



Edmund A. Hajim School of Engineering & Applied Sciences
Department of Electrical and Computer Engineering

Graduate Student Handbook

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Overview

Our robust research program touches a wide variety of disciplines including medical imaging, digital audio and music, and quantum optoelectronics. To learn more about the department's current research programs, visit the [research page](#).

Prospective Students

Questions about the ECE graduate program? You may complete this [Inquiry Form](#), contact Michele Foster, Graduate Program Coordinator, at michele.foster@rochester.edu or visit our [ECE FAQ page](#). For general information about being a graduate student at Rochester, visit the [graduate studies website](#).

Incoming Students

Congratulations on being accepted into the electrical and computer engineering graduate program! Be sure to review the [incoming graduate student checklist](#) to ensure that you've filled out the appropriate paper work.

General ECE Information

Hours and University Holidays: The Department of Electrical and Computer Engineering offices are open Monday through Friday, 8:00 a.m. to 4:30 p.m. These hours remain the same during all University breaks, except UR-observed holidays (New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving (2 days; Thursday and Friday), and Christmas Day).

Location: The Department of Electrical and Computer Engineering offices are located in two buildings on the University of Rochester River Campus: the Computer Studies Building and the Hopeman Building. While professors and students are located in both buildings, the Computer Studies building houses the department's main administrative functions, including the department chair and financial support personnel, and Hopeman is home to the admissions and academic support.

Web Pages

University of Rochester:	http://www.rochester.edu
Hajim School of Engineering & Applied Sciences:	http://www.hajim.rochester.edu
Electrical & Computer Engineering:	http://www.ece.rochester.edu
AS&E Graduate Studies Office:	http://www.rochester.edu/college/gradstudies

Master's Program

Program Requirements

The MS degree requires at least 30 credit hours of graduate 400-level course work with 16 of these credit hours being in electrical and computer engineering (ECE) course work. Twelve of these 16 credits should be within the selected **Area of Concentration**. Research and reading courses cannot be counted towards the required 16 ECE credit hours.

Concentrations

Each MS candidate, including students who plan to pursue a PhD, must also declare a concentration of study. The areas of concentration are:

- [Musical acoustics and signal processing](#)
- [Signal/Image processing and Communications](#)
- [Biomedical/ultrasound](#)
- [VLSI/IC microelectronics and computer design](#)
- [Superconducting and solid-state electronics](#)
- [Optoelectronics](#)

Each MS candidate must choose one of the following options :

Plan A, Thesis Option (requires 6-10 research credits)

All thesis students must successfully defend a thesis. The defense must be conducted by a committee of no less than two ECE faculty members and one outside faculty member. The thesis defense must be completed by mid-December for fall graduation or by mid-April for spring graduation. Check the [graduate calendar](#) for this year's deadlines. If the Research Advisor is from outside of ECE, the committee must be required to have two ECE faculty members, one outside faculty member, plus the Research Advisor.

Plan B, Exam Option (0-6 research credits allowed)

All part-time and non-thesis option students must pass a MS exam, which can be a term project, an essay or an oral exam. The exam must be conducted by a committee of no less than two ECE faculty members. The MS exam must be completed by mid-December for fall graduation or by mid-April for spring graduation. Check the [graduate calendar](#) for this year's deadlines.

Master's Program of Study

Each full-time master's student must submit a proposed program of study (POS) at the beginning of the second semester. The program of study should be completed and signed by your faculty advisor before submitting to the graduate coordinator for approval. Once approved at the department level it will be to the associate dean.

The POS is expected to form a consistent plan of work to complete the required 30 credit hours. Courses in another department closely related to, but outside the student's major field of interest should not ordinarily exceed 12 hours of credit. The program must include at least 20 credit hours taken at the University of Rochester as a matriculated student in a graduate degree program. Up to 10 credit hours of graduate level credit from an undergraduate-graduate degree program can be included with an approved Transfer Credit form.

UNIVERSITY OF ROCHESTER
ARTS, SCIENCES AND ENGINEERING

Version Original

PROGRAM OF STUDY FOR THE MASTER'S AND/OR PHD DEGREES

Name Jane Doe URID 12345678
Program MS - ECE - Signal & Image Processing Date Jan 2017

- PhD
Master's Plan Plan B

INSTRUCTIONS: This program of study must be prepared by the student in consultation with the department. Courses completed should include the grade earned in the course. Courses in progress should be marked with an asterisk (*). Courses taken at other institutions for transfer credit should be listed separately and an official supporting transcript attached, except that if a Master's degree is presented for 30 hours transfer credit, the individual courses need not be listed.

Table with 5 columns: Subject/Course #, Check if Master's PoS, Grade (if completed), Descriptive Title, Credit Hours. Rows include ECE 447, 446, 440, 445, BME 451, BME 451, ECE 495.

Remarks Total Hours (at least 30 credit hours for Master's and 90 credit hours for PhD) 30

APPROVED, Faculty Advisor Date

APPROVED, Dean of Graduate Studies Date

DISTRIBUTION: GSO Student File and Department

Rev 10/15

Master's Areas of Concentration and Research

The department's graduate research is broken up into categories, many of which overlap depending on the type of research that the student undertakes.

Musical Acoustics and Signal Processing

In this program, students can earn their master's with a concentration in musical acoustics and signal processing in one calendar year. Program instructors include faculty from both the ECE department and the Eastman School of Music.

Non-EE majors would need the following courses which can be found at a Community College:

- Calculus including linear algebra and multi-variable calculus.
- Calculus based Physics including Mechanics and Electricity & Magnetism
- Circuits and Systems (typical sophomore EE course)
- A course in Signals
- A programming course in C/C++ or other formal

Students enrolled in this program are encouraged to participate in one of the many ongoing research projects in the Music Research Laboratory, including projects on:

- Internet-enabled music telepresence and immersive audio environments
- Musical source separation and automated music transcription
- Physical modeling musical sound synthesis
- Music representations
- Audio watermarking
- Quantitative studies of musical timbre
- Audio embedded music metadata

Students can also participate in research in music perception and cognition, and music and language being done in other allied laboratories.

Signal and Image Processing and Communications

Students in this program can participate in a wide range of research including:

- Signal research on: Wide-band radar and sonar systems design, Digital image and video processing, Very low bitrate video compression, Medical image processing
- Communications research on: frequency hopping codes for multiple-access-spread-spectrum communications, designed to minimize interference in radar and sonar systems
- Digital image processing research on: Image enhancement and restoration, Image segmentation/recognition, Processing of magnetic resonance images
- Digital video processing research on: 2-D and 3-D motion estimation techniques, Deformable motion analysis, Stereoscopic image analysis, Standards conversion and high-resolution image reconstruction, Object-based methods for very low bitrate video compression
- Biomedical signal processing research on: Spectral analysis in one-, two-, and three-dimensional spaces, Analysis and algorithms for computed tomography, Inverse scattering techniques for imaging tissue characterization

Biomedical Ultrasound and Biomedical Engineering

High-frequency sound (ultrasound) is used in many areas of medicine to obtain images of soft organs in the body. High-intensity ultrasound is used to destroy kidney and gallstones without surgery (lithotripsy).

Students in this program will conduct scientific investigations that focus on the interactions of ultrasonic energy with biological materials ranging from heart and liver tissues, to bones and gallstones. Students may also conduct research on the applications of ultrasonic contrast-producing agents similar to radiological contrast and tracer techniques.

The results from these efforts are used to improve or extend clinical applications of ultrasonic techniques, both in diagnosing diseases of the heart and liver, and in therapeutic users such as lithotripsy. This work is also used to set standards for exposure of patients during examination and to improve the application of high-intensity sound for therapy.

Circuits and Computer Systems

VLSI/IC Microelectronics and Computer Design

Students in this program work in a variety of VLSI/IC microelectronics and computer design research areas. Some of the current research being conducted here at Rochester includes:

- Research in VLSI and CAE to address topics in integrated circuit design methodologies and automation.
- Specific system-oriented research including an analytical model for multi-access protocols with prioritized messages and distributed control architecture.
- Testability studies that explore operational parallelism in any testing process to determine the set of automated test procedures which minimizes the silicon area consumed by the built-in self-test structures.
- Applying VLSI design and analysis techniques to develop ultrafast superconducting digital integrated circuits.
- Designing and analyzing high performance VLSI-based digital and analog integrated circuits and their systems. Specifically, speed, area, and power dissipation tradeoffs are investigated in terms of application-specific constraints and their fundamental circuit level limitations.
- High-performance core microarchitecture; Low-power architectural designs; Multiprocessor architecture: performance and reliability; Optical and high-speed interconnect; Scientific computing

Physical Electronics and Nanotechnology

Superconductivity and Solid-State Electronics

Students in this program work in a variety of superconductivity and solid-state electronics research areas. Some of the current research being conducted here at Rochester includes:

- Designing, fabricating, and testing ultrafast superconducting digital integrated circuits.
- Developing integrated circuits that can carry out digital signal processing and analog-to-digital conversion at unprecedented rates, using the new "single-flux quantum logic."
- Using picosecond electrical and optical pulses to probe the transient response of semiconducting and superconducting devices, such as Metal-Semiconductor-Metal (MSM) photodiodes and tunnel junctions.
- Implementing quantum computation, in which Josephson-junction based circuits may manipulate quantum superposition states to efficiently perform specialized computational tasks.
- Using concentrated high-temperature superconductivity to develop thin-film devices based on Y-Ba-Cu-O for applications including high-speed electronic interconnects, passive microwave circuits, high-frequency Josephson junctions, and optoelectronic hybrid and monolithic devices.

Optoelectronics

Information processing with optical pulses allows for higher data rates than electronic signals. Optoelectronics research is focused on obtaining a detailed understanding of ultrafast phenomena and ultrafast nonlinearities in semiconductors and high-temperature superconductors, and at using silicon quantum dots and nanometer-size objects in optoelectronics and biosensing.

Students in this program work in a variety of optoelectronic research areas. Some of the current research being conducted here at Rochester includes:

- Using laser technology, solid-state physics, materials science, and device physics and engineering to design novel optoelectronic devices.
- Studying electron and hole thermalization and recombination in semiconductors and semiconductor quantum wells, and the optoelectronic properties of porous silicon, which unlike crystalline silicon emits light efficiently at room temperature.
- Determining response times using laser processing of Y-Ba-Cu-O epitaxial thin films into oxygen-rich (superconducting) and oxygen-poor (semiconducting) regions, together with pump-probe femtosecond reflectivity measurements.

Teaching Assistant Requirement – MS

There is not a TA requirement for the Master's program in ECE.

There are opportunities to be assigned as a TA position for compensation. Being assigned as a TA is considered an Add-on employment position and UR Employment verification guidelines will be followed. Compensation for TA add-on hire is paid by the semester at the established MS TA hire pay-rate. See the Graduate Coordinator for details.

Research Assistant Requirement – MS

There is not a RA requirement for the Master's program in ECE. Most MS students do research for credit.

There are opportunities to be hired in a RA position for compensation. Being hired in a RA is considered an Add-on employment position and UR Employment verification guidelines will be followed. Compensation for RA add-on hire is paid as an hourly-based position within a pay-range established by Student Employment guidelines. See the Graduate Coordinator for details.

PhD Program

The PhD degree requires 90 credit hours of graduate study, 60 of these being beyond a master's degree.

All PhD students must take and pass 16 credits of ECE graduate-level coursework. At least two ECE graduate-level courses from their academic/research concentration and at least one ECE graduate-level course from each of the other two concentration areas. These four ECE courses must be taken during the first year of study.

If a PhD student wishes to pursue a MS in electrical engineering, **two additional courses** will be required to complete a total of 24 course credits toward the 30 required for the MS (non-thesis) degree. At least 16 of these course credits must be in ECE courses. The Comprehensive Examination will complete the MS Final Exam requirement for the MS degree.

Teaching Assistant Requirement - PhD

All graduate students matriculated for the PhD degree are required to perform a certain amount of teaching assistance as part of their education. Teaching experience deepens and enriches a student's understanding of the discipline and provides invaluable professional training and is, therefore, considered to be a vital component of any PhD program. **The ECE department requires two semesters of TA experience.**

There are opportunities to be assigned as a TA position beyond the two-semester requirement. Being assigned as a TA after the requirement is fulfilled is considered an **Add-on** employment position and UR Employment verification guidelines will be followed. Compensation for TA add-on hire is paid by the semester at the established TA hire pay-rate. See the Graduate Coordinator for details.

Research Assistant - PhD

All PhD graduate students in ECE receive a fellowship/stipend or assistantship from the University. These appointments are for positions in which the graduate student is conducting duties required by their academic program. These appointments may also be used when graduate students are receiving payments for living expenses with no expectation for service (e.g. Sproull Fellowships). The University considers these appointments educational, and the type of appointment (Grad Fellowship/Stipend vs. Grad Assistantship) depends on the source of the funding for the position. This stipend is paid by the Advisor as long as sufficient progress is being made toward the degree.

PhD Areas of Concentration and Research

PhD concentrations and research areas are broken up into three overarching topics:

- [Signal Processing and Communications](#)
- [Integrated Electronics and Computer Engineering](#)
- [Physical Electronics, Electron Magnetism, and Acoustics](#)

Students will take two graduate-level classes in their chosen concentration area and at least one graduate-level course from each of the other two concentration areas. The specific courses will be selected by each individual student and their research advisor.

Signal Processing and Communications

Biomedical Ultrasound and Biomedical Engineering

High-frequency sound (ultrasound) is used in many areas of medicine to obtain images of soft organs in the body. High-intensity ultrasound is used to destroy kidney and gallstones without surgery (lithotripsy).

Students in this program will conduct scientific investigations that focus on the interactions of ultrasonic energy with biological materials ranging from heart and liver tissues, to bones and gallstones. Students may also conduct research on the applications of ultrasonic contrast-producing agents similar to radiological contrast and tracer techniques.

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- Digital video processing research on: 2-D and 3-D motion estimation techniques, Deformable motion analysis, Stereoscopic image analysis, Standards conversion and high-resolution image reconstruction, Object-based methods for very low bitrate video compression
- Biomedical signal processing research on: Spectral analysis in one-, two-, and three-dimensional spaces, Analysis and algorithms for computed tomography, Inverse scattering techniques for imaging tissue characterization

Integrated Electronics and Computer Engineering

VLSI/IC Microelectronics and Computer Design

Students in this program work in a variety of VLSI/IC microelectronics and computer design research areas. Some of the current research being conducted here at Rochester includes:

- Research in VLSI and CAE to address topics in integrated circuit design methodologies and automation.
- Specific system-oriented research including an analytical model for multi-access protocols with prioritized messages and distributed control architecture.
- Testability studies that explore operational parallelism in any testing process to determine the set of automated test procedures which minimizes the silicon area consumed by the built-in self-test structures.
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Physical Electronics, Electron Magnetism, and Acoustics

Superconductivity and Solid-State Electronics

Students in this program work in a variety of superconductivity and solid-state electronics research areas. Some of the current research being conducted here at Rochester includes:

- Designing, fabricating, and testing ultrafast superconducting digital integrated circuits.
- Developing integrated circuits that can carry out digital signal processing and analog-to-digital conversion at unprecedented rates, using the new "single-flux quantum logic."
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Students in this program work in a variety of optoelectronic research areas. Some of the current research being conducted here at Rochester includes:

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- Studying electron and hole thermalization and recombination in semiconductors and semiconductor quantum wells, and the optoelectronic properties of porous silicon, which unlike crystalline silicon emits light efficiently at room temperature.
- Determining response times using laser processing of Y-Ba-Cu-O epitaxial thin films into oxygen-rich (superconducting) and oxygen-poor (semiconducting) regions, together with pump-probe femtosecond reflectivity measurements.

Microelectromechanics and Electrostatics

Students in this program work in a variety of microelectromechanics and electrostatic research areas. Some of the current research being conducted here at Rochester includes:

- Developing small integrated sensors and transducers using microfabrication techniques developed for silicon microelectronic circuits.
- Exploring issues of noise and sensitivity in displacement sensors and accelerometers.
- Developing cryogenic electro-mechanical transducers and vacuum tunneling transducers sensitive to sub-Angstrom displacements.
- Researching particle electro-mechanical interactions exhibited by particles in the size range from 5 to 500 microns when electric or magnetic fields are present.
- Developing dielectrophoretic levitation techniques for investigating dielectric properties of individual metallic or dielectric particles or even biological cells.
- Researching the flow of powders and granular media under the influence of electric or magnetic fields.
- Investigating electrostatic hazards with the goal of preventing serious explosions that plague liquid and dry chemical and electronic production facilities.
- Developing a general model for predicting the relaxation and dissipation of electrical charge within insulating materials such as liquids and dry powders.

Acoustics

Students in this program work in a variety of acoustic research areas. Some of the current research topics here at Rochester include:

- Acoustic wave equation
- Plane, spherical, and cylindrical wave propagation
- Reflection and transmission at boundaries
- Normal modes
- Absorption and dispersion
- Radiation from points, spheres, cylinders, pistons, and arrays
- Diffraction
- Nonlinear acoustics

Comprehensive First-year Exam Requirements

The [Comprehensive Examination](#), to be completed by the end of the third semester of study, is required for continuation in the PhD program. Students may petition to extend the time for completing these requirements. Part-time students and those with a non-ECE background may need additional time.

The ECE Department's PhD graduate research program is partitioned into three main areas of concentration and research:

- A. Signals and Communications**
- B. Integrated Electronics and Computer Engineering**
- C. Physical Electronics, Electromagnetism, and Acoustics**

All first year PhD students must satisfy the following requirements for continuation in the PhD program:

1. **2+1+1 Course Requirement:** All PhD students must take and pass at least 2 graduate level courses (400-level) from their respective concentration area and at least one graduate level course from each of the two remaining areas. The courses must be taken during the first year of study¹. The specific courses are to be selected by the students in agreement with their research advisors.
2. **Area Exam:** All PhD students must take an oral exam before the end of their third semester of full-time study¹. The format of the oral exam (e.g., a question/answer session, a paper presentation or both) shall be determined by the Academic Advisor and shall be conducted in front of at least two faculty in the respective research area. The Advisor and/or Graduate Program Coordinator will provide general guidelines on what is expected of them for the exam. Upon completion of the oral exam, the exam committee shall provide the examination results to the Graduate Program Coordinator to be included in student's academic record. The exam committee shall provide their recommendation at the conclusion the oral exam, specifically if the student should be allowed to continue to the next stage of their graduate program, if remedial work is required and the exam re-taken, or if the student should not continue in the PhD program. Final action will be taken after the recommendation is approved by the Graduate Program Coordinator and the Department Chair.

PhD Qualifier/Proposal Examination

All doctoral students must pass a PhD qualifying examination and submit a written PhD thesis proposal in their third to fourth year of full-time graduate study.

The proposal document has no formal formatting requirement but we recommend following the formatting instructions in the [Manual for PhD Students: Formatting the Thesis and Preparing for the Defense](#).

The committee for the proposal examination for the PhD degree is approved by the University dean of graduate studies on the advice of the appropriate associate dean of graduate studies. The committee shall consist of:

- At least two current full-time tenure-track members with the rank of assistant professor or higher who hold their primary appointments in the department offering the degree program, or are among the core faculty defined for an interdisciplinary PhD program in the role of “inside members.”
- The dissertation advisor or supervisor can have a primary or secondary appointment in the candidate’s program department and must be present for the examination.
- At least one current full-time faculty member at assistant professor rank or higher from outside the student’s department can act as an “outside reader.”
- A committee made up of faculty members whose primary appointments are all in the same department will not be permitted.
- Requests for non-standard committee members must be done by Petition to the Dean. Please see the Graduate Coordinator for this request.

Students who pass the PhD qualifying examination will get thesis research assistance from the Faculty Thesis Advisory Committee. The committee meets with the student at least once each year.

PhD Thesis Defense Examination

Before you can start your thesis you must:

- Complete all courses, exams, and research requirements
- Meet with your [advisory committee](#) to ensure that everyone agrees that the work is ready to defend
- Decide on a date for the defense
- Inform your graduate administrator that you have started the process to prepare for your defense

Nominate a Faculty Member to Serve as Chair for Your Defense

A chair is appointed for each PhD oral defense to monitor and promote fairness and rigor in the conduct of the defense. To help eliminate pre-established judgments on the candidate's work, the chair should be from a different program/department than the student. For more information about chair responsibilities, read the [instructions for the chair](#).

You must identify a faculty member to serve as chair for your defense. The chair must be:

- A current full-time faculty member at assistant professor rank or higher
- Outside the department offering the degree program, or outside your advisor's department (interdisciplinary degree programs only)
- Someone who has not had prior involvement in your research

The selection of the chair is subject to the approval of the department/program, the dean of graduate studies in Arts, Sciences and Engineering, and the University dean of graduate studies.

The chair must be physically present during the entire defense, including the public oral presentation (if applicable) and the questioning session. The chair is welcome to read and comment on the dissertation and/or the defense presentation, but this is not required. The chair does not need to be an expert in your research area. It is your responsibility to get a copy of the final dissertation to the chair at least one week prior to the defense.

Selecting a Defense Date

You should begin scheduling the actual defense date **three months in advance** to ensure that your advisor, committee members, and chair are able to be present and that rooms are available on the date and time selected.

Defenses can be held on any day the University's Graduate Studies Office is open (not weekends, evenings, holidays, or the days between Christmas and New Year's). Check the [academic calendar](#) for important dates and deadlines.

Use the [PhD date calculator](#) to determine the deadline dates for getting your paperwork to the Graduate Studies Office and department committee.

When all committee members and your chair agree to a specific date and time for the defense, inform your graduate administrator as soon as you possibly can, but no later than **six weeks prior to your defense date**. Your graduate administrator will advise you of any program-specific requirements for the defense as well as work with you to prepare for your thesis defense. They will also help you determine who will schedule the room for your thesis defense.

You should provide your committee members **at least two weeks** to read and comment on your dissertation before the date you need to register your dissertation.

Participating Via Video Conferencing

While you, your advisor, and the chair must all be physically present in the room for the defense, other committee members are allowed to participate in the defense remotely via Skype or other video conferencing technology so long as all committee members agree to the arrangement. This must also be approved by the AS&E dean of graduate studies and the University dean of graduate studies before the dissertation is registered for defense.

Someone other than you and your committee must handle the IT setup and be on standby for any problems. If anyone involved finds that remote participation is interfering with the defense, he or she can request that the defense be rescheduled.

Dissertation Writing and Guidelines

The [Preparing Your Thesis](#) manual is a great resource to help you bring your dissertation up to the required standard of organization, appearance, and format for the University of Rochester. Before preparing the defense copy of your dissertation, check the contents of the manual carefully to help avoid mistakes that can be time-consuming and costly to correct.

Registering Your Dissertation for the Final Oral Exam

In order to register your dissertation, you or your graduate administrator will need to create a record on the [Graduate Studies PhD Completion website](#). This record will include:

- Degree information
- Past degrees
- Contact information
- The defense version of your dissertation as a PDF
- Other relevant documents

The version of your dissertation attached to your online record is considered the registration copy.

When your PhD completion record is finalized, committee members will receive emails with links to access your record and approve your dissertation to progress to defense. You'll need to [provide copies](#) of the

dissertation identical to the registration copy to all members of your committee, including the chair, at least two weeks before the record is finalized. Everyone but the chair is required to comment or sign off on the dissertation before it is submitted.

There may be deadlines for registering your dissertation specific to your program. Consult with your graduate administrator to ascertain those deadlines and follow them carefully.

After all committee members have provided their approval, your thesis will be reviewed by your faculty director/department chair, the AS&E dean of dean of graduate studies, and the office of the University dean of graduate studies. When all of these officials have approved your committee and dissertation for defense, your dissertation is considered registered. You will be able to track these approvals in your online record and will receive a confirmation email when approvals are complete.

The Graduate Studies Office and the AS&E dean of graduate studies, as well as the University Graduate Studies Office, may make corrections to the PDF of your dissertation. This annotated copy of your dissertation, along with the original version, will be stored in the PhD completion website. You are not allow to distribute updated versions of your dissertation prior to the defense, but be sure to incorporate any corrections before uploading your final dissertation to ProQuest®.

After the defense, if the committee has required major revisions to be approved by one or more of its members, it is your responsibility to provide them with the corrected final version for their approval. They will be asked to submit written confirmation of that approval to the University Graduate Studies Office. Failure to do so could delay conferral of your degree.

After the Defense

Student Status

You can submit the final corrected copies of your dissertation as soon as you address any remaining comments that were brought up during the defense or noted in the registration copy of your dissertation, which will be returned to you usually within a few days before or after the defense. You can take up to one semester following the defense to address any comments, during which you can remain a full-time student. Your degree conferral date will depend on when you submit the final corrected copies of your dissertation.

Final Corrected Copies of the Dissertation

The day after your defense, you will receive an email from the University dean of graduate studies that provides instructions on how to:

- Submit the final corrected copies of your dissertation through ProQuest
- Provide authorization for the release of your dissertation through [UR Research](#)
- Complete a mandatory online exit survey
- Verify to the University dean of graduate studies' office that the dissertation has been submitted

Publishing Your Final Dissertation The University of Rochester requires all doctoral candidates to deposit their dissertations for publication with ProQuest Dissertation Publishing and with the University libraries. Hard copies are not required. The library receives an electronic copy of the dissertation from ProQuest, but students must give the University permission to obtain it.

Internships

Research Internship Policy

A graduate practical research internship is designed to allow a student to obtain practical experience in their graduate research field by working on an internship outside the university for a short period of time during their graduate education.

A full-time faculty member supervises the academic portion of the internship. The academic work that needs to be completed is determined by mutual agreement between the student and faculty sponsor. The student must obtain the signature of the faculty member (on the Internship Approval Form) in order to register for an internship. Students are required to submit a short write-up of their internship experience to their internship faculty advisor. The faculty member will provide a grade for the 1 credit internship based on this write-up at the end of the semester. All grades must be added to a student record before a PhD defense may be delivered.

- Internships are registered as 1-credit hour of research and can be taken during the fall, spring, and summer terms.
- The student must register for 1 credit under
 - Full-time internship: 494 (Master's) or 594 (Ph.D.)
 - Part-time internship (less than 20 hours/week, in the Rochester area): 494 (Master's) or 594 (Ph.D.)
- If a full-time internship is taken over the semester rather than over the summer, the student must also register for continuing enrollment, 899A (Master's) or 999A (Ph.D.).
- Each 1 credit internship, up to a maximum of 2, counts toward the total required credits for the degree (30 or 32 for Master's, 90 for Ph.D.) and must be included in the student's Program of Study. To count additional credits of internship beyond 2 toward the degree requirements requires approval of the Dean of Graduate Studies.
- At the PhD level, tuition for internships is paid for by the dean's tuition scholarship when taken within the 90 credits required to earn a PhD and when the internship research credit is included on the Program of Study. If a PhD student would like to take an internship after accumulating 90 credits, the expense of the tuition credit is the financial responsibility of the student or their academic department.
- At the Master's level, tuition expenses for internship courses are the financial responsibility of the student after any Dean's awarded scholarship is applied.
- Health insurance: students currently enrolled in the University of Rochester Student Health Insurance plan will remain on this plan during the internship period.
- Master's students
 - Note that internships represent "research" credit. Thus, in order to complete Plan B for the Master's degree, students must make sure the sum of their

Paperwork

All internships require the following paperwork

- Internship Approval Form (with faculty advisor signature)
- Paper registration form

- Full-time internship during the summer: register for 494 (Master's) or 594 (Ph.D.)
- Full-time internship during the semester: register for 494 & 899A (Master's) or 594 & 999A (Ph.D.) In Absentia Request Form
- Part-time internship during the semester: register for 494P (Master's) or 594P (Ph.D.) as well as additional course or research credits.
- If internship funded by Dean's or Department's FAO, a 506 form charging the student's standard tuition must be submitted via HRMS.
- International students must complete and submit to ISO the ISO CPT form with a copy of the internship offer

Transitional Internship Policy

A graduate transitional internship is designed to allow international students to obtain practical experience in their graduate research field while transitioning to OPT by working on an internship outside the university for a short period of time.

Note: These registrations require a unique Course Registration Number (CRN) to be created. All paperwork is required in the GSO at least 2 weeks prior to the start of the internship to allow time for administrative processing. Approval and registration during the fall and spring terms must be processed before the last day of the semester. Registration requests received less than 2 weeks before the desired internship start date will delay the internship start date.

A full-time faculty member supervises this internship. The work that needs to be completed is determined by mutual agreement between the student and faculty sponsor. The faculty advisor and graduate coordinator must approve and sign the Internship Approval Form in order to register for the internship. The faculty member must provide a grade for the .5 (half) credit internship at the end of the semester.

- Internships are registered as a .5 credit hour of research and can be taken during the fall, spring, and summer terms.
- The student must register for the .5 credit - 494I (Master's) or 594I (Ph.D.) To register, the student must request their Graduate Coordinator create a hard copy registration form which is available on the ASE Intranet.
- If a full-time internship is taken in the fall or spring semester (not summer), the student must also register for continuing enrollment, 899A (Master's) or 999A (PhD) via an on-line registration.
- It is expected that a single .5 internship will allow sufficient time for a successful defense and OPT approval process. A maximum of 2 (two) .5 credit internships are allowed with Advisor and Dean Approval.
- At the Master's level, tuition expenses for internship courses are the financial responsibility of the student after any Dean's awarded scholarship is applied.
- Health insurance: students currently enrolled in the University of Rochester Student Health Insurance plan will remain on this plan during the internship period if they maintain a full-time registration status.

Transfer Credit Policy

The associate dean of graduate studies may approve, for students who do not present the master's degree, up to 30 credit hours of acceptable graduate work taken at this or another university toward the requirements for the doctoral degree.

Work taken prior to matriculation in a graduate degree program is classified as possible transfer work. Limits on transfer credits are set at the program level. Credit hours may be accepted toward degree requirements if the subjects taken form an integral part of the proposed program of study and if taken within five years of the date of matriculation with a grade of B or higher as interpreted in this University.

Requests for transfer credit must have the approval of the associate dean of graduate studies. Similarly, permission to take work at another institution for transfer credit after matriculation in a graduate program must be approved in advance by the associate dean of graduate studies. Credit hours already applied to two degrees, whether at the University of Rochester or elsewhere, cannot be applied to a third degree at the University. For additional information; please review the [graduate studies bulletin](#).

University of Rochester Undergraduates (Transfer Credits Info)

Arts, Sciences and Engineering allows no more than 10 credits taken prior to matriculation in a graduate program to be transferred in for the master's degree program of study free of charge. If a student wishes to transfer in more than 10 credits for courses taken at the University of Rochester prior to matriculation in a graduate program, the student must pay for these credits. The cost shall be based on the per-credit tuition rate at the time the credit transfer is requested, and any graduate tuition scholarship that has been provided to the student shall be applied to this total tuition cost.

All transfer credits must not have been used as part of the undergraduate degree program and require approval of the program (either the Director of Graduate Studies or the Chair) and the Arts, Sciences and Engineering Dean of Graduate Studies in order to be applied to a graduate program of study.

Note that programs have their own requirements beyond completion of credit hours, such as distribution requirements, TA requirements, and specific work towards the exit exam or essay that the student must complete in order to earn a master's degree. Students are encouraged to meet early in their planning process with the program Graduate Administrator and/or Director of Graduate Studies in order to devise a program of study that will meet all the requirements for the degree.

Illustrative examples:

- Student takes two courses with graduate content during his/her senior year, for eight credits. None of these courses were used to fulfill a requirement for the bachelor's degree. With approval, the student may transfer in all eight credits for the master's program of study without charge.
- Student takes four courses with graduate content during his/her senior year, for 16 credits. None of these courses were used to fulfill a requirement for the bachelor's degree. With approval, the student may transfer in 10 credits from these 16 credits for the master's program of study without charge. If the student wishes to transfer in the remaining 6 credits, he/she will be charged for 6 credits at the current tuition amount, less any tuition scholarship provided to the student in the offer of admissions to the master's program.
- Student takes eight courses with graduate content during his/her senior year, for 32 credits. None of these courses were used to fulfill a requirement for the bachelor's degree. With approval, the student may transfer in 10 credits from these 32 credits for the master's program of study without charge. If the student wishes to transfer in the remaining 22 credits, he/she will be charged for 22 credits at the current tuition amount, less any tuition scholarship provided to the student in the offer of admissions to the master's program. The student will need to matriculate in the master's program after completing the bachelor's degree and complete any program requirements, such as the exit exam, to obtain the master's degree.

Academic Honesty Policy

Academic honesty is a fundamental value that must be shared and upheld by all members of the University of Rochester community. Graduate students in Arts, Sciences and Engineering (AS&E) have the responsibility to understand and abide by the University and AS&E policies, and suspected infractions of these policies will be treated with the utmost seriousness.

A student remains responsible for the academic honesty of work submitted to the University as part of the requirements for the completion of a degree (or any other coursework taken at the University) even after the work is accepted, the degree is granted, or the student is no longer matriculated at the University of Rochester. Ignorance of these standards is not considered a valid excuse or defense.

Academic honesty resources:

- [Academic Honesty Policy for Arts, Sciences and Engineering](#)
- [Graduate Student Academic Honesty Resources](#)
- [Process of Review of Academic Misconduct Flowchart](#) (PDF)

Academic Probation Policy

- All graduate students are expected to maintain high standards of academic performance in their course work and their research. Minimum grades for courses or research work carrying graduate credit are C or S. However, a student can get credit for only one C during the course of their graduate studies.
- Getting Placed on Academic Probation
- A student who receives the grade of C in one or more courses or the grade of E in one or more courses will be considered to have an unsatisfactory record and will be automatically placed on academic probation*. A student on academic probation cannot be awarded a graduate degree. Students in extenuating circumstances may appeal to the dean of graduate studies.
- * Students who receive their first and only C in their final semester are not subject to academic probation.
- Removal from Academic Probation
- A student will be removed from academic probation if the student completes 12 semester hours of graduate credit with no grade lower than B-. If the student receives a grade below B-, the student is subject to removal from the program. In such a case, the student must petition the dean of graduate studies to remain in the program. This petition must be approved by the program director or department chair, and it must include a discussion of the reason for the poor performance and a plan for improved academic performance.

Forms & Policies

Graduate Student Forms

- [Add/Drop Registration Form](#)
- [Audit Fee Waiver for PhD Students](#)
- [Dissertation Checklist](#)
- [Parental Leave Request Form](#)
- [Petition for Non-Standard Committee Member](#)
- [Petition for Time to Degree Extension](#)
- [Program of Study](#)

Policies

Most of the rules and regulations that govern graduate students at the University of Rochester can be found in the [Graduate Bulletin](#). However, there are other policies, listed below, with which you should be familiar.

- [100 Level Course Policy](#)
- [Academic Honesty Policy](#)
- [Academic Probation Policy](#)
- [Auditing Policy](#)
- [Double Master's Degree Policy](#)
- [Transfer Credit Policy](#)
- [Study In Absentia Policy](#)
- [Research Internship Policy](#)
- [Unofficial Course Attendance Policy](#)
- [Leave of Absence Policy](#)
- [Master's Student Expectations and Responsibilities Policy](#)
- [PhD Student Expectations and Responsibilities Policy](#)
- [Family-friendly Policy](#)
- [Student Conduct Policy](#)
- [Tuition Refund Policy](#)
- [Policy on Refunds of Student Charges for Change of Status](#)

Resources

Academic Planning:

- [Course Schedule/Descriptions](#)
- [Graduate Bulletin](#)
- [Graduate Academic Calendar](#)
- [Registration](#)
- [Graduate Bulletin](#)
- [Graduate Student Association](#)
- [Doctoral Theses](#)
- [Graduate Student Guidelines on Research Integrity and Conflict of Interest](#)
- [Tax Presentation from February 2018 Tax Workshop](#)