

Department of Mechanical Engineering

Graduate Student Handbook

2018-2019



**MECHANICAL ENGINEERING
GRADUATE DEGREE REQUIREMENTS
AND PROCEDURES**

2018-2019

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INTRODUCTION

This handbook provides general guidelines for graduate students in Mechanical Engineering. It is intended to supplement the Rice University [General Announcements](#), which contain graduate school regulations governing students, including deadlines and additional requirements. In addition to complying with the regulations stated in this handbook, students must also comply with the General Announcements and the [Code of Conduct](#).

In case of error, omission, or conflict, policies of the 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.

It is the student's responsibility to be familiar with the rules, procedures, and requirements of the Department of Mechanical Engineering, 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. A student failing to meet department or university requirements is subject to dismissal from the program.

GENERAL REQUIREMENTS

The following regulations concerning graduate study in the Department of Mechanical Engineering are in addition to the regulations and deadlines described in the General Announcements. Students are responsible for meeting both the university and department requirements and deadlines.

Degrees Offered

The department offers a professional master degree (MME), a Master of Science degree (MS), and a Doctor of Philosophy degree (PhD). An automatic master's degree is not offered to PhD degree candidates in the department.

Course Selection

MS and PhD students should consult with their advisor regarding course selection for each semester. MME students will choose courses from the required MME course set. For a list of suggested technical courses per research area, please see the Graduate Administrator.

Course Level

Courses must be graduate level (500 or above) to count towards the degree. Graduate credits are not given for courses that are required for a BS in Mechanical Engineering degree at Rice.

Grades

Students are required to maintain a 3.0 GPA to remain in the program. If the cumulative GPA falls below 3.0, the student will be placed on academic probation within the department for one semester. If the student's GPA remains below 3.0, he/she will be asked to leave the program.

No credit toward an advanced degree will be given for a course in which a grade of D or F is received. A graduate student who receives a failing grade will have their record reviewed, and the department will make specific recommendations regarding further study at the university.

Transfer Credit

Courses taken at another credited college or university are not automatically approved for transfer credit. To receive transfer credit, students should petition the department in writing, listing not only the grades earned for the courses involved but also describing and matching the transfer class to the Rice equivalent. The petition should be submitted to the advisor first for approval and then to the Department Director of Graduate Studies.

Transfer credit will not be given for courses used towards the requirements for any degree(s) received from the previous institution(s). The department will accept up to six credits.

Independent Study

For every 18 semester hours of required coursework, only six of those semester hours can be taken as independent study or as special topics courses conducted as independent study. Topics will be assigned by the advisor. At the end of the semester, students should turn in any projects and reports as requested by the advisor.

Progress Review

Earning an advanced degree implies a high level of scholastic performance. In order to evaluate progress, the records and research performance of each graduate student will be reviewed annually. If the results of this review are not satisfactory, the department will either specify additional course of study and/or research performance requirements, or the student may be dismissed from the university.

Financial Support

Financial support is reserved for doctoral students who have demonstrated exceptional performance in research and

coursework. These students will receive a stipend from their advisor and a full tuition waiver offered by the Office of Graduate and Postdoctoral Studies for the entire period of study, upon satisfactory progress.

Financial support can be reduced or terminated. Active participation in required research activities is a basic condition for continued financial support. When a graduate student is placed on probationary status due to inadequate academic progress, the advisor may decide to reduce or suspend the financial support to the student. Students who are absent from required research activities for a continuous two- week period without permission or mitigating circumstances, may be subject to termination of financial support. Each reduction or termination will be evaluated on a case-by-case basis.

The department does not provide financial support to MS and MME students.

Leaves of Absence

A leave of absence may be granted only by the Office of Graduate and Postdoctoral Studies upon recommendation of the department and is granted only to students in good standing. Leave must be approved in advance of the academic semester

in question. Normally, a leave of absence is granted for no more than two consecutive semesters. No work toward a degree may be done at Rice (or involve Rice faculty/facilities) during a student's leave of absence.

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, full-time PhD and MS students should follow the Rice staff holiday schedule. This schedule includes designated staff holidays, including winter break, when the university is officially closed. Full-time PhD and MS students do not automatically receive Fall Break, Spring Break, and Spring Recess as time off since the university is not officially closed during this time.

Vacation policies should be discussed directly with the student's advisor. Vacations, leave time, or other absences must be approved by the student's advisor in advance and must be in compliance with university rules and guidelines from funding agencies.

Nonscheduled Absence

For 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.

For MME students, 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.

Advisor Change

Switching advisors should only be considered in exceptional circumstances since it will likely affect progress toward the degree and/or any financial support arranged by the previous advisor. 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 every effort to

assist the student, however, the student bears the ultimate responsibility of finding a new advisor.

Degree Change

Students admitted to the MS program can switch to MME during the add/drop period of their first semester without fees or penalty. After that period, students must apply to the alternative program they seek, and no classes will be transferred between programs.

Honor System

All students at Rice University agree to abide by the [Honor Code](#), which covers such matters as plagiarism and giving or receiving aid on exams. It is the obligation of every student at Rice to read the "[Honor System Handbook](#)," and to understand and maintain the honor system at all times. Specific information on the Honor Code can be found at: honor.rice.edu.

THE DOCTOR OF PHILOSOPHY (PhD) DEGREE

Requirements

- 90 semester hours of total credit
- Coursework hours:
 - 42 hrs with BA
 - 36 hrs with BS
 - 30 hrs with 5 year BS
 - 18 hrs with MS
- 6 semesters of MECH 606 – Graduate Seminar
- 6 semesters of Instructional Assistance
- Pass the Qualifying Exam
- Complete the Candidacy Evaluation
- Complete residence requirement
- Complete a dissertation indicating the ability to do original and scholarly research
- Pass a formal oral examination on the thesis and related topics

Time Period for Completion

PhD students are expected to complete all the requirements for the degree within five years following entrance into the program. Continuation in the program beyond this time limit will require special approval of the department.

Residency

The minimum residence requirement for the PhD degree is four semesters (fall/spring) of full-time study (9+ hrs) at the university.

Courses

A total of 90 semester credit hours (course work + research) are required to receive the PhD degree. Courses must be graduate level (500 or above) to count towards the degree. A student's course of study is formulated in consultation with their advisor and must adhere to the course requirements located in the [General Announcements](#). The student should obtain approval from their advisor prior to enrollment.

Credit received for either Graduate Seminar (MECH 606) or Research and Thesis (MECH 800) will not be counted toward course requirements. They will count toward the degree total credit requirements.

Graduate Seminar (MECH 606)

The Graduate Seminar (MECH 606) is a one-credit course offered each term. All PhD students must attend at least 75% of the MECH seminars during their first three years (six semesters) of study. The seminar schedule, which will continue to develop during the semester, will be posted in Canvas and on the

department website. Seminar announcements will also be made via email and posted flyers.

Research and Thesis (MECH 800)

Each candidate for the PhD must complete a thesis that constitutes an original contribution to scientific knowledge. Active research should be underway by the end of the second semester of study. Students should meet regularly with their thesis advisor and provide updates on their progress. Students should meet all deadlines established by the thesis advisor and other committee members.

Students enroll for and accrue research credit hours as they progress towards the degree. The number of research credit hours that students register for each semester should be commensurate with the actual amount of time dedicated to research (1 credit hour is approximately equal to 3 hours of research per week). Students should consult with their advisor prior to registering for more than three credit hours of research per semester, and should plan accordingly to ensure that the required number of research credit hours will be earned in order to complete degree requirements in a timely manner.

Candidates for the PhD degree who have completed all requirements except completion of the thesis must register for Research and Thesis (MECH 800) every semester until graduation.

Instructional Assistance

As part of their research degree program and educational experience, all PhD students are required to provide instructional assistance to the department for six semesters. This instructional assistance, which will not exceed 10 hours per week, can be in the form of grading, lecturing, assisting in labs, or developing course material.

Students providing instructional assistance should adhere to the following responsibilities:

- Attend the required TA training hosted by the Dean of Engineering's office and or the Center for Teaching Excellence.
- Follow appropriate codes of conduct, including: acting in a trustworthy and responsible manner; treating others with respect; treating students fairly, and limiting interactions and relations with students in the class to a professional nature.
- Meet with the course instructor prior to the beginning of the teaching assignment to discuss expectations and deadlines.

- Disclose, to the instructor, any possible conflicts of interest that may arise.
- Attend classes as requested by the instructor.

Satisfactory Progress

PhD students are expected to make continuous and satisfactory progress towards fulfilling their degree requirements.

Satisfactory progress is defined as and includes the following:

- PhD students must register for at least nine (9) semester hours of graduate credit every semester in residence.
- Active research should be underway by the end of the second semester of study.
- Students must submit progress reports by the deadlines noted in the “Progress Reports” section of these guidelines.
- Students must pass the Qualifying Exam.
- Students must complete the Candidacy Evaluation.
- Students must petition for candidacy prior to the beginning of their ninth semester.
- Students must maintain a GPA of 3.0 or better.

Students who fail to meet any of these requirements will receive a letter of warning and will be required to write and submit an improvement plan with goals and deadlines to their advisor.

Progress Reports

PhD students are required to submit annual progress reports during the entirety of their graduate career using provided templates. Submission of progress reports is one criteria used to determine satisfactory performance.

At a minimum, the progress report should include the following:

- Student name, ID number, and Rice email address
- Reporting year
- Name of Advisor
- Coursework completed during reporting period
- Teaching assignments completed during reporting period
- Publications, by the student during reporting period
- Conference presentations by the student during the reporting period
- Awards and accomplishments during reporting period
- Description of research (progress and outcomes) completed during reporting period
- Description of work planned for next reporting period (courses taken, research plans and expectations)
- Concerns regarding research or progress in the program

Students must submit their progress report to their advisor for review and recommendations. The advisor will discuss the student's progress with the student and make any recommendations to the student. If improvement is

recommended, deficiencies will be placed in writing and include a time line to meet recommended milestones.

Once the progress report has been reviewed and signed, a copy of the report must be forwarded to the Graduate Administrator by the appropriate deadline. Students should begin their reports in time to ensure the advisor has sufficient time to review, make recommendations, and approve the reports prior to the deadlines. Copies unsigned by the advisor will not be accepted.

Qualifying Exam

PhD students must successfully complete a Qualifying Exam (QE). The QE is a two-part exam covering mechanical engineering topical knowledge (via oral exam) and research aptitude (via research evaluation).

The outcome of the QE will be either “pass,” in which case the student continues in the program, or “fail,” in which case the student is eligible for a retake of the part(s) of the exam (oral exam and/or research aptitude) deemed unsatisfactory. This retake must occur no later than the end of the semester following the original examination. Only one re-take of the QE will be permitted. If the student is not successful at the retake, they will not be approved to move forward in the PhD program.

Students must contact the Graduate Administrator for a PhD Qualifying Exam Schedule form prior to undertaking the QE.

Part 1: Oral exam

The oral exam portion of the Qualifying Exam will cover topics in the Mechanical Engineering curriculum. The purpose of the oral exam is to evaluate the student's mastery of undergraduate material, and the student's ability to synthesize topics at a graduate level. The oral exam will be completed by the end of the student's third semester of study. The student, with approval of their advisor, will select three faculty members (can include their advisor) representing at least two topical areas, and will schedule a one-hour oral exam comprised of one question from each of the two chosen topical areas.

The committee of three faculty will evaluate, using rubrics, the student's knowledge, synthesis, and presentation of technical material asked orally. The committee must be comprised of a majority of senior (tenured) faculty in the department. The student can elect to have additional departmental faculty members on the committee. The committee member(s) representing each area will keep a record of the question asked

from that area and will provide that to the Graduate Administrator together with the other documents related to the exam.

Research Areas

| Solid Mechanics | Thermal Systems | Dynamics | Fluid Mechanics | Control Systems | Mathematics & Computation |
|-----------------|-----------------|----------|-----------------|-----------------|---------------------------|
| Akin | Bayazitoglu | Fregly | Hassanzadeh | Ghorbel | Akin |
| Brake | Schaefer | Ghorbel | Meade | O'Malley | Brake |
| Fregly | Wehmeyer | O'Malley | Tezduyar | | Hassanzadeh |
| Spanos | Higgs | Spanos | Wehmeyer | | Meade |
| | | | Schaefer | | Tezduyar |
| | | | Higgs | | |

Part 2: Research Aptitude

The student must demonstrate aptitude for research by satisfactorily completing one of the following tasks prior to the end of the third semester of study:

1. Written literature review related to planned thesis research.
2. Research documented as a technical report, conference paper, and/or journal paper.

Research aptitude will be evaluated with a rubric that is completed by the evaluating committee. The committee can, in the case of a peer-reviewed publication, take the acceptance of a paper at a conference or in a journal as satisfactory demonstration of aptitude.

Candidacy Evaluation

The Candidacy Evaluation (CE) involves evaluation of a written document and an oral presentation, prepared and delivered by the student. The CE provides an assessment of the student's research progress and feasibility of any additional proposed research that the student intends to complete for his/her PhD thesis. The evaluation is administered by the student's PhD Thesis Committee. The CE should be scheduled when all coursework and department requirements are completed (typically after six semesters), but no later than the ninth semester of study. The CE will usually take place one year before the intended PhD defense date. Students should contact the Graduate Administrator for a Candidacy Evaluation Schedule form prior to undertaking the CE.

CE Procedure

Students will assemble their PhD thesis committee, with the approval of their advisor, prior to completing the Candidacy Evaluation. Once the committee is formed, the CE is scheduled.

The student will prepare a draft of the PhD thesis (introduction and/or background with literature review, chapters completed to date, and additional proposed analysis, theory, and/or experiments still to be completed) for the committee to review.

This document will be shared with the committee two weeks prior to the CE.

At the CE, the student will give an oral presentation to the committee. Rubrics will be used to evaluate the research progress and plan for completion. The student will receive feedback regarding their progress to the degree, the committee's evaluation of quality, depth, and rigor of their work to date, and additional feedback that will assist in the student's preparation for the PhD thesis defense.

The committee may recommend the student repeat the CE one time if performance and progress are deemed unsatisfactory.

Upon successful completion of the CE, the student can file paperwork to petition for the PhD candidacy with the Graduate Administrator.

Thesis Committee Requirements

The thesis committee oversees the student's research outcomes. The purpose of the committee is to provide an outside perspective on the student's research, helping the student to structure his/her work and identify opportunities. The committee is responsible for approving the student's research plan via the CE and signing off on the final dissertation and defense.

The thesis committee is composed of at least four members.

Three members, including the committee chair, must be members of the mechanical engineering faculty; one member must have his or her primary appointment in another department within the university. At least four members of the committee must meet one of the following requirements:

- Tenured or tenure-track members of the Rice faculty
- Research faculty holding the rank of faculty fellow, senior faculty fellow, or distinguished faculty fellow
- Faculty who have been certified as thesis committee members by the Dean of Graduate and Postdoctoral Studies

In addition to the four required members, additional members of the committee may be selected with the approval of the department chair. The guidelines for committee membership are available in the General Announcements.

Approval of Candidacy

All PhD students are required to submit a petition for 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. Achieving candidacy for the PhD degree signals that a graduate student has:

- Completed required course work (500 level or higher)
- Completed six credit hours of the graduate seminar (MECH 606)
- Completed six semesters of Instructional Assistance
- Fulfilled residency requirement of four full time semesters
- Passed the Qualifying Exam
- Passed the Candidacy Evaluation
- Shown the ability to carry on scholarly work in his/her subject area

Candidacy forms may be found on the Graduate and Postdoctoral Studies website: graduate.rice.edu/forms. Petitions should be submitted to the Graduate Administrator. After candidacy has been approved by the Department Chair and the Dean of Graduate and Postdoctoral Studies, the student can then schedule a thesis defense in coordination with his/her research advisor.

PhD students must be approved for candidacy before the beginning of the ninth semester of their enrollment at Rice.

Students who have passed their deadline to 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. Petitions should be completed in consultation with the student's advisor.

PhD Defense

Candidates who pass the Qualifying Exam and have completed the Candidacy Evaluation are required to write a detailed PhD thesis under the guidance of the thesis committee. The oral defense of a thesis is intended to be an examination of a completed body of work. The length of the oral examination and the subject matter on which the candidate is questioned are left to the judgment of the committee.

The completed thesis must be submitted at least two weeks prior to the defense to both the thesis committee and to the Graduate Administrator. The defense must be scheduled according to the Rice University graduate school guidelines. Please refer to the Office of Graduate and Postdoctoral Studies website graduate.rice.edu/thesis for specific requirements.

Candidates should upload a copy of their thesis and signed Approval of Candidacy form, within one week of the defense to thesis.rice.edu.

Candidates who successfully defend their PhD thesis will be awarded the degree of doctor of philosophy. Should a candidate fail the defense, the committee chair may schedule a second examination. Students who fail the defense a second time must withdraw from the university.

PhD students are required to defend their thesis before the end of the 16th semester of their enrollment at Rice and complete their program within 10 years of initial enrollment in the degree program.

Acceptance of Thesis

Candidates who successfully passed the oral examination in defense of their thesis must submit their final thesis to the Office of Graduate and Postdoctoral Studies no later than six months after the date of the examination. Please refer to the Graduate and Postdoctoral Studies website graduate.rice.edu/thesis for specific instructions regarding thesis submission.

If the thesis is not ready for final signature by the end of the six-month period, the “pass” will be revoked and an additional oral defense will need to be scheduled. Applications for an extension without re-examination must be made by the candidate with the unanimous support of the thesis committee,

endorsed by the Dean of the School of Engineering, and approved by the Office of Graduate and Postdoctoral Studies. Extensions of this six-month period for completion without reexamination will be granted only in rare circumstances.

Graduation

All degree candidates are required to apply for their degree with the Office of the Registrar during the semester in which they wish to graduate. For example, students who plan to graduate in August must apply for their degree on or before June 1st.

Students who plan to graduate in December must apply for their degree on or before November 1st. Students who plan to graduate in May must apply for their degree on or before February 1st.

Degrees are conferred three times a year (August, December, and May); however, commencement happens once a year in May. All August and December degree candidates are invited to participate in May commencement activities.

Suggested Timeline for Ph.D Students

| YEAR 1 | | | YEAR 2 | | | YEAR 3 | | | YEAR 4 | | | YEAR 5+ | | |
|--|----------|--------|--|--------|--------|--------|--------|--------|--|--------|--------|---------|--------|----------------|
| Fall | Spring | Summer | Fall | Spring | Summer | Fall | Spring | Summer | Fall | Spring | Summer | Fall | Spring | Summer |
| Instructional Assistance, Ph.D 6 semesters | | | | | | | | | | | | | | |
| | | | Qualifying Exam Before end of 3rd semester | | | | | | Candidacy Evaluation Semester 6 (typically earliest to Semester 9 (latest)) | | | | | |
| Register for Graduate Seminar, 6 semesters | | | | | | | | | | | | | | |
| | Research | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | Thesis Defense |

Year 1 –

- Register for at least 9 hours of graduate credit each semester
- Register for Graduate Seminar (MECH 606)
- Register for Research and Thesis (MECH 800) – start research by the second semester
- Begin instructional assistance
- Prepare for Qualifying Exam

Year 2 –

- Register for at least 9 hours of graduate credit each semester
- Register for Graduate Seminar (MECH 606)
- Register for Research and Thesis (MECH 800) – start your research
- Continue with instructional assistance
- Complete Qualifying Exam (before the end of the third semester)

Year 3 –

- Register for at least 9 hours of graduate credit each semester
- Register for Graduate Seminar (MECH 606)
- Register for Research and Thesis (MECH 800) – continue research
- Continue with instructional assistance
- Form PhD thesis committee
- Prepare/Conduct Candidacy Evaluation
- Petition for PhD Candidacy

Year 4 and Beyond –

- Register for at least 9 hours of graduate credit each semester
- Register for Research and Thesis (MECH 800) – continue research
- Prepare for thesis defense

THE MASTER OF SCIENCE (MS) DEGREE

Requirements

- 30 semester hours of credit, 24 of which must be taken at Rice
- Coursework hours:
 - 24 hrs with BA
 - 18 hrs with BS
 - 12 hrs with 5 year BS
- 4 semesters of MECH 606 – Graduate Seminar
- 3 semesters of Instructional Assistance
- Pass the Preliminary Candidacy Evaluation
- Write and present an oral defense of a thesis

Time Period for Completion

Students seeking the MS degree are expected to complete all the requirements for the degree within two calendar years following entrance into the program. Continuation in the program beyond this time limit will require special approval of the department.

Residency

The minimum residence requirement for the PhD degree is one semester (fall/spring) of full-time study (9+ hrs) at the university.

Courses

A total of 30 semester credit hours (course work + research) are required to receive the MS degree. Courses must be graduate level (500 or above) to count towards the degree. A student's course of study is formulated in consultation with their advisor and must adhere to the course requirements located in the [General Announcements](#). The student should obtain approval from their advisor prior to enrollment.

Credit received for either Graduate Seminar (MECH 606) or Research and Thesis (MECH 800) will not be counted toward course requirements. These courses will count toward the degree total credit requirements.

Graduate Seminar (MECH 606)

The Graduate Seminar (MECH 606) is a one-credit course offered each term. All MS students must attend at least 75% of the MECH seminars during their first two years (four semesters) of study. The seminar schedule, which will continue to develop during the semester, will be posted in Canvas and on the department website. Seminar announcements will also be made via email and posted flyers.

Research and Thesis (MECH 800)

Each candidate for the MS degree must complete a thesis demonstrating ability in research of a fundamental nature (analytical or experimental). It is expected that the research will be of sufficient importance and quality that positive results would lead to publication. Active research should begin by the end of the first year at the latest. Students should meet regularly with their thesis advisor and provide updates on their progress. They should meet all deadlines established by the thesis advisor and other committee members.

Candidates for the MS degree who have completed all requirements except completion of the thesis must register for Research and Thesis (MECH 800) every semester until graduation.

Instructional Assistance

As part of their research degree program and educational experience, all MS students are required to provide instructional assistance to the department for three semesters. This instructional assistance, not exceed 10 hours per week, can be in the form of grading, lecturing, assisting in labs, or developing course material.

Students providing instructional assistance should adhere to the following responsibilities:

- Attend required TA training hosted by the Dean of Engineering's office and or the Center for Teaching Excellence.
- Follow appropriate codes of conduct, including: acting in a trustworthy and responsible manner; treating others with respect; treating students fairly, and limiting interactions and relations with students in the class to a professional nature.
- Meet with the course instructor prior to the beginning of the teaching assignment to discuss expectations and deadlines.
- Disclose, to the instructor, any possible conflicts of interest that may arise.
- Attend the classes as requested by the instructor.

Satisfactory Progress

MS students are expected to make continuous and satisfactory progress towards fulfilling their degree requirements. Students will be provided a written assessment of their academic progress at least annually or more often as deemed appropriate by their advisor or thesis committee. The student's signed progress report with any comments from the advisor/thesis committee will serve as this written assessment. A copy of the written assessment should be submitted to the Graduate

Administrator for inclusion in the student's record. Satisfactory progress is defined as and includes the following:

- Students must register for at least nine semester hours of graduate credit every semester in residence.
- Students must work on their thesis research on a full-time basis no later than their first semester in residence.
- Students must pass the Preliminary Candidacy Evaluation.
- Students must maintain a GPA of 3.0 or better.

Students who fail to meet any of these requirements will receive a letter of warning and will be required to write and submit an improvement plan with goals and deadlines to their advisor.

Progress Reports

MS students are required to submit annual progress reports during the entirety of their graduate career using provided templates. Submission of progress reports is one criteria used to determine satisfactory performance. The student generated reports are in addition to the evaluation completed by the student's advisors/committees.

At a minimum, the progress report should include the following:

- Student name, ID number, and Rice email address
- Reporting Year
- Name of Advisor

- Coursework completed during reporting period
- Teaching assignments completed during reporting period
- Publications, by the student during reporting period
- Presentations at conferences by the student during the reporting period
- Awards and accomplishments during reporting period
- Description of research completed during reporting period (research progress and outcomes)
- Description of work planned for next reporting period (courses taken, research plans and expectations)
- Concerns the student has regarding their research or progress in the program

Students must submit their progress report to their advisor for review and recommendations. The advisor will discuss the student's progress and make any recommendations to the student. If improvement is recommended, deficiencies will be placed in writing with a time line to meet recommended milestones.

Once the student's progress report has been reviewed and signed by the advisor, a copy of the report must be forwarded to the Graduate Administrator by the appropriate deadline. Students should begin their reports in time to ensure the advisor has sufficient time to review, make recommendations, and

approve the reports prior to the deadlines. Copies unsigned by the advisor will not be accepted.

Preliminary Candidacy Evaluation

All MS students will be subject to a preliminary evaluation of their candidacy (PCE) to be conducted by the end of the second semester of enrollment. The PCE will be based on a review of the academic performance up to the time of evaluation, including performance in course work and graduate research in the form of course grades, course ranking, GRE scores, and other relevant information. The PCE is conducted by a panel of three department faculty members selected by the advisor and approved by the director of graduate studies. The PCE will result in one of four possible outcomes:

1. Approve preliminary candidacy
2. Approve preliminary candidacy conditionally with specific conditions
3. Extend the period of evaluation and receive candidacy approval no later than the end of the third semester of enrollment in the graduate program
4. Disapprove candidacy

Students not progressing sufficiently within the first year will be dismissed from the program.

Thesis Committee

After successfully passing the PCE, students should then form a thesis committee which will administer the oral examination for the student's thesis defense and has final approval/disapproval authority and responsibility for the written thesis. A thesis committee is composed of three members. Two members, including the committee chair, must be department faculty; the other member must have his/her primary appointment in another department within the university. At least two members of the committee must meet one of the following requirements:

- Tenured or tenure-track members of the Rice faculty
- Research faculty holding the rank of faculty fellow, senior faculty fellow, or distinguished faculty fellow
- Faculty who have been certified as thesis committee members by the Dean of Graduate and Postdoctoral Studies

The committee chair need not be your advisor. However, the committee chair must be either a tenured, tenure-track, or research faculty member of the department. Additional members for the committee, who may or may not meet the above criteria, may be selected with the approval of the Department Chair.

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

To change thesis committee members, students must receive approval from the Department Chair.

Approval of Candidacy

MS students are required to submit a petition for approval of candidacy. Candidacy marks a midpoint in the course of graduate education. Achieving candidacy for MS degree signals that a graduate student has:

- Completed required course work (500 level or higher)
- Completed four credit hours of the graduate seminar (MECH 606)
- Completed three semesters of Instructional Assistance
- Passed the Preliminary Candidacy Evaluation
- Demonstrated the ability for clear oral and written communication
- Shown the ability to carry on scholarly work in his/her subject area

Candidacy forms may be found on the Graduate and Postdoctoral website: graduate.rice.edu/forms. Petitions should be submitted to the Graduate Administrator. After candidacy has been approved by the Department Chair and the Dean of Graduate and Postdoctoral Studies the student can then schedule a thesis defense in coordination with his/her advisor.

MS students must be approved for candidacy before the beginning of the third semester of their enrollment at Rice. Students who have passed the deadline to candidacy, and who have 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. Petitions should be completed in consultation with the student's advisor.

MS Defense

The oral defense of a thesis is intended to be an examination of a completed body of work. The length of the oral examination and the subject matter on which the candidate is questioned are left to the judgment of the committee.

The completed thesis must be submitted at least two weeks prior to the defense to both the thesis committee and to the

Graduate Administrator. The defense must be scheduled according to the Rice University graduate school guidelines. Please refer to the Office of Graduate and Postdoctoral Studies website graduate.rice.edu/thesis for specific requirements.

A candidate is required to be enrolled in the semester in which his/her oral examination is held. Students who defend during the summer must enroll in the summer session of classes. For the purpose of the oral defense only, enrollment in a semester is considered valid through the Friday of the first week of class of the following semester. Students passing the oral examination on or before the end of the first week of classes of any semester do not have to register for that or any subsequent semester even though they may be continuing to make minor revisions to the final copy of their thesis.

Candidates should upload a copy of their thesis and signed Approval of Candidacy form within one week of the defense to thesis.rice.edu.

Candidates who successfully defend their MS thesis will be awarded the degree of Master of Science. Should a candidate fail the defense, the committee chair may schedule a second

examination. Students who fail the defense a second time must withdraw from the university.

MS students are required to defend their thesis before the end of the 8th semester of their enrollment at Rice and complete their program within five years of initial enrollment in the degree program.

Acceptance of Thesis

Candidates who successfully passed the oral examination in defense of their thesis must submit their thesis to the Office of Graduate and Postdoctoral Studies no later than six months after the date of the examination. Please refer to the Graduate and Postdoctoral Studies website graduate.rice.edu/thesis for specific instructions regarding thesis submission.

If the thesis is not ready for final signature by the end of the six-month period, the “pass” will be revoked and an additional oral defense will need to be scheduled.

Applications for an extension without re-examination must be made by the candidate with the unanimous support of the thesis committee, endorsed by the Dean of the School of Engineering, and approved by the Office of Graduate and Postdoctoral

Studies. Extensions of this six-month period for completion without re-examination will be granted only in rare circumstances.

Graduation

All degree candidates are required to apply for their degree with the Office of the Registrar during the semester in which they wish to graduate. For example, students who plan to graduate in August must apply for their degree on or before June 1st.

Students who plan to graduate in December must apply for their degree on or before November 1st. Students who plan to graduate in May must apply for their degree on or before February 1st.

Degrees are conferred three times a year (August, December and May); however, commencement happens once a year in May. All December degree candidates are invited to participate in May commencement activities.

Suggested Timeline for MS Students

| YEAR 1 | | | YEAR 2 | | |
|--|----------|--------|--------|----------------|--------|
| Fall | Spring | Summer | Fall | Spring | Summer |
| Instructional Assistance, M.S. 3 semesters | | | | | |
| | PCE Exam | | | | |
| Register for Graduate Seminar, 4 semesters | | | | | |
| | Research | | | | |
| | | | | Thesis Defense | |

Year 1 –

- Register for at least 9 hours of graduate credit each semester
- Register for graduate seminar (MECH 606)
- Register for Research and Thesis (MECH 800) – start research
- Begin instructional assistance
- Preliminary Candidacy Evaluation will be conducted in the spring semester
- Form thesis committee

Year 2 –

- Register for at least 9 hours of graduate credit each semester
- Register for Graduate Seminar (MECH 606)
- Register for Research and Thesis (MECH 800) –continue research
- Continue with instructional assistance
- Prepare for thesis defense

THE PROFESSIONAL MASTER'S DEGREE (MME)

Requirements

- 30 semester hours of credit, 24 of which must be taken at Rice
- 18 credit hours from the “MME Course Set”
- 12 credit hours from elective 500+ level courses in relevant field

Time Period for Completion

MME students are expected to complete all the requirements for the degree within two calendar years following entrance into the program. Continuation in the program beyond this time limit will require special approval of the department.

Residency

The minimum residence requirement for the MME degree is one semester (fall/spring) of full-time study (9+ hrs) at the university.

Courses

A total of 30 semester credit hours are required to receive the MME degree. Courses must be graduate level (500 or above) to count towards the degree. A student's course of study is formulated with the approval of the Director of Graduate

Studies and must adhere to the course requirements located in the [General Announcements](#).

18 credit hours are required from the “MME Course Set” established by the department:

| | |
|------------------------|------------------------|
| (MECH 501 or MECH 508) | MECH 575 |
| MECH 502 | MECH 582 |
| MECH 505 | (MECH 588 or MECH 598) |
| MECH 517 | MECH 594 |
| MECH 554 | MECH 597 |

12 credit hours are elective 500+ level courses in a relevant field. None of the remaining required 12 credit hours can be Independent-Study (MECH 611 or 612) or MME Research Project (MECH 621 or 622) classes.

Prerequisite courses may be required for students who have a BA or BS in another field.

Note: For each pair of courses listed as (MECH AAA or MECH BBB), only one is needed to meet the MME Course Set requirement. If a course, or its undergraduate version, was taken

previously to meet the requirements of an undergraduate degree,
it can be replaced according to the following:

MECH 501 ← MECH 508

MECH 508 ← MECH 501

MECH 502 ← (MECH 678 or MECH 679)

MECH 517 ← MECH 503

MECH 554 ← (MECH 555 or MECH 654)

MECH 582 ← MECH 583

MECH 588 ← MECH 598

MECH 598 ← MECH 588

MECH 594 ← MECH 596

MECH 665 ← MECH 667

Field Report Requirement

MME students are required to prepare a Field Report for one of the MME Course Set classes. Students must prepare a report and presentation on a mechanical engineering field or design related to that course. Topics must be approved by the course instructor before the mid-term break for courses taken in the fall and before spring break for courses taken in the spring. The written Field Report is due at 5pm on the last day of classes for that semester. The oral presentation will be given at a time to be scheduled by the instructor.

Students are strongly encouraged to consult with the Center for Written, Oral, & Visual Communication (<https://cwovc.rice.edu/>) when preparing their written report and oral presentation.

Should the faculty evaluation of the report or presentation prove to be “Unsatisfactory” then the report and/or presentation will be re-done until it is evaluated to be “Satisfactory.”

Application for Degree

All degree candidates are required to apply for their degree with the Office of the Registrar during the semester in which they wish to graduate. For example, students who plan to graduate in December must apply for their degree on or before November 1st. Students who plan to graduate in May must apply for their degree on or before February 1st.

Degree certifications are conducted via Degree Works. Degree Works is a web-based, degree auditing and tracking system that enables students and departments to evaluate academic progress towards graduation in accordance to university and department requirements. Students can access Degree Works by logging on to their Esther account.

Certification, approval and final clearance for graduation is performed first by the Department of Mechanical Engineering, and then by the Office of Graduate and Postdoctoral Studies.

Graduation

Degrees are conferred three times a year (August, December and May); however, commencement happens once a year in May. All December degree candidates are invited to participate in May commencement activities.

GUIDELINES FOR DISMISSALS, PETITIONS, APPEALS, GRIEVANCES AND PROBLEM RESOLUTION

Dismissal

Students are responsible for meeting the requirements of the department and university. The two most common grounds for dismissal of a graduate student are (1) inadequate academic progress, or (2) a disciplinary violation resulting in a university sanction.

Inadequate academic progress includes failing to meet grade requirements, failing to pass required examinations by the required time, or failing to advance to candidacy or defend his/her thesis within the required time. The student will be warned in writing of the possibility of dismissal and given clear information about what must be done within a specified time period to alleviate the problem. Email communication is considered to be "in writing." A student who fails to meet the stated requirements within the time frame specified will receive a notice of dismissal from the department no less than 15 days before removal from the graduate program.

Graduate students whose cumulative grade point average or the average for the most recently completed semester (including the summer semester) falls below 3.0 are placed on probationary status and will be so notified by the department in writing. 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 grade point average below the required grade, the student will be immediately dismissed without further warning. Students will be notified once final grades have been received and posted to their records. Satisfactory/Unsatisfactory (S/U) grades cannot be used to end probationary status.

A dismissal will be held in abeyance until the petition and appeal process is concluded, as students may petition for a dismissal to be revoked as described below.

Graduate students often receive financial support in the form of graduate stipend and tuition waivers. The termination of financial support to a graduate student, while not equivalent to dismissal, is a serious action that could deprive students of their financial ability to continue graduate studies.

Consequently, the procedure to terminate a student's financial support before the end of the financial-support commitment period will be analogous to those for dismissal as described above.

Active participation in required academic activities (for example, laboratory work in certain science and engineering programs) is a basic condition for continued financial support. Students who are absent from such required activities for two contiguous weeks without permission and without mitigating circumstances may be subject to termination of financial support. In addition, they may be judged to be making inadequate academic progress. Thus, if absences must occur, they must be pre-arranged with the student's advisor, except for medical and family emergencies, in which cases timely notification is required. The advisor and/or the department will provide immediate written warnings when students are not present and carrying out required academic activities for more than one week.

Petitions and Appeals

Students may petition for exceptions to academic requirements, regulations, and judgments. A course requirement is an example of an academic requirement. Allowed time to degree is an

example of an academic regulation. Course grades and dismissals from the department are examples of academic judgments. Petitions for exceptions to academic requirements, regulations, and judgments should be viewed as unusual rather than typical. Extensions of various time limits, such as time to candidacy or time to defense, will not be granted routinely. Students requesting such extensions must document the unusual circumstances justifying the request, demonstrate their academic progress towards the goal, and provide a concrete plan for meeting the goal within the requested extension.

The department's Petitions, Appeals, and Grievances Committee will handle petitions regarding departmental requirements. A petition regarding university requirements, regulations, or judgment must be submitted to the Office of Graduate and Postdoctoral Studies; such a petition must be accompanied by a recommendation from the department. When the department's recommendation is negative, or when the petition requests a major exception—for example, an extension of allowed time to degree by more than 1/2 semester—the Office of Graduate and Postdoctoral Studies may also obtain the recommendation of the School of Engineering and the Graduate Council with regard to such petitions.

Petitions regarding academic decisions must be submitted in writing within 15 days from the time that the student knew or should reasonably have known of the decision being petitioned, or within 15 days after an informal effort to resolve the situation has not been successful. Petitions seeking exceptions to academic requirements or regulations should be submitted in writing at least 30 days before the requirement or regulation takes effect. For example, a petition to extend allowed time to degree should be submitted at least 30 days before the deadline in effect. Late petitions may be dismissed, except for unusual situations when a delay is found justifiable by the unit receiving the petition. Appeals will be acknowledged in writing immediately upon their receipt by the receiving unit. Email communication is considered to be “in writing.”

A student (or other parties affected by the decision) is allowed only one level of appeal from a decision regarding a petition. In general, the appeal process will be resolved at the lowest level possible. When the department decides the petition, the appeal must be submitted to the School of Engineering. When the petition is decided at a school level, the Office of Graduate and Postdoctoral Studies must handle the appeal. When the Office of Graduate and Postdoctoral Studies decide the petition, the appellant may submit an appeal to the Provost. An appeal

must be submitted within 15 days from receipt of the decision that is being appealed. Late appeals will be dismissed, except for unusual situations when a delay is justified. Appeals will be acknowledged in writing immediately upon their receipt by the receiving unit. Email communication is considered to be “in writing.”

A petition/appeal should indicate the requirement, regulation, or judgment that is the subject of the petition/appeal, the specific exception requested, and the grounds for the request. An appeal must indicate why the decision involving the earlier petition was incorrectly decided. Grounds for a petition/appeal could be procedural errors by academic or administrative personnel or special circumstances found to be mitigating by the unit receiving the petition/appeal. Disagreement over evaluation of academic quality will not be considered as an appropriate basis for petitions/appeals unless the evaluation is found to be patently unreasonable by the unit receiving the petition/appeal. Petitions involving a violation of university policy or improper conduct by university personnel will be handled as grievances (see Grievances).

Petitions and appeals should be resolved within 30 days of their submission. When such resolution cannot be achieved within

30 days, the student will be informed of the delay before the 30 days are over. A resolution of the petition or appeal must be achieved within 60 days. A lack of resolution of a petition within 60 days is an acceptable cause for an appeal. All time frames in this procedure refer to academic calendar days, and exclude mid-term, inter-term and summer recesses. (This exclusion does not apply to a student who is enrolled during the summer.) All petitions and appeals, as well as responses to petitions and appeals, must be in writing. Email communication is considered to be “in writing.”

Grievances

Petitions and appeals involve exceptions to academic requirements, regulations, and judgments. A grievance is a complaint regarding inappropriate conduct by other students, faculty members, or staff. Inappropriate conduct encompasses both inappropriate personal conduct, such as sexual harassment, as well as inappropriate official conduct, such as violation of university policies. Specific policies exist to address grievances based on discrimination or sexual harassment and these policies must be followed in situations involving these issues.

Grievances against another student may be raised with the assistant dean of Student Judicial Programs and addressed under

the Code of Student Conduct. In other cases, a student may present a grievance in writing at the lowest appropriate level, typically the department or School of Engineering. If a satisfactory resolution is not obtained at that level, the student may appeal the outcome of the grievance by presenting the problem at the next administrative level, such as the School of Engineering, Office of Graduate and Postdoctoral Studies, Provost, or President. Grievances against non-faculty staff members may also be brought to the Employee Relations Director in Rice's Human Resources office. The procedures for handling grievances are analogous to those for handling petitions and appeals. Students submitting grievances must so indicate in their submissions.

Problem Resolution

During the course of graduate studies, problems that do not fall under the category of grievances, described above, may arise in the relationship between a graduate student and the department or his/her advisor. Students should attempt to resolve such problems by informing the appropriate faculty members and working together to resolve the problem. When attempts to resolve the problem informally are unsuccessful, the following problem-resolution procedure will be used:

1. The student will submit the problem in writing to the department chair, who will then attempt to resolve it
2. If the student remains unsatisfied, the problem will be presented to the department's Petitions, Appeals, and Grievances Committee for resolution. Both the student and the department chair will submit a written record of their views to this committee
3. If the student remains unsatisfied, the problem will be referred to a standing subcommittee of the Graduate Council composed of three faculty members (representing diverse disciplines within the university) and a graduate student, with the dean of Graduate and Postdoctoral Studies as an ex-officio member. A written report of proceedings at stage 2 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

The time frame for handling problem resolution is similar to that for handling petitions, appeals, and grievances. Students may

seek guidance on any of these procedures through discussions with the Office of Graduate and Postdoctoral Studies.

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 that 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.

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: **(713) 348-3311** Policies, including Sexual Misconduct Policy and Student Code of Conduct, and more information regarding Title IX can be found at safe.rice.edu.

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RESOURCES

Academic Calendar: registrar.rice.edu

Award Opportunities: engineering.rice.edu/gradoppps

Counseling Center: rcc.rice.edu

Course Catalog: courses.rice.edu

Forms: graduate.rice.edu/forms

General Announcements: ga.rice.edu

Good Practices in Graduate Education: graduate.rice.edu/goodpractices

Graduate and Postdoctoral Studies Office: graduate.rice.edu

Honor System and Code of Student Conduct: honor.rice.edu

International Student Information: oiss.rice.edu

Library: library.rice.edu

Map of Campus: rice.edu/maps

Parking: parking.rice.edu

Professional Development Workshops:
graduate.rice.edu/profdevelopment

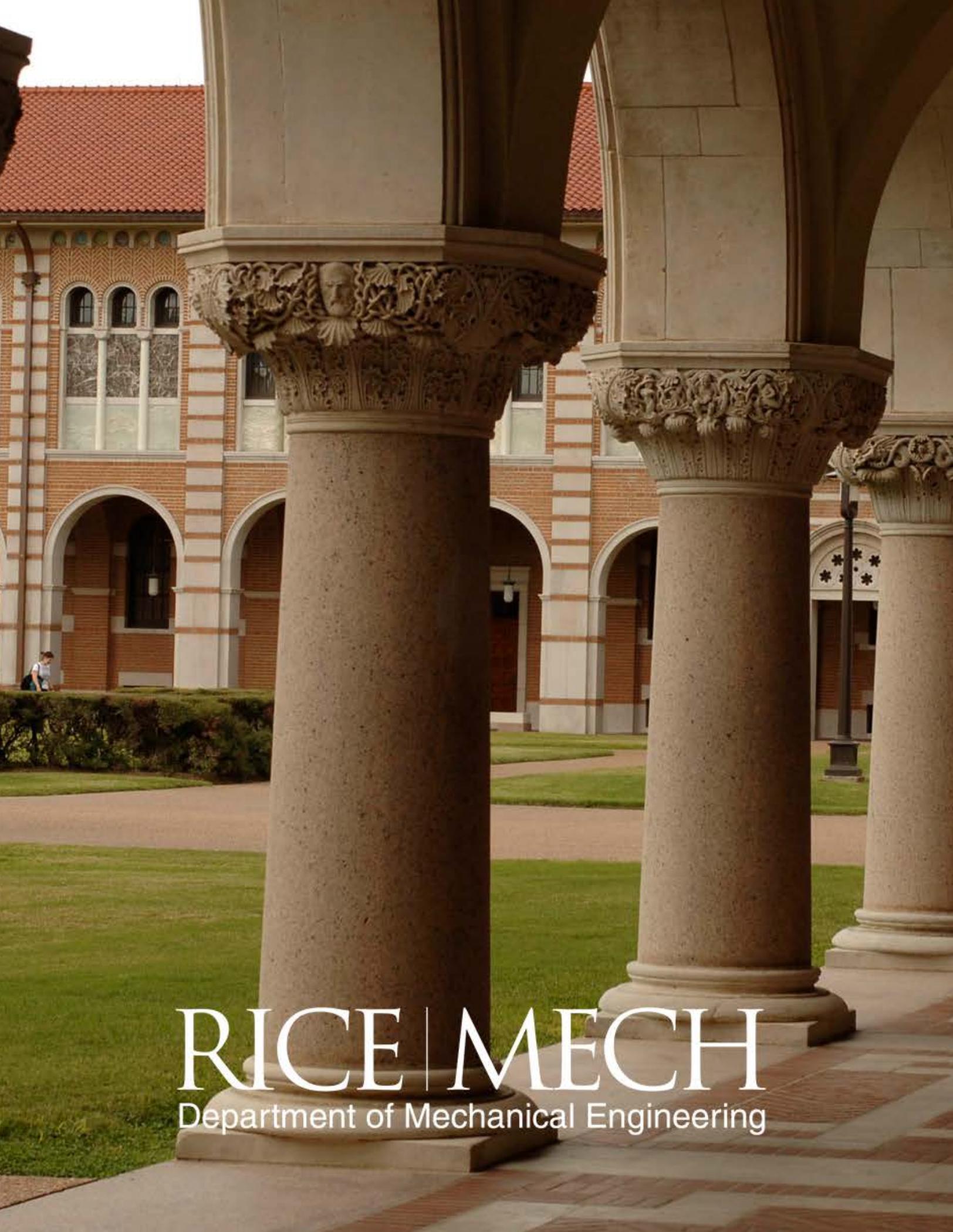
Recreation Center: recreation.rice.edu3

Registration: graduate.rice.edu/registration

Technology Support: it.rice.edu

University Fellowships and External Funding:
graduate.rice.edu/universityfellowships

Wellness: wellness.rice.edu

A photograph of a courtyard at Rice University. In the foreground, several large, ornate stone columns support a walkway. The columns have detailed capitals with carvings. In the background, a large brick building with arched windows and doorways is visible. A person is walking on a path in the distance. The scene is well-lit, suggesting a sunny day.

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Department of Mechanical Engineering