Graduate Program in Agricultural and Resource Economics  
M.S., Joint M.S./M.B.A., and Ph.D. Degree Requirements  
Current revision date: May 4, 2012  
Graduate Council Approval: June 11, 2012

Master’s Degree Requirements

1) Admissions requirements:

Consideration for program admission requires a bachelor’s degree, three letters of recommendation, official transcripts, GRE scores, TOEFL or IELTS score (if applicable) and Office of Graduate Studies online application with fee. Applications received by January 15 will be given priority consideration. Applications will not be considered after April 15.

An undergraduate degree in economics or agricultural economics is typical for ARE graduate students, but is not required. A minimum cumulative GPA of 3.0 (on a 4.00 scale) is required for admission. While admission does not formally require exceeding minimum GRE scores, priority will be given to applicants with GRE quantitative scores above the 70th percentile and verbal GRE scores above the 60th percentile (30th percentile for non-native speakers of English). Graduate Studies requires the Test of English as a Foreign Language (TOEFL) if the student’s native language is not English or his/her instruction has not been in English. The minimum score required for admission to graduate study at UC Davis is 550 for the paper test, and a score of 80 is required for the Internet-based test.

Meeting some or all of these criteria does not guarantee admission, but merely eligibility. The decision to recommend admission to the Dean of Graduate Studies will be made by the Program Admissions Committee on the basis of available space and the competitiveness of applicants compared to the eligible pool.

A. Prerequisites:

Students, including those who did not major in economics or agricultural economics, are expected to have completed the equivalent of the following UC Davis courses:

- Calculus-based Intermediate Microeconomics: ARE 100A & 100B (8 units)
- Statistics: STA 103 (4 units)
- Econometrics: ARE 106 (4 units)
- One year of Calculus: MAT 16A, 16B, 16C or 21A, 21B, 21C (12 units)

Additional upper-division courses in economics or agricultural economics are strongly encouraged.

B. Deficiencies:

Deficiencies in the above coursework requirements must be corrected prior to enrollment in the MS program.
2) Programs of Study

The ARE Graduate Program offers both Plan I (Thesis) and Plan II (Comprehensive Exam) options to complete the MS degree.

**Plan I.** At UC Davis, this plan requires 30 units of graduate and upper division courses (the 100 and 200 series only) and, in addition, a thesis or a project in lieu of a thesis. At least 12 of the 30 units must be graduate work in the major field.

The ARE Plan I requires a minimum of 31 graduate units in Agricultural and Resource Economics. As described below, 24 of these graduate units correspond to required core courses and at least 7 units correspond to required field courses. This plan also requires a thesis.

**Plan II.** At UC Davis, this plan requires 36 units of graduate and upper division courses, of which at least 18 units must be graduate courses in the major field. Not more than 9 units of research (299 or equivalent) may be used to satisfy the 18-unit requirement. A comprehensive final examination in the major subject is required of each candidate. No thesis is required.

Plan II ARE also requires a minimum of 36 units of upper-division and graduate courses. 31 of these units correspond to required courses, with 24 units corresponding to required core courses and at least 7 units to required field courses. The remaining 5 units may come from other graduate courses or upper division undergraduate courses that meet the general program objectives of the student. Allowable upper division courses do not include core undergraduate courses in Economics and Managerial Economics such as ARE 100A-B, 106, 155 and their prerequisites. Students must also pass a comprehensive written examination. No thesis is required.

3) Course Requirements

A. Core Courses (6 courses, 24 units)

Students must complete all of the following core courses under both Plan I and Plan II:

- **Microeconomic Theory (12 units)**
  - ARE 204A (4 units)
  - ARE 204B (4 units)
  - ARE 252 (4 units)

- **Econometrics (8 units)**
  - ARE 256A (4 units)
  - ARE 256B (4 units)

- **Research Methods (4 units)**
  - ARE 258 (4 units)
B. Field Courses (2 courses, minimum of 7 units)

Students must complete two of the following three field courses under both Plan I and Plan II:

- ARE 214 (4 units)
- ARE 222 (3 units)
- ARE 275 (4 units)

C. Elective Courses (0 – 2 courses, 0 – 5 units depending on plan and field courses chosen)

Under Plan I, students are not required to complete any elective courses.

Under Plan II, students who select ARE 222 as a field course (and thus complete a total of 31 core plus field units) must complete elective coursework totaling at least 5 units. Students who do not select ARE 222 as a field course must complete elective coursework totaling at least 4 units. Students may choose from other graduate courses or upper division undergraduate courses that meet the general program objectives of the student. Allowable upper division courses do not include core undergraduate courses in Economics and Managerial Economics such as ARE 100A-B, 106, 155 and their prerequisites.

D. Summary

Consistent with the policies of the Office Graduate Studies, students must receive a grade of C or better in any course to receive credit towards the degree. Students must register for a minimum of 12 units per Quarter. Courses that fulfill any of the program course requirements may not be taken S/U unless the course is normally graded S/U. Once course requirements are completed, students can take additional classes as needed, although the 12 units per quarter are generally fulfilled with a research class (299). Per UC regulations students cannot enroll in more than 12 units of graduate level courses (200) or more than 16 units of combined undergraduate and graduate level (100, 200, 300) courses per quarter.

Under Plan I: Students complete 24 units of core courses; at least 7 units of field courses, and a thesis.

Under Plan II: Students complete 24 units of core courses; at least 7 units of field courses; and additional elective courses. Students who complete 7 units of field courses must complete at least 5 units of elective courses. Students who complete 8 units of field courses must complete at least 4 units of elective courses.
The typical course schedule under Plan I is thus:

<table>
<thead>
<tr>
<th>Coursework for MS Plan I</th>
<th>Fall Quarter</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>ARE 204A</td>
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<tr>
<td></td>
<td>ARE 256A</td>
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<tr>
<td></td>
<td>ARE 222</td>
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<tr>
<td></td>
<td>(core)</td>
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<tr>
<td></td>
<td>(core)</td>
</tr>
<tr>
<td></td>
<td>(field)</td>
</tr>
<tr>
<td>Winter Quarter</td>
<td>ARE 204B</td>
</tr>
<tr>
<td></td>
<td>ARE 256B</td>
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<tr>
<td></td>
<td>ARE 252</td>
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<tr>
<td></td>
<td>(core)</td>
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<tr>
<td>Spring Quarter</td>
<td>ARE 258</td>
</tr>
<tr>
<td></td>
<td>(core)</td>
</tr>
<tr>
<td></td>
<td>(core)</td>
</tr>
</tbody>
</table>

The typical schedule for MS Plan II is thus:

<table>
<thead>
<tr>
<th>Coursework for MS Plan II</th>
<th>Fall Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ARE 204A</td>
</tr>
<tr>
<td></td>
<td>ARE 256A</td>
</tr>
<tr>
<td></td>
<td>ARE 222</td>
</tr>
<tr>
<td></td>
<td>(core)</td>
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<tr>
<td></td>
<td>(core)</td>
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<tr>
<td></td>
<td>(field)</td>
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<tr>
<td>Winter Quarter</td>
<td>ARE 204B</td>
</tr>
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<td></td>
<td>ARE 256B</td>
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<tr>
<td></td>
<td>ARE 252</td>
</tr>
<tr>
<td></td>
<td>(core)</td>
</tr>
<tr>
<td>Spring Quarter</td>
<td>ARE 258</td>
</tr>
<tr>
<td></td>
<td>(core)</td>
</tr>
<tr>
<td>June/July</td>
<td>ARE 275</td>
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<tr>
<td></td>
<td>(field)</td>
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<tr>
<td></td>
<td>MS</td>
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<tr>
<td></td>
<td>Comprehensive Exam</td>
</tr>
<tr>
<td></td>
<td>ARE 171A</td>
</tr>
<tr>
<td></td>
<td>or comparable elective</td>
</tr>
<tr>
<td></td>
<td>(elective)</td>
</tr>
</tbody>
</table>

4) Special requirements:

None.

5) Committees

A) The Graduate Administrative Committee:

The Graduate Administrative Committee (GAC) consists of the five graduate advisors in the program. The ARE Department Chair appoints one of these advisors as GAC Chair.

The GAC is charged with the following responsibilities:

a. To review and make recommendations to Graduate Studies regarding applications for admission and fellowships, and various graduate student petitions;
b. To serve as graduate advisors as described below;
c. To evaluate and make recommendations to the Program faculty regarding policy, curriculum, and administration of the Program;
d. To appoint ad hoc committees, as needed.

In addition to the above duties, the GAC Chair provides academic leadership for the program, making recommendations to the Department Chair regarding departmentally funded student employment and fellowships, overseeing student employment and fellowships funded by other sources including block grant and other funds allocated specifically to the graduate program, appointing preliminary and qualifying exam committees, and coordinating administrative matters with the Office of Graduate Studies

B) **Admissions Committee:**

The Admissions Committee consists of the five faculty members of the Graduate Administrative Committee (GAC). Once the completed application, all supporting material, and the application fee have been received, the application will be submitted to the Admissions Committee. Based on a review of the entire application, a recommendation is made to accept or decline an applicant’s request for admission. That recommendation is forwarded to the Dean of Graduate Studies for final approval of admission. Notification of admissions decisions will be sent to the applicant by Graduate Studies. Applications are accepted through March 1 for the class entering the following Fall. Priority is given to those applications received by January 15.

C) **Course Guidance/Advising Committee**

The five faculty members of the GAC serve as graduate advisors. Graduate advisors are responsible for ensuring that their advisees complete appropriate preparative course work; interpreting requirements; providing advice and guidance to their advisees about required coursework, elective courses, and graduate research options and requirements; identifying members for the thesis committee (in the case of Plan I students); and overseeing students’ progress. Prior to the end of the first week of each Fall quarter, students are required to meet with their assigned advisor and complete a Study Plan. The Study Plan lays out the courses and other academic activities for the remainder of the year. Students are also required to meet with their advisors in the Spring quarter to complete a Progress Report. In the case of Plan I MS students, the balance of responsibility for overseeing students’ progress shifts from the Graduate Advisor to the Thesis Advisor after the student advances to candidacy.

D) **MS Comprehensive Exam Committee:**

The Chair of the Graduate Program appoints an examination committee that is responsible for preparing, administering and grading the examination. This committee, composed of three Graduate Program faculty members, forwards its recommendation to the Graduate Program, which makes the final decision on each student.
E) **Thesis Committee:**

A student pursuing an M.S. under Plan I, in consultation with his/her graduate advisor, nominates three faculty members to serve on the Thesis Committee. These nominations are submitted to the Office of Graduate Studies for formal appointment in accordance with Graduate Council policy. The major professor serves as Chair of the committee. At least two of the members of the thesis committee must be members of the Graduate Program in Agricultural and Resource Economics. Cooperative Extension Specialists with primary appointments in the Department of Agricultural and Resource Economics who hold an appropriate instructional title, such as Lecturer without Salary, may serve as co-chair or member of the thesis committee. Senate faculty who are not members of the Graduate Program in Agricultural and Resource Economics may serve as a member of the thesis committee subject to approval from the Graduate Administrative Committee and may serve as the sole thesis chair subject to approval from the Graduate Administrative Committee and the Department Chair of ARE for nomination to the Dean of Graduate Studies.

6) **Advising Structure and Mentoring:**

Students completing the MS under Plan I have both a Graduate Advisor and a Major Professor. The Graduate Advisor, who is appointed by Graduate Studies, is a resource for information on academic requirements, policies and procedures, and registration information. The Major Professor is the faculty member who supervises the student’s research and thesis and serves as the Chair of the Thesis Committee. The student identifies the Major Professor in consultation with his/her Graduate Advisor. The Graduate Program Staff assist students with identifying a major professor, identifying appointments, and general university policies.

Students completing the MS under Plan II have a Graduate Advisor as described above (section 5C).


7) **Advancement to Candidacy:**

Plan I and Plan II M.S. students must file an Advancement to Candidacy form, which is available online at: [http://www.gradstudies.ucdavis.edu/forms/](http://www.gradstudies.ucdavis.edu/forms/) in the quarter in which they complete all required core and field courses. This is typically in the Spring quarter. Plan II MS students must complete all core, field and elective courses before taking the comprehensive exam. A completed Candidacy form includes a list of courses the student has taken to complete degree requirements. The student’s Graduate Adviser and committee Chair must sign the candidacy form before it can be submitted to Graduate Studies. If the candidacy is approved, the Office of Graduate Studies will send a copy to: the appropriate graduate staff person and the student; the Thesis Committee Chair will also receive a copy, if applicable. If the Office of Graduate Studies determines that a student is not eligible for advancement, the department and the student will be told the reasons for the application’s deferral. Some reasons for deferring an application include: grade point average below 3.0, outstanding “I” grades in required courses, or insufficient units.
8) **Comprehensive Examination and Thesis Capstone Requirements**

a) **Thesis Requirements (Plan I):**

- **Thesis committee meetings:** The candidate and major professor should meet at least once per quarter with the other members of the thesis committee to discuss progress and any changes in research objectives.

- **Thesis:** Research for the Master's thesis is to be carried out under the supervision of a faculty member of the program and must represent an original contribution to knowledge in the field. The thesis research must be conducted while the student is enrolled in the program. The thesis is submitted to the thesis committee at least one month before the student plans to make requested revisions. All committee members must approve the thesis and sign the title page before the thesis is submitted to Graduate Studies for final approval. Should the committee determine that the thesis is unacceptable, even with substantial revisions; the program may recommend the student for disqualification from the program to the Dean of Graduate Studies.

The thesis must be filed in a quarter in which the student is registered or on filing fee. Instructions on preparation of the thesis and a schedule of dates for filing the thesis in final form are available from Graduate Studies; the dates are also printed in the UC Davis General Catalog and in the Class Schedule and Registration Guide issued each quarter. A student must have a GPA of 3.0 for the M.S. degree to be awarded.

b) **Comprehensive Examination (Plan II):**

i) **The Exam:** The comprehensive exam is a written exam that covers the material from the core courses. Students have four hours to complete the exam. The exam is written by the three faculty members on the MS Comprehensive Exam Committee.

ii) **Timing:** The comprehensive examination is given several weeks after completion of the Spring quarter, typically in the last week of June or first week of July. Students may take the comprehensive examination once they have advanced to candidacy.

ii) **Outcome and Retake:** The Exam committee’s unanimous vote is required to pass a student on the exam. If a student does not pass the exam on the first try, he/she may retake the exam. The retake is offered at the end of the summer. The format of the second exam is the same as that of the first exam. The examination may not be repeated more than once. A student who does not pass on the second attempt will be recommended for disqualification from further graduate work in the program to the Dean of Graduate Studies. Once the exam has been passed, the Master’s Report Form is signed by the Program Graduate Adviser and then forwarded to the Office of Graduate Studies. The deadlines for completing this requirement are listed each quarter in the campus General Catalog (available online at the website of the Office of the Registrar or from the Bookstore). A candidate must be a registered student or in Filing Fee status at the time the program submits the form, with the exception of the summer period between the end of the Spring Quarter and the beginning of Fall Quarter. The program must file the report with Graduate Studies within one week of the end of the quarter in which the student’s degree will be conferred.
9) **Normative Time to Degree:**

The Normative Time to Degree for the ARE M.S. program is three quarters under Plan II and between four and six quarters under Plan I.

10) **Typical Time Line and Sequence of Events:**

Course requirements are typically completed by the end of the first year of study for students under both plan I and plan II. Plan II students then take the MS comprehensive exam at the end of June. Plan I students typically carry out and complete their thesis by the end of their second year.

The following would be a typical program for a Plan II M.S. student:

**Timeline for MS Plan II Student**

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>June/July</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARE 204A</td>
<td>ARE 204B</td>
<td>ARE 258</td>
<td></td>
</tr>
<tr>
<td>ARE 256A</td>
<td>ARE 256B</td>
<td>ARE 275</td>
<td></td>
</tr>
<tr>
<td>ARE 222</td>
<td>ARE 252</td>
<td>ARE 171A</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>MS Comprehensive Exam</strong></td>
</tr>
</tbody>
</table>

The following would be a typical program for a Plan I M.S. student:

**Timeline for MS Plan I Student**

**YEAR ONE**

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>June/July</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARE 204A</td>
<td>ARE 204B</td>
<td>ARE 258</td>
<td></td>
</tr>
<tr>
<td>ARE 256A</td>
<td>ARE 256B</td>
<td>ARE 275</td>
<td>Research</td>
</tr>
<tr>
<td>ARE 222</td>
<td>ARE 252</td>
<td>ARE 299</td>
<td></td>
</tr>
</tbody>
</table>

**YEAR TWO**

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH</td>
<td>RESEARCH</td>
<td>RESEARCH</td>
</tr>
</tbody>
</table>
11) **Sources of funding**

Students may receive financial support in the form of employment as reader, TA or GSR. However, *a priori* there is no guarantee for such support unless stated explicitly in the offer letter sent to the students.

12) **PELP, In Absentia and Filing Fee status.**

Information about PELP (Planned Educational Leave), In Absentia (reduced fees when researching out of state), and Filing Fee status can be found in the Graduate Student Guide: [http://www.gradstudies.ucdavis.edu/publications/](http://www.gradstudies.ucdavis.edu/publications/)
Joint M.S./M.B.A. Program Degree Requirements

This joint program enables students to obtain both an M.B.A. in the Graduate School of Management and an M.S. in Agricultural and Resource Economics (ARE) in three years. Students complete the full requirements of the M.B.A. and of the Plan II MS in ARE. A maximum of 12 units may be counted towards both degrees. Since the Plan II M.S. in ARE requires 36 units and the M.B.A. requires 72 units, the total number of units required by the joint degree ranges from 96 to 108.

ARE MS Requirements

1) Admissions requirements:

Consideration for program admission requires a bachelor’s degree, three letters of recommendation, official transcripts, GRE scores, TOEFL or IELTS score (if applicable) and Office of Graduate Studies online application with fee. Applications received by January 15 will be given priority consideration. Applications will not be considered after April 15.

An undergraduate degree in economics or agricultural economics is typical for ARE graduate students, but is not required. A minimum cumulative GPA of 3.0 (on a 4.00 scale) is required for admission. While admission does not formally require exceeding minimum GRE scores, priority will be given to applicants with GRE quantitative scores above the 70th percentile and verbal GRE scores above the 60th percentile (30th percentile for non-native speakers of English). Graduate Studies requires the Test of English as a Foreign Language (TOEFL) if the student’s native language is not English or his/her instruction has not been in English. The minimum score required for admission to graduate study at UC Davis is 550 for the paper test, and a score of 80 is required for the Internet-based test.

Meeting some or all of these criteria does not guarantee admission, but merely eligibility. The decision to recommend admission to the Dean of Graduate Studies will be made by the Program Admissions Committee on the basis of available space and the competitiveness of applicants compared to the eligible pool.

A) Prerequisites:

Students, including those who did not major in economics or agricultural economics, are expected to have completed the equivalent of the following UC Davis courses:

- Calculus-based Intermediate Microeconomics: ARE 100A & 100B (8 units)
- Statistics: STA 103 (4 units)
- Econometrics: ARE 106 (4 units)
- One year of Calculus: MAT 16A, 16B, 16C or 21A, 21B, 21C (12 units)
- Additional upper-division courses in economics or agricultural economics are strongly encouraged.
B) Deficiencies:

Deficiencies in the above coursework requirements must be corrected prior to enrollment in the MS program.

2) Program of Study

Under the joint MS/M.B.A. degree, the student must complete the Plan II (Comprehensive Exam) options.

Plan II. At UC Davis, this plan requires 36 units of graduate and upper division courses, of which at least 18 units must be graduate courses in the major field. Not more than 9 units of research (299 or equivalent) may be used to satisfy the 18-unit requirement. A comprehensive final examination in the major subject is required of each candidate. No thesis is required.

Plan II ARE also requires a minimum of 36 units of upper-division and graduate courses. 31 of these units correspond to required courses, with 24 units corresponding to required core courses and at least 7 units to required field courses. The remaining 5 units may come from other graduate courses or upper division undergraduate courses that meet the general program objectives of the student. Allowable upper division courses do not include core undergraduate courses in Economics and Managerial Economics such as ARE 100A-B, 106, 155 and their prerequisites. Students must also pass a comprehensive written examination. No thesis is required.

3) Course Requirements

A. Core Courses (6 courses, 24 units)

Students must complete all of the following core courses under Plan II:

- Microeconomic Theory (12 units)
  - ARE 204A (4 units)
  - ARE 204B (4 units)
  - ARE 252 (4 units)

- Econometrics (8 units)
  - ARE 256A (4 units)
  - ARE 256B (4 units)

- Research Methods (4 units)
  - ARE 258 (4 units)

B. Field Courses (2 courses, minimum of 7 units)

Students must complete two of the following three field courses under Plan II:

- ARE 214 (4 units)
• ARE 222 (3 units)
• ARE 275 (4 units)

C. Elective Courses (1 – 2 courses, 4 – 5 units depending on field courses chosen)

Under Plan II, students who select ARE 222 as a field course (and thus complete a total of 31 core plus field units) must complete elective coursework totaling at least 5 units. Students who do not select ARE 222 as a field course must complete elective coursework totaling at least 4 units. Students may choose from other graduate courses or upper division undergraduate courses that meet the general program objectives of the student. Allowable upper division courses do not include core undergraduate courses in Economics and Managerial Economics such as ARE 100A-B, 106, 155 and their prerequisites.

D. Summary

Consistent with the policies of the Office Graduate Studies, students must receive a grade of C or better in any course to receive credit towards the degree. Students must register for a minimum of 12 units per Quarter. Courses that fulfill any of the program course requirements may not be taken S/U unless the course is normally graded S/U. Once course requirements are completed, students can take additional classes as needed, although the 12 units per quarter are generally fulfilled with a research class (299). Per UC regulations students cannot enroll in more than 12 units of graduate level courses (200) or more than 16 units of combined undergraduate and graduate level (100, 200, 300) courses per quarter.

Under Plan II: Students complete 24 units of core courses; at least 7 units of field courses; and additional elective courses. Students who complete 7 units of field courses must complete at least 5 units of elective courses. Students who complete 8 units of field courses must complete at least 4 units of elective courses.

4) Special requirements:

None.

5) Committees

A) The Graduate Administrative Committee:

The Graduate Administrative Committee (GAC) consists of the five graduate advisors in the program. The ARE Department Chair appoints one of these advisors as GAC Chair.

The GAC is charged with the following responsibilities:

e. To review and make recommendations to Graduate Studies regarding applications for admission and fellowships, and various graduate student petitions;
f. To serve as graduate advisors as described below;
g. To evaluate and make recommendations to the Program faculty regarding policy, curriculum, and administration of the Program;
h. To appoint ad hoc committees, as needed.
In addition to the above duties, the GAC Chair provides academic leadership for the program, making recommendations to the Department Chair regarding departmentally funded student employment and fellowships, overseeing student employment and fellowships funded by other sources including block grant and other funds allocated specifically to the graduate program, appointing preliminary and qualifying exam committees, and coordinating administrative matters with the Office of Graduate Studies.

B) **Admissions Committee:**

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C) **Course Guidance/Advising Committee**

The five faculty members of the GAC serve as graduate advisors. Graduate advisors are responsible for ensuring that their advisees complete appropriate preparative coursework; interpreting requirements; providing advice and guidance to their advisees about required coursework, elective courses, and graduate research options and requirements; identifying members for the thesis committee (in the case of Plan I students); and overseeing students’ progress. Prior to the end of the first week of each Fall quarter, students are required to meet with their assigned advisor and complete a Study Plan. The Study Plan lays out the courses and other academic activities for the remainder of the year. Students are also required to meet with their advisors in the Spring quarter to complete a Progress Report. In the case of Plan I MS students, the balance of responsibility for overseeing students’ progress shifts from the Graduate Advisor to the Thesis Advisor after the student advances to candidacy.

D) **MS Comprehensive Exam Committee:**

The Chair of the Graduate Program appoints an examination committee that is responsible for preparing, administering and grading the examination. This committee, composed of three Graduate Program faculty members, forwards its recommendation to the Graduate Program, which makes the final decision on each student.

6) **Advising Structure and Mentoring:**

Students completing the MS under Plan II have a Graduate Advisor as described above. The Mentoring Guidelines are available online at:


7) **Advancement to Candidacy:**
Plan II M.S. students must file an Advancement to Candidacy form, which is available online at: http://www.gradstudies.ucdavis.edu/forms/, in the quarter in which they complete all required core and field courses. This is typically in the Spring quarter. Plan II MS students must complete all core, field and elective courses before taking the comprehensive exam. A completed Candidacy form includes a list of courses the student has taken to complete degree requirements. The student’s Graduate Adviser and committee Chair must sign the candidacy form before it can be submitted to Graduate Studies. If the candidacy is approved, the Office of Graduate Studies will send a copy to: the appropriate graduate staff person and the student; the Thesis Committee Chair will also receive a copy, if applicable. If the Office of Graduate Studies determines that a student is not eligible for advancement, the department and the student will be told the reasons for the application’s deferral. Some reasons for deferring an application include: grade point average below 3.0, outstanding “I” grades in required courses, or insufficient units.

8) Comprehensive Examination Capstone Requirements

A. The Exam: The comprehensive exam is a written exam that covers the material from the core courses. Students have four hours to complete the exam. The exam is written by the three faculty members on the MS Comprehensive Exam Committee.

B. Timing: The comprehensive examination is given several weeks after completion of the Spring quarter, typically in the last week of June or first week of July. Students may take the comprehensive examination once they have advanced to candidacy.

C. Outcome and Retake: The Exam committee’s unanimous vote is required to pass a student on the exam. If a student does not pass the exam on the first try, he/she may retake the exam. The retake is offered at the end of the summer. The format of the second exam is the same as that of the first exam. The examination may not be repeated more than once. A student who does not pass on the second attempt will be recommended for disqualification from further graduate work in the program to the Dean of Graduate Studies. Once the exam has been passed, the Master’s Report Form is signed by the Program Graduate Adviser and then forwarded to the Office of Graduate Studies. The deadlines for completing this requirement are listed each quarter in the campus General Catalog (available online at the website of the Office of the Registrar or from the Bookstore). A candidate must be a registered student or in Filing Fee status at the time the program submits the form, with the exception of the summer period between the end of the Spring Quarter and the beginning of Fall Quarter. The program must file the report with Graduate Studies within one week of the end of the quarter in which the student’s degree will be conferred.

9) Sources of funding

While completing their MS in ARE, students may receive financial support in the form of employment as reader, TA or GSR. However, a priori there is no guarantee for such support unless stated explicitly in the offer letter sent to the students.

10) PELP, In Absentia and Filing Fee status.
Information about PELP (Planned Educational Leave), In Absentia (reduced fees when researching out of state), and Filing Fee status can be found in the Graduate Student Guide: http://www.gradstudies.ucdavis.edu/publications/

Specific GSM Requirements

- **Core Courses (11 courses, 33 units).** The M.B.A. core requires 33 units of coursework (11 courses, each 3 units). In the first year of the M.B.A. program, students take the first nine courses listed below. During the second year, students complete a required two-course sequence in project development (MGT 240A and 240B). The full list of core courses is as follows:
  
  - MGT 200A: Financial Accounting
  - MGT 201A: Individual and Group Dynamics
  - MGT 201B: Organizational Strategy and Structure
  - MGT 202A: Markets and the Firm
  - MGT 203A: Data Analysis for Managers
  - MGT 204: Marketing Management
  - MGT 205: Financial Theory and Policy
  - MGT 252: Managing for Operational Excellence
  - MGT 268: Articulation and Critical Thinking
  - MGT 240A: Project Management I
  - MGT 240B: Project Management II

- **Elective Courses (27 units).** Students must complete a total of 27 elective units. The number of courses required to complete these units will depend on the number of ARE units counted towards both degrees. If no ARE units are counted towards the MBA degree, then students must complete 9 elective GSM courses at 3 units each. If the maximum of 12 units from ARE are counted towards the MBA degree, then students must complete 5 elective GSM courses at 3 units each. A full listing of the GSM elective courses as well as additional information regarding the requirements of the M.B.A. degree may be found on the GSM website: http://gsm.ucdavis.edu/daytime-mba.

Timing of Coursework

The total time required to complete the joint program is three years. Students typically complete the two programs sequentially with the order being chosen by the student in consultation with their academic advisors. Thus a student either completes all ARE requirements in year one and the M.B.A. requirements in years two or reverses the order and completes the M.B.A. requirements in years one and two and the ARE requirements in year three.

The table below presents a typical program for a student completing the ARE requirements in year one and the M.B.A. requirements in years two and three. In this example, the student takes 7 electives in the GSM, for a total of 21 units, and thus would need to count at least 6 ARE units towards both degrees. This could be accomplished, for example, by counting ARE 222 (3 units) and ARE 275 (4 units) towards both degrees.
Typical Timeline for Joint MS/MBA Student

<table>
<thead>
<tr>
<th>YEAR ONE (Complete Plan II MS in ARE)</th>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>June/July</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ARE 204A</td>
<td>ARE 204B</td>
<td>ARE 258</td>
<td></td>
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<tr>
<td></td>
<td>ARE 256A</td>
<td>ARE 256B</td>
<td>ARE 275</td>
<td>MS Comprehensive Exam</td>
</tr>
<tr>
<td></td>
<td>ARE 222</td>
<td>ARE 252</td>
<td>ARE 171A</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR TWO (first year of MBA)</th>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 200A</td>
<td>MGT 201B</td>
<td>MGT 201A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT 202A</td>
<td>MGT 204</td>
<td>MGT 252</td>
<td></td>
<td>Internship</td>
</tr>
<tr>
<td>MGT 203A</td>
<td>MGT 205</td>
<td>MGT Elective</td>
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<td></td>
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<tr>
<td>MGT 268A</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR THREE (second year of MBA)</th>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 240A</td>
<td>MGT 240B</td>
<td>MGT 201A</td>
<td></td>
</tr>
<tr>
<td>MGT Elective</td>
<td>MGT Elective</td>
<td>MGT Elective</td>
<td></td>
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<tr>
<td>MGT Elective</td>
<td>MGT Elective</td>
<td>MGT Elective</td>
<td></td>
</tr>
</tbody>
</table>
**Ph.D. Degree Requirements**

1) **Admissions requirements:**

Consideration for program admission requires a bachelor’s degree, three letters of recommendation, official transcripts, GRE scores, TOEFL or IELTS score (if applicable) and Office of Graduate Studies online application with fee. Applications received by January 15 will be given priority consideration. Applications will not be considered after April 15.

Given the quantitative nature of the first-year course sequences, either an undergraduate degree stressing quantitative analysis -- such as economics, agricultural economics, mathematics or statistics -- or an M.S. degree in similar fields is typical for ARE Ph.D. students, but is not required. While rigorous, the Ph.D. program is also flexible. Students with more advanced quantitative training can follow the “full core” option described below and complete the required coursework in two years; while those with less quantitative training can follow the “split core” option described below and complete the required coursework in three years.

A minimum GPA of 3.3 (on a 4.00 scale) is required for admission. While admission does not formally require exceeding minimum GRE scores, priority will be given to applicants with GRE quantitative scores above the 80th percentile and verbal GRE scores above the 60th percentile (30th percentile for non-native speakers of English). Graduate Studies requires the Test of English as a Foreign Language (TOEFL) if your native language is not English or your instruction has not been in English. The minimum score required for admission to graduate study at UC Davis is 550 for the paper test, and a score of 80 is required for the Internet-based test.

Meeting some or all of these criteria does not guarantee admission, but merely eligibility. The decision to recommend admission to the Dean of Graduate Studies will be made by the Program Admissions Committee on the basis of available space and the competitiveness of applicants compared to the eligible pool.

**D. Prerequisites:**

Students, including those who did not major in economics or agricultural economics, are expected to have completed the equivalent of the following UC Davis courses:

- Calculus-based Intermediate Microeconomics: ARE 100A & 100B (8 units)
- Statistics: STA 103 (4 units)
- Econometrics: ARE 106 (4 units)
- One year of Calculus: MAT 21A, 21B, 21C (12 units)
- Once course in linear algebra: MAT 22A (4 units)
- Additional upper-division courses in economics or agricultural economics as well as math and statistics are strongly encouraged.


B. Deficiencies:

Because of the quantitative nature of the PhD courses, any deficiencies in the above coursework requirements must be corrected prior to enrollment in the PhD program.

2) Dissertation Plan

The Agricultural and Resource Economics Graduate Program uses “Plan B” for the dissertation committee and exit requirements. This specifies a three member (minimum) dissertation committee and an optional final oral examination (at the discretion of the dissertation committee for each individual student). No exit seminar is required. Additional details regarding “Plan B” are given at: http://www.mrak.ucdavis.edu senate/ddregulations_0405_revisions.pdf.

3) Course Requirements – Core; Major Field and Electives (18 courses, 72 units)

A. Core Courses (9 courses, 36 units)

All students are required to take the following courses:

- Microeconomic Theory
  - ECN 200A (5 units; Fall Quarter)
  - ECN 200B (5 units; Winter Quarter)
  - ECN 200C (5 units; Spring Quarter)
- Econometrics
  - ARE/ECN 239 (4 units; Fall Quarter)
  - ARE/ECN 240A (4 units; Winter Quarter)
  - ARE/ECN 240B (4 units; Spring Quarter)
- Applied Microeconomics
  - ARE 202A (3 units; Fall Quarter)
  - ARE 202B (3 units; Winter Quarter)
  - ARE 202C (3 units; Spring Quarter)

B. Major Field Courses (6 courses, 24 units)

All students are required to complete specialized coursework in two Major Fields. Each Major Field consists of a three course sequence.

One of the student’s Major Fields must be chosen from the following three ARE Major Fields:

- Development Economics
  - ARE 215A (4 units)
  - ARE 215B (4 units)
  - ARE 215C (4 units)
• *Natural Resource and Environmental Economics*
  o ARE 254 (4 units)
  o ARE 276 (4 units)
  o ARE 277 (4 units)

• *Agricultural Economics*
  o ARE 231 (4 units)
  o ARE 232 (4 units)
  o ARE 233 (4 units)

The second can be one of the above three, any three-course field in the Department of Economics, or the Econometrics major field which is jointly taught with the Department of Economics. To complete the Econometrics Major field, students must complete three of the following four courses:

• *Econometrics*
  o ARE/ECN 240C (4 units)
  o ARE/ECN 240D (4 units)
  o ARE/ECN 240E (4 units)
  o ARE/ECN 240F (4 units)

Descriptions of the major fields available in the Department of Economics can be found in the Economics Graduate Handbook, which is available on-line at: http://www.econ.ucdavis.edu/graduates_handbook.cfm.

C. **Elective Courses (3 courses; 12 units)**

Students must complete an additional three Ph.D. -- level courses in Agricultural and Resource Economics or Economics. In addition to the major field courses listed above, additional elective courses offered within the Department of Agricultural and Resource Economics include:

• ARE 215D: The Environment and Economic Development
• ARE 222: International Agricultural Trade
• ARE 298: Advanced Topics in Agricultural, Resource and Development Economics

Students may take one of their elective courses outside of Agricultural and Resource Economics and Economics if the course clearly contributes to the student’s academic development. Students must acquire permission from their Graduate Advisor to count a non ARE/ECN course towards their degree requirement.
D. Summary

36 units of core coursework, 24 units of major field coursework, and 12 units of elective coursework are required for a total of 72 units. Full-time students must enroll for 12 units per quarter including research, academic and seminar units. Courses that fulfill any of the program course requirements may not be taken S/U unless the course is normally graded S/U. Once course requirements are completed, students can take additional classes as needed, although the 12 units per quarter are generally fulfilled with a research class (299). Per UC regulations students cannot enroll in more than 12 units of graduate level courses (200) or more than 16 units of combined undergraduate and graduate level (100, 200, 300) courses per quarter.

4) Special Requirements:

Once required coursework has been completed, students are strongly encouraged to regularly attend departmental research seminars. Seminar, workshop and brown-bag attendance is critical to obtaining thesis ideas, maintaining contact with faculty members, and seeing how research presentations are made. Seminar and workshop series are offered throughout the year in Agricultural Economics, Environmental and Resource Economics, and Development Economics.

After passing the Qualifying Exam (described in the next section), students are encouraged, and may be required by their dissertation committees, to give a seminar presentation on their dissertation progress.

5) Advising Structure and Mentoring:

Students are assigned a Graduate Advisor upon entry into the program. In addition, first year students should feel free to consult with the graduate program chair for questions concerning their first year courses and exams.

After completing coursework, the student identifies two faculty Research Essay Advisors. The Research Essay Advisors assist the student in formulating a research agenda and writing the Research Essay, which is the basis for the Oral Qualifying Exam. The Research Essay Advisors need not serve later on the dissertation committee, and these advisors may be substituted if the direction of the student’s research changes. Each student should select the Research Essay Advisors no later than the May 15 following completion of the last prelim. Students should consult with faculty teaching the second year field courses most closely related to their expected field of research for assistance with selecting the Research Essay Advisors. Students who still find it difficult to select these advisors should consult with the graduate program chair for assistance.

The Mentoring Guidelines are available online at: http://www.gradstudies.ucdavis.edu/gradcouncil/mentoring.pdf.
6) Committees

A) The Graduate Administrative Committee:

The Graduate Administrative Committee (GAC) consists of the five graduate advisors in the program. The ARE Department Chair appoints one of these advisors as GAC Chair.

The GAC is charged with the following responsibilities:

i. To review and make recommendations to Graduate Studies regarding applications for admission and fellowships, and various graduate student petitions;

j. To serve as graduate advisors as described below;

k. To evaluate and make recommendations to the Program faculty regarding policy, curriculum, and administration of the Program;

l. To appoint ad hoc committees, as needed.

In addition to the above duties, the GAC Chair provides academic leadership for the program, making recommendations to the Department Chair regarding departmentally funded student employment and fellowships, overseeing student employment and fellowships funded by other sources including block grant and other funds allocated specifically to the graduate program, appointing preliminary and qualifying exam committees, and coordinating administrative matters with the Office of Graduate Studies.

B) Admissions Committee:

The Admissions Committee consists of the five faculty members of the Graduate Administrative Committee (GAC). Once the completed application, all supporting material, and the application fee have been received, the application will be submitted to the Admissions Committee. Based on a review of the entire application, a recommendation is made to accept or decline an applicant’s request for admission. That recommendation is forwarded to the Dean of Graduate Studies for final approval of admission. Notification of admissions decisions will be sent to the applicant by Graduate Studies. Applications are accepted through March 1 for the class entering the following Fall. Priority is given to those applications received by January 15.

C) Course Guidance/Advising Committee

The five faculty members of the GAC serve as graduate advisors. Graduate advisors are responsible for ensuring that their advisees complete appropriate preparatory coursework; interpreting requirements; providing advice and guidance to their advisees about required coursework, elective courses, and graduate research options and requirements; identifying members for the thesis committee (in the case of Plan I students); and overseeing students’ progress. Prior to the end of the first week of each Fall quarter, students are required to meet with their assigned advisor and complete a Study Plan. The Study Plan lays out the courses and other academic activities for the remainder of the year. Students are also required to meet with their advisors in the Spring quarter to complete a Progress Report. Advising on research and dissertation begins with the two Research Essay advisors, who (as described above) are selected by the student during
the second or third year. The balance of responsibility for overseeing students’ progress shifts from the Graduate Advisor to the Dissertation Advisor after the student advances to candidacy.

D) **Oral Qualifying Exam Committee**

The qualifying examination committee consists of four members of the Department of Agricultural and Resource Economics and one member from outside the department. At least one of the two Research Essay advisors must participate on the oral exam committee. All members of the qualifying examination committee must hold Ph.D degrees and must be professors at a UC campus unless the research essay advisors secure a waiver from the Dean of Graduate Studies.

E) **Dissertation Committee:**

The dissertation is the means by which the candidate demonstrates research proficiency. Upon advancement to candidacy, the student will assemble a dissertation committee consisting of three faculty members, chaired by the student’s major professor, to direct the research. At least two of the members of the dissertation committee must be members of the Graduate Program in Agricultural and Resource Economics. Cooperative Extension Specialists with primary appointments in the Department of Agricultural and Resource Economics who hold an appropriate instructional title, such as Lecturer without Salary, may serve as co-chair or member of the dissertation committee. Senate faculty who are not members of the Graduate Program in Agricultural and Resource Economics may serve as a member on the dissertation committee subject to approval from the Graduate Administrative Committee and may serve as the sole dissertation chair subject to approval from the Graduate Administrative Committee and the Department Chair of ARE for nomination to the Dean of Graduate Studies.

7) **Advancement to Candidacy:**

Students are eligible for advancement to candidacy after completing all course requirements as described above, passing preliminary examinations at the Ph.D level, completing and submitting a Research Essay and passing their Oral Qualifying Examination, as described below. The student must file the appropriate paperwork with the Office of Graduate Studies and pay the candidacy fee in order to be officially promoted to Ph.D candidacy.

Students who pursue the “full core” option should advance to candidacy prior to the Fall quarter of their third year. Students who pursue the “split core” option should advance to candidacy prior to the Fall quarter of their fourth year. The “full” and “split” core options are described in section 9 below.

**A. Preliminary examinations**

**Core theory prelims:** All students must pass written preliminary examinations (“prelims”) in Microeconomic Theory (covering ECN 200A, 200B, 200C), Applied Microeconomic Theory (covering ARE 202A, 202B, 202C) and Econometrics (covering ARE/ECN 239,
240A, 240B). The core theory prelims should be taken at the earliest opportunity following completion of the course sequence. “Full core” students should take them at the beginning of the summer following their first year. “Split core” students should take the Econometrics prelim at the beginning of the summer following their first year and should take the Microeconomic Theory and Applied Microeconomic Theory prelims at the beginning of the summer following their second year.

Prelims are “closed book” and are graded on a 0 – 5 numerical scale. A minimum score of 2.0 is required to pass the exam. All exams are graded by two or three faculty members. Students may read the examiners’ comments by contacting the graduate program coordinator.

Retaking core theory prelims: A student who does not pass a prelim exam may retake the exam at the end of the summer. Students may re-take each exam not more than once, that is, a maximum of two attempts are allowed for each exam.

A “full core” student who, before beginning the second year or a “core splitting” student who, before beginning the third year, fails to meet the requirements listed in this section will be recommended for disqualification to the Dean of Graduate Studies. This requirement may be waived on petition to the Chair of the Graduate Administrative Committee if the student can prove adequate grounds.

**B) Major Field and Elective Coursework**

By the summer of the year following completion of preliminary examinations, students should have completed all remaining required coursework. This includes the six courses comprising their two major fields and the three elective courses.

**C) Research Essay**

The program’s emphasis on applying microeconomic theory encourages students to begin thinking about dissertation topics early in the program. During the summer following the second year (for full core student) or the third year (for split core students), each student completes a research essay that reviews the existing literature with regard to a reasonably specific research question. The purpose of the essay is to identify a research focus of the dissertation. The essay serves as the basis for the oral qualifying examination.

As discussed above, students work with two Research Essay advisors in the preparation of the research essay. Students must identify these two faculty members who will review and, if satisfactory, sign the essay. Students must notify the Graduate Program Coordinator of the subject of the essay and the names of the members of the Research Essay advisors, by May 15 of the year following completion of the preliminary examinations.

**Format and Substance**

The essay should review the existing literature on a reasonably specific research question. The essay must be between 15 and 25 double-spaced pages, with 12 point font and margins of at least one inch on all sides. Reference lists, figures, tables, and maps do not count toward
ARE Program Requirements

the page limits. Failure to observe these limits will result in the essay being returned to the student without review.

Students should consult with their two Research Essay advisors when defining a question and identifying papers to be reviewed. The essay should address an area that will be relevant to the student’s dissertation and, ideally, will serve as the first draft of a literature review chapter in the student’s dissertation. The student is not required, however, to write a dissertation on the topic of their essay. The essay should demonstrate the student’s ability to define and evaluate a research question. The purpose of the essay is to critically evaluate existing literature; to describe how theory has been implemented in empirical work, and to identify remaining unanswered questions.

Submission

Once the Research Essay has been approved and signed by both Research Essay advisors, the student must submit one signed paper copy of the essay, one electronic copy of the essay and, electronic copies of five key articles reviewed in the essay to the Graduate Program Assistant. “Full core” students must complete this submission by September 1 of the summer following their second year. “Split core” students must complete this submission prior to September 1 of the summer following their third year. Failure to meet the appropriate deadline will be considered a failure to make normal progress. As Departmental funding guarantees are conditional on the student making normal progress, failure to meet the appropriate deadline may result in a withdrawal of guaranteed funding until the student advances to candidacy (as described in section E below).

D) Oral Qualifying Examination

The Qualifying Examination is the University’s means of evaluating and certifying the adequacy and appropriateness of the student’s preparation for the doctorate.

A five-person examining committee is appointed by Graduate Council, upon the recommendation of the chair of the Graduate Administrative Committee. Four of the committee members are faculty from the Department of Agricultural and Resource Economics. Two of these four are typically, although not necessarily, the two Research Essay advisors. The fifth member must be a faculty member from outside the Department of Agricultural and Resource Economics. Neither of the two Research Essay advisors may serve as chair of the oral qualifying examination committee.

All members of the examination committee must approve the student’s essay as a sufficient basis for an oral qualifying examination prior to the examination itself. Approval in this case constitutes agreement to convene the scheduled examination; no formal signature is required. If the examiners determine that student’s essay is an insufficient basis for an examination, then the student must revise the essay, and the examination will be postponed. The student may appeal the committee’s decision in writing to the GAC.

Conditional on approval of the research essay by the full committee, a three hour oral exam is scheduled. The exam begins with a 15 minute presentation of the research essay by the student. The remainder of the exam consists of questions by the exam committee of the material and ideas put forward in the research essay. The questions and discussion are not limited, however, to the ideas presented and papers reviewed in the research essay. The
examiners may ask about additional ideas or literature deemed to be relevant to the student’s research topic.

The committee will reach a decision on the student’s performance immediately after the oral exam. The committee, having reached a unanimous decision, shall inform the student of its decision to:

- “Pass” (no conditions may be appended to this decision),
- “Not Pass” (the Chair’s report should specify whether the student is required to retake all or part of the examination, list any additional requirements, and state the exact timeline for completion of requirements to achieve a “Pass”), or
- “Fail”.

If a unanimous decision takes the form of “Not Pass” or “Fail”, the Chair of the oral qualifying exam committee must include in its report a specific statement, agreed to by all members of the committee, explaining its decision and must inform the student of its decision. Students that receive a “Fail” will be recommended for disqualification from the program to the Dean of Graduate Studies. Students that receive a “Not Pass” may attempt the qualifying exam one additional time; the QE report must list the specific conditions and expected timing for the second exam. After a second examination, a vote of “Not Pass” is unacceptable; only “Pass” or “Fail” is recognized. Only one retake of the qualifying examination is allowed. Should the student receive a “Fail” on the second attempt at the exam, the student will be recommended for disqualification from the program to the Dean of Graduate Studies.

E) Advancement to candidacy

The student may file for advancement to candidacy upon successful completion of the qualifying exam and all other degree requirements except completion of the dissertation. An Application for Advancement to Candidacy must be submitted to the Office of Graduate Studies and approved by that office before advancement occurs.

8) Dissertation requirements:

The dissertation is the means by which the candidate demonstrates research proficiency. The Department of Agricultural and Resource Economics follows Dissertation plan B and does not require an exit seminar upon completion of the dissertation. However, a final oral exam may be required at the discretion of the dissertation committee.

After advancing to Candidacy, the student may be required to demonstrate evidence of progress on an annual basis. This evidence may take the form of an updated written research proposal, a research presentation in a Departmental workshop or seminar, an article submitted for publication, or a research presentation at a professional conference.
9) Normative Time to Degree

A) Full Core versus Core Splitting.

While all students are subject to the same program requirements, students may select from two options for the timing of coursework completion. The option selected is a function of the student’s prior preparation in economics and quantitative methods. The student decides upon the option in consultation with his/her Graduate Advisor in the summer prior to the first year. The two options are as follows:

- **Full Core**: Under this option, students complete the three required Ph.D. core sequences in Microeconomics Theory, Econometrics and Applied Economic Theory in their first year. They take the preliminary examinations in each of these core areas in the summer after their first year. Students with a M.S. in economics, agricultural economics, or statistics are expected to select the Full Core option. Students without an M.S. degree, but whose undergraduate degree was strong in both economic theory and quantitative methods (for example students with an economics B.A. and a minor in Math) are also expected to select this option.

- **Core Splitting**: Under this option, students complete the required Ph.D. core sequence in Econometrics in the first year and take the Econometrics preliminary examination in the summer after their first year. They postpone the core sequences in Microeconomic Theory and Applied Microeconomic Theory until their second year. During their first year, these students typically take the M.S. courses in Microeconomic Theory as well as additional coursework in Math or Statistics in order to prepare for the remaining two core sequences. Students with only an undergraduate degree or students who have been away from school for several years may select this option.

B) Normative time to Advancement to Candidacy and Completing the Dissertation

The expected time to advancement to candidacy depends on whether the student chooses the Full Core or the Core Splitting option. The expectations are as follow:

- **Full Core** students are expected to advance to candidacy prior to the fall quarter of their third year (after 6 quarters). The typical time line for advancing to candidacy is as follows:
  - Year 1: Complete the three core course sequences and pass preliminary exams in the three core course areas in the summer after Year 1.
  - Year 2: Complete two major field course sequences and elective field courses. By the Spring quarter of Year 2, the student should have identified the Research Essay advisors and begun working under their supervision on the Research Essay.
  - Year 2 Summer: Complete Research Essay under supervision of Research Essay Advisors. The essay must be submitted by September 1. Schedule and take the Oral Qualifying Exam and advance to Candidacy prior to the Fall quarter of Year 3.
  - Year 3: Begin developing dissertation research.
  - Year 4: Continue with dissertation research.
o Year 5: Complete dissertation.

- **Core Splitting** students are expected to advance to candidacy prior to the Fall quarter of their fourth year (after 9 quarters). The typical timeline for advancing to candidacy is as follows:
  o Year 1: Complete Econometrics core sequence, M.S. level courses in microeconomic theory, and undergraduate courses in mathematics and statistics. Pass the Econometrics preliminary examination in the summer after the first year.
  o Year 2: Complete the Microeconomic and Applied Microeconomic Theory core sequences. As students enroll in a third course each quarter, they may also complete coursework towards a first major field or to satisfy the PhD elective course requirements. Pass the preliminary examinations in Microeconomic and Applied Microeconomic Theory in the summer after Year 2.
  o Year 3: Complete two major field course sequences and additional electives. By the Spring quarter of Year 3, the student should have identified the Research Essay advisors and begun working under their supervision on the Research Essay. The essay is completed and submitted by September 1 of the summer after Year 3. Schedule and take the Oral Qualifying Exam and advance to candidacy prior to the Fall quarter of Year 4.
  o Year 4: Continue with dissertation research.
  o Year 5: Complete dissertation.

10) **Sources of funding.**

Students in the Agricultural and Resource Economics PhD program may apply for funding as teaching or research assistants. Students are also strongly encouraged to fellowship proposals to secure independent funding.

11) **PELP, In Absentia and Filing Fee status.**

Information about PELP (Planned Educational Leave), In Absentia (reduced fees when researching out of state), and Filing Fee status can be found in the Graduate Student Guide: [http://www.gradstudies.ucdavis.edu/publications/](http://www.gradstudies.ucdavis.edu/publications/)

12) **Leaving the Program Prior to Completion of the PhD Requirements.**

Should a student leave the program prior to completing the requirements for the PhD, they may still be eligible to receive the Masters if they have fulfilled all the requirements (see Masters section). Students can use the Change of Degree Objective form available from the Registrar’s Office: [http://registrar.ucdavis.edu/PDFFiles/D065PetitionForChangeOfGraduateMajor.pdf](http://registrar.ucdavis.edu/PDFFiles/D065PetitionForChangeOfGraduateMajor.pdf)