



**HAJIM SCHOOL OF ENGINEERING & APPLIED SCIENCES**  
**UNIVERSITY of ROCHESTER**

Alternative Energy

Department of Chemical Engineering

Graduate Handbook

**2016-2017**

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## REQUIREMENTS FOR THE MASTER OF SCIENCE IN ALTERNATIVE ENERGY

### Master's Student Expectations and Responsibilities

Find this information here:

<http://www.rochester.edu/college/gradstudies/policies/masters.html>

### 1. BACKGROUND COURSES

#### Basic Sciences

All students who intend to enroll in the Master of Science program in Alternative Energy should have received a Bachelor's degree in engineering or science. The Master of Science in Alternative Energy is independent of the existing Master of Science in Chemical Engineering. Entering students must have completed two-semester courses in general chemistry, general physics, and calculus, in addition to one-semester course in differential equations and thermodynamics, or their equivalents. Students deficient in these academic preparations will be required to take remedial courses *in addition* to the degree requirements described below.

#### Master of Science with Thesis (Plan A)

Students in Plan A must earn a minimum of 30 credit hours, at least 18 of which should be attributed to the 400-level courses identified on page four. The balance of the credit-hour requirement can be satisfied through independent reading (no more than four credit hours) and thesis research (at least six credit hours), culminating in a Master's thesis.

#### Master of Science without Thesis (Plan B)

Students in Plan B must earn a minimum of 32 credit hours of coursework acceptable as graduate credits, at least 18 of which should be attributed to the 400-level courses identified on page four and no more than four through independent reading. Alternatively, students may opt for industrial internship (one credit hour), for which a final essay must be submitted as a part of their degree requirements. In addition to coursework and the essay, all students in Plan B must pass a thirty minute oral exit exam before a committee comprised of at least two, preferably three Chemical Engineering faculty members. A written report is not required. Two weeks prior to the exam, the M.S. candidate will be provided three recently published papers, one of which he or she must choose to evaluate. Students are not allowed to discuss their chosen manuscript with other students or faculty. The exam begins with the candidate presenting a ten minute oral summary and critique of the chosen manuscript. The presentation should consist of projected slides (e.g. PowerPoint). Slides should introduce the chosen manuscript, demonstrate a solid understanding of relevant physical principles, and offer an evaluation / critique of the manuscript. The examination committee members will then ask questions for approximately

twenty minutes to evaluate (i) the student's ability to identify and clearly explain the physical principles upon which the paper is based, (ii) the scientific basis and appropriateness of the student's critique, and (iii) student competency in chemical engineering subjects, particularly those related to completed M.S. coursework.

It is considered important that the total exam time (30 minutes for each student) be rigorously maintained. As a result, students are reminded that it is very important for them to use their time well during both the presentation and question portions of the exam. Students are encouraged to rehearse their presentations and will be stopped after ten minutes.

Following the exam, the committee will recommend to the Director of Graduate Studies that the student pass, pass with contingency, or fail.

#### Possible Outcomes:

- *pass*
- *contingent pass*: either take additional course(s) or write a follow-up document to be reviewed and voted on by the committee
- *failure*: can retake the exam the next time it is offered. Students who fail the exam twice are terminated from the program.

The oral exams will normally be held twice a year, after spring break and after fall break. Exams will normally be held in a single block, with students following each other at half-hour intervals.

#### Coursework Requirements

To fulfill the credit-hour requirements, students should include a minimum of three core competency courses for Plan A, and at least four for Plan B, of which at least one must be selected from ERG 458, 460, 464 and 465. The courses identified below provide core competency in alternative energy, and the balance of the coursework requirement can be satisfied by taking technical electives listed as follows. With prior approval by the Program Director of Graduate Studies, equivalent graduate-level courses will be accepted, and up to two 200 or 300 level courses as long as there is an advanced content, rigor and requirement component to these courses.

### Core Courses Competency in Alternative Energy:

(Minimum of 3 for Plan A, At least 4 for Plan B. At least ONE from highlighted courses for both Plans A and B.)

ERG 441	Advanced Transport Phenomenon
ERG 458	Electrochemical Engineering and Fuel Cells
ERG 460	Solar Cells
ERG 464	Biofuels
ERG 465	Green Chemical Processes
ERG 466	Nuclear Science & Technology I (offered alternate Fall semesters)
ERG 485	Thermodynamics & Statistical Mechanics
ERG 488	Introduction to Energy Systems

### Technical Electives:

ERG 413	Engineering of Soft Matter
ERG 430	Organic Electronics
ERG 454	Interfacial Engineering
ERG 469	Biotechnology and Bioengineering
ERG 486	Polymer Science and Engineering
CHE 400	Applied Boundary Value Problems
CHE 488	Introduction to Energy Systems
CHM 456	Chemical Bonds: From Molecules to Materials
CHM 462	Biological Chemistry
CHM 486	Energy Science Technology and Society
ECE 423	Semiconductor Devices
ME 451	Crystallography & X-Ray Diffraction
ME 453	Introduction to Nuclear Engineering
ME 481	Mechanical Properties of Solids
OPT 407	SEM Practicum
PHY 420	Introduction to Condensed Matter Physics
TEM 492	Solar Energy & System Modeling
ERG 491	Independent Reading (at most 4 credit hours)
ERG 494	Industrial Internship (1 credit hour)
ERG 495	Master's Thesis Research

## 2. MASTER OF SCIENCE DEGREE PROGRAMS

The faculty advisor and the Dean for Graduate Studies must approve all Master of Science programs. The Master of Science degree may be earned with or without writing a thesis; the general requirements for the degree are described in the University of Rochester's Graduate Studies Bulletin, which all students are encouraged to read. Graduate students have the option to complete the MS degree with a **thesis (Plan A)** or coursework-only **non-thesis (Plan B)**. Most part-time students choose the **non-thesis option (Plan B)**. Full time students receiving a stipend must complete a thesis (Plan A) unless the research advisor and the Graduate committee approve the Plan B program.

### REQUIREMENTS: THESIS PROPOSAL FOR MASTER'S FUNDING

### **Proposal Description:**

The thesis proposal serves two primary purposes. First, it is the means by which the funding committee evaluates the merit of the research. The objective of the Master's funding program is to support research experiences for our students wanting to pursue Plan A degrees, while seeding new research directions within the laboratories of departmental faculty. Our department emphasizes original, innovative, high impact research on important applied and scientific problems. The proposal should present your proposed approach to a problem or open question – demonstrating your technical acumen and convincing the committee of the likelihood of its success. Second, the proposal is used to judge your writing abilities. A Plan A Master's degree requires that you conduct original research, and then prepare and defend a dissertation to be read and evaluated by a thesis committee. From UR's *Preparing Your Thesis* manual (<http://www.rochester.edu/Theses/ThesesManual.pdf>), "At the University of Rochester, the doctoral [also master's] thesis is expected to be an original work by the student, formulated in a scholarly manner and with content of a quality consistent with respected publications in your field." This statement is not intended to dissuade you from pursuing a Plan A degree but rather emphasize the importance of strong writing skills required to produce a high quality, defensible thesis.

The thesis proposal should describe the research topic, impress the scientific interest or practical utility of the topic, review the current status in the field and previous results from your advisor's laboratory, and describe your proposed approach to an important question or problem.

### **Proposal Instructions:**

*The proposal must be prepared solely by you. You are encouraged to seek assistance from friends and the UR Writing Center ([writing.rochester.edu](http://writing.rochester.edu)), but the text and ideas must be developed by you independently. Do not copy text from other sources, including materials that your perspective advisor might provide you.*

The written reports should be no more than 1600 words in length (the cover page, figure captions, references, and budget justification are excluded from the word count). The report should contain enough information that an outside reviewer with a technical background but who is not an expert in the field can fully understand and critique it. The formatting and the technical content of the proposal is left to your discretion, but it should be a highly polished document written at a technical level. Feel free to discuss the content of the proposal with your advisor, but some examples and suggestions are provided below:

- *Introduction and Background:* Describe the research topic. Why is it important? What is its technological relevance or what fundamental property/phenomenon do you expect to uncover?
- *Previous work:* What has been achieved? What are recent breakthroughs? What contributions has your advisor's lab made and how is your research distinct?

- *Proposed work*: Thoroughly describe your idea – specifically, what experiments do you intend to do. Justify your proposed approach.
- *Conclusion*: Briefly summarize the main points.
- *References: (required)*
  - Must be cited in the body of the text
  - Should come from high quality, reliable sources - often peer-reviewed publications and/or books
  - A consistent formatting of the references and in-text citations should follow the general practice of your discipline, but the ACS Style Guide is a good starting point: <http://pubs.acs.org/isbn/9780841239999>  
Example: Stark, T.; Potts, P. The Body Weight Distribution of Mutants at Xavier's School for Gifted Youngsters. *Journal of Obscure Data* **2014**, *20*, 200-215.
- *Figures (required)*
  - Should be embedded throughout main body of the text (not listed at the end)
  - At least some should be original figures that you have prepared (not reproduced from references)
  - If you do reproduce a figure, it should be cited appropriately.
- *Appendix, Budget Justification (limited to 1 page)*
  - Maximum allowable budget is \$5000
  - With input from your PI, describe and justify the requested budget.
  - *A table categorizing the various expenses is an effective way to present the budget, but concise justification of each line is required.*
  - Examples of allowed costs: small equipment, chemicals, supplies & consumables, user facility instrument fees, conference registration fees, specialized software, etc.
  - Unallowed costs: salaries, equipment maintenance & service contracts, new computers & office equipment for your advisor's group

Document formatting (do not deviate)

- 8-1/2 x 11" paper
  - 1" margins on all sides
- Font: 11 pt., Times New Roman or Arial. Other fonts are not allowed.

## **Master's Thesis Registration Instructions**

- Plan ahead: Contact Vicki at least 4 weeks prior.

- Thesis must be registered at least 10 full working days prior to defense date.
- All paper work must be completed BEFORE those 10 days.( See #1)
- Program of study must be completed.
- Student must have completed or will have completed 30 hours of study by the anticipated graduation day.
- Student coordinates committee members prior to thesis registration. Committee must consist of the following faculty members:
  - Two full-time (assistant professor or higher) from within ChE°
  - One non-department full-time (assistant professor or higher)
  - If non-department student advisor, need additional committee member from within ChE°
- Student needs to contact Vicki to reserve Gavett 206, 208, or other
- Thesis registration:
  - Examination Appointment Form must be completed
  - One bound copy of the thesis must be registered with the Graduate Students Office (218 Lattimore) at least 10 working days prior to defense date along with Examination Appointment Form.
- Student need to provide and deliver a copy of their thesis to each committee member. This is done the same day the thesis is registered
- Student need to provide Vicki with the abstract of their thesis. This is done the same day the thesis is registered

**NOTE:** You may obtain a copy of the UR Theses Manual online:  
<http://www.rochester.edu/college/gradstudies/masters-defense/index.html>

**After your defense and any corrections are made to the thesis, two final unbound copies are delivered to Grad Studies. One unbound copy and one on CD are provided to Vicki**  
<http://www.rochester.edu/college/gradstudies/current/>

UNIVERSITY OF ROCHESTER  
 ARTS, SCIENCES AND ENGINEERING

Version Original

PROGRAM OF STUDY FOR THE MASTER'S DEGREE

Name Student, Alternative Energy EXAMPLE URID -----

Program ERG (Alternative Energy) Your DEPARTMENT is Chemical Engineering Date -----

Degree MS Plan Plan B

Get this fillable form at: [https://www.rochester.edu/asei/get\\_file.php?id=2302](https://www.rochester.edu/asei/get_file.php?id=2302)

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.

<u>Subject/ Course #</u>	<u>Grade (if completed)</u>	<u>Descriptive Title</u>	<u>Credit Hours</u>
ERG 441	_____	ADV TRANSPORT PHENOMENON	4.0
ERG 458	_____	ELECTROCHEM&ENGG & FUEL CELL	2.0
ERG 460	_____	SOLAR CELLS	4.0
ERG 482	_____	PROC MICROELECTRONIC DEVICES	2.0
ERG 488	_____	INTRO TO ENERGY SYSTEMS	4.0
ERG 485	_____	THERMODYNAMICS & STATISTICAL MECHANICS	4.0
ERG 491	_____	INDEPENDENT READING	4.0
ECE 427	_____	ELECTRIC POWER: CONV, TRAN, CON	4.0
TEM 492	_____	ENERGY SYSTEMS ECONOMICS AND MODELING	4.0
_____	_____	_____	32.0
ERG 496	_____	RESEARCH SEMINAR (EVERY SEMESTER)	0.0
ERG 497	_____	TEACHING ALTERNATIVE ENERGY (ONLY THE SEMESTER YOU ARE DOING THIS)	0.0
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Total Hours (the total should not equal less than 30 credit hours)			<u>32.0</u>

Remarks

Get Faculty Advisor's signature and give to Vicki. If this POS changes, please revise and note revision in top right corner.

APPROVED, Faculty Advisor \_\_\_\_\_ Date \_\_\_\_\_

APPROVED, Dean of Graduate Studies \_\_\_\_\_ Date \_\_\_\_\_

DISTRIBUTION:  
 GSO Student File and Department

Rev 02/14

### **3. PROGRAM OF STUDY**

A faculty advisor will generally be named for each student by the end of the first semester. The advisor assists the student in developing a complete program of study for the anticipated degree. Each program and all subsequent changes must be approved by the student's advisor and the associate dean for graduate studies. Students who take courses without the approval of the advisor and the associate dean, or without registering for them, may not receive credit toward their degree requirements.

Master's degree programs must be filed no later than the date specified by the college.

### **4. RESEARCH SEMINAR REQUIREMENT**

All students are required to register for the Chemical Engineering Departmental Seminar Series (CHE 496), unless they are in-absentia. The department chairperson should be indicated as the instructor for the course with zero credit hours. Grading for this course is based on attendance. Attendance at all the seminars is expected. Students may miss one seminar per semester and still receive a grade of "A". Each additional seminar missed will lower the grade by one letter. The dates and times of the seminars are posted on the departmental web page and announced via e-mail.

### **5. TA REQUIREMENT**

All graduate students are required to TA. TAs need to register for ERG 497 "Teaching Alternative Energy" with zero credits. Satisfactory performance is expected in each TA assignment, as will be acknowledged on the academic transcript

### **6. EVALUATION: RESEARCH PROGRESS REVIEW (RPR)**

In order to evaluate student's research performance, all students pursuing a M.S. Plan A degree are required to submit the Research Progress Review (RPR) at the conclusion of every semester (Fall and Spring). At the same time, faculty advisors will inform the graduate studies committee of student's research progress and include recommendations for the following semester. After all forms have been submitted to the Graduate Program Coordinator, the graduate committee will review students' academic records and research accomplishments within the concluding semester. A full report will be submitted to the Graduate Studies Office.

### **MS Degree Maximum Time of Completion\***

A candidate must complete all the requirements for the master's degree within **five years** from the time of initial registration for graduate study, and must maintain continuous enrollment for each term after matriculation. Students who for good reason have been unable to complete a program within five years may, upon recommendation by the faculty advisor and department chair, petition the associate dean for an extension of time. Such extension, if granted, will be of limited duration.

\* All categories including "Leave of Absence" count towards the time limit

## **RESPONSIBILITIES OF TEACHING ASSISTANTS**

### **SUPERVISED COLLEGE TEACHING**

As part of educational experience, all students are expected to provide undergraduate teaching assistance during their program of study. Students must register for ERG 497 "Teaching Alternative Energy".

#### **Expectations and Responsibilities of TAs:**

1. TAs should be polite, courteous, and respectful to all students.
2. TAs should have 2 hours/week of office hours, at a time that is convenient for the students in the course.
3. TAs are *not* expected to be available to answer students' questions outside of office hours.
4. Students in courses are expected to observe the above restrictions on office hours.
5. TAs should be prepared to answer questions on the material being presented in class.
6. TAs share in the grading of homework and examinations.
7. TAs should grade and return homework assignments within a week after the due date of the assignments.
8. The department, if requested, will provide each graduate student with the opportunity to make classroom presentations.
9. TAs should register for ERG 497 "Teaching Alternative Energy" for zero credit. Satisfactory performance is expected in each TA assignment, as will be acknowledged on the academic transcript.

**GRADUATE STUDENT RESIDENCY, VACATIONS,  
AND LEAVE OF ABSENCE**  
(Approved 8/29/01)

General Guidelines and Principles

Graduate students are expected to be in residence the entire calendar year. Students must recognize that the periods when classes are not in session are the ideal times to devote to research and should plan to spend as much of that time as possible in productive research.

The need to take reasonable time off for vacation and time away from the academic program is recognized. However, graduate students should expect to take off no more than 10 working days per year. Such periods should be carefully arranged far in advance with the research advisor, a full semester or six months in advance is not too early. Graduate students need to be cognizant of all possible deadlines for manuscripts, abstracts, proposals, grant reports, and academic requirements such as TA assignments and the qualifying exam so that any vacation time does not adversely affect fulfilling these obligations.

If it becomes absolutely necessary for students to take leaves of absence for any time longer than a normal vacation period, they should not expect their stipends to continue while they are away. Such leaves must be approved, far in advance, by the student's research advisor and should be considered a special privilege that is not generally available.

This policy is not intended to change the academic environment that we have into a workplace. Students and faculty alike should spend as much time as they can on their academic pursuits because it is enjoyable, not because they are compelled to do so. In keeping with the academic environment, necessary flexibility in this policy may be exercised, consistent with meeting the deadlines of assignments and research results. Each faculty member may choose to enforce this policy in his research group in a way that works best for him and his students. Any variations are at the option of the faculty advisor, and students should not expect that all variations will be generally available.

Vacation Approval Form

The research advisor and the department chair make final decisions regarding when and how long students may take time off from their research. Many factors affect such decisions. The research calendar has many deadlines that must be met: proposal submissions, abstracts for presentations at technical meetings, final reports to funding agencies, etc. All these activities are the joint responsibility of the research advisor and the students in the research lab. In addition, the academic calendar imposes special constraints. For example, graduate students in their first year of residency (and in some cases beyond the first year) have an obligation to support the teaching function of the department through service as a teaching assistant. Thus, every graduate student in this situation must schedule time off when it will not conflict with these TA responsibilities.

**UNIVERSITY OF ROCHESTER**  
**Department of Chemical Engineering**

**APPLICATION FOR EXTENDED VACATION**

Full-time graduate students are expected to discuss any vacation plans with their research supervisor. In addition, vacation days cannot be taken when they will conflict with a student's responsibilities as a teaching and research assistant.

Full-time graduate students who plan to be away from the department for five or more consecutive days must fill out this form and obtain approvals *in advance*, in accordance with the schedule presented below.

For vacation periods of *five to nine days* (excluding weekends but including holidays), this application form must be completed at least *one month* in advance of departure.

For vacation periods of *ten or more days*, this application must be completed at least *two months* in advance of departure.

**Failure to comply with these deadlines may result in the loss of vacation privileges as well as the loss of stipend for the period of absence.**

Student Name: \_\_\_\_\_

Vacation period: \_\_\_\_\_

Date of return to assume full time responsibility: \_\_\_\_\_

Thesis Advisor: \_\_\_\_\_

Date: \_\_\_\_\_

Department Chair: \_\_\_\_\_

Date: \_\_\_\_\_

## **Occupational Safety Unit Safety Training for Research Laboratory Personnel**

### OSHA Required Training

**To assure compliance with federal and state regulations, those working in labs or supervising lab personnel must complete EH&S laboratory safety training annually.** Is your lab safety training current? You can now check your individual training history through the HRMS PeopleSoft site - [HRMS Sign-in](#). Once you log in using your netid and password, select the "Self Service" option from the main menu, then select "Learning and Development" and "Training Summary". You'll see a list of the various training courses you have completed at the University.

EH&S Lab Safety Training sessions include topics to comply with the following regulations:

- OSHA (Occupational Safety and Health Administration) compliance training for the standards:
  - Bloodborne Pathogens
  - Fire Safety
  - Formaldehyde Standard
  - Gas Cylinder Safety
  - Laboratory Standard
  - Personal Protective Equipment
- EPA (Environmental Protection Agency) issues for minimizing waste and disposal of regulated medical waste and hazardous waste
- General biosafety information including CDC (Centers for Disease Control and Prevention), New York State Department of Health, and Department of Environmental Conservation issues

**Departments can schedule a live 3-hour session for their department provided a minimum of 20 people are scheduled for attendance. This can be scheduled by calling EH&S at x5-3241.**

Computer-based Laboratory Safety Training, through the Blackboard system, is available for staff who are unable to attend a "live" session. Non-UR employees, non-UR students and volunteers may complete their lab safety training using the same Blackboard system, but must register for a "basic account" first. (Go to [https://www.urmc.rochester.edu/libraries/miner/teaching\\_and\\_learning/blackboard/forms/create\\_user.cfm](https://www.urmc.rochester.edu/libraries/miner/teaching_and_learning/blackboard/forms/create_user.cfm).)

Instructions on how to self-enroll in the course are available - [Self-enroll in Lab Safety Training](#). The safety training has been customized for the various University lab staff:

- **Clinical Lab Personnel** - training program designed only for those who process human specimens.

- **Phlebotomists and Clinical Study Coordinators** - training program designed only for those who draw blood or coordinate clinical studies
- **Research Lab Personnel** - Laboratory Safety Training is now available through Blackboard.

All individuals within a particular lab must complete the same training program. Select the program based on the activities in the lab - **You need to complete only one of the four options below. If you are not sure which one to take, the Biologicals/Chemicals/Animals covers the most information.**

- **Biologicals/Chemicals/Animals** - training program designed for those staff working with chemicals, recombinant DNA, human specimens, or infectious agents
- **Biologicals/Chemicals** - training program designed for those for those staff working with chemicals and recombinant DNA, human specimens or infectious agents but **NO** animals
- **Chemical/Animals** - training program designed for those staff working with chemicals and animals
- **Chemicals** - training program designed for those staff working with chemicals only and miscellaneous physical hazards are present

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QUESTIONS or COMMENTS?

Contact EH&S at (585) 275-3241 or e-mail [EH&S Questions](#).

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## Academic Honesty Policy

<http://www.rochester.edu/College/honesty/graduates.html>

### Information for New Graduate Students

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Graduate studies at the University of Rochester are decentralized and focused within individual Departments and Programs. These units are the most important sources of advice and information about programs and policies, and you should contact them directly about any specific issues.

In addition, you should read the current official Graduate Bulletin, paying particular attention to those sections governing your specific degree program and the section "Regulations and University Policies Regarding Graduate Study."

Several items of general importance are discussed below. Additionally, the Council of Graduate Schools Resolution Regarding Graduate Scholars, Fellows, Trainees and Assistants can be downloaded here.

#### **CREDENTIALS**

Each entering student must eventually provide all documents requested in the application form (even when an offer is made prior to receipt of all such documents). These include transcripts and three letters of recommendation. Graduate admission is, in addition, contingent upon completion of the requirements for a Bachelor's degree, or equivalent, unless an exception is explicitly noted in the letter of appointment.

The following materials were not requested with the application, but must be received:

- Supplementary or final transcript, including certification of the completion of any degrees  
(By the end of the Fall semester, or a hold may be placed on your ability to register for Spring 16)
- Health History Form

New York State Public Health Law #2165 requires that all full-time and part-time students enrolled for at least six credit hours per semester (or 4 quarter hours per quarter), born on or after January 1, 1957, attending a college or university in New York State, must provide evidence of immunity to Measles, Mumps, and Rubella. The law also mandates that full time students indicate receipt of information about Meningococcal disease and the availability of a vaccination for students. Students from countries where tuberculosis is endemic must be screened for TB using a PPD test. The University of Rochester also requires a tetanus vaccination, preferably containing Pertussis. Students not in compliance with the immunization requirements will be withdrawn from school and required to leave campus. All of this information is included in the Health History Form packet that you will receive after accepting admission to the University. Further information about the immunization requirements is on the University Health Service website in the Student Services section.

The Immigration Reform and Control Act of 1986 requires all students receiving assistantships from the University to submit proof of their employment eligibility. Failure to complete an Employment Eligibility Verification (Form I-9) will result in termination of an assistantship.

Documents that establish both identity and employment eligibility are (a) a US passport, (b) a certificate of US citizenship, (c) a certificate of naturalization, (d) an unexpired foreign passport with attached employment authorization or (e) an alien registration card with photograph.

OR

You can prove your identity by providing a US Military Card, a state-issued driver's license, or a state-issued ID card with a photograph that includes your name, sex, date of birth, height, weight, and color of eyes. You can establish employment eligibility by producing either an original Social Security number card (other than a card stating it is not valid for employment), a birth certificate issued by a state, country, or municipal authority bearing a seal or other certification, or by an unexpired USCIS Employment Authorization.

The Employment Verification forms (Form I-9) will be available in your Department/Program office. A departmental representative will be happy to certify it for you.

## **ORIENTATION**

Arts, Sciences and Engineering will be having an orientation in late August. All new students are required to attend.

## **REGISTRATION**

Classes begin Wednesday, August 31, 2016. First-year graduate students should plan to arrive on campus at least one week before the first day of classes (especially if you are looking for housing) to allow time for consultation with departmental advisers, course selection and registration. Registration must be completed within two weeks from the first day of classes or a late registration fee will be charged.

All students holding teaching or research assistantships must register for at least nine credit hours (but not more than twelve credit hours) in order to be considered full-time. Students not holding assistantships must register for at least twelve credit hours (but not more than sixteen credit hours) in order to maintain full-time status; this also includes holders of Fellowships and Traineeships who are not teaching or department assistants.

## **DROPPED COURSES**

A regular semester course may be dropped at any time through the sixth week of classes, provided the student obtains the approval of his or her faculty advisor and the instructor(s), notifies the graduate registrar on the proper drop/add form, and the change does not alter the student's time status. No record of such actions appears on the official transcript.

Following the start of the seventh week of classes, a drop notification (or a change from credit to audit) sent to the graduate registrar must bear the signatures of the faculty advisor, course instructor(s), and associate dean of graduate studies. Such late drops will be recorded on the official transcript and identified by the grade W. At the option of the course instructor, a grade of E may also be attached.

In exceptional circumstances, the associate dean of graduate studies will review the circumstances as initiated by an appropriate written petition.

Dropping credit hours after the seventh week of a semester or retroactive after the conclusion of the semester is not permitted if the change affects the student's time status (full-time status changes to part-time status) for that particular semester. No academic credit is granted for courses in progress at the time a student withdraws from the University, except by explicit approval of the associate dean acting upon a written petition

## ENGLISH LANGUAGE TESTING

Strong English language skills are vital to your success in the program and to your future career. If you have any doubt about your English abilities, you are strongly encouraged to take additional training in English. All incoming graduate students whose first language is not English and who will be teaching assistants in the coming year are required to be tested for their English proficiency. Individual oral testing with a language specialist will be held in late August. Students will sign up for a 15 minute timeframe for the testing. Students must ensure that they are on campus and available for the testing. If you are delayed due to visa issues, you will be contacted regarding a reschedule.

Students whose language skills are judged to not be satisfactory will be required to take an English as a Second Language course designed specifically for International Graduate Students (at a cost of \$625). This course emphasizes the acquisition of English cultural and linguistic skills needed for clear communication in the university and career environments. Primary areas covered will be accent reduction, pragmatics (culture's role in language), nonverbal communication, public speaking, and academic and business writing.

## IMMIGRATION DOCUMENTS

International students who require immigration sponsorships as an F-1 or J-1 student should return the New Student Request for an I-20/DS-2019 form to their Department/Program as soon as possible after the offer of admission has been accepted. Supporting documents may also be required, including a passport copy and proof of financial support, if needed. This form and detailed instructions can be found on the International Services Office (ISO) website. The ISO is unable to issue necessary immigration documents without complete and accurate information.

## APPOINTMENTS AND AWARDS

The University of Rochester, as a member of the Council of Graduate Schools in the United States, subscribes to the Resolution Regarding Graduate Scholars, Fellows, Trainees, and Assistants. In accordance with that Resolution, "when a student accepts an offer before April 15 and subsequently desires to withdraw, the student must submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made."

The continuity of all appointments and awards, and the eligibility for reappointment, require that the student make satisfactory academic progress. Any award can be terminated, at any time, if the academic work is regarded as unsatisfactory.

## **EXTERNAL WORK POLICY**

Full-time students holding fellowships, assistantships, or scholarships may not accept other full-time employment.

## **FINANCIAL AID**

Merit-based awards are provided by the academic department during the admission process, while federal and private loan funding can be obtained through the Financial Aid Office. Graduate students may borrow up to a maximum of \$20,500 per academic year through the Federal Direct unsubsidized loan program. The actual amount a student is eligible to borrow cannot exceed the University of Rochester's cost of attendance minus any other assistance received, including merit-based awards and tuition waivers provided by employers.

The application required for federal student loans is the Free Application for Federal Student Aid (FAFSA), available at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). Students who have completed their application materials will be reviewed for aid eligibility. Eligibility is determined based upon planned enrollment.

Please contact the Financial Aid Office at (800) 881-8234 or visit the website at <http://enrollment.rochester.edu/financial/> for additional details on loans and contact information for staff members.

## **SUPERVISED TEACHING**

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 amount and nature of the teaching varies according to Departments and Programs. This requirement is independent of whether the student is receiving a fellowship, scholarship, or assistantship, although teaching assistants will, by virtue of their assignments, automatically fulfill this requirement.

## **TA TRAINING**

There will be an all-day TA training workshop in late August. This workshop is open to all first-time teaching assistants. Please check with your specific program to see if attendance at this workshop is mandatory and, if so, plan your arrival on campus accordingly.

## STUDENT HEALTH PROGRAM

<http://www.rochester.edu/uhs/>

The Student Health Program for full-time students has two parts:

### Mandatory Health Fee

(1) The mandatory health fee, which is paid by all full-time students through their tuition billing statement, covers the cost of visits with physicians, nurse practitioners, and registered nurses at the University Health Service (UHS), short-term psychotherapy at the University Counseling Center (UCC), health education services, and public health/disease prevention programs. The cost of the mandatory health fee is \$264 per semester for 2015-2016. Each year the fees are posted on the UHS website.

### Health Insurance

(2) In addition to the mandatory health fee, all full-time students must have health insurance. Students can enroll in the University-sponsored health insurance plan offered through the University Health Service or remain on their own health insurance.

**Each year, all full-time students must complete the online Health Insurance Enrollment/Waiver Process before the start of classes to indicate their health insurance coverage.** The link to this online process is in the pink Quick Links box on the UHS website. Health insurance generally covers the cost of services such as hospitalization, surgical procedures, and diagnostic laboratory tests and x-rays; the mandatory health fee does not cover these services. The benefits covered by health insurance will vary depending on the student's insurance plan.

The cost of the single health insurance offered through the University Health Service is \$2,460 per year for 2015-2016. Students who choose to remain on their own insurance plan can waive this portion of the fee if their insurance plan meets University standards. (The health insurance fee increase is usually within 10% each year.)

**Insurance Options for Married Students:** Due to the high cost of health care, it is recommended that students have health insurance coverage for their families who are with them in Rochester. Students who enroll in the University-sponsored insurance can also enroll their spouse and dependent children. Spouses who enroll in the insurance plan must also pay the mandatory health fee, which covers their visits to the University Health Service and the University Counseling Center.

All non-immigrant international students and their families who are in the United States with them must comply with immigration requirements and University policies governing health insurance.

Further information about the University Health Service and health insurance for students is available on the University Health Service website. <http://www.rochester.edu/uhs/>



**UNIVERSITY of ROCHESTER**

Office of the Bursar

**2016-2017 SCHEDULE OF CHARGES for GRADUATE STUDIES**

<b>SCHOOL OR COLLEGE ①</b>	<b>TUITION RATE</b>
Arts & Sciences	
Matriculated	\$1,538.00 / credit hour
Non-matriculated	\$868.00 / credit hour
Engineering and Applied Sciences	\$1,538.00 / credit hour
Technical Entrepreneurship & Management	\$1,800.00 / credit hour
Warner Graduate School of Education	\$1,390.00 / credit hour
School of Medicine and Dentistry	\$1,538.00 / credit hour
School of Nursing	\$1,400.00 / credit hour
 <b>AUDIT FEES</b>	
Arts & Science, Education, Engineering, Technical Entrepreneurship & Management and School of Medicine & Dentistry	\$176.00 / credit hour
 <b>REGISTRATION FEES</b>	
895 Continuation of Masters Enrollment (no health fees charged)	\$1,070.00 / semester
899 Masters Dissertation	\$1,070.00 / semester
985 Leave of Absence	\$60.00 / semester
995 Continuation of Doctoral Enrollment (no health fees charged)	\$1,070.00 / semester
999 Doctoral Dissertation	\$1,070.00 / semester
Late Registration Fee	\$160.00 / semester
 <b>OTHER FEES</b>	
Activity Fee: Arts & Science, Engineering & Nursing	\$10.00 / semester
Program Fee: Technical Entrepreneurship & Management	\$250.00 / semester
Part-time Student Health Record Processing Fee	\$30.00
International Student Fee ②	\$25.00 / semester
 <b>HEALTH AND INSURANCE FEES</b>	
Mandatory Health Fee	All full-time students Per semester \$282.00
Health Insurance ③	Fall semester \$1,230.00
	Spring semester \$1,230.00
	Child Per year \$2,460.00
	Two+ Children Per year \$4,920.00

① Separate schedules are available for the Eastman School of Music, the School of Nursing and the Simon Business School.

② F or J Visa type.

③ The fall semester cost represents coverage for August - January; the spring semester cost represents coverage for February - July.

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4/6/2016