

GRADUATE STUDENT HANDBOOK

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INTRODUCTION

The Department of Resource Economics offers programs of study toward the Master of Science Degree and the Doctor of Philosophy Degree. Major fields of study are (1) Natural Resource and Environmental Economics, (2) Industrial Organization of the Food System, and (3) Applied Econometrics. A strong foundation in economic theory and quantitative methods is emphasized for all students.

This handbook supplements general information and regulations presented in the Graduate School Bulletin and Graduate School Handbook. In case of conflict, Graduate School regulations take precedence over departmental policies. Departmental policies are proposed to the Graduate Faculty by the Graduate Studies Committee, and administered by the Graduate Program Director. The Graduate Program Director must approve any exceptions to normal Departmental requirements.

The Graduate Studies Committee is composed of three faculty members, including the Graduate Program Director, and one graduate student member. In accordance with University policy, all personnel actions, including admissions, evaluations of satisfactory progress, and recommendations for assistantships, are made by the faculty members only.

Each entering graduate student is assigned an academic advisor from among the faculty members of the Graduate Studies Committee. The Advisor is responsible for ensuring that courses submitted toward the M.S. or Ph.D. degree constitute a coherent program and satisfy degree requirements. The Graduate Program Director is responsible for appointing committees to administer all qualifying and comprehensive examinations, and for submitting the names of Thesis and Dissertation Committee members for approval by the Dean of the Graduate School.

MASTER OF SCIENCE DEGREE

► Entrance Requirements

Entering students are expected to have undergraduate training in economic theory and quantitative methods. Successful completion of first year courses requires a working knowledge of Intermediate Microeconomic Theory, Multivariate Calculus, Matrix Algebra, and Introductory Statistics. Any deficiencies in these areas must be remediated by taking the appropriate course work, which is not counted toward advanced degree credit requirements. Failure to take remedial course work is linked to less than satisfactory progress in the first semester and can lead to dismissal from the program. Students are encouraged to complete additional coursework in Econometrics, Mathematical Statistics, Calculus, and Linear Algebra to better prepare themselves for graduate work. Before the start of the first semester, students are required to attend a two-week Summer Math Class.

Students are normally admitted to regular Degree Status, but some may be required to enroll on Provisional Status for a maximum of 12 credits. At the end of this provisional period both the Department and the Graduate School evaluate the student's performance; at that time, either the student is admitted to Degree Status or enrollment is ended.

The Master of Science Degree offered by the Department features field essay and thesis options. All MS students are admitted under the field essay option. A student may choose the thesis option only if sponsored by a faculty member and approved by the Graduate Studies Committee. The Graduate Studies Committee will evaluate the request on the basis of course and job performance, research aptitude, and availability of funding. A student interested in writing a thesis should apply for the thesis option by April 1 of the first year (see further information under Degree Requirements with Thesis below).

► Degree Requirements with Field Essay:

Requirements for the M.S. Degree with Field Essay are as follows:

1. **Complete a minimum of 28 course credits.** All 28 required course credits must be taken on a letter-graded basis. The research field essay will carry 3 additional credits. Specific course requirements are as follows:

Microeconomic Theory	- RES EC 711 and 712
Quantitative Methods	- ECON 751, RES EC 701 and 702
Major Field (Select one)	- RES EC 703, Applied Econometrics RES EC 720, Natural Resource and Environmental Economics RES EC 732, Industrial Organization of the Food System
Seminar	- RES EC 791Y (two-semester long, 1 credit)
Electives	- 9 credits

Electives Recommendations: Students should carefully plan their electives to complement their major fields and to provide breadth of knowledge. Although not required for MS students not specializing in applied econometrics, RES EC 703, Topics in Advanced Econometrics, is strongly recommended for all students. Students should consult with their academic advisor and the Graduate Program Director on their choice of electives.¹ Graduate courses in other departments, such as Economics, Mathematics and Statistics, Political Science, Natural Resources Conservation, and the Isenberg School of Management, may also be chosen but only with the approval of the Graduate Program Director.

2. **Complete a Research Field Essay of 3 credits** (RES EC 698) under the supervision of a member of the Graduate Faculty. The essay is usually a detailed literature review relevant to a particular problem area but may involve other work. Some limited data analysis may also be required. The essay must be approved by the Graduate Program Director by the end of the Fall semester of the second year. The department requires an electronic version of the field essay for the department's electronic library. It is expected as a matter of courtesy that an electronic file will also be provided to the Chair of the field essay.
3. **Submit to the Department:**
 Electronic version of the field essay
 Resource Economics Exit Survey
 (Note: Both of these items are required for signature of the Degree Eligibility Form by the Graduate Program Director)
4. **Submit to the Graduate School:**
 Degree Eligibility Form²

► **3-Semester Course Sequence**

Required and recommended courses for the M.S. Degree with Field Essay are as follows:

Fall (1st Semester)		Spring (2nd Semester)	
RES EC 701	Quantitative Methods	RES EC 702	Econometric Methods
RES EC 711	Applied Microeconomic Theory I	RES EC 712	Applied Microeconomic Theory II
ECON 751	Mathematical Methods for Economics	_____	Major field course or elective
RES EC 791Y	Seminar (1 credit for year)	RES EC 791Y	Seminar

Fall (3rd Semester)	
RES EC 703	Topics in Advanced Econometrics
_____	Major field course or elective
_____	Major field course or elective
RES EC 698	Research Field Essay (3 credits)

¹ Students may request to be reassigned to another advisor if their research interests change during the course of their studies.

² Available here: <http://www.umass.edu/gradschool/policies-forms/forms-graduate-students>

► Satisfactory Progress

The following guidelines define satisfactory progress for students in the M.S. Program with field essay.

FIRST YEAR

- January Serve as a research assistant.³ Review first semester performance with academic advisor to discuss any problem areas and possible remedies. Discuss course choices. Begin assessing potential field essay topics.
- April 1 Obtain a faculty sponsor to serve as Field Essay Advisor. Report your advisor, topic, topic abstract, and summer work plan to the Graduate Program Director using the form **M.S. Field Essay Research Plan for Summer 20xx distributed to you in RES EC 791Y**.
- April/May Meet with faculty supervisor to further develop field essay topic and outline of summer work.
- July 1 Submit a progress report to the Graduate Program Director.

SECOND YEAR

- September Students are required to present the work they have done on their field essays during the Graduate Student Conference which takes place the first Friday of classes each year. Additionally, students must review course requirements and choices with Graduate Program Director. If not finished, work should continue on the field essay to ensure completion by December.
- December Obtain approval of the field essay by the faculty supervisor and Graduate Program Director. Submit an electronic file of the field essay to the department.

In addition to ongoing assessment, the Graduate Studies Committee conducts reviews of M.S. students' progress after each semester and each summer. These reviews assess course grades and progress. In addition, teaching or research assistantship performance is evaluated.

In evaluating satisfactory progress, no arbitrary standards are imposed, but failure to maintain a cumulative grade point average of at least 3.0 will result in the Graduate Studies Committee determining that a student is not making satisfactory progress. Students who are not making satisfactory progress will be notified in writing. They are subject to loss of funding or dismissal from the program.

³ Employment during the January intersession is required. See p. 16 for an explanation.

► Degree Requirements with Thesis

Requirements for the M.S. Degree with Thesis are as follows:

1. **Complete a minimum of 25 course credits**; the thesis will carry 6 additional credits. All 25 required course credits must be taken on a letter-graded basis. Specific course requirements are as follows:

Microeconomic Theory	- RES EC 711 and 712
Quantitative Methods	- ECON 751, RES EC 701 and 702
Major Field (Select one)	- RES EC 703, Applied Econometrics RES EC 720, Natural Resource and Environmental Economics RES EC 732, Industrial Organization of the Food System
Seminar	- RES EC 791Y (two-semester long, 1 credit)
Electives	- 6 credits

Electives Recommendations: Students should carefully plan their electives to complement their major fields and to provide breadth of knowledge. Although not required for MS students not specializing in applied econometrics, RES EC 703, Topics in Advanced Econometrics, is strongly recommended for all students. Students should consult with the Graduate Program Director academic advisor on their choice of electives. Graduate courses in other departments, such as Economics, Mathematics and Statistics, Political Science, Natural Resources Conservation, and the School of Management, may also be chosen but only with the approval of the Graduate Program Director.

2. Apply to enter Thesis Option by April 1. (See details under Satisfactory Progress below.)
3. **Select a Thesis Committee, prepare a thesis proposal, and write a 6-credit thesis.** The Thesis Committee is made up of at least two graduate faculty members; the Chair must be a member of the Department. Students must register for 6 credits of RES EC 699.

University requirements stipulate that the thesis proposal approved and signed by all members of the Thesis Committee and by the Graduate Program Director, be submitted to the Graduate School at least four months before the Thesis Defense. **However, the Department requires that the thesis proposal be submitted by August 31 of the first year.**⁴ The proposal must contain an introduction and justification for the research, a review of the relevant literature, a list and discussion of the research objectives, and a thesis outline.

Responsibility for preparing the thesis and making copies rests with the student. The style must conform to the Graduate School's Guidelines for Master's Theses and Doctoral Dissertations.⁵ The original and one copy of the thesis (or the electronic file with two original signature pages) must be submitted to the Graduate School. The Department

⁴ The Graduate Studies Committee considers this an important deadline. The purpose of the requirement is to ensure that students make satisfactory progress on their theses. A student may apply for an extension by submitting: (1) a summary of thesis research completed during the summer, (2) an outline of the thesis including title, objectives and methods, and (3) written approval of the thesis advisor. However, the thesis proposal must be approved before the student registers for ResEc 699 (Master's Thesis).

⁵ http://www.umass.edu/gradschool/sites/default/files/thesis_and_dissertation_guidelines.pdf

requires an electronic version of the thesis for the department's electronic library. It is expected as a matter of courtesy that an electronic copy will also be provided to the Chair of the Thesis Committee.

4. **Pass an oral thesis examination** (usually referred to as the Thesis Defense) administered by the Thesis Committee. Presentation of a departmental seminar on the research is a part of the Thesis Defense. The defense must be scheduled (with the Graduate Administrative Assistant) at least 10 days prior to the presentation.
5. **Submit to the Department:**
 Electronic version of the thesis
 Resource Economics Exit Survey
 (Note: Both of these items are required for signature of the Degree Eligibility Form by the Graduate Program Director)
6. **Submit to the Graduate School:⁶**
 Thesis electronically submitted through ScholarWorks
 One signature page on acid free paper with original signatures
 Degree Eligibility Form

► 4-Semester Course Sequence

Required and recommended courses for the M.S. Degree with Thesis are as follows:

Fall (1st Semester)		Spring (2nd Semester)	
RES EC 701	Quantitative Methods	RES EC 702	Econometric Methods
RES EC 711	Applied Microeconomic Theory I	RES EC 712	Applied Microeconomic Theory II
ECON 751	Mathematical Methods for Economics	_____	Major Field Course or Elective
RES EC 791Y	Seminar (1 credit for year)	RES EC 791Y	Seminar)
Fall (3rd Semester)		Spring (4th Semester)	
RES EC 703	Topics in Adv. Econometrics	RES EC 699	Master's Thesis (3 credits)
_____	Major Field Course or Elective		
RES EC 699	Master's Thesis (3 credits)		

⁶ For forms deadlines, and a checklist, see this webpage: <http://www.umass.edu/gradschool/policies-forms/forms-graduate-students>.

► **Satisfactory Progress**

The following guidelines define satisfactory progress for students in the M.S. Program with thesis. Exceptions may occur, but students adhering to these guidelines are likely to finish the M.S. Program with thesis within two academic years.

FIRST YEAR

- January Serve as a research assistant.⁷ Review first semester performance with academic advisor to discuss any problem areas and possible remedies. Discuss course choices. Assess thesis research opportunities early in Spring semester. RES EC 791Y will provide an introduction to research methods.
- April 1 Obtain a faculty sponsor to serve as Thesis Advisor and apply to the Graduate Studies Committee to enter the Thesis Option. This application is made to the Graduate Program Director through submitting the form **M.S. Thesis Research Plan for Summer 20xx** distributed to you in RES EC 791Y. As part of this form, report your advisor, topic, topic abstract, funding source (is there a grant that will fund your research?), and summer work plan. The Graduate Program Director will notify you whether you are approved for the Thesis Option by May 15.
- April/May Meet with Thesis Advisor to further develop thesis topic and outline of summer work.
- July 1 Submit a progress report to the Graduate Program Director.
- August 31 Submit Thesis Proposal to the Graduate Program Director and the Graduate School. The Thesis Committee will be formally appointed at this time with a memo from the Graduate Program Director to the Graduate School. Completion of the thesis proposal by this date is required to demonstrate satisfactory progress on thesis research.

SECOND YEAR

- September Students are required to present the work they have done on their field essays during the Graduate Student Conference which takes place the first Friday of classes each year. Additionally, students must review course requirements and choices with Graduate Program Director. If not finished, work should continue on the field essay to ensure completion by December.
- April-May Finish writing thesis and present seminar/defense.

In addition to ongoing assessment, the Graduate Studies Committee conducts reviews of M.S. students' progress after each semester and each summer. These reviews assess

⁷ Employment during the January intersession is required. See p. 16 for an explanation.

course grades and progress. In addition teaching or research assistantship performance is evaluated.

In evaluating satisfactory progress, no arbitrary standards are imposed, but failure to maintain a cumulative grade point average of at least 3.0 will result in the Graduate Studies Committee determining that a student is not making satisfactory progress. Students who are not making satisfactory progress will be notified in writing. They are subject to loss of funding or dismissal from the program.

DOCTOR OF PHILOSOPHY DEGREE

► Entrance Requirements

Entering students are expected to have strong undergraduate training in economic theory and quantitative methods. At a minimum, applicants are expected to have completed coursework in Intermediate Microeconomic Theory, Intermediate Macroeconomic Theory, at least one year of Calculus, and Introductory Statistics with high grades. Any deficiencies in these areas must be remediated by taking the appropriate course work, which is not counted toward advanced degree credit requirements. Failure to take remedial course work is linked to less than satisfactory progress in the first semester and can lead to dismissal from the program. The admissions committee looks favorably on applicants with additional training in Econometrics, Linear Algebra, and Mathematical Statistics. Before the start of the first semester, students are required to attend a two-week Summer Math Class.

Although it is not a requirement, many students entering at the Ph.D. level will already have a Master's degree in Agricultural Economics, Resource Economics, or Economics. Ph.D. applicants without Master's degrees are sometimes admitted to our M.S. program, and then encouraged to re-apply to the Ph.D. program after one semester to one year. This is done to help ensure successful completion of the Doctoral program by students without graduate experience. This process does not usually require additional time to complete the Ph.D.

► Degree Requirements

Requirements for the Ph.D. are as follows:

1. **Complete a plan of study approved by the Graduate Program Director.** A minimum of 45 course credits beyond the B.S. or B.A. degree, plus 18 credits of dissertation research is required.

Specific requirements for the Ph.D. are as follows:

Microeconomic Theory:

RES EC 711, RES EC 712, ECON 701, and one of ECON 700, or ECON

702.⁸

Quantitative Methods:

ECON 751, RES EC 701, 702, 703

Macroeconomic Theory:

ECON 705

Major Field: One of the following sequences:

RES EC 720 and 721 - Natural Resource and Environmental Economics

RES EC 732 and 797M - Industrial Organization of the Food System

RES EC 797A and RES EC 797D or ECON 852 (if offered) or ECON 753

- Applied Econometrics Minor Field and Electives:

Four courses, at least two of which form a coherent Minor Field. Minor fields do not have to be fields offered by the Department. For example, students interested in Economic Development may choose a minor field in this area by completing ECON 765 and 766. Students in the Applied Econometrics field are required to have a minor field in statistics (STATISTC 607 and 608).

No double counting of requirements is permitted. The Macroeconomics course must be passed with a grade of B or better. Equivalent courses taken elsewhere can be substituted for Ph.D. requirements with the approval of the Graduate Program Director, provided a grade of B or better was earned.

2. ***Pass qualifying examinations in Microeconomic Theory and Quantitative Methods.*** These are normally taken as soon as the microeconomic theory courses (RES EC 711, RES EC 712, ECON 701 and either ECON 700 or ECON 702) and quantitative methods courses (RES EC 701, 702, 703) have been completed. They must be taken prior to the start of the fourth semester. Upon failure of any exam, the Graduate Program Director will require a formal agreement for additional study to be performed before a retake. After two failures of any examination, further attempts may be made only upon the recommendation of the faculty members of the Graduate Studies Committee.
3. ***Pass a preliminary comprehensive examination.*** The comprehensive exam consists of a written examination in the major field. The comprehensive exam will normally be administered during January of the third year in the PhD program.⁹ The comprehensive exam committee will be assigned by the Graduate Program Director and will be comprised of at least two members of the graduate faculty in the candidate's field. As a comprehensive exam, it may also include questions about basic concepts of microeconomic theory and quantitative methods. Additional topics/readings may also be assigned by the exam committee. Graduate School policy limits the number of attempts to pass the comprehensive exam to two.

⁸ Students should consider taking both Econ 700 (Microeconomics Coordination and Conflict) and 702 (Game Theory) in consultation with the Graduate Program Director or their Academic Advisor.

⁹ However, if course waivers are granted in the first academic year, the comprehensive examination takes place in May/June of the second year.

4. ***Select a Dissertation Committee and write and defend the dissertation prospectus.*** The Committee will consist of three or more Graduate Faculty, with at least one member from outside the Department and at least two members, including the Chair, from within the Department. The outside member must be a member of the University Graduate Faculty. The dissertation prospectus is completed after selecting a dissertation advisor and committee.

The Graduate School requires that the prospectus, approved and signed by all Committee members and the Graduate Program Director, be submitted to the Graduate School at least seven months before the Dissertation Defense. **However, the Department requires that the prospectus be completed by spring of the third year.**

The prospectus serves to establish the student's research plans and to guide completion of the dissertation. The prospectus should be developed in concert with the dissertation advisor to ensure that the student's research objectives are consistent with those of Department faculty and resources. The student, dissertation advisor, and committee determine the format of the prospectus. At a minimum, the prospectus must contain a definition of the research problem(s), a justification for the proposed research, a review of relevant literature, identification of the research objectives, and proposed methods.

Ph.D. students may choose to complete either a traditional research dissertation or a three-essay dissertation. If the student chooses the three-essay option, the prospectus should identify the essays as three specific research objectives, with a justification, literature review, and proposed methods for each essay.

Upon completion of the dissertation prospectus, the student defends the prospectus. A model of casual formality is encouraged, taking form largely as thoughtful conversation among the candidate and committee members. The candidate will typically introduce the research objectives and procedures in 15-30 minutes. Committee members then interact with the candidate and each other to determine whether the plan will likely bear fruit in the form of a completed dissertation and subsequent publications. If not, the conversation centers on how best to adjust plans. Other faculty and graduate students are encouraged to sit in, and may be given the opportunity to ask questions or make contributions if time permits. This is an excellent opportunity for the student to gain experience presenting professional work and to receive feedback from committee members and Department faculty on the proposed dissertation.

5. ***Master of Science Degree.*** Students who do not have an M.S. degree may earn their Master of Science Degree as an intermediate degree toward the Ph.D. To receive this degree, students must complete a minimum of 30 course credits, and complete a Research Field Essay of 3 credits (RES EC 698). Students should register for RES EC 698 during the Spring of their second year. During the summer of the second year, the student will complete a first draft of the dissertation prospectus. When the draft prospectus is accepted by the student's research advisor, it will be accepted by the Graduate Program Director as the student's research field essay.

6. **Complete the dissertation.** Responsibility for preparing the dissertation and making copies rests with the student. The style must conform to the Graduate School's Guidelines for Master's Theses and Doctoral Dissertations.¹⁰ An electronic version of the dissertation must be submitted to the Graduate School. The Department requires an electronic version of the dissertation for the department's electronic library. It is expected as a matter of courtesy that an electronic file will also be provided to the Chair of the Dissertation Committee.
7. **Defend the Dissertation.** The Graduate Program Director announces the time and place of the Defense to the Graduate School at least six weeks in advance. All members of the Graduate Faculty of the University of Massachusetts are entitled to attend a Dissertation Defense, but the Dissertation Committee alone determines the outcome. Presentation of a departmental seminar on the research is a part of the Defense.
8. **Submit to the Department:**
Electronic version of the dissertation
Resource Economics Exit Survey
(Note: Both of these items are required for signature of the Degree Eligibility Form by the Graduate Program Director)
9. **Submit to the Graduate School:¹¹**
Dissertation electronically filed with ScholarWorks@UMassAmherst, One signature page with original signatures
Survey of Earned Doctorates form
Degree Eligibility form
Copyright Registration (optional)
Payment (by credit card, personal check or money order) for:
 Microfilming fee
 Copyright fee (optional)

► **Typical First Year Course Sequence¹²**

Fall (1st Semester)		Spring (2nd Semester)	
RES EC 701	Quantitative Methods	RES EC 702	Econometric Methods
RES EC 711	Microeconomic Theory I	RES EC 712	Microeconomic Theory II
ECON 751	Mathematical Methods for Economics	ECON 701	Microeconomic Theory
RES EC 791Y	Seminar (1 credit for year)	RES EC 791Y	Seminar

► **Typical Second Year Course Sequence**

Fall (3rd Semester)		Spring (4th Semester)	
RES EC 703	Topics in Adv. Econometrics	Econ 705	Macroeconomics
ECON 70?	Microeconomics	_____	Major Field Course 1

¹⁰ http://www.umass.edu/gradschool/sites/default/files/thesis_and_dissertation_guidelines.pdf

¹¹ For forms, deadlines, and detailed guidelines on filing the dissertation and associated documents, see: <http://www.umass.edu/gradschool/policies-forms/forms-graduate-students>

¹² Your actual course sequence will be determined in consultation with the Graduate Program director.

_____ Elective 1 _____ Elective 2
Micro and Quantitative Methods comprehensives to be written in January.

► **Typical Third Year Course Sequence**

Fall (5th Semester)	Spring (6th Semester)
_____ Major Field Course 2	
_____ Elective 3	Dissertation Research
_____ Elective 4	

Field comprehensive to be written in January.

Students will be expected to focus on their Dissertation Research starting in the Spring of the third year. It is recommended that the prospectus be defended at the start of the 4th year.

► **Satisfactory Progress**

The following guidelines define satisfactory progress for students in the Ph.D. program.

FIRST YEAR

- September Prepare plan of study to be approved by the Graduate Program Director.
- January Serve as a research assistant.¹³ Review first semester performance with academic advisor to discuss any problem areas and possible remedies.
- April 1 Work with a faculty sponsor to supervise your work in your first summer. Report your advisor, topic, topic abstract, and summer work plan to the Graduate Program Director using the form PhD First Summer Plan 20xx distributed to you in RES EC 791Y.
- July 1 Submit a progress report to the Graduate Program Director.

SECOND YEAR

- September Review plan of study with the Graduate Program Director and make any needed adjustments.
- January Serve as a research assistant. Complete Qualifying Examinations in Microeconomic Theory and Quantitative Methods.
- Summer Develop dissertation research topic(s) and preliminary draft of dissertation prospectus.

THIRD YEAR

- September Review plan of study and degree requirements with the Graduate Program Director.
- January Complete Field Comprehensive Examination

¹³ Employment during the January intersession is required. See p. 16 for an explanation.

Spring Appoint Dissertation Committee, complete and defend prospectus and submit prospectus to Graduate Program Director and the Graduate School. Completion of the dissertation prospectus by this date is required to demonstrate satisfactory progress on the dissertation research.

Spring Defend dissertation prospectus.

FOURTH YEAR

September Present first dissertation paper. Focus on dissertation research for the entire year.

Spring Present seminar/defense of dissertation.

In addition to ongoing assessment, the Graduate Studies Committee conducts reviews of Doctoral student progress after each semester and each summer. These reviews assess course grades, qualifying and comprehensive exam results, and dissertation research progress. In addition, teaching or research assistantship performance is evaluated.

In evaluating satisfactory progress, no arbitrary standards are imposed, but failure to maintain a cumulative grade point average of at least 3.2 will result in the Graduate Studies Committee determining that a student is not making satisfactory progress. Students who are not making satisfactory progress will be notified in writing. They are subject to loss of funding or dismissal from the program

DEPARTMENTAL POLICIES

► Teaching and Research Assistantships

Because the M.S. and Ph.D. programs are rigorous, the Department strongly discourages students with assistantship support from working outside the University during the academic year. The number of assistantships varies from year to year, depending on funding allocations made by the School and on the success of the Department in obtaining externally supported research grants. As a result we have begun to encourage MSc students to obtain internships over the summer term.

Continued support for individual students is not guaranteed and is subject to funding, continued satisfactory progress (see above), satisfactory work on the assistantship, and length of time the student has been in the program. Supported students in the M.S. program with thesis can normally expect support through the second academic year. Supported students in the M.S. program with field essay option can normally expect support through the fall semester of their second year. Supported Ph.D. students normally receive a total of four years of support.

Performance as a teaching or research assistant will be evaluated by the faculty supervisor and the Graduate Studies Committee. Students should seek guidance from the supervisor as needed to perform their teaching or research responsibilities. If a student is concerned about the quantity or quality of a supervisor's guidance, he or she should consult with the Department Chair or Graduate Program Director. Students who do not perform their assistantship duties well may have their funding reduced or eliminated.

The duties of a teaching assistant or associate include but are not restricted to: grading problem sets and examinations, counseling individual students, leading discussion sections, and helping with administrative tasks associated with courses. The assistant may be required to give lectures for a course, but may not assign grades. A graduate student employed as a Teaching Associate is responsible for teaching courses and assigning grades.

Generally, PhD students will be provided the opportunity to teach, with full responsibility, at least one semester of small RAP courses before they graduate. These opportunities represent excellent additions to the students CV and offer the students opportunities to contribute to the Department's teaching mission. Teaching Associates will be offered an additional stipend.

During the first year a research assistant will be assigned to a sponsored research project. Every attempt will be made to place assistants in projects that match their areas of interest, but this may not always be possible. In the first year, an assistant may be involved in activities such as data manipulation and literature search that are not related to the thesis or dissertation topic, within the constraints of the supported research activities of the Department.

Employment during the January intersession is required given the assistantship contract periods, which is 19 weeks for fall and spring assistantships. Fall assistantships begin at

the beginning of September and end around mid-January. Spring assistantships begin around mid-January and end 19 weeks later, toward the end of May.¹⁴ Students employed as teaching assistants in the fall and spring semesters are expected to work as research assistants during the intersession. Research assistantship assignments for January are announced during the fall semester. Employment during spring break may be required in order to fulfill work requirements. Particular arrangements should be made between the assistant and the supervisor and meet the approval of the Department Chair.

The standard assistantship is a half-time position representing 20 hours of work per week during the academic year and 16 hours per week during the summer. Satisfactory academic and job performance during the academic year will place a teaching assistant in line for summer support as a research assistant. By April 1st of the first year, each student who will be a research assistant over the summer will be asked to consult with the faculty advisor and then to submit summer vacation and work plans to the faculty advisor, Graduate Program Director, and Department Chair.

Should departmental research funds permit, students on assistantships might be offered an opportunity to work more than the standard contract during the summer months.¹⁵ Alternatively, with approval of the Graduate Studies Committee, a faculty member may use outside grant money to pay a research assistant to work increased hours during the summer.

Graduate assistants working on departmental research, teaching or extension projects should use departmental supplies for the work connected with the project; they may obtain supplies by requesting them from the Graduate Secretary. No student should take departmental supplies for personal use. Graduate assistants working on departmental projects as employees are entitled to reimbursement for travel and other expenses in accord with University policy. University rules should be followed carefully, particularly the requirement to submit a travel authorization form at least two weeks prior to travel.

► Statute of Limitations Extension Policy

Graduate School Statute of Limitations policy allows Master's degree students three years to complete all degree requirements; Ph.D. students are allowed five years after achieving candidacy. A student who requests an extension to the Statute of Limitations must petition the Graduate Program Director, who in turn submits a recommendation with justification to the Graduate School Dean. The final decision rests with the Dean.

Department policy on extensions is developed by the Graduate Studies Committee. It is the policy of the Committee that extensions will be granted only in extraordinary circumstances. Individual requests are decided on a case by case basis by the faculty members of the Committee.

¹⁴ Specific dates vary from year to year.

¹⁵ The number of hours that international students are allowed to work depends on their Visa's and may differ between academic and summer terms.

► **Leaves of Absence**

Under unusual circumstances, for example a prolonged illness, a student may apply to the Graduate Program Director for a leave of absence. The Graduate Program Director submits a recommendation with justification to the Graduate Dean, whose decision is final. A leave of absence temporarily suspends the Statute of Limitations clock, allowing the student additional time to complete the degree.

► **Graduate Student Travel to Professional Meetings and Conferences**

Financial support for travel to professional meetings is provided for students who have papers or posters accepted for presentation. Financial support is limited and students should follow the guidelines below:

- Only matriculated graduate student (i.e., enrolled in an on-campus graduate degree program for credits or Program Fee/Continuous Enrollment) are eligible.
- Students review potential conferences for their research and reach decisions about submissions with their research advisor. Most conferences require that research be original and that it not be presented at other conferences. Choose wisely – we want students to present at conferences with the greatest impact whenever possible.
- In your request for funds to the Graduate Program Director, please include the following: the name, date and location of the conference, the title of your accepted paper/poster, a travel budget, amount that will be funded from a research grant (if any), the notice of acceptance of your paper/poster and a letter of support from your Research Supervisor.
- All travel must be approved by the Graduate Program Director and Department Chair.
- When approved for travel, a Pre-Travel Authorization form, available from the Finance and Personnel Manager, must be completed and approved by the Department Chair at least two weeks before travel.
- Upon completion of travel, an itinerary is provided to the Finance and Personnel Manager with itemized expenses for reimbursement up to the level approved in the Pre-Travel Authorization.

The Department strives to fund graduate student travel to present papers, when funds are available, as it is an important part of graduate education. The Department has a history of supporting graduate student travel to meetings and encourages paper submissions.

► **Other Policies**

Normally, all graduate students are given office space. Should the number of students ever exceed the available desk space, the following priorities will be used in making desk and office assignments: (1) Ph.D. students on departmental assistantships, (2) M.S. students on departmental assistantships, (3) students on non-departmental assistantships or fellowships, (4) Ph.D. students not on assistantships, and (5) M.S. students not on assistantships.

All graduate students may use the computer facilities in the computer laboratory. These items of equipment should not be removed from the computer laboratory. The Department's Computer Committee determines priorities for use of this equipment. Department copy machines are not for student use. Copying required as part of teaching or research work must be done through the faculty supervisor or the graduate administrator.

► **Course Availability**

Core courses taught yearly: RES EC 701, 702, 703, 711, 712, 791Y.

Elective courses taught yearly: RES EC 720, 732, , and 797B.

Elective courses taught on demand from Ph.D. students: RES EC 721, 797A, 797D, and 797M.

**RESOURCE ECONOMICS
COURSE LIST**

Number	Title	Level	Semester
691-695	Seminar	M.S.	-
696	Independent Study in Resource Economics	M.S.	-
697	Special Topics	M.S.	-
698	Research Field Essay	M.S.	-
699	Master's Thesis	M.S.	-
701	Quantitative Methods	M.S./Ph.D.	F
702	Econometric Methods	M.S./Ph.D.	S
703	Topics in Advanced Econometrics	M.S./Ph.D.	F
711	Applied Microeconomic Theory I	M.S./Ph.D.	F
712	Applied Microeconomic Theory II	M.S./Ph.D.	S
720	Environmental and Resource Economics	M.S./Ph.D.	S
721	Advanced Environmental and Natural Resource Economics	Ph.D.*	F
732	Industrial Organization in Resource Economics I	M.S./Ph.D.	S
791A	Seminar in Resource Economics	M.S./Ph.D.	S
791Y	First-Year Seminar in Resource Economics	M.S./Ph.D.	F&S
796	Independent Study	Ph.D.	-
797A	Topics in Forecasting	M.S./Ph.D.	F
797B	Experimental Economics	M.S./Ph.D.	S
797D	Panel Data Econometrics	M.S./Ph.D.	S in odd years thereafter
797M	Industrial Organization in Resource Economics II	Ph.D.*	-
899	Doctoral Dissertation	Ph.D.	-

**These courses may be taken by M.S. students with approval of the instructor.*

ELECTIVE COURSES BY FIELD OF SPECIALIZATION

	Natural Resource and Environmental Economics	Industrial Organization	Applied Econometrics
Required for Field of Specialization	RES EC 720 (S)	RES EC 732 (S)	RES EC 703 (F)
Departmental Courses	RES EC 703 (F) RES EC 721 (F – if offered) RES EC 732 (S) RESEC 797A (F) RES EC 797B (S)	RES EC 703 (F) RES EC 720 (S) RESEC 797A (F) RES EC 797B (S) RES EC 797M (F – if offered)	RES EC 720 (S) RES EC 732 (S) RES EC 797A (F) RES EC 797B (S) RES EC 797D (S – if offered)
Other Courses	ECON 797EV (F)		STATISTIC 515 (F, S) STATISTIC 516 (S) STATISTIC 597A (F) STATISTIC 697F (S) STATISTIC 705 (F) STATISTIC 706 (S) ECON 753 (F)

Course Titles

ECON 753: Applied Econometrics II
 ECON 797EV: Political Economy of the Environment
 STATISTIC 515: Statistics I
 STATISTIC 516: Statistics II
 STATISTIC 597A: Stat Computing
 STATISTIC 697F: Topics in Regression
 STATISTIC 705: Linear Models I
 STATISTIC 706: Linear Models II