should submit the grievance in writing to the Director of Graduate Studies (PhD and MBE Applied Bioengineering students) or the Director of the MBE GMI program (MBE GMI students).
2. If the student remains unsatisfied, the problem should be presented for resolution to the Graduate Academic Affairs Committee. If a member of this committee also serves as the student's advisor or on the student's thesis committee, the student may ask the chair for an alternate pro tem committee member. Both the student and the appropriate director (as listed above) will submit written records of their views to this committee.
3. If the student remains unsatisfied, the problem will be referred to a standing subcommittee of the university-wide Graduate Council and composed of three faculty members (representing diverse disciplines within the university) and a graduate student, with the dean of graduate and postdoctoral student as an ex-officio member. A written report of proceedings at stage 3 will be presented to the chair of Graduate Council for forwarding to the subcommittee, along with all other written materials generated during the investigation. The decision of this subcommittee is considered final. Every effort should be made to resolve the problem prior to this stage.

The Texas Higher Education Coordinating Board (THECB) and the Texas Administrative Code (19 TAC § 1.110-1.120) require Rice University -- and all other Texas universities -- to provide a student complaint procedure that complies with the U.S. Department of Education's "Program Integrity" regulations as part of the university's eligibility for Title IV federal funds.

The requisite complaint process must inform current, former or prospective students who have exhausted Rice's grievance, complaint or appeal processes how to initiate a complaint outside of Rice with THECB. The THECB's procedures for such complaints are found at: <http://www.thecb.state.tx.us/index.cfm?objectid=AC6FA0BC-F5DB-16DE-6B667C083DFB5B98>. Students wishing to use this outside process should ensure they have first addressed their complaint to the appropriate Rice University complaint process. If Rice is unable to resolve the matter after the student has exhausted internal complaint and appeal processes, the student may then file a complaint with THECB.

### **Prerequisite Requirements**

- Fundamentals of Systems Physiology (Rice equivalent courses: BIOE 322, BIOE 302, BIOE 381)
- Cell Biology (Rice equivalent to BIOC 341) or Physical Biology (Rice equivalent BIOE 502)
- Statistics (Rice equivalent course: Any 400 level or above statistics course. PhD students who have not had statistics may take BIOE 539 to satisfy both the prerequisite and the degree requirement for a math course.

If a student does not have evidence on their undergraduate transcript that they have received credit for these courses, they must take them as part of their program curricula. If not taken prior to matriculation, students are strongly encouraged to take prerequisite courses during their first semester, but must do so within the first two years of study.

Prerequisite courses in a discipline other than bioengineering may be taken for a standard letter

grade or pass/fail. Students taking courses as pass/fail should note that their work is graded using the standard letter grading system during the course of the semester. The student will receive a grade of “Pass” if he or she earns a grade of A-D. If a student earns a grade of “F”, which appears on their transcript as an “F” and counts toward the semester and cumulative GPA.

University policy does not allow graduate students to take a course offered by their 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. (See grading procedures.)

### **Transfer Credit**

Students in the Department of Bioengineering may apply for transfer credit for graduate-level courses taken at Rice or other institutions. It is recommended that students apply for transfer credit at the beginning of their graduate program.

Courses taken at another accredited college or university are not automatically approved for transfer credit. Transfer credit is only granted with the approval of the Graduate Academic Affairs Committee (PhD) or the MBE Academic Affairs Committee (MBE).

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. The minimum grade for transferred credits is a B- or equivalent.

A petition must be submitted to the Graduate Academic Affairs Committee (GAAC) for this approval.

The number and type of credits that may be transferred differ from program to program. Refer to the section on transfer of credits in the program specific guidelines to determine how many and what type of credits the individual programs allow.

### **Residency Requirements**

PhD students must complete at least four full fall and/or spring semesters in full-time study at Rice University. Minimum residency for master's programs is one fall or spring semester of full-time graduate study

Masters of Bioengineering (MBE) must complete a minimum residency is one fall or spring semester in full-time or part-time graduate study.

### **Continuous Enrollment**

All graduate 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 Associate Provost constitutes *de facto* withdrawal. If a student later wishes to resume study, reapplication is required. Readmission is given only on the recommendation of the department and the approval of the Associate Provost.

## **Full-Time Study**

Students in the PhD or MS programs and MBE Students in the Global Medical Innovation track are expected to enroll as full time students. Semester course load for full-time students is twelve hours for the fall and spring semesters. Full-time enrollment during the summer semester is at least six hours.

## **Part-Time Study**

Students in the MBE Applied Bioengineering track may register part-time. Part-time students must register for at least three hours in a semester. All time boundary and degree requirements apply to part-time students. Students who wish to become part-time time in the upcoming semester must obtain written permission from the MBE Academic Affairs Committee before the semester begins. Students who wish to obtain part-time status after the semester has started must also obtain the approval of the Office of Graduate and Postdoctoral Studies.

International students should consult the Office of International Students and Scholars about the possible impact on their visa status of dropping below full-time.

## **Course Registration**

University policy requires students maintain their student status throughout their career at Rice University. PhD students are expected to register for “Graduate Research (BIOE 500)” during the summer semester unless special arrangements are made in advance with their advisor. MBE Students are not required to register for summer courses with the exception of GMI track students who are completing their internship during the summer. Students are responsible for registering for courses each semester.

Students register by logging onto ESTHER using their student ID number and following the instructions under the registration tab.

First year students may not register prior to orientation. Time will be provided to register for courses at the end of the department orientation. Representatives from the GSA will be available to provide technical assistance and course recommendations. Academic advice will be provided by faculty advisors. If students require academic assistance/advising after their first semester, they should seek advice from their faculty advisor.

## **Atypical Registration Situations**

Courses Requiring Special Registration: There are instances when you will not be allowed to register via ESTHER. Examples include:

- closed courses that have reached their maximum enrollment,
- closed courses requiring departmental or instructor permission,
- prerequisite override,
- audit, and
- late add

In such instances, students are required to submit a Special Registration form. The Special Registration form can be found at [http://registrar.rice.edu/online\\_forms/](http://registrar.rice.edu/online_forms/). Special registration must have the approval of the course instructor and the student's advisor. PhD students who have not yet been assigned an advisor during their first semester and all MBE students should submit forms to the BIOE Graduate Program Assistant who will assist in obtaining the signature of the BIOE Director of Graduate Study.) Once signed, the student will be notified to pick up the form and submit it to the Registrar. If the student is registering later than two weeks after the semester begins, they must also obtain approval from The Office of Graduate and Postdoctoral Studies (GPS). This must be done by the student, in person, prior to submitting the form to the Registrar's Office.

Dropping Courses after Drop Deadline: Graduate and Postdoctoral Studies approve dropping a course after the deadline only when a convincing case is made that the student encountered insurmountable problems that s/he made conscientious efforts to resolve. Requests to drop courses after the published deadline set by the Office of the Registrar must be submitted using a Special Registration Form. Once signed by the student's instructor and advisor, the student must petition the Graduate Academic Affairs Committee (GAAC) for approval. The petition must specifically state a compelling reason why the request should be granted. If approved by GAAC, the petition will then be submitted to the Office of Graduate and Postdoctoral Studies for final approval. Because approval to "late drop" a course is not guaranteed, students should continue to attend the course until a final ruling is made.

All petitions should be submitted to the BIOE Academic Program Administrator for inclusion on the GAAC agenda.

Double-Booking/Overlapping Courses: Double booking or overlapping of courses is prohibited by the department.

Inter-institutional Courses: Under certain circumstances, inter-institutional courses may be taken at participating institutions including Baylor College of Medicine, University of Texas Health Science 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 [http://registrar.rice.edu/online\\_forms/](http://registrar.rice.edu/online_forms/). Courses taken through the inter-institutional program do not have equivalent courses at Rice; therefore, transfer credit (with no grade assigned) is applied to the student's Rice transcript upon completion of the course. Since these courses are considered the same as courses taken at Rice, the transfer credits for inter-institutional courses are not counted against the maximum allowable transfer credits for the student's program.

In order to qualify for an inter-institutional course all of the following criteria must be met:

- Students must be registered **full-time** at Rice during semester course is taken. (Note: It is especially important that MBE students who wish to take inter-institutional courses so during the fall and spring semesters only, when they are normally registered full-time at Rice. Inter-institutional courses will not be approved unless the student is registered full time at Rice during the semester they take the inter-institutional course.)
- Requested class must not be offered by Rice during the term taken.

- Requested class must be necessary for the completion of the graduate degree.
- Number of credits allowed per term/semester may vary depending on the policy of the host school.
- All approval signatures must be obtained.
- If a student is taking an inter-institutional course during their last semester before graduation, it is the student's responsibility to assure course credit will be transferred in time for Rice grade deadlines.

International students taking inter-institutional courses must check with OISS regarding additional paperwork. Most host schools will require a copy of I-20/DS02019, visa stamp, passport ID page, and I-94.

Summer Registration: Graduate students in the PhD program must register for summer research hours (BIOE 500).

Students planning to take BIOE 506 should be aware this course is not considered a research course. If a student wishes to complete a summer internship, they should register for BIOE 506 in the subsequent fall semester. If students choose to take non-research courses in the summer, tuition is charged to the student. Tuition waivers are not generally available and will not be approved for summer classes, even for students who receive full tuition waivers during the fall and spring semesters. Exceptional cases should be discussed with the BIOE Academic Program Administrator.

### **Policy on Incompletes**

An incomplete may be awarded only if the student has done work in the course, the instructor judges the reasons for granting incomplete status to be valid, and the instructor determines that the work can be completed in the time specified by University Policy. It is the responsibility of the student to request an incomplete before the due date of the required work. (It is recommended an agreement for an incomplete be documented in writing e.g. email.) If an incomplete is granted, all work in the course must be completed by the date agreed upon by the student and instructor and ON or BEFORE the deadline date listed in the Academic Calendar.

### **Exceptions to Academic Requirements**

PhD Program: Students must petition the Graduate Academic Affairs Committee for exceptions to academic requirements. It is strongly recommended that students obtain the support of their advisor and submit documentation (signature approval) of this support as part of their petition.

MBE Program (Applied Bioengineering (APB) & Global Medical Innovation tracks (GMI): Students must petition the MBE Academic Affairs Committee. Students in the GMI track are strongly encouraged to obtain the support of the Director of the GMI program and submit documentation (signature approval) of this support as part of their petition.



## **Grading Procedures**

General grading procedures can be found at [https://registrar.rice.edu/students/gpa\\_calculation](https://registrar.rice.edu/students/gpa_calculation) . S/U courses (BIOE 500, 504, 698, & 699) will not count toward the total 30 credit hours graded with a standard letter grade. However, in the case of PhD students, these credits will count toward the total of 90 credit hours required for the degree.

MBE students should not take courses graded as satisfactory/unsatisfactory since these courses cannot be taken for a letter grade and will not count toward required hours for the MBE degree.

Audit: Currently enrolled students may audit one or more courses by securing permission of the instructor and by registering as an auditor with the Office of the Registrar. (This is done by completing a Special Registration form.) Students may audit courses at any time during their graduate program. There are no credit hours associated with audited courses, and auditing a course does not affect a student's GPA. Requests to audit a class or to change from audit to credit or vice versa must be done by the end of the second week of the semester. The grade designation "AUD" is used for students auditing a course, and specifically when the auditing student has met the audit requirements of the course as defined by the instructor. A grade designation of "NC" is given to students who do not meet the audit requirements.

## **Interruption of Studies**

There are two types of interruptions in study: short-term releases and separations. Both releases and separations may be either voluntary or involuntary. Separations are periods of no enrollment and require specific reinstatement or readmission processes.

### Short-Term Medical and Parental Release

There are two types of short-term releases: medical and parental. Short-term releases can be up to six weeks in length.

If a graduate student cannot fulfill the duties of his or her appointment due to a medical emergency or the adoption or birth of a child, the student may be temporarily released from their academic responsibilities.

Enrollment and stipend support may be continued for up to six weeks or until the appointment expires (whichever occurs first). A student may apply for short-term medical or parental release at any time during the semester. Complete guidelines for obtaining a medical or parental release are available at <http://graduate.rice.edu/leaves> . Students taking a voluntary short-term release should make arrangements with their advisor and instructors to complete their academic responsibilities in a timely way.

The university may also insist on a student's short-term medical release if, in the judgment of the dean of graduate and postdoctoral studies, or her/his designee, the student has a serious medical or psychological condition that the student cannot effectively address while enrolled or which is likely to be severely exacerbated by the Rice academic and/or living environment.

Students may not do degree work or work involving Rice faculty or facilities while on short-term medical release. Students returning from a short-term medical release will be required to provide documentation that they are able to return to their studies.

### Voluntary Separations

Voluntary separations include leaves of absence (generally one to two semesters in length) and withdrawals (medical and nonmedical). Students on a leave of absence are not required to petition for readmission. Withdrawn students are eligible to reapply. If students voluntarily withdraw for medical or psychological/psychiatric reasons, however, they must meet the readmission conditions for a medical or involuntary withdrawal.

### Leave of Absence

A leave of absence allows a student to take time off from their studies and later resume study without having to petition for readmission to the university. Normally, students may take a leave of absence for no more than two consecutive semesters. The semesters that a student is on leave do not count against the time to candidacy or the time to defense. They do, however, count against time to degree.

A leave of absence is granted only by the Office of Graduate and Postdoctoral Studies on the recommendation of the department chair and only to graduate students in good standing with the university. Students must obtain approval for a leave before the beginning of the academic semester in which the leave is taken. Leave requests, endorsed by the department, must be received in the Office of Graduate and Postdoctoral Studies prior to the first day of classes.

### Medical Leave of Absence

Students who take a leave of absence for medical/health issues must submit documentation of treatment and demonstration of medical stability from their treating healthcare provider prior to returning from leave.

Students must pay a reinstatement fee of \$125 on their return from an official leave.

### Nonmedical Withdrawal and Readmission

Students who wish to withdraw from Rice during the semester, for any nonmedical reason, are to notify the chair of their academic department in writing (see [Refund of Tuition and Fees](#)). Failure to register before the end of the fourth week of classes without a leave of absence granted by the Office of Graduate and Postdoctoral Studies constitutes a de facto withdrawal.

Students who later wish to resume study after a voluntary or de facto withdrawal must petition for readmission to the university. Petitions must be submitted to the Office of Graduate and Postdoctoral Studies no later than August 1st for fall, December 15th for spring and April 1st for summer readmissions. The petition must include an academic plan devised in consultation with the student's advisor, advising committee, or director of graduate studies (depending upon the graduate program's advising structure). The semesters that a student is not enrolled do not count

against the time to candidacy or the time to defense. They do, however, count against time to degree. Readmission requires the recommendation of the department chair and the approval of the dean of graduate and postdoctoral studies. Readmitted students must pay a readmission fee of \$350.

### Medical Withdrawal and Readmission

Graduate students may request a medical withdrawal from the university by applying in writing to the Office of Graduate and Postdoctoral Studies at any time during the semester, up until the last day of classes; the withdrawal does not take effect until approved in writing. Email communication is considered to be “in writing.” Students considering taking time off for personal reasons related to their wellbeing and mental health are also encouraged to contact the graduate affairs manager or the [Student Wellbeing Office](#) about the roadmap back to Rice. The Student Wellbeing Office serves as a liaison to the medical readmission process during the separation process and when students are ready to return.

Graduate students who wish to seek readmission following a medical withdrawal must submit to the Office of Graduate and Postdoctoral Studies a written petition for readmission no later than June 1 for the fall semester and November 1 for the spring semester, and April 1 for summer semester after the medical withdrawal. This petition must include documentation of treatment provided and demonstration of medical stability (usually six months); students may also be required to interview with the director of the Rice Counseling Center or Student Health Services or their designees. The petition also must include an academic plan devised in consultation with the student's advisor, advising committee, or director of graduate studies (depending upon the graduate program's advising structure) and approved by the department chair. Detailed petition requirements can be found on the [Graduate and Postdoctoral Studies website](#).

Students who withdraw for psychological reasons within the last five weeks of a semester are strongly encouraged to focus on their wellbeing needs and will not be eligible to apply for immediate readmission the following semester. Students who withdraw for psychological reasons while enrolled during the summer session are not eligible to apply for immediate readmission in the fall.

The semesters that a student is not enrolled do not count against the time to candidacy or the time to defense. They do, however, count against the time to degree. Readmission requires the approval of the dean of graduate and postdoctoral studies, and readmitted students must pay a readmission fee of \$350.

### Involuntary Separations

Sometimes, the university will require a student to withdraw, which requires a specific readmission process. An involuntary separation may result from a disciplinary and/or a medical reason.

The university may insist on a student's involuntary separation from the university if, in the judgment of the dean of graduate and postdoctoral studies or her/his designee, or, in the case of disciplinary action, of Student Judicial Programs, the student's behavior includes, but is not limited to, the following:

- Poses a threat to the safety or welfare of him/herself or other members of the Rice community;
- Has a serious medical or a psychological condition that the student cannot effectively address while enrolled or that is likely to be severely exacerbated by the Rice academic and/or living environment;
- Demonstrates behavior that seriously interferes with the education of other members of the Rice community; behavior that violates the Rice Code of Student Conduct, the Rice Honor Code, the Rice Sexual Misconduct Policy, the Rice Weapons Policy; or other relevant policies, or behavior that otherwise requires disciplinary action;
- Is not able to continue functioning as a student.

An involuntary separation can be the result of an interim decision or a final decision. An interim decision is usually a summary process that may result in a temporary separation.

A final decision comes after a process that includes notification, opportunity to respond, and opportunity to appeal. It can result in a suspension (i.e. temporary separation) or in an expulsion (i.e. permanent separation), as well as other sanctions.

#### Readmission following Involuntary Separations

Following an involuntary separation, graduate students who wish to seek readmission must submit a written petition for readmission to the Office of Graduate and Postdoctoral Studies no later than June 1 for the fall semester, November 1 for the spring semester, and April 1 for summer semester. Petitions for return following a medical withdrawal must include documentation of treatment provided and demonstration of medical stability (usually six months); students may be required to interview with the director of the Rice Counseling Center or Student Health Services or their designees. The petition also must include an academic plan devised in consultation with the student's advisor, advising committee, or director of graduate studies (depending upon the graduate program's advising structure) and approved by the department chair.

Students who are involuntarily separated from the university for psychological reasons within the last 5 weeks of either the fall or spring semester are not being eligible to apply for readmission for the following semester. Students who are withdrawn for psychological reasons while enrolled during the summer session are not eligible to apply for immediate readmission in the fall; they must wait to reapply for readmission for the spring semester.

Students taking time off due to an involuntary withdrawal are also encouraged to contact the graduate affairs manager or the [Student Wellbeing Office](#) about the roadmap back to Rice. The Student Wellbeing Office serves as a liaison to the readmission process, during the separation process and when students are ready to return.

Students involuntarily separated from the university for violations of the [Code of Student Conduct](#) or other disciplinary reasons, including honor code violations, must submit a petition to the Office of Student Judicial Programs and receive approval prior to returning to the university or for the award of a degree (See [Academic and Judicial Discipline](#)).

The semesters that a student is not enrolled do not count against the time to candidacy or the time to defense. They do, however, count against the time to degree. Readmission requires the approval of the dean of graduate and postdoctoral studies, and readmitted students must pay a readmission fee of \$350.

Further information is available by contacting the [Office of Graduate and Postdoctoral Studies](#).

### Resignation

A student may resign from the university by notifying the dean of graduate and postdoctoral studies in writing. Resignation means the student is withdrawing, is no longer a student at Rice, and will not return to Rice. A resignation becomes effective when accepted by the dean of graduate and postdoctoral studies. In general, if a student is under investigation for a potential [Code of Student Conduct](#) violation or has charges pending under the Code, disciplinary proceedings will terminate upon acceptance of the resignation by the dean of graduate and postdoctoral studies. A student who resigns is not eligible to receive a degree from Rice, even if the student has otherwise met all of the requirements for the degree.

### Non-enrollment Restrictions

Students may not do degree work at Rice or work involving Rice faculty or facilities during any period of no enrollment, except during the period following successful oral defense prior to submission of the final thesis.

All separated students must return their student ID to the Office of Graduate and Postdoctoral Studies. All university keys must be returned to the appropriate offices. Participation in student activities on and off campus and use of Rice facilities, including, but not limited to, the student center, the playing fields, the recreation center, and the computer labs, are limited to enrolled students.

Separated students are expected to be away from Rice during the term of the separation. If the student is employed by Rice at the time of separation, he or she must relinquish such employment or petition the [Office of Graduate and Postdoctoral Studies](#) for written permission to continue the on-campus employment. Noncompliance with these requirements may delay or prevent readmission.

### **Absence from Lab**

Vacation Time: During the first semester of study, all graduate students observe the same holiday schedule as other students engaged in course work. Beginning in the second semester, PhD and MS students engaged in research receive two weeks paid vacation annually, in addition to designated staff holidays, including winter break when the university is officially closed. Rice is not officially closed during spring break. PhD Students do not automatically receive spring break as time off. All requests for vacation time, including spring break, must be approved in advance by the student's advisor.

MBE students in both tracks observe the university holiday schedule throughout their studies. Students in the MBE GMI track may have a slightly altered schedule when participating in internships.

Non Scheduled Absences PhD and MS Students: Active participation in required academic activities, including laboratory work, is a basic condition of financial support. Absences, other than medical and family emergencies, must be approved by the student's advisor in advance. In the case of medical or family emergencies, notification is expected in as timely a manner as possible depending upon the specific situation.

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

MBE Students (both tracks): Attendance at class meetings is essential to academic success. Students are expected to take personal responsibility for class attendance and bear the responsibility for the effect that absences may have upon performance and evaluation in the course with consequences up to and including dismissal from the program.

## **Outside Employment for Graduate Students**

### MBE Students

#### MBE Applied Bioengineering Track

MBE students in the Applied Bioengineering track may accept outside employment on or off-campus without prior approval. The work performed must be incidental to work carried out in pursuit of the student's degree. Students are cautioned to balance their employment and academic activities so that they can appropriately meet their academic responsibilities. International students should check with OISS prior to accepting employment to assure they comply with immigration rules.

#### MBE Global Medical Innovation Track

MBE students in the Global Innovation Bioengineering track may accept employment on or off-campus without prior approval, however, students must keep in mind the requirements of this program and are cautioned to balance their employment and academic activities to assure employment does not interfere with the specific responsibilities of the GMI track. The work performed must be incidental to work carried out in pursuit of the student's degree. International students should check with OISS prior to accepting employment to assure they comply with immigration rules.

### PhD and Master's Thesis Students

PhD students receiving stipends from fellowships or assistantships may not accept any regular

paid employment on or off campus without the explicit permission of the department. If permission is granted, full-time students whether receiving stipend support or not, may not accept paid employment in excess of 20 hours per week. Students must have completed at least one academic year and be in good standing to request approval for outside employment. To request approval, students must petition the Graduate Academic Affairs Committee. The student petition must include the written approval of the student's advisor before it will be considered by GAAC. Students must receive approval of GAAC prior to accepting a paid employment position on or off campus.

### International Students

In addition to adhering to the policies ruling their specific program, international students in all programs wishing to accept employment must consult the Office of International Students and Scholars about the possible impact working full or part-time will have on their visa status.

### **Transfer Between Programs**

Specific rules apply to students who request to be transferred between graduate programs.

#### PhD to Master's (Thesis-based)

Requests to change from a PhD to a Master's thesis program are only granted under special circumstances. Students who wish to change from a PhD to a Master's thesis program must obtain the permission of their advisor and then petition the Graduate Academic Affairs Committee in writing. Each request is considered on a case-by-case basis and must receive the approval of the student's advisor and the Chair of the Department.

#### PhD to Bioengineering MBE Professional Master's Program (both tracks):

Admission into a professional master's program (Applied Bioengineering or Global Medical Innovation track) is granted separately from admission into a research or thesis program. Students who wish to change from a thesis program to a professional degree program must petition the Graduate Academic Affairs Committee in writing. Students who change from the PhD to the MBE program must keep in mind that all academic requirements of the MBE program must be met. Upon recommendation of the department and approval by the Dean's office, the request is sent to the Office of Graduate and Postdoctoral Studies for consideration and a final decision

If approved, students who received tuition waivers while enrolled in the thesis program will be expected to repay tuition before their professional degrees are awarded.

Professional degree programs terminate when the degree is awarded. Students who wish to continue graduate study after completing a professional program must reapply for consideration of readmission into a research program.

#### MBE (both tracks) to PhD

Admission to the MBE program is granted separately from admission into a research or thesis (PhD) program and admission to the MBE program does not guarantee admission to the PhD

program. A student working towards an MBE degree and anticipating graduation prior to the semester in which they would begin the PhD program may apply. Their application will be evaluated using the same criteria applied to all other PhD applicants.

#### Transfer between MBE Tracks

Due to the differences in the Applied Bioengineering (AB) and Global Medical Innovation (GMI) MBE tracks, it is difficult to switch from one track to the other. If a student requests a transfer from one track to another, he or she must keep in mind that many of the credit hours may not transfer between tracks since all requirements of the track to which the student transfers must be met. Each student request will be handled on a case-by-case basis and must be approved by the Director of the MBE program, the Director of Graduate Study and the Graduate Academic Affairs Committee. All requests should begin with a petition to the GAAC Committee. (Petitions should be submitted to the Academic Program Administrator).

#### Transfer to a Graduate Program in a Different Department

If a student wishes to transfer to a graduate program in a different department, the student must be accepted into the other department's graduate program and must receive permission of both departments before the transfer can be approved. The student must petition the Graduate Academic Affairs Committee once approval is received from the department in which the student wishes to transfer. Final approval lies with the Office of Graduate and Postdoctoral Studies.

### **Equal Opportunity/Non-Discrimination/Affirmative Action Policy**

Rice University is committed to the principle of equal opportunity in education and employment, and it is the policy of the University to attract qualified individuals of diverse backgrounds to its faculty, staff and student body. Accordingly, Rice University does not discriminate against individuals on the basis of race, color, religion, sex, sexual orientation, gender identity, national or ethnic origin, ancestry, age, disability, or veteran status in its admissions policies, educational programs, or employment of faculty or staff.

The University takes affirmative action in employment by recruiting, hiring and advancing women, members of underrepresented minority groups, and qualified special disabled veterans, veterans of the Vietnam era, recently separated veterans, and other protected veterans (as those categories are defined by law).

The Director of Equal Employment Opportunity Programs and Affirmative Action is the University's designated EEO Officer and Title IX Coordinator, and inquiries concerning the University's policies and compliance with applicable laws may be directed to the EEO/AA Office (M.S. 130), P.O. Box 1892, Houston, TX 77251-1892 or Allen Center, Room 205. The Director reports to the President of the University. Complaints that allege discrimination or harassment may be brought to the attention of the Director (when involving either students or employees), the offices of the Dean of Undergraduates or Vice Provost for Research & Graduate Studies (when involving students), or the Human Resources office (when involving employees). The University will investigate complaints and provide effective remedial action where necessary.



## Title IX

Rice encourages any student who has experienced an incident of sexual, relationship, or other interpersonal violence, harassment or gender discrimination to seek support. There are many options available both on and off campus for all graduate students, regardless of whether the perpetrator was a fellow student, a staff or faculty member, or someone not affiliated with the university.

Students should be aware when seeking support on campus that most employees are required by Title IX to disclose all incidents of non-consensual interpersonal behaviors to Title IX professionals on campus who can act to support that student and meet their needs.

The therapists at the Rice Counseling Center and the doctors at Student Health Services are confidential, meaning Rice will not be informed about the incident if a student discloses to one of these Rice staff members. Rice prioritizes student privacy and safety, and only shares disclosed information on a need-to-know basis.

Policies, including Sexual misconduct Policy and Student Code of Conduct and more information regarding Title IX can be found at [safe.rice.edu](http://safe.rice.edu).

If you are in need of assistance or simply would like to talk to someone, please call Rice Wellbeing and Counseling Center, which includes Title IX Support at (713) 348-3311.

### **Graduate Peer Mentoring Program**

The Bioengineering Graduate Student Association serves as a resource to help graduate students navigate their way through the BIOE graduate program.

Graduate students in both the MBE and PhD programs are encouraged to participate in the GSA and seek out fellow graduate students to serve as peer mentors.

### **Quality of Life Student Resources**

The Rice University campus-wide Graduate Student Association maintains an up-to-date and comprehensive list of resources supporting quality of life at their website <http://gsa.rice.edu>.

The GSA Guide to Grad Life menu has information for topics ranging from recreation to professional development to family resources and child care. The site also provides helpful hints for new students about orientation, housing, and navigating the Houston area.

Additionally, there is a student life section of the Office of Graduate and Postdoctoral Studies website: <http://graduate.rice.edu/studentlife>.

Both of these websites are updated frequently and provide information for prospective and current graduate students.

## **The Wellbeing and Counseling Center**

The Wellbeing and Counseling Center supports student development and success by providing a good first point of contact for students who want to talk to someone about solutions to their wellbeing and mental health concerns.

The Wellbeing Center is available Monday – Friday, 9:00 am to 5:00 pm.

- Walk-in: Gibbs Wellness Center
- Phone: 713-348-3311 (24/7).
- In case of an emergency: 713-348-6000 (24/7).

## Program Specific Guidelines

### Doctor of Philosophy

#### Introduction

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

#### PhD Curriculum

The PhD curriculum consists of foundation, supporting, and advanced topic courses, which collectively, afford the student broad exposure to his or her chosen field of research interest.

Students must take:

1. Minimum of 30 semester hours of graduate level foundation, supporting, and advanced topic courses. Graduate level courses are those numbered 500 and above.
2. A minimum of 15 of the 30 semester hours of graduate level courses must be designated as bioengineering courses (BIOE).

The following foundation courses are required of all PhD students. Courses graded for a standard letter grade may be counted toward the 30 required semester hours.

Course No.	Course Name	Credits	Grading Method
BIOE 516	Mechanics, Transport, and Cellular Signaling	3	Letter Grade
BIOE 517	Instrumentation and Molecular analysis	3	Letter Grade
BIOE 518	Introduction to Computational Biology	3	Letter Grade
BIOE 519	Biomaterials	3	Letter Grade
BIOE 633 Or BIOE 690	Life Sciences Entrepreneurship  Professional Development for Bioengineering (intended for students in their 2 <sup>nd</sup> year and above)	1.5  3	Letter Grade  Letter Grade
UNIV 594	Training in the Responsible Conduct of Research	1.0	Satisfactory/ Unsatisfactory
BIOE 539 or MATH/STAT/CAAM elective	Graduate Students should take BIOE 539 in lieu of BIOE 439	3.0  3.0 or higher	Letter Grade  Letter Grade

Advanced Topic Courses: A large array of advanced specialty courses is available to BIOE graduate students. Each student should, in consultation with his or her advisor, select the courses most appropriate for his or her research. Advanced topic courses may be used to meet the 30 semester hours of graduate level courses.

Specialization Track: Student may elect a specialization track during their graduate Studies. To fulfill the requirements of the track, students must take three (3) supporting courses in the area of interest. The student must consult with his or her advisor regarding appropriate courses to support their chosen track. Six major tracks that reflect interests within the Bioengineering Department are recognized:

1. Translational Bioengineering and Cancer Research
2. Molecular, Cellular, and Tissue Engineering
3. Bio-imaging and Optics
4. Biomaterials, Biomechanics, and Tissue Bioengineering
5. Computational and Theoretical Bioengineering
6. Nanobiology

### **Course Requirements**

The university minimum requirement for the doctorate 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.

Students must earn a grade of B- (2.67) or above in all course work counted toward their coursework requirements. Courses in which a student receives a grade below a B- (2.67) may not be used to fulfill degree requirements.

PhD students in the Bioengineering PhD program entering Rice with a bachelor's degree must take a minimum of 30 semester hours of graduate level foundation and advanced topic courses. Of those, 15 semester hours must be graduate level BIOE courses

In specific instances, the Graduate Academic Affairs Committee may waive a course. Waived courses will count toward the required 30 semester hours; however, such courses do not count toward the required 15 semester hours required. If a BIOE course is waived, another BIOE course must be taken to meet the 15 semester hour requirement.

As with all graduate students, the thesis advisor or thesis committee may require further course work if it is considered essential to the thesis research.

During the first semester in residence, all PhD students must take a minimum of twelve semester hours including three advanced courses (9 semester hours) for a standard letter grade. (Courses taken on a "pass/fail" or "satisfactory/unsatisfactory" basis do not count toward this 9 semester hour requirement.)

After the first semester, departmental policy requires that full-time PhD students be registered for a minimum of 12 semester hours in fall and spring. If hours are needed in addition to course work, the student should register for between 1 and 15 semester hours per semester during the terms they are engaged in research.

Students must register for a minimum of six semester hours of BIOE 500 during the summer semester to be eligible for a stipend.

Students are expected to fulfill the research requirements defined by their advisor to earn a “satisfactory” grade in BIOE 500 (Graduate Research).

Most formal courses should be completed in the first year of residence to allow students to commence thesis research on a full-time basis by the end of the second semester.

Students who have received a credit for graduate courses taken during MS studies or MD/PhD students may petition the Graduate Academic Affairs Committee (GAAC) to relax the requirement for registering for nine hours of advanced courses during the first semester.

### **Transfer Credit**

PhD students entering Rice with a master’s degree or students who have taken graduate level courses as an undergraduate may petition the Graduate Academic Affairs Committee (GAAC) to receive credit for graduate courses taken. The following applies:

- No course can be used to satisfy both an undergraduate and graduate degree requirement.
- Students must still take at least 18 semester hours of advanced courses at Rice.
- No more than 12 semester hours may be transferred.
- The courses to be transferred must be chosen from those that normally satisfy requirements for an advanced degree.
- Each case must be individually approved by the Graduate Academic Affairs Committee based on the work done.
- A student may not count a course toward the PhD requirements if the course is substantially the same as one already counted toward the PhD degree requirements. The decision as to whether a course is “substantially the same” will be made by the Graduate Academic Affairs Committee.

### **Academic Waivers**

MD/PhD students in the Medical Scientist Training Program may automatically waive 12 semester hours of credit based on work completed during their medical school training. These waived credit hours will be considered the same as courses taken at Rice for a standard letter grade when used to meet the minimum requirement of 30 hours. The following applies:

- MD/PhD students must still meet the minimum requirements of completing 18 hours at Rice including 15 hours of BIOE courses as part of their degree requirements.
- MD/PhD students must meet minimum university requirement of 90 semester hours including research hours

Non-MD/PhD student waivers will be considered on a case-by-case basis.

## **First Semester Advisor**

During the first semester, until students are assigned a faculty advisor, students are advised by the Director of Graduate Studies and the Graduate Academic Affairs Committee. Once a student officially joins a lab, the student's advisor will take over the primary advising role.

## **Lab Rotations and Choosing a Thesis Advisor**

The key for successful PhD graduates is the relationship with their research advisor. To facilitate learning about various research projects and lab environments, first year PhD students are required to participate in lab rotations. The purpose of lab rotations is to

- assist first-year students in choosing an advisor and a lab for conducting thesis research
- provide an opportunity for students to explore research options other than their declared area of interest.
- encourage cohesion within the department

To facilitate and optimize the rotation experience for both the student and the faculty, it is important the student and advisor meet prior to the start of any rotation to discuss expectations, goals, requirements, and laboratory guidelines; it is the student's responsibility to arrange to meet with the advisor to discuss what is expected during the rotation period. During this meeting, the advisor should make clear his/her expectations for the rotation. In general, a student should expect to spend approximately ten (10) hours in the lab per week for each rotation.

Students are expected to choose advisors within the department of Bioengineering; however, students may choose to complete one rotation outside the Bioengineering department. The mentor for this rotation must be a faculty member whose primary appointment is in a department at Rice University or if at an institution external to Rice, the faculty member must hold an adjunct faculty position with the department of Bioengineering.

Although strongly discouraged, rotations may be carried out concurrently. It is important that students actively engage in the lab during the rotation period. Suggested activities include attending lab meetings, interacting with graduate students and post-docs, and discussing research with the faculty member.

## **Rotation Waiver**

Students must complete three (3) rotations unless they fall into one of the categories listed below:

1. MD/PhD student who has selected a thesis advisor in the department of Bioengineering and started their thesis research should submit a rotation waiver request.
2. MD/PhD student who has not selected a thesis advisor must complete a minimum of two laboratory rotations and submit a waiver request for the third rotation.
3. A student recruiting on behalf of a specific faculty member with this stipulated in the student's official admission offer letter should submit a rotation waiver.

Note: Unofficial agreements between advisors and students do not exempt students from the requirement of completing three rotations with three different advisors.

## Rotation & Matching Process

### Rotation In Labs

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1. Register for BIOE 504

This course gives the student an opportunity to experience different research projects while allowing the faculty to assess the interests and aptitude of the students.

This course is a three (3) credit course and is graded “satisfactory/unsatisfactory.”

Students must successfully complete a minimum of three (3) lab rotations to receive a satisfactory grade and to be allowed placement with an advisor.
2. Attend Research Presentations

Research presentations will take place during orientation to introduce students to bioengineering research in the department.

Students will be provided a list of advisors within the Department of Bioengineering who expect to accept students into their labs.

Students should rotate within these labs.

Students may elect to rotate in a laboratory as a way to broaden their background in an areas of bioengineering or develop a new collaboration
3. Talk with Faculty and Submit Rotation Notification Form

Students should submit a Rotation Notification Form signed by the faculty member the student elects to rotate with

Deadline for submission and beginning of rotation will be given at Orientation
4. Complete 2 of 3 lab rotations

Lab rotations should last approximately three (3) weeks each.

Students shall spend enough time in the lab to understand the research projects and approaches and to interact with lab members and the advisor.

Specific rotation requirements will be determined by the advisor.

The deadline for completing all rotations will be published early in the semester.

Note: Students who matriculate early and work in labs in the summer, may NOT count this work as one of their official rotations
5. Concurrent with #4, Submit the "Third Rotation Request form"

Prior to completing the second rotation, submit the “third Rotation Request” form listing the choice of third rotation.

List at least three possible advisors in whose lab student may wish to rotate

Labs in which a student has already rotated should not be included.

Students will be notified of the deadline for submitting rotation forms for the third rotation early in the semester.

Students will be notified of approval of the third rotation within a reasonable timeframe.

Students are strongly encouraged to discuss lab rotations with potential advisors before completing their third rotation request.

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| 6. Complete Third Rotation                              | Complete rotation with approved advisor. Students may do more than three rotations if time permits and advisor agrees to the rotation in advance.  |
| 7. Submit verification form for each completed rotation | As part of the lab rotation grade, students are required to submit a lab rotation assessment form at the end of each official rotation.<br><br>Failure to submit a minimum of three (3) lab rotation assessment forms will result in a grade of “unsatisfactory” and may prevent the student from choosing an advisor. |

Once all lab rotations are completed:

#### Choosing an Advisor

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| 8. Submit the “Advisor Selection” form | Submit the “Advisor Selection” form with a ranked list of advisors and research projects by the published deadline<br><br>Student must choose a <u>minimum of three projects</u> under the direction of at least <u>two different advisors</u> .<br><br>Student may include laboratories in which they did not rotate; however, the student must have, at minimum, discussed research opportunities with this advisor. |
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#### Policies for Choosing Advisor

1. All PhD students are expected to choose a primary advisor in the Bioengineering Department.
2. Students may, in special circumstances, request an advisor in another department at Rice. If a student requests a primary advisor in a department other than Bioengineering, the advisor should be one who works collaboratively with the Department of Bioengineering and holds an adjunct or joint appointment within the department.
3. Student may, in special circumstances, choose an advisor who does not hold a primary position in a department at Rice University.
  - These advisors are known at “external advisors.”



- If a student choose an external advisor, the student must have a co-advisor whose primary appointment is in the Department of Bioengineering
  - The co-advisor's role must agree to financially support the student should the external advisor choose to no longer support the student. Such support is contingent upon the pursuit of collaborative projects and available funding at the time the relationship ends.
  - The student must obtain permission from the Bioengineering co-advisor prior to submitting the Advisor Selection form.
4. Students who are approved to have an advisor outside the Department of Bioengineering (another Rice department or outside of Rice) are expected to follow all procedures and meet all degree requirements of the Department of Bioengineering.
  5. Students who are approved to have an advisor outside the Department of Bioengineering (another Rice department or outside of Rice) must understand that the advisor may have additional expectations.
  6. MD/PhD students must obtain written approval of their choice of advisor choice from the Baylor Medical Scientist Program.

#### Matching Policy and Procedures

1. The selection process is coordinated by the Department of Bioengineering Director of Graduate Studies and the Graduate Academic Affairs Committee. Every effort is made to match the needs of the students to those of the faculty with available funded research projects.
2. Several factors are considered during the matching process, including funding, available space, academic standing, rotation performance, and the relationship between the student and the potential advisor.
3. Once all students have submitted their Advisor selection form, and after consultation with requested advisors, final approval of the student's advisor is given by the Director of Graduate Studies and the Chair of the Graduate Academic Affairs Committee.
4. Most students will be notified of the assignment of his or her advisor within two weeks.
5. In special circumstances where a student cannot be placed with an advisor by the deadline, the student will be notified of the delay and efforts to assign an advisor will be handled on a case-by-case basis. Although the department will provide guidance, it is the ultimate responsibility of the student to find an advisor who is willing to accept him or her into their lab. Student who does not have an assigned advisor by the end of the fall semester should make finding an advisor one of their top priorities.
6. In all cases, a student should be accepted into an advisor's lab no later than December 31<sup>st</sup>. Satisfactory progress in the department required that a student begin full time work on their

graduate research during their second semester. If they are not accepted into a lab by the end of the first semester, this requirement is not met and they may be considered for dismissal from the graduate program.

### **Financial Support**

Financial support is dependent upon satisfactory performance, reasonable progress towards degree requirements, and the availability of funds. Student stipends are subject to all the usual federal taxes.

Students who are enrolled in three or more advanced courses (9 semester hours) are considered full time for the purposes of meeting the guidelines for financial support. However, the Bioengineering department requires that first year BIOE students take a minimum of twelve semester hours that are graded using a standard letter grade scale in order to meet academic requirements during their first semester. .

The department funds students for the first semester (4.5 months) of study. In most cases this covers the period from August 16 to December 31. Advisors become responsible for financial support of students the first day of the second semester of study. Advisors are expected to pay 100% of the student's stipend unless the stipend is funded by an external fellowship, scholarship, training grant, or other source of funding which covers all or a portion of the student's stipend.

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

### **Support Limitations**

The normal limit of financial support for graduate students is ten semesters (excluding summers). Students who anticipate taking longer than 10 semesters for completion of the PhD degree must consult with their advisor. The advisor may require the student to submit an additional progress report providing the following:

1. Summary of work accomplished since the presentation of the thesis proposal,
2. specific information on research work remaining to be done, and
3. estimated time to completion.

The advisor, in consultation with the thesis committee, shall consider the student's progress, exceptional circumstances which justify continued funding, and the availability of funding when making a decision regarding whether the student's funding should be continued for a specific period. Continued support shall be reevaluated annually or more often as appropriate.

Student's whose funding has been terminated may continue to register and work on research projects as long as they continue to make acceptable progress toward the degree requirements. If a student fails to continue to make acceptable progress he or she is subject to dismissal from the program.

## External Fellowships/Awards

Students are encouraged to seek external fellowships and awards. The Office of Proposal Development (<http://00opd.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 should take advantage of their services.

If a student receives an external award, the following apply:

- If the total amount of the fellowship, including stipend, insurance, etc. is below the current stipend offered by the Department of Bioengineering, the student's fellowship is
  - supplemented to equal the current Rice stipend level, and
  - the student's is provided an additional \$4000 supplemental stipend for the period of the fellowship.

These supplements are paid by the department during the first semester (4.5 months) of study. The advisor becomes responsible for the supplemental payments beginning the second semester of study, or for students who receive awards after the first semester, on the date the fellowship/scholarship becomes effective. Students with external advisors should make their advisors aware of this policy when joining the lab or applying for competitive scholarships. The fellowship/scholarship must be competitive and designated for the graduate stipend.

- If the total amount of the fellowship, including stipend, insurance, etc. is above the current stipend offered by the Department of Bioengineering, the student's fellowship is
  - supplemented by an additional \$4000 annual supplement during the period of the fellowship.
  - This \$4000 annual supplemental stipend is offered regardless of the amount of the stipend provided by the external funding.

The supplement is paid by the department during the first semester (4.5 months) of study. The advisor becomes responsible for the supplemental payments beginning the second semester of study, or for students who receive awards after the first semester, on the date the fellowship/scholarship becomes effective. Students with external advisors should make their advisors aware of this policy when joining the lab or applying for competitive scholarships. The fellowship/scholarship must be competitive and designated for the graduate stipend.

If a student's fellowship/scholarship ends or 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 (department stipend and associate tuition waiver) at the level provided by the Department of Bioengineering at the time. The student will no longer receive the \$4000 supplemental stipend. If after the first semester, the advisor will become responsible for the stipend immediately upon the termination of the fellowship.

## Training Grants

If a student is awarded a training grant for an amount below the current level of support offered by the Department of Bioengineering, the student's grant is supplemented to equal the current stipend level. This supplement is paid by the department during the first semester of study. The advisor becomes responsible at the beginning of the second semester of study, or for students who receive training grants after the first semester, on the date the training grant becomes effective. Students with external advisors should make their advisors aware of this policy when joining the lab or applying for training grants.

If the student's training grant ends or 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 (department stipend and associate tuition waver) at the level provided by the Department of Bioengineering at the time. The department will pay the stipend if the student is in the first 4.5 months of study; the advisor is responsible beginning the first day of the second semester of study, or if after the first semester, the date the training grant becomes effective.

## Extenuating Circumstances

There may be circumstances where the student's advisor may not have adequate funding to support the student's stipend or supplemental funding. In such situations, issues will be resolved on a case-by-case basis in consultation with the Chair of the Department of Bioengineering.

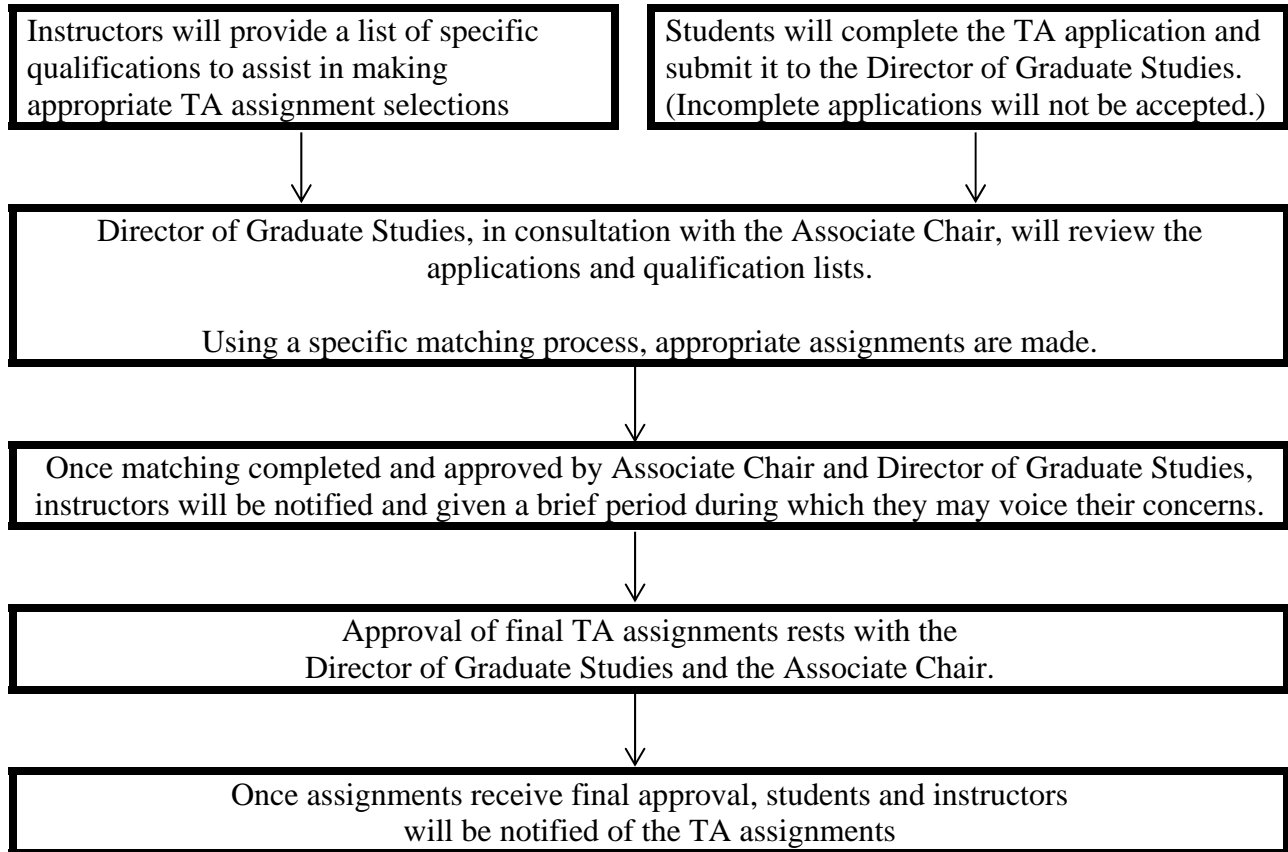
## Teaching Requirement

Teaching is a graduate degree requirement. The following apply:

- Students may be asked to spend the equivalent of ten (10) hours per week on teaching assignments.
- Teaching assignments may involve tutoring, leading recitation sections, grading papers, or supervising work in an undergraduate laboratory.
- Each teaching assignment will usually be given a point value of 0.5 to 1.5 based on the amount of effort required to TA the course. In rare cases, point values of 0.25 and 2.0 will be used. Students must complete a total point value of 2.5 teaching assignments. Students will TA for more than a point value of 2.5 only in exceptional circumstances and with the approval of the Bioengineering Director of Graduate Studies.
- Student will not have teaching responsibilities during their first semester in residence, and usually not during their second. Students are expected to complete their teaching assignment during the third through fifth semesters.
- In cases where TA responsibilities conflict with a required course or the Bioengineering Colloquia (BIOE 698/699) the course or colloquia should be postponed for the semester.

- Students planning to pursue an academic career are encouraged to request more involved teaching assignments.

#### Procedure for Assigning Teaching Assistants



#### TA Best Practices

- Teaching assistant positions will be filled according to specific requirements of the course as defined by the instructor and qualifications of the student.
- Efforts will be made to match students with their primary course choice; however, preference is given to the needs of the department. Therefore a preferred course cannot be guaranteed.
- Registering for courses which conflict with a TA assignment after the assignment is finalized is not permissible.
- Students will generally not be assigned more than one TA assignment during a semester. Rare exceptions will be approved in advance by the Director of Graduate Studies or the Associate Chair.
- Students will not TA a course in which they are currently enrolled.

- TAs will meet with the course instructor prior to the beginning of the teaching assignment to discuss expectations and deadlines.
- TAs is expected to attend scheduled classes for the course in which they are serving as a TA unless specified otherwise by the instructor.
- The number of hours required for teaching assignments varies depending on the course. TAs should expect to devote approximately eight (8) hours per week to TA responsibilities.
- TA responsibilities vary depending upon the class. TAs is expected to fulfill all reasonable requests made by the instructor. Serious conflicts should be discussed with the Director of Graduate Studies.
- TAs is expected to work collaboratively with other TAs and graders as necessary.
- TAs whose stipend is paid in full or part by funding from the Office of the Dean of Engineering must attend the TA workshop organized by the Office of the Dean.
- Instructors will provide TAs sufficient instructions at the beginning of the TA assignment to assure the TA is aware of the instructor's expectations.

### TA Honor Code

TAs should follow the appropriate code of conduct. This includes acting in a trustworthy and responsible manner, treating others with respect, treating students fairly, and limiting their interactions and relationships with students in the class to a professional nature while serving as a TA.

Teaching assistants are responsible for knowing the contents of the *Honor Code TA Handbook*. These publications can be found at <http://honor.rice.edu/ta-handbook/>. TAs should refer to the handbook in cases of suspected violations of the Honor Code and are expected to follow the appropriate procedures in such cases.

It is the TA's responsibility to disclose any possible conflicts of interest to the instructor. This includes, but is not limited to, disclosure of personal relationships with members of the class. When in doubt about a possible conflict of interest, the student TA should discuss the specific situation with the instructor.

### Thesis Committee and Proposal

The Department of Bioengineering does not require a qualifying exam. Successful presentation of a thesis proposal is required in lieu of such an exam.

The student must have completed the following before the beginning of the fifth semester in residence (excluding summer semesters):

1. select a thesis committee
2. prepare a thesis proposal, and
3. defended the thesis proposal to their thesis committee.

### Thesis Committee Members

The composition of the thesis committee must comply with University policy. Rules regarding the members of the thesis committee are governed by the *General Announcements* and will not be waived. The thesis committee must have a minimum of three members.

- Two (2) members including the committee chair, must be members of the Bioengineering faculty with their primary appointment in the Bioengineering Department, or who hold joint appointments with the Department of Bioengineering. (Adjunct faculty do not fulfill this requirement)
- One (1) member must be a faculty member whose primary appointment is in another department within the university. .
- Students must choose a Thesis Director and Committee Chair. In most cases, the student's advisor serves as both the Director and Chair. The student's thesis advisor may always serve at the Thesis Director. However, if the student's advisor does not hold a primary or joint appointment in the Department of Bioengineering, the student must request a faculty member of the Department of Bioengineering to serve as the Committee Chair.
- Additional members of the committee, who may or may not meet the above criteria, may be selected with the approval of the department chair. These members are in addition to the three required members.

### Written Thesis Proposal

Students must pass their thesis proposal prior to the beginning of their fifth semester (excluding summers). The thesis proposal is a written summary of research progress up to the point of the date of the proposal and future research plans. The proposal defense should be viewed as an opportunity 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 the thesis research.

The document should contain (at minimum) the following sections:

- abstract (not to exceed 250 words)
- background with extensive literature survey
- problem statement
- research plans and methodology
- any results obtained up to this point, and
- proposed time-line for completion of thesis research

The length and breadth of the thesis proposal should be discussed with the student's advisor. The advisor may, within reason, require additional information be included. Portions of manuscripts or reports to sponsors (if available) can be incorporated in the thesis proposal.

The thesis proposal must be distributed to the members of the thesis committee at least one week prior to the scheduled presentation.

### Oral Thesis Proposal Defense

All members of the student's thesis committee should be physically present at the oral defense. In rare circumstances, where a member cannot be physically present, it is acceptable under for the member to be present via technologies such as videoconference or Skype. In such circumstances, the student must receive prior approval from his or her advisor and it should be noted on the thesis proposal form that the committee member participated in the thesis defense via electronic means.

### Thesis Proposal Committee Decision

The Thesis Committee may make one of three decisions regarding the thesis proposal, "pass without reservations," "pass with reservations." Or "fail."

- Pass without Reservations: Student will continue research based upon their thesis proposal
- Pass with Reservations: Committee members must, within one week, provide the student an explanation of deficiencies and a written and reasonable time frame for the student to correct identified deficiencies, the student fails to correct deficiencies within a reasonable time frame, they will be required to redefend the entire proposal or be subject to dismissal from the program.
- Fail: If a student fails the thesis proposal, the committee may, by unanimous vote, allow the student to redefend within a reasonable time frame. Students are allowed to redefend only one. If a student fails the thesis proposal defense a second time, the student is subject to dismissal from the program. In rare exceptions to this rule may be appealed via petition. This petition must be approved by the student's advisor and submitted to the Graduate Academic Affairs Committee for consideration.

Documentation (Thesis Proposal Defense Forms) of the thesis proposal defense must be submitted to the Department Academic Program Administrator so appropriate documentation can be place in the student's record.

### Internship Opportunity

In addition to course work PhD students are encouraged to participate in an optional three-six month internship experience. Well received by bioengineering graduate students, the internship provides an opportunity to gain real-world exposure and/or 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 for each student is managed through collaborative interaction between the advisor, the host, and the bioengineering program. Students must notify their advisors of potential internship opportunities in a timely manner, preferably before the beginning of semester(s) that will be affected by the internship.



Generally students participating in internships do not receive a graduate student stipend during the time of the internship. Details of financial arrangements should be discussed with the student's advisor and finalized prior to the internship. The BIOE Academic Program Administrator should be notified no less than three weeks prior to the beginning of the internship in order to assure time to make necessary revisions to payroll. If appropriate documentation is not received in time to make adjustments to the student's payroll, the student will be responsible for repaying any overpayment he or she may receive. The student should provide documentation (offer letter, evaluation) of the internship so that it may be documented in the student's record.

Decisions regarding stipends from external fellowships during an internship is based upon the requirements of the fellowship/training grant and is made on a case-by-case basis. If a student has received an external fellowship or training grant, it is the student's responsibility to assure that the internship does not conflict with guidelines and requirements of the fellowship or grant.

PhD students must register for BIOE 500 during the time they are completing the internship in order to maintain continuous enrollment.

### **Opportunities for Presentation of Research**

Students will be expected to present their research in an official forum at least once annually. This will ideally be in the form of a research talk at a local, national or international conference. Students will also have an opportunity to present during the BIOE GSA "Breakfast Club" or at the annual Graduate Student Symposium. Poster presentations do not fulfill this requirement. Students should document presentations as part of their progress report.

Other opportunities may be approved on a case-by-case basis. The student should inform the GAAC by way of petition if they have not been given an opportunity to present their research so that additional opportunities can be arranged.

### **Progress Review and Evaluation**

#### **Advisor/Committee Meetings**

- First Two Years: PhD students will meet with their advisor as deemed necessary.
- After Thesis Committee Chosen: Once a student picks the members of his or her thesis committee, the committee and advisor should meet with the student on an annual basis or more often as deemed appropriate by their advisor or thesis committee.

## Semi-Annual Progress Reviews

The purpose of the progress review is to ensure that graduate students and their advisors are communicating regularly regarding the student's progress on thesis research and the student's overall development. PhD students are required to submit semiannual progress reports during the entirety of their graduate career. Submission of progress reports is one criteria used to determine satisfactory performance.

Reports are on a calendar year basis and cover the time frames, January to June and July to December. First year students are expected to complete a progress report for their first semester covering the time frame from August 15 to December 31.

Students submit progress reports using a three-part standardized review form. These forms should be completed using the table below as a recommended guide.

<b>Suggested Time Table for Submitting Semi-Annual Progress Reviews</b>			
<b>Responsible Party</b>	<b>Action Necessary</b>	<b>January – June Report</b>	<b>July – December Report</b>
Student	Complete Section 1, Add copy of CV, and submit to advisor	July 15	January 15
Advisor	Complete Section 2, return to student	July 25	January 25
Advisor & Student (if necessary)	Meet with student and Complete Section 3 if necessary	July 28	January 28
Student	Submit report to Academic Program Administrator (Email preferred)	On or before July 31	On or before January 31

It is the student's responsibility to coordinate with their advisor to assure the progress report is submitted by the deadline.

If the advisor (or committee as appropriate) feels it necessary, a meeting will be arranged to further discuss the student's progress with the student. Recommendations to the student and a time line to meet recommended milestones should be included and documented in Section 3 of the progress review.

## Satisfactory Performance

PhD students are expected to make continuous and satisfactory progress towards fulfilling their degree requirements. Satisfactory progress is defined as and includes the following:

1. Must have a minimum of nine (9) semester hours of graduate degree courses, graded using a standard letter grade scale, excluding courses taken on a "pass/fail" or "satisfactory/unsatisfactory" basis, by the end of the first semester in residence.

2. Student must begin work on their thesis research on a full time basis beginning the second semester in residence
3. After the student's first year in residence, students must make an annual oral presentation of their research.
4. Students must submit progress reviews by the published deadlines.
5. Student must submit the written copy and successfully defend their thesis proposal in an oral presentation before the beginning of their fifth semester in residence (excluding summer semesters).
6. Students must petition for doctoral candidacy prior to the beginning of their ninth semester.
7. Students must maintain a grade point average (GPA) of 3.2 or better.
8. Students must make continuous progress in research.

#### Probationary Status/Possible Dismissal Due to Academic Grades

1. Graduate students in the PhD program who's cumulative GPA falls below 3.2 are placed on probationary status. The period of probation extends to the end of the next semester in which the student is enrolled. Satisfactory/Unsatisfactory grades cannot be used to end probationary status.
2. Once a student is placed on probationary status they have one semester (excluding summer semester) to improve their grades. If their GPA remains below 3.2 for two consecutive semesters, the advisor has the prerogative to immediately dismiss the student or the student's stipend may be suspended and student may become responsible for tuition costs until the student's cumulative GPA is once again above 3.2.

Decisions to reduce or terminate a student's stipend or dismiss a student from the program will be made on a case-by-case basis. The Graduate Academic Affairs Committee, the thesis advisor, and the Director of Graduate Study will consider all the factors that may have affected a student's performance before reaching such a decision. The Department Chair will be advised of all potential action prior to final actions of the involved parties.

3. If a student's GPA falls below 2.33 for two consecutive semesters, the student will be immediately dismissed without further warning in accordance with University Policy. (Students will be notified of their status once final grades have been received and posted in their record.)

#### Inadequate Progress in Research

Graduate students in the PhD program earn research hours by registering for BIOE 500. If a student does not make adequate progress in research during a semester, the student will receive a

grade of “unsatisfactory” in BIOE 500 and placed on probation during the subsequent semester and subject to continuous evaluation. When a student makes a grade of “unsatisfactory” the student will receive a written warning with notice of potential dismissal from the lab/graduate program. If a student received a grade of “unsatisfactory” in BIOE 500 for two semesters and has not met the milestones in the prior written warning, the student will be immediately dismissed from the graduate program.

#### Possible Dismissal Due to Inadequate Progress in Research

Students, who are deemed as making inadequate progress towards meeting the goals of their program, will be given written notice that they are on probation and may be considered for dismissal from their current research group and possibly the graduate program. This notice will include clear expectations required to regain a satisfactory standing. The first written warning allows a specific time period of no less than three calendar weeks to alleviate the deficiencies or problems resulting in the consideration of dismissal.

The student is encouraged to seek another potential advisor during the probationary period(s) to provide an option should corrective action not be successful and the student is dismissed from their current research group at the end of the final probationary period.

The student will be reevaluated at the end of the initial warning period. If the student’s advisor determines adequate progress has been made toward correcting deficiencies, the advisor may consider the student in good standing and advise the student in writing they are no longer being considered for dismissal. If student is later determined to not be in good standing, the evaluation process must start over at Day “0.”

If, at the end of the time frame allowed in the original written warning, there is inadequate progress toward correcting the stated deficiencies, the student will be given a second written notification and additional time of not less than three weeks to attempt positive progress. The possibility of dismissal and the end of financial support must be clearly stated in this warning.

If, after the two written warnings and the passage of the specific probationary periods of no less than six weeks, the student has not made significant progress toward correcting deficiencies and/or meeting the advisor’s expectations, and the advisor is convinced that the student will be unable to achieve adequate progress despite intervention or additional time, the advisor may dismiss the student from their research group. The date of dismissal may correspond with the end date of the last probationary period or any date thereafter. The official date of dismissal will be included in this notification and the student will be advised that financial support will end as of the date of dismissal.

#### Opportunity to Join a Different Research Group:

A student, having been given an opportunity to find another advisor during the probationary period, may change advisors if accepted into another research group.

A student dismissed due to inadequate progress may not change advisors more than twice and may not have a total of more than three (3) advisors, including their initial advisor, during their career as a graduate student.

If a student is unable to find another advisor, the student will be dismissed from the graduate degree program.

Dismissal normally coincides with the end of a semester. A dismissal from the graduate degree program that takes effect during the semester requires approval of the Dean of Graduate and Postdoctoral Studies in accordance with the *Guidelines for Dismissal, Petitions, Appeals, Grievances, and Problems Resolution*.

In most cases a student may remain a member of the PhD program through the end of the current semester. However, the student's prior advisor is not obligated to pay the student or provide office space after dismissal from his or her group. Students must earn a minimum stipend of \$8000 per semester to be eligible for a tuition waiver. If a student is dismissed prior to the end of the 7<sup>th</sup> week of the semester, the student may be liable for the tuition for that semester. The student may be dismissed at the end of the semester if they have not been invited to join another research group.

### **Change in Advisor for Reason Other than Inadequate Progress in Research**

Since switching advisors will likely affect progress toward the degree and/or any financial support arranged by the previous advisor, students should only consider switching advisors in exceptional circumstances. However, the department recognizes that in rare circumstances, a student may feel their interests could be better served by working with a different advisor. Requests to voluntarily switch advisors will be handled on a case-by-case basis. In such cases the department will make an effort to assist the student, however, the student bears the ultimate responsibility of finding a new advisor.

#### **Procedure**

1. Student should first discuss relevant issue(s) with their current advisor in an attempt to resolve any concerns or problems.
2. If the student feels the issues are insurmountable, he or she is encouraged to request the guidance of the Graduate Academic Affairs Committee or the Bioengineering Director of Graduate Studies.
3. If the student still wishes to switch advisor, the student should speak with advisors whose research interests are in line with their interests who is willing to serve as the student's advisor, and who has funding to support the student.
4. If the student finds another faculty member willing to serve as his or her advisor, the student must submit a petition to the Graduate Academic Affairs Committee for approval to switch advisors. This petition must have the endorsement of the new advisor.
5. If the Committee approves the switch, the Bioengineering Academic Program Administrator will process the paperwork required to switch advisor. In situation where the Committee

does not approve the switch, the Committee will assist the student in resolving issues or reconsider the petition should issues be deemed unresolvable.

6. If a student changes advisors prior to achieving candidate, the student, with their new advisor's approval, may wish to petition the Graduate Academic Affairs Committee to request a short delay in the timeline for the student's thesis proposal.

Students may not initiate the process to change advisors more than twice nor have a total of more than three advisors, including their initial advisor, during their tenure as a student.

### **Approval of Candidacy**

The attainment of candidacy marks the completion of all requirements for the degree other than those related to research leading to the writing, submission, and defense of the thesis.

All PhD students must submit a petition for approval of candidacy. Candidacy information may be found at <http://graduate.rice.edu>. The candidacy form can be found at <http://gpsdocs.rice.edu/forms/DoctoralCandidacyPetitionForm.pdf>. Students are responsible for completing sections 1 & 3. Sections 2 & 4 will be completed by the department. The Petition should be submitted to the BIOE Academic Program Administrator. Form will be submitted to Graduate and Postdoctoral Studies by the department.

Student may take the final oral examination in defense of their thesis only after the Dean of graduate and Postdoctoral Studies approves their candidacy. Final approval of candidacy will come from the Associate Provost and is valid for four years.

### **Time Boundary**

PhD students must be approved for candidacy before the beginning of the ninth semester of enrollment at Rice (excluding summer semesters). Students will not be allowed to enroll in a graduate program after their eighth semester unless they have been approved for candidacy.

A student's individualized time boundaries are available in ESTHER. Students who are approaching or who have passed their deadline for candidacy, and who have not met all requirements for candidacy, must submit an extension of candidacy request. Extensions are approved on a case-by-case basis by the Office of graduate and Postdoctoral Studies.

The Office of Graduate and Postdoctoral Studies will impose a \$125 reinstatement fee on students who are allowed to continue but who have exceeded their item boundaries without prior approval.

### **Oral Dissertation**

After a student's candidacy has been approved and upon completion of his or her research project, the student must schedule, in coordination with his or her research advisor, a public oral examination of the defense of his or her thesis. Oral examination of the doctoral degree must be announced at least two weeks in advance. Oral examination announcements are to be submitted

to the Office of Graduate and Postdoctoral Studies by entering the information into the online “Graduate Student’s Thesis Defense Announcement Form.” This form can be found at <http://events.rice.edu/rgs>. (Refer to the GPS website: <http://graduate.rice.edu/thesis/> for specific information regarding scheduling requirements.) Exceptions to this policy are granted only in very rare circumstances and must be approved by GPS.

PhD students must conclude an original investigation that is formalized in an approved thesis. The completed thesis must be submitted in either final or draft form to the members of the thesis committee at least two weeks before the oral examination. A copy of the final draft or completed thesis must also be submitted to the department at least two weeks before the oral examination. This copy may be submitted electronically to [ges2@rice.edu](mailto:ges2@rice.edu).

All oral thesis defenses must take place at the Rice University campus. The candidate and all thesis committee members must be physically present. In exceptional cases, appeals to this requirement must be made by the student’s advisor, to the Dean of Graduate and Postdoctoral Studies. Appeals should be submitted using the online form found at <https://graduate.rice.edu/videoconference>. This form must be submitted and the decision rendered prior to the date of the thesis defense.

In the course of the examination, the thesis committee members may recommend revisions or additions, which must be incorporated in the final thesis, which is then signed by all committee members.

Should a candidate fail, the committee chair may schedule a second examination. Students who fail a second time will be dismissed from the university in accordance with University rules.

Students who wish to have their degree conferred in the same semester in which they defend, must comply with the deadlines for filing their applications for degree conferral and thesis defense. These deadlines can be found at <http://registrar.rice.edu/calendars/>.

### Time Boundary

PhD students are required to complete their program, including thesis defense, within ten (10) years of initial enrollment in the degree program. The time boundaries include any period in which the student was not enrolled or enrolled part time, for whatever reason. A student who fails to meet this University time to degree deadline may not be able to continue their degree program.

### Acceptance of Thesis

No later than six months from the date of the examination, candidates who successfully passed the oral examination in defense of their thesis must submit their thesis to the Office of Graduate and Postdoctoral Studies. A student’s thesis must be submitted electronically. Refer to the graduate and Postdoctoral Studies website <http://graduate.rice.edu/thesis/> for specific instructions regarding how to submit the thesis. Final approval of the thesis is by the Associate Provost.

If the thesis is not ready for final signatures by the end of the six-month period, the “pass” may be revoked and an additional oral defense must be schedule. Extensions of this six-month period for completion without reexamination will be granted only in rare circumstances. Application for an extension without reexamination must be made by the candidate with the unanimous support of the thesis committee, endorsed by the school dean, and approved by the Office of Graduate and Postdoctoral Studies.

**Graduation**

Student degrees are conferred at the end of the semester in which they defend their thesis, including the end-of-summer degree conferral. Students, who defend their thesis in the summer, by the deadline set by the Office of graduate and Postdoctoral Studies, may have their degrees conferred in August. All degree candidates are required to apply for degree conferral with the Office of the Registrar during the semester in which they wish to graduate, prior the deadline set by the registrar’s Office. Student should refer to the Office of the Registrar at <http://registrar.ride.edu> for additional information regarding deadlines.

Commencement occurs only once per year. Students may participate in commencement if they defended after the thesis submission deadline for the prior year’s commencement.

**Suggested Time Line for PhD Students**

Degree Progress	Yr 1 Fall	Yr 1 Spring	Yr 2 Fall	Yr 2 Spring	Yr 3 Fall	Yr 3 Spring	Yr 4 Fall	Yr 4 Spring	Yr 5 Fall	Yr 5 Spring
Rotations										
Advisor Selection										
Courses										
Attend Bioengineering Colloquia										
Teaching Assistant										
Present Annual Oral Presentation										
Preparation of Research Proposal										
Choose Thesis Committee										
Defend Thesis Proposal										
Research										
Achieve Candidacy										
Thesis Defense										



## Master of Science

### 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 a public oral examination.

### Master of Science (MS) Curriculum

The MS curriculum consists of two components, foundation and advanced topic courses. Collectively these courses afford the student broad exposure to his or her chosen field of research interests.

Students must take:

3. Complete a minimum of 30 semester hours of study (including thesis research hours).
4. Complete a minimum of 18 semester hours of graduate level foundation and advanced topic courses (graded using a standard letter grade scale). Courses used to meet this requirement must be at the 500 level or above. Courses grades as “pass/fail” or “satisfactory/unsatisfactory” cannot be used to meet this requirement.
5. A minimum of 24 of the 30 required credits must be taken at Rice.
6. All courses must be relevant to the field of Bioengineering.

Advanced Topic Courses: A large array of advanced specialty courses is available to BIOE graduate students. Each student should, in consultation with his or her advisor, select the courses most appropriate for his or her research. Advanced topic courses may be used to meet the 18 semester hours of graduate level courses (graded using a standard letter grade scale).

The university minimum for the master’s degree is 30 semester hours beyond the Bachelor’s degree. MS student must earn the additional credit hours they need for graduation by registering for the thesis research course (BIOE 500). Students may register for between 1 and 12 credit hours per semester during the term they are engaged in research.

Department policy requires that full-time students be registered for at least 9 credit hours each semester. If hours are needed in addition to course work, the student should register for BIOE 500. Students are expected to fulfill the research requirements as defined by their advisor to earn a grade of “satisfactory” in BIOE 500.

All course work must be completed by the deadline for candidacy. Students should carefully consider their course choices to assure they meet the degree requirements for the MS program.

As with all graduate students, the thesis advisor or thesis committee may require further course work if it is considered essential to the thesis research.

## **Transfer Credit**

A minimum of 24 of the 30 required credit hours must be taken at Rice. Students may transfer a maximum of six (6) credit hours from a different institution. Students who have taken graduate level courses as an undergraduate may petition the Graduate Academic Affairs Committee (GAAC) to receive credit for these courses. The following applies:

- No course can be used to satisfy both an undergraduate and graduate degree requirement.
- Students must still take at least 24 semester hours of advanced courses at Rice.
- No more than six (6) semester hours may be transferred.
- The courses to be transferred must be chosen from those that normally satisfy requirements for an advanced degree.
- Each case must be individually approved by the Graduate Academic Affairs Committee (GAAC) based on the work done.
- Students who have taken graduate level courses as an undergraduate may petition the GAAC to receive credit for up to six (6) hours for the courses.
- A student may not count a course toward the MS requirements if the course is substantially the same as one already counted toward the MS degree requirements. The decision as to whether a course is “substantially the same” will be made by the Graduate Academic Affairs Committee.

In specific instances, the Graduate Academic Affairs Committee may waive a course. Waived courses will count toward the required 30 semester hours; however, such courses do not count toward the required 18 semester hours required. If a BIOE course is waived, another BIOE course must be taken to meet the 18 semester hour requirement. All waivers will be considered on a case-by-case basis.

## **Policies for Choosing Advisor**

In exceptional cases where a MS student is admitted directly to the MS program, an advisor will be chosen prior to admission.

MS students who transferred from the PhD program to the MS program will remain with the same advisor as for their PhD studies.

In very rare circumstances where a student transferring from the PhD program to the MS program who do not wish to remain with the same advisor, the same rules that apply to PhD students who change advisors are followed.

## **Financial Support**

MS students are governed by the same general financial support rules as the PhD program. The following stipulations apply to MS Students:

- Students who receive a stipend in support of their graduate work are expected to devote full-time status to their studies and are not to take employment unless they receive explicit permission to do so from their advisor.

- Support is dependent upon satisfactory performance, reasonable progress towards degree requirements, and the availability of funds.
- Student stipends are subject to all the usual federal taxes.

The normal limit of financial support for graduate students in the MS program is six semesters (excluding summers). Students who anticipate taking longer than six semesters for completion of the MS degree must consult with their advisor. The advisor may require the student to submit an additional progress report providing the following:

4. Summary of work to this point,
5. specific information on research work remaining to be done, and
6. estimated time to completion.

The advisor, in consultation with the thesis committee, shall consider the student's progress, exceptional circumstances which justify continued funding, and the availability of funding when making a decision regarding whether the student's funding should be continued for a specific period. Continued support shall be reevaluated annually or more often as appropriate.

Student's whose funding has been terminated may continue to register and work on research projects as long as they continue to make acceptable progress toward the degree requirements. If a student fails to continue to make acceptable progress he or she is subject to dismissal from the program.

### **Teaching Requirement**

MS students who receive departmental support during their MS studies must fulfill the same teaching as PhD students. If the student receives no departmental support (i.e. support from advisor only) the student is not required to fulfill a teaching requirement.

### **Opportunity to Present Research**

There is no requirement for MS students to present their research; however, students are encouraged to discuss specific opportunities to do so with their advisor. The GSA sponsors a "Breakfast Club" which offers an opportunity for peer reviewed research presentations. The department will provide additional opportunities for poster sessions during the year.

### **Thesis Committee Members**

The composition of the thesis committee must comply with University policy. Rules regarding the members of the thesis committee are governed by the *General Announcements* and will not be waived. The thesis committee must have a minimum of three members.

- Two (2) members must be members, including the committee chair, must be members of the Bioengineering faculty with their primary appointment in the Bioengineering Department, or who hold joint appointments with the Department of Bioengineering. (Adjunct faculty do not fulfill this requirement)

- One (1) member must be a faculty member whose primary appointment is in another department within the university. Faculty whose primary appointment is in another department within the university but who holds a joint appointment in the department of Bioengineering may NOT serve in the capacity of an outside member. However, such faculty may serve as additional members of the committee.
- Students must choose a Thesis Director and Committee Chair. In most cases, the student's advisor serves as both the Director and Chair. The student's thesis advisor may always serve at the Thesis Director. However, if the student's advisor does not hold a primary or joint appointment in the Department of Bioengineering, the student must request a faculty member of the Department of Bioengineering to serve as the Committee Chair.
- Additional members of the committee, who may or may not meet the above criteria, may be selected with the approval of the department chair. These members are in addition to the three required members.

### **Progress Review and Evaluation**

#### Advisor/Committee Meetings

MS students will meet with their advisor as deemed necessary. Once a student picks the members of his or her thesis committee, the committee and advisor should meet with the student on an annual basis or more often as deemed appropriate by their advisor or thesis committee.

#### Semi-Annual Progress Reviews

The purpose of the progress review is to ensure that graduate students and their advisors are communicating regularly regarding the student's progress on thesis research and the student's overall development. MS students are required to submit semiannual progress reports during the entirety of their graduate career. Submission of progress reports is one criteria used to determine satisfactory performance.

Reports are on a calendar year basis and cover the time frames, January to June and July to December. First year students are expected to complete a progress report for their first semester covering the time frame from August 15 to December 31.

Students submit progress reports using a three-part standardized review form. These forms should be completed using the table below as a recommended guide.

<b>Suggested Time Table for Submitting Semi-Annual Progress Reviews</b>			
<b>Responsible Party</b>	<b>Action Necessary</b>	<b>January – June Report</b>	<b>July – December Report</b>
Student	Complete Section 1, Add copy of CV, and submit to advisor	July 15	January 15
Advisor	Complete Section 2, return to student	July 25	January 25
Advisor & Student (if necessary)	Meet with student and Complete Section 3 if necessary	July 28	January 28
Student	Submit report to Academic Program Administrator (Email preferred)	On or before July 31	On or before January 31

It is the student's responsibility to coordinate with their advisor to assure the progress report is submitted by the deadline.

If the advisor (or committee as appropriate) feels it necessary, a meeting will be arranged to further discuss the student's progress with the student. Recommendations to the student and a time line to meet recommended milestones should be included and documented in Section 3 of the progress review.

### **Satisfactory Performance**

MS students are expected to make continuous and satisfactory progress towards fulfilling their degree requirements. Satisfactory progress is defined as and includes the following:

- MS students must have a least 12 semester hours of graduate degree courses, using a standard letter grade scale and excluding courses taken on a "pass/fail" or "satisfactory/unsatisfactory" by the end of the first semester in residence.
- After the student's first semester in residence, students must work on their thesis research on a full-time basis.
- Students must maintain a grade point average (GPA) of 3.0 or better.

### **Probationary Status/Possible Dismissal Due to Academic Grades**

4. Graduate students in the MS program who's cumulative GPA falls below 3.0 are placed on probationary status. The period of probation extends to the end of the next semester in which the student is enrolled. Satisfactory/Unsatisfactory grades cannot be used to end probationary status.
5. Once a student is placed on probationary status they have one semester (excluding summer semester) to improve their grades. If their GPA remains below 3.0 for two consecutive semesters, the advisor has the prerogative to immediately dismiss the student or the student's stipend may be suspended and student may become responsible for tuition costs until the student's cumulative GPA is once again above 3.0.

Decisions to reduce or terminate a student's stipend or dismiss a student from the program will be made on a case-by-case basis. The Graduate Academic Affairs Committee, the thesis advisor, and the Director of Graduate Study will consider all the factors that may have affected a student's performance before reaching such a decision. The Department Chair will be advised of all potential action prior to final actions of the involved parties.

6. If a student's GPA falls below 2.33 for two consecutive semesters, the student will be immediately dismissed without further warning in accordance with University Policy. (Students will be notified of their status once final grades have been received and posted in their record.)

### Inadequate Progress in Research

Graduate students in the MS program earn research hours by registering for BIOE 500. If a student does not make adequate progress in research during a semester, the student will receive a grade of “unsatisfactory” in BIOE 500 and placed on probation during the subsequent semester and subject to continuous evaluation. When a student makes a grade of “unsatisfactory” the student will receive a written warning with notice of potential dismissal from the lab/graduate program. If a student received a grade of “unsatisfactory” in BIOE 500 for two semesters and has not met the milestones in the prior written warning, the student will be immediately dismissed from the graduate program.

### Possible Dismissal Due to Inadequate Progress in Research

The dismissal process due to inadequate progress in research is the same as for PhD students.

### **Change in Advisor for Reason Other than Inadequate Progress in Research**

Since switching advisors will likely affect progress toward the degree and/or any financial support arranged by the previous advisor, students should only consider switching advisors in exceptional circumstances. However, the department recognizes that in rare circumstances, a student may feel their interests could be better served by working with a different advisor. Requests to voluntarily switch advisors will be handled on a case-by-case basis. In such cases the department will make an effort to assist the student, however, the student bears the ultimate responsibility of finding a new advisor.

MS students follow the same procedure for choosing a new advisor as PhD students.

### **Approval of Candidacy**

The attainment of candidacy marks the completion of all requirements for the degree other than those related to research leading to the writing, submission, and defense of the thesis.

All MS students must submit a petition for approval of candidacy. Candidacy information may be found at <http://graduate.rice.edu>. The candidacy form can be found at <http://gpsdocs.rice.edu/forms/DoctoralCandidacyPetitionForm.pdf> . Students are responsible for completing sections 1 &3. Sections 2 & 4 will be completed by the department. The Petition should be submitted to the BIOE Academic Program Administrator. Form will be submitted to Graduate and Postdoctoral Studies by the department.

Student may take the final oral examination in defense of their thesis only after the Dean of graduate and Postdoctoral Studies approves their candidacy. Final approval of candidacy will come from the Associate Provost and is valid for four years.

## **Time Boundary**

MS students must be approved for candidacy before the beginning of the fifth semester of enrollment at Rice (excluding summer semesters). Students will not be allowed to enroll in a graduate program after their fourth semester unless they have been approved for candidacy.

A student's individualized time boundaries are available in ESTHER. Students who are approaching or who have passed their deadline for candidacy, and who have not met all requirements for candidacy, must submit an extension of candidacy request. Extensions are approved on a case-by-case basis by the Office of graduate and Postdoctoral Studies.

The Office of Graduate and Postdoctoral Studies will impose a \$125 reinstatement fee on students who are allowed to continue but who have exceeded their item boundaries without prior approval.

## **Oral Dissertation**

After a student's candidacy has been approved and upon completion of his or her research project, the student must schedule, in coordination with his or her research advisor, a public oral examination of the defense of his or her thesis. Oral examination of the master's degree must be announced at least one week in advance. Oral examination announcements are to be submitted to the Office of Graduate and Postdoctoral Studies by entering the information into the online "Graduate Student's Thesis Defense Announcement Form." This form can be found at <http://events.rice.edu/rgs>. (Refer to the GPS website: <http://graduate.rice.edu/thesis/> for specific information regarding scheduling requirements.) Exceptions to this policy are granted only in very rare circumstances and must be approved by GPS.

MS students must conclude an original investigation that is formalized in an approved thesis. The completed thesis must be submitted in either final or draft form to the members of the thesis committee at least one week before the oral examination. A copy of the final draft or completed thesis must also be submitted to the department at least one week before the oral examination. This copy may be submitted electronically to [ges2@rice.edu](mailto:ges2@rice.edu).

All oral thesis defenses must take place at the Rice University campus. The candidate and all thesis committee members must be physically present. In exceptional cases, appeals to this requirement must be made by the student's advisor, to the Dean of Graduate and Postdoctoral Studies. Appeals should be submitted using the online form found at <https://graduate.rice.edu/videoconference>. This form must be submitted and the decision rendered prior to the date of the thesis defense.

In the course of the examination, the thesis committee members may recommend revisions or additions, which must be incorporated in the final thesis, which is then signed by all committee members.

Should a candidate fail, the committee chair may schedule a second examination. Students who fail a second time will be dismissed from the university in accordance with University rules.

Students who wish to have their degree conferred in the same semester in which they defend, must comply with the deadlines for filing their applications for degree conferral and thesis defense. These deadlines can be found at <http://registrar.rice.edu/calendars/>.

### Time Boundary

MS students in the Bioengineering program are expected to complete their degrees in two to three years. Student are required to defend their thesis before the end of the eighth semester of their enrollment (not counting summer semesters) and complete the program within five years of initial enrollment. A student who does not meet these deadlines will be dismissed from Rice.

The time boundaries include any period in which the student was not enrolled or enrolled part time, for whatever reason. A student who fails to meet this University time to degree deadline may not be able to continue their degree program.

### Acceptance of Thesis

No later than six months from the date of the examination, candidates who successfully passed the oral examination in defense of their thesis must submit their thesis to the Office of Graduate and Postdoctoral Studies. A student's thesis must be submitted electronically. Refer to the graduate and Postdoctoral Studies website <http://graduate.rice.edu/thesis/> for specific instructions regarding how to submit the thesis. Final approval of the thesis is by the Associate Provost.

If the thesis is not ready for final signatures by the end of the six-month period, the "pass" may be revoked and an additional oral defense must be schedule. Extensions of this six-month period for completion without reexamination will be granted only in rare circumstances. Application for an extension without reexamination must be made by the candidate with the unanimous support of the thesis committee, endorsed by the school dean, and approved by the Office of Graduate and Postdoctoral Studies.

### Graduation

Student degrees are conferred at the end of the semester in which they defend their thesis, including the end-of-summer degree conferral. Students, who defend their thesis in the summer, by the deadline set by the Office of graduate and Postdoctoral Studies, may have their degrees conferred in August. All degree candidates are required to apply for degree conferral with the Office of the Registrar during the semester in which they wish to graduate, prior the deadline set by the registrar's Office. Student should refer to the Office of the Registrar at <http://registrar.rice.edu> for additional information regarding deadlines.

Commencement occurs only once per year. Students may participate in commencement if they defended after the thesis submission deadline for the prior year's commencement.



## Professional Master's Degree Applied Bioengineering Track

The Master of Bioengineering Applied Bioengineering track is a non-thesis degree that provides student with greater depth in their bioengineering training to advance their career objectives.

The Applied Bioengineering track gives applicants the flexibility to craft their own curriculum depending on their interests and career goals. The Bioengineering Department offers graduate-level courses in the following:

- Biomaterials and Drug Delivery
- Biomedical Imaging and Diagnostics
- Computational and Theoretical Bioengineering
- Tissue Engineering and Biomechanics
- Systems and Synthetic Biology

### Curriculum

Students in the MBE-AB program must complete thirty (30) credits including 18 bioengineering credits at the 500 level or above (BIOE 5XXX or BIOE 6XX).

Classes in professional development, industry seminar series, quantitative analysis, and a general elective are also part of the curriculum.

### Requirements

Requirements for the MBE Applied Bioengineering track include the successful completion of 30 credits at the graduate level as follows:

Credits	Courses	
18	Bioengineering courses from approved list (Approved list for each semester will be provided to students prior to registration)	
1.5	BIOE 627 Medical Technology Design Seminar 1	
1.5	BIOE 628 – Medical Technology Design Seminar 2	
3	BIOE 539 An alternative quantitative-based BIOE course, 400 level or above may be substituted with approval of the Director of Graduate Studies.	
3	Elective – $\geq$ 500 level (may be non-BIOE, but must be relevant to Bioengineering degree)	
3	Professional Development elective(s) – 500 level or above chosen from approved courses listed below (Must have a total of 3.0 credits.)	
<b>Approved Professional Development Electives</b>		
Course No.	Name	Credits
BIOE 633	Life Science Entrepreneurship	1.5
ENGI 510	Technical and Managerial Communications	3
ENGI 515	Leading Teams and Innovation	3
ENGI 529	Ethics and Engineering Leadership	3
ENGI 545/LEAD 545	Strategic Thinking	3
ENGI 610	Management for Science and Engineers	3
ENGI 615	Leadership Coaching for Engineers	3
MGMT 734	Technology Entrepreneurship	3
ENGI 542	Communication for Engineers	3

## Graduate Colloquia

The Graduate Colloquia (BIOE 698/699) is open to MBE Applied Bioengineering track students. Students may count up to 1 credit for BIOE 698/699 towards their degree. Students who attend for credit must follow all policies of the course, including attending all seminars. The colloquia are open to the public; therefore, MBE students may attend without officially registering for BIOE 698/699. By not registering they may attend only those lectures of interest. Non-registered students will not receive credit for the course.

## BIOE 506 – Graduate Independent Study

MBE students may take BIOE 506 (Graduate Independent Study) for a maximum of six credit hours to count towards their MBE degree. Students interested in BIOE 506 typically take 1-3 credit hours per semester. It is the student's responsibility to locate a faculty member willing to mentor them through this independent study course. The following apply:

- The student must produce a final project in the form of a paper, design project, exam, or other project goals as defined by the instructor
- BIOE 506 must be taken for a standard letter grade (A – F).
- If a student is using an internship to fulfill the requirements of BIOE 506, the student must submit written proof of the internship offer, including the name and contact information of their supervisor, prior to the first day of the internship.

## Transfer of Credits to Graduate Degree

A minimum of 24 of the 30 credits must be taken at Rice. Students may transfer a maximum of six (6) credits from a different institution. The following applies:

- The course must be chosen from those that normally satisfy requirements for an advanced degree. No course can be used to satisfy both an undergraduate and graduate degree requirement.
- For specific instructions on how to transfer credits, refer to the “Transfer of Credit” portion in the “General Guidelines” section of this handbook.

Students who completed their undergraduate degree at Rice within the last three years may petition the graduate Academic Affairs Committee (GAAC) to allow up to 21 credits of graduate level courses taken as an undergraduate, which were not used to satisfy undergraduate degree requirements, to count toward their graduate degree. The courses must be chosen from those that normally satisfy requirements for an advanced degree. No course can be used to satisfy both an undergraduate and a graduate degree requirement.

## Time to Degree

Students may enroll on a full-time or part-time basis. It is expected that students will complete their degree within two to four semesters.

All professional masters' students are required to complete their program within five years of initial enrollment. This time boundary includes any period in which a student is not enrolled or enrolled part-time for whatever reason.

### Satisfactory Progress

MBE students in the Applied Bioengineering track must maintain a GPA of 3.0 or higher.

The Office of Graduate and Postdoctoral Studies requires that students be provide a written assessment of their academic progress at the end of each semester. In the case of MBE students, the student's transcript meets this requirement. Should a student wish a more detailed assessment he or she is encouraged to speak to their course instructor or the Director of Graduate Studies.

Graduate students in the MBE Applied Bioengineering track whose grade point average falls below 3.0 are placed on probationary status. The department will notify them of this status.

The period of probation extends to the end of the next semester in which the student is enrolled. Once students are placed on probationary status, they have one semester to improve their grades. If the next semester again results in probationary status, (cumulative GPA of less than 3.0 or two consecutive semesters below 3.0) the student may be dismissed form the program without further notice.

Decisions regarding dismissal will be determined by the Director of Graduate Studies with the approval the Chair of the Department. Students whose GPA falls below 2.33 for two consecutive semesters (including the summer semester) will be immediately dismissed without further warning in accordance with the policy of Gradate and Postdoctoral Studies guidelines or dismissal.

Students will be notified of their status and/or dismissal once final grades have been received and posted to their records.

### Academic Guidance

Students may seek academic guidance from the Master's Committee or the Bioengineering Director of Graduate Studies.

### Graduation

All degree candidates are required to apply for degree conferral with the office of the Registrar during the semester in which they wish to graduate.

Degree conferrals take place in May, August, and December.

Commencement is held only once per year at the end of the spring semester. Student who completes their degrees during the prior summer or fall semester may participate in the following commencement held in the spring.

## Professional Master's Degree Global Medical Innovation Track

As the medical technology industry becomes increasingly global with an emphasis on cost-effective health care solutions and clinical outcomes, Rice University seeks to prepare engineers for this new and changing environment.

The MBE Global Medical Technology track will prepare engineers for careers in medical technology through education in innovation, emerging-market design projects and internships.

The Rice MBE track in Global Medical Innovation specifically targets students who have an undergraduate degree in engineering (mechanical, electrical, chemical, or bioengineering/medical) or a related field, and who are interested in pursuing a career in the private, public, or non-profit sectors of medical technology.

### Curriculum

The Global Medical Innovation track of the MBE program consists of:

Credits	Courses
3	BIOE 527 – Medical Technology Design 1
3	BIOE 529 – Medical Technology Design 2
3	BIOE 528 Medical Technology Implementation 1
3	BIOE 530 – Medical Technology Implementation 2
1.5	BIOE 627 Medical Technology Design Seminar 1
1.5	BIOE 628 – Medical Technology Design Seminar 2
6	Internship (BIOE 600) or Independent Study (BIOE 506). BIOE 600 may be completed during the summer. BIOE 506 may be completed during the fall and spring semesters. Each student 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.
3	BIOE 539 An alternative quantitative-based BIOE course, 400 level or above may be substituted with approval for the Director of Graduate Study
3	Graduate level (500 or above) BIOE elective Students will be provided a list of approved BIOE electives at the beginning of each semester
3	Professional Development elective – 500 level or above chosen from approved courses listed below (Must have a total of 3.0 credits).

Approved Professional Development Electives		
Course No.	Name	Credits
BIOE 633	Life Science Entrepreneurship	1.5
ENGI 510	Technical and Managerial Communications	3
ENGI 515	Leading Teams and Innovation	3
ENGI 529	Ethics and Engineering Leadership	3
ENGI 542	Communication for Engineers	3
ENGI 545/LEAD 545	Strategic Thinking	3
ENGI 610	Management for Science and Engineers	3
ENGI 615	Leadership Coaching for Engineers	3
MGMT 734	Technology Entrepreneurship	3

### Transfer of Credits to Graduate Degree

A minimum of 24 of the 30 credits must be taken at Rice. Students may transfer a maximum of six (6) credits from a different institution. The following applies:

- Students in the GMI track may only transfer courses to meet the quantitative course requirement and/or the BIOE elective.
- Courses to be transferred must be chosen from those that normally satisfy requirements for an advanced degree. No course can be used to satisfy both an undergraduate and graduate degree requirement.
- Students may not transfer course credits to substitute for BIOE 527, 528, 529, 530, 627, or 628.
- For specific instructions on how to transfer credits, refer to the “Transfer of Credit” portion in the “General Guidelines” section of this handbook.

### Graduate Colloquia

The Graduate Colloquia (BIOE 698/699) is open to MBE Bioengineering track students. Students may count up to 1 credit for BIOE 698/699 towards their degree. Students who attend for credit must follow all policies of the course, including attending all seminars. The colloquia are open to the public; therefore, MBE students may attend without officially registering for BIOE 698/699. By not registering they may attend only those lectures of interest. Non-registered students will not receive credit for the course.

### BIOE 506 – Graduate Independent Study

MBE students may take BIOE 506 (Graduate Independent Study) for a maximum of six credit hours to count towards their MBE degree. Students interested in BIOE 506 typically take 1-3 credit hours per semester. It is the student’s responsibility to locate a faculty member willing to mentor them through this independent study course. The following apply:

- The student must produce a final project in the form of a paper, design project, exam, or other project goals as defined by the instructor
- BIOE 506 must be taken for a standard letter grade (A – F).

- If a student is using an internship to fulfill the requirements of BIOE 506, the student must submit written proof of the internship offer, including the name and contact information of their supervisor, prior to the first day of the internship.

### Time to Degree

Students are expected to enroll on a full-time basis and students should complete their degree within two semesters. Any deviation from this timetable must be approved by the Director of the MBE Global Medical Innovation track.

All professional masters' students are required to complete their program within five years of initial enrollment. This time boundary includes any period in which a student is not enrolled or enrolled part-time for whatever reason.

### Satisfactory Progress

MBE students in the Applied Bioengineering track must maintain a GPA of 3.2 or higher.

The Office of Graduate and Postdoctoral Studies requires that students be provide a written assessment of their academic progress at the end of each semester. In the case of MBE students, the student's transcript meets this requirement. Should a student wish a more detailed assessment he or she is encouraged to speak to their course instructor or the Director of Graduate Studies.

Graduate students in the MBE Global Medical Innovation track whose grade point average falls below 3.2 are placed on probationary status. The department will notify them of this status.

The period of probation extends to the end of the next semester in which the student is enrolled. Once students are placed on probationary status, they have one semester to improve their grades. If the next semester again results in probationary status, (cumulative GPA of less than 3.2 or two consecutive semesters below 3.2) the student may be dismissed from the program without further notice. Decisions regarding dismissal will be determined by the Director of Graduate Studies with the approval of the Chair of the Department.

Students whose GPA falls below 2.33 for two consecutive semesters (including the summer semester) will be immediately dismissed without further warning in accordance with the policy of Graduate and Postdoctoral Studies guidelines for dismissal.

Students will be notified of their status and/or dismissal once final grades have been received and posted to their records.

### Academic Support

Students may seek academic guidance from the Director of the MBE Global Medical Innovation track or the Bioengineering Director of Graduate Studies.

## Graduation

All degree candidates are required to apply for degree conferral with the office of the Registrar during the semester in which they wish to graduate.

Degree conferrals take place in May, August, and December.

Commencement is held only once per year at the end of the spring semester. Student who completes their degrees in the prior summer or fall semester may participate in the following commencement held in the spring.

## Helpful Contact Information

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### Department of Bioengineering

URL: <http://bioe.rice.edu/>

Location: BRC, Ste. 1030

Email: [bioeng@rice.edu](mailto:bioeng@rice.edu)

Mail Stop: 142

Phone: 713.348.5869

Gayle Schroeder: 713.348.5063 | ges2@rice.edu Academic Program Administrator

Peggy Scheier: 713.348.3253 | pms4@rice.edu Undergraduate Academic Program

Coordinator

Sheretta Edwards: 713.348.2871 | sheretta@rice.edu Program Coordinator, MBE GMI Track

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### Graduate and Post-Doctoral Studies

URL: <http://graduate.rice.edu/>

Location: 323 Allen Center

Email: [graduate@rice.edu](mailto:graduate@rice.edu)

Mail Stop: 13

Hours: 8:00 a.m. – 12:00 p.m.; 1-4:00 p.m., Monday thru Friday

\*Thesis submissions hours are 1:30 PM – 3:30 PM\*

Phone: 713.348.4002

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### Office of The Registrar

URL: <http://www.registrar.rice.edu/>

Location: 116 Allen Center

Email: [registrar@rice.edu](mailto:registrar@rice.edu)

Mail Stop: 57

Hours: 8:30 a.m. – 4:30 p.m., Monday thru Friday

Phone: 713.348.4999

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### Rice University Course Planning Website

URL: <http://scheduleplanner.rice.edu>

*Note to Students: Schedule Planner is a tool written by a Rice faculty member intended to help students plan which courses to take. It graphically shows your schedule, various sections of a course, and even provides easy access to course and instructor evaluations.*

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### Rice University Police Department

URL: <http://rupd.rice.edu/>

Location: Just inside Entrance # 8  
(2000 Block of University Boulevard at Stockton)

Mail Stop: 551

Phone: 713.348.6000 (24/7) On campus, dial 8600

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### Rice Wellbeing and Counseling Center

URL:

<http://wellbeing.rice.edu/>

Location: Gibbs Wellness Center, 1st floor

Phone: 713.348.3311 (24/7)

In case of an emergency: 713.348.6000 (24/7)

Hours: Monday thru Friday 9am-5pm. Walk-ins Welcome



*\*Closed weekends and university holidays*

TURN OVER

**BRC (Bioscience Research Collaborative)**

**URL:** <http://brc.rice.edu/home/>

**Location:** 6500 Main St., Houston  
**Mail Stop:** 650  
**Phone:** 713.348.8600  
**Emergency:** 713.348.8610 (fire, medical, environmental)

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**Student Health Insurance Plan**

**URL:** <http://studenthealthinsurance.rice.edu/>

**Location:** Memorial Hermann Medical Plaza, Suite 2600  
**Phone:** (713) 348-5544  
**Office Hours:** 9:00 a.m. – 4:00p.m., Monday thru Friday – CLOSED WEEKENDS  
**Email:** [studentinsrance@rice.edu](mailto:studentinsrance@rice.edu)

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**Student Health**

**URL:** <http://health.rice.edu/>

**Location:** Next to the Brown Master's House off Entrance 27b  
**Mail Stop:** 760  
**Phone:** 713.348.4966  
**Fax:** 713.348.5427  
**Office Hours:** 8:00 a.m. – 5:00 p.m., Monday thru Friday – CLOSED WEEKENDS  
**Email:** [hlsv@rice.edu](mailto:hlsv@rice.edu)

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**Aetna Student Insurance Nurse Line - 24 hour assistance**

1-800-556-1555 *This is a helpful number to call if you have questions after hours.*

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**IT (Information Technology)**

**URL:** <http://it.rice.edu/>

**Location:** Mudd Lab, 103  
**Mail Stop:** 119  
**Phone:** 713.348.4357 (Help Desk)  
**Office Hours:** 9:00 a.m. – 5:00 p.m., Monday thru Friday (except holidays)  
**Email:** [helpdesk@rice.edu](mailto:helpdesk@rice.edu)

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**Graduate Housing**

**URL:** <http://campushousing.rice.edu/graduate/>

**Rice Graduate Apartments**

**Phone:** 713-348-GRAD (4723)  
**Email:** [gradapts@rice.edu](mailto:gradapts@rice.edu)

**Rice Village Apartments**

**Phone:** 713-348-4050  
**Email:** [rvapts@rice.edu](mailto:rvapts@rice.edu)

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**Library (Fondren Library)**

**URL:** <http://library.rice.edu/>

**Mail Stop:** 44  
**Phone:** 713.348.5698  
**Email:** [libr@rice.edu](mailto:libr@rice.edu)