Agricultural and Resource Economics

Graduate Program Policies and Procedures

Updated: Fall 2025

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1 Academic Programs

1.1 Master of Science (M.S.)

The Master of Science (M.S.) degree certified by the Department of Agricultural and Resource Economics (DARE) is a formal program of study consisting of 30 credit hours including a work of original research (thesis or technical paper). The program is designed to be completed in two years, but students who work diligently can finish earlier. Class work is focused on microeconomic applications and quantitative methods, which can typically be completed in approximately three semesters. Most M.S. students in DARE opt to prepare a thesis to be defended publicly.

Completion of the M.S. program in DARE signifies a mastery of fundamental microeconomic theory and econometrics with an ability to perform applied economic research. This preparation makes M.S. graduates suitable for employment in the public and private sectors as analysts, consultants, researchers, and other occupations. The M.S. in DARE also provides an excellent basis for those inclined to pursue doctoral degrees. Many of our students have decided to pursue a Ph.D., either in our own program, or in other top-level institutions across the country.

Relative to undergraduate instruction, study at the Masters level is faster-paced, uses considerably more formality in the classroom, and requires original research. Students are expected to be self-motivated, professional, and actively invested in their own education.

1.1.1 Admission Policies/Post-Admission

Applications to the M.S. degree program are reviewed by the Graduate Admissions Committee to determine suitability for study in agricultural and resource economics at the graduate level. Successful applicants for the M.S. program will have an undergraduate degree with an overall grade point average greater than or equal to 3.0 on a 4.0-point scale and will have successfully completed courses in differential calculus and statistics. Most successful applicants will also have completed courses in econometrics and intermediate microeconomic theory, or equivalent.

An undergraduate background in agricultural and resource economics, economics, or a related field is encouraged, but is not required. All applicants to the program are required to take the Graduate Record Exam (GRE); minimum required GRE scores for consideration are: Quantitative ≥ 30%; Written ≥ 15%; Verbal ≥ 15%. The Graduate Admission Committee evaluates each prospective student based on the totality of their application materials.

Once admitted, applicants are responsible for following the steps outlined on the graduate school website: https://graduateschool.colostate.edu/steps-once-admitted/.

1.1.2 Academic Advising

After initial enrollment, the Chair of the Graduate Program ("Grad Chair") will initially serve as the temporary advisor. During this period, students are expected to work on devising their program of study and identify a faculty member who will serve as their permanent advisor and thesis work supervisor. The Grad Chair will help with these tasks. Students are encouraged to familiarize themselves with the work of and meet with DARE faculty as part of the process of

selecting their Graduate Advisory Committee, following the procedures detailed in section 2.1.1. Students making satisfactory degree progress **will declare their permanent advisor on the** GS-6 form **by the end of the second semester after arrival**.

1.1.3 Credit Requirements

Total credits required for the M.S. degree are:

- **Plan A** – 30 credits including a thesis (maximum of 6 credits for thesis).
- **Plan B** – 30 credits including a technical paper (no thesis credit awarded).

A Minimum of:

- 24 credits must be earned at Colorado State University.
- 21 credits must be earned after admission to the Agricultural and Resource Economics Graduate Program.
- 15 credits must be 500-level or above courses.
- At least 12 credits must be from formal AREC or ECON 500-level or above courses (i.e., not independent study or research).
- Please note that we expect students to be actively engaged in devising their program of study, and the responsibility of complying with these requirements rests on the student. Pass-fail grading is not permitted as part of the program of study (i.e., courses listed on GS-6 Form) unless (i) the course is only offered as pass-fail and (ii) the student receives approval from the Chair of the Graduate Committee prior to taking the course.

1.1.4 Courses

M.S. students are required to take four core classes (ECON 501, AREC 506, 507, 535) within their first two semesters, one methods course (AREC 615 or AREC 635) and field courses (AREC 605 and 610 or 540). The courses are listed in the following section, and the Appendix presents a sample M.S. program complying with such constraints.

1.1.4.1 Core Courses:

- ECON 501: Quantitative Methods for Economists
- AREC 506: Applied Microeconomic Theory
- AREC 507: Applied Welfare and Policy Analysis
- AREC 535: Applied Econometrics

1.1.4.2 Methods Courses (Choose one course):

- AREC 615: Optimization Methods for Applied Economics **OR**

- AREC 635: Econometric Theory I

1.1.4.3 Field Courses

A field in Agricultural Economics or Environmental and Natural Resource Economics will be declared by taking field courses:

- AREC 605 (3 credits): Agricultural Production and Cost Analysis **AND**
- AREC 610 (3 credits): Agricultural Marketing and Demand Analysis

OR

- AREC 540 (3 credits): Environmental and Natural Resource Economics

1.1.4.4 Elective Courses

Specific course electives beyond the required core, method and field courses will be selected and agreed upon by the student and their advisor in consideration of the student's background and objectives. Such courses can be from any department and can include 300 and 400 level courses. However, courses considered prerequisites to enter the MS program cannot be counted toward the minimum credit requirement including ECON 306 (Intermediate Microeconomics), AREC/ECON 335 (Introduction to Econometrics) and STAT 301 (Introduction to Statistical Methods). (See Appendix A for DARE offered graduate level courses). Students that choose the Plan A track may also use a maximum of 6 thesis credits (AREC 699) toward their degree. Graduate students at CSU are considered full time when registered for 9 credits per semester, which is a typical course load for DARE students.

Formal coursework from a properly planned degree program can be completed in three semesters. See https://catalog.colostate.edu/general-catalog/courses-az/arec/ for the catalog description of DARE classes.

1.1.5 Thesis (Plan A)

The Plan A track requires a student to submit a Master's thesis to the Graduate School. A Master's thesis in DARE is an independent, original piece of research prepared by the student, addressing a topic of interest related to agricultural and resource economics, which contributes to scholarly knowledge. The thesis is a formal written document that describes a research project, often testing theoretical hypotheses with empirical data. The expectation for the thesis is that it provides the basis for a peer-reviewed publication. Specific guidelines for submitting a thesis are determined by the Graduate School, and can be found at https://graduateschool.colostate.edu/thesis-dissertation/.

1.1.6 Technical Paper (Plan B)

A technical paper in DARE is typically the application of empirical methods to a particular managerial decision or problem of interest within the agricultural and resource economics field.

As a research paper, it may not contribute to scholarly knowledge to the degree expected of a formal thesis. Students that choose Plan B cannot use thesis credits (AREC 699) toward their requirement of 30 credits; implying that this plan requires two more formal courses than Plan A.

1.1.7 Final Exam

Candidates for an M.S. degree must pass a final examination (also known as a thesis or technical paper defense), which must be held by the published deadlines of the student's graduating term. The examining committee is the student's graduate committee with the advisor serving as chairperson. **It is the student's responsibility to schedule the final examination in consultation with the advising committee and the graduate coordinator, and to give a minimum two week notice to the broader academic community**.

In DARE, the final exam consists of the candidate presenting the results of their research (thesis or technical paper) and answering questions related to the research and the student's program of study. Exams typically last two hours and have a public and private component. The presentation and general questions are open to the public. The public attendees are then dismissed and the committee has an opportunity to ask further questions.

Passing the examination requires a majority vote of the committee. A tie vote is interpreted as failure to pass the examination. Voting at all final oral examinations shall be limited to the student's committee members, where non-academic faculty members do not have a vote.

Pending committee approval, a candidate who fails the final examination may be reexamined once and may be required to complete further work. The reexamination must be held no later than 12 months after the first examination. The examination should not be held earlier than two months after the first examination. Failure to pass the second exam results in dismissal from the program.

The **Report of Final Examination** (GS-24) must be initiated by the student in coordination with the graduate coordinator when the exam is scheduled. The completed form must be submitted to the Graduate School within two working days after results are known. This must occur before the term graduation deadline.

1.1.8 Assessing Academic Performance

To meet the requirements for graduation and to remain in good academic standing, a student must demonstrate acceptable performance as outlined by the Graduate School. It is the responsibility of the graduate student to be knowledgeable of current Graduate School policy. The information provided below is current as of Spring 2023.

https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/#scholastic-standards

Grade requirements:

1. An overall 3.00 grade point average must be maintained in regular (course numbers less than x82) and non-regular (course numbers x82 to x99) courses graded traditionally (A through F).

2. The grade point average in courses included on the approved Program of Study (GS-6) must also equal at least 3.00.

3. Grades of C or higher must be earned in all courses on a Program of Study.

4. D grades may be accepted in background courses (outside the Program of Study), but such courses must be included in the computation of the cumulative grade point average.

Standards and requirements for off-campus graduate study are the same as those standards and requirements on campus. The academic Department Head has the basic responsibility for the implementation of this policy.

Academic probation: failure to maintain good academic standing results in the student being placed on academic probation and a loss of eligibility for departmental funding. The probationary period extends for one semester beyond the one in which this status is acquired. During the probationary period, the student must register for traditionally graded courses that affect the grade point average. With permission of the student's advisory committee, the student may register for continuous registration instead of traditionally graded courses. Continuous registration may be used to extend the probationary period for a maximum of two semesters, after which traditionally graded courses must be taken. The period allowed between being placed on probation and registering for courses that affect the grade point average shall be limited by the departmental graduate committee within their criteria for determining satisfactory progress. Students on probation are subject to dismissal by the academic department or the Dean of the Graduate School at the end of the probationary semester unless good academic standing has been regained. This requires adequate improvement in cumulative grade point averages (3.00) and/or satisfactory progress as determined by the student's graduate advisory committee.

Newly admitted students who have yet to complete 12 regular credits or two semesters of graduate work (whichever comes first) cannot go on academic probation. They will be put on "Academic Watch" and are required to contact their advisors and/or advisory committees to set up a meeting to create a progress plan.

Students who were admitted after waiver of the minimum undergraduate GPA requirement are considered provisionally admitted. Such students must achieve a regular and overall GPA of 3.00 or higher their first semester or they will be dismissed from their programs and the Graduate School.

Note: There is no repeat/repair option in Graduate School. If a student repeats a course that is on the Program of Study, both courses will be listed on the Program of Study. The Program of Study GPA will be calculated with the higher course grade only, and not with the average grade of both courses. The grades for both courses are included in the GPA calculation for the overall course GPA and regular course GPA from courses taken within and outside of the Program of Study.

1.1.9 Assessing Degree Progress

In addition to minimum GPA requirements, good academic standing requires satisfactory progress in the overall program of study. Students' individual graduate advisory committees may render judgments as to whether satisfactory progress is being made toward the degree. Satisfactory performance is based on all aspects of academic performance and not necessarily course work alone. A positive judgment is required to remain in good academic standing.

DARE requires that when a student's graduate advisory committee or an appropriate departmental graduate committee finds that a student is making unsatisfactory progress toward the degree due to factors other than grade point average and that satisfactory progress cannot be anticipated, a plan should be created and the following steps should be taken.

1. Inform the student of the concerns, create a progress plan with the student, develop a timeline and inform the student of the potential consequences (dismissal) if the progress is not satisfactory.

2. The committee should keep in contact with the student to give feedback during the progress plan timeline and document such contacts and their outcomes.

3. At the end of the timeline, if progress is not adequate, the committee may recommend dismissal from the program.

The recommendation must be referred to the Department Head for approval and the Dean of the Graduate School for final action. The student may appeal such an immediate dismissal through the existing Graduate School appeals procedure.

1.1.9.1 Timing and Milestones to Degree Completion for M.S.

The following are suggested guidelines intended to result in expeditious completion of a student's degree requirements. Typical timing for the M.S. degree is as follows:

M.S. Milestones	**Normal Progress**	**Limit**
Select thesis advisor and committee	End of 2nd semester	End of 3rd semester
Complete courses	End of 3rd semester	End of 10 years
Final Exam	End of 4th semester	End of 10 years

Sample M.S. programs of study are presented in the Appendix.

1.2 Doctor of Philosophy

The Doctor of Philosophy (Ph.D.) degree certified by the Department of Agricultural and Resource Economics is a program of study consisting of 72 credit hours (42 earned following a

30-credit M.S. degree), including credits from a substantial work of original research written in the form of a dissertation. Class work is focused on microeconomic theory, quantitative methods, and at least one field (Agricultural Economics or Environmental and Natural Resource Economics). Successful candidates must pass:

1. two written Qualifying Examinations (Econometrics and Microeconomic Core Theory)
2. a Preliminary Oral Examination (comprised of a written and oral component) of their proposed research, and
3. a Final Oral Dissertation Defense.

With proper planning and pre-enrollment academic preparation, a Ph.D. degree can be earned in approximately four years. Completion of the Ph.D. in DARE signifies a mastery of advanced microeconomic theory and quantitative methods, with a particular expertise in either Agricultural Economics or Environmental and Natural Resource Economics. Those who earn a Ph.D. must demonstrate significant intellectual achievement, high scholarly ability, and great breadth of knowledge. Successful Ph.D. graduates will be experts in applied economics who are able to: develop and execute research programs; teach economics courses; and present theoretical and applied economic concepts and results to a wide variety of audiences.

Ph.D. students are held to the highest academic standards and are expected to become experts in their field. Significant independent inquiry outside of the classroom is expected. Successful students are self-motivated, professional, and proactive in achieving their academic goals.

1.2.1 Admission Policies/Post-Admission

Applicants to the Ph.D. degree program are reviewed by the Graduate Admissions Committee to determine suitability for study in agricultural and resource economics at the Ph.D. level. While applicants with a strong background in quantitative methods and economics are more likely to gain admission to the Ph.D. program with departmental funding, applicants with other types of degrees will be considered. **All applicants to the program are required to take the Graduate Record Exam (GRE)**; minimum required GRE scores for consideration are: Quantitative ≥ 30%; Written ≥ 15%; Verbal ≥ 15%. Although the Graduate Admission Committee evaluates each prospective student based on the totality of their application materials, there , there is a preference for high scores on the quantitative portion of the exam. Once admitted, applicants are responsible for following the steps outlined on the graduate school website: https://graduateschool.colostate.edu/steps-once-admitted/.

1.2.2 Academic Advising

After initial enrollment, the Chair of the Graduate Program will serve as the student's temporary advisor. During this period, students are expected to work at devising their program of study and identifying a faculty member who will serve as their permanent advisor and dissertation supervisor. Students are encouraged to familiarize themselves with the work of the DARE faculty when identifying a permanent advisor, following the procedures detailed in section 2.1.1. Their temporary advisor will help with these tasks. The chair of this committee, with input from the committee members, will guide the student through the research process and the writing of a

doctoral dissertation. **All students must declare their permanent advisor on the GS-6 form by the end of the third semester after arrival**.

1.2.3 Credit Requirements

A minimum of 72 credits is required for the Ph.D. degree:

- A minimum of 42 credits earned in 500-level or above courses beyond the B.S. degree, with a minimum of 30 of these credits earned in regular graduate courses (i.e., not independent studies or research).
- Students may apply up to 30 credits from an approved Master's degree toward the Ph.D. requirements provided such degree fulfills course requirements analogous to the Agricultural and Resource Economics M.S. program offered by DARE. The transfer of such credits must be requested by means of submitting a GS3 – Transfer Credit Evaluation form, which, for the lump-sum 30 -credit transfer, can be approved by the major advisor at the moment of submitting the plan of study (form GS6).
    - If other credit transfers are requested, and/or the Master's degree credits to be transferred were not earned at a U.S. institution, you should submit the form GS3 before you submit your GS6, and it will be evaluated on acase by case basis by the Chair of the Graduate Program.
- A maximum of 12 dissertation credits.
- At least 32 credits earned at Colorado State University after admission to the Ph.D. program.
- A maximum of 10 credits in courses earned after the date on which an M.S. degree was awarded may be accepted in transfer if approved by the student's advisory committee, the department, and the Graduate School. Transfer credits are only allowable for completed courses receiving a grade of B or better (3.0 grade points), in accordance with the substitution policy.
- At least 9 credits must be earned at Colorado State University at the 700 level in AREC ***OR*** ECON classes, not including AREC 784, 795, and 799.
- Please note that we expect students to be actively engaged in devising their program of study, and the responsibility of complying with these requirements rests on the student. Pass-fail grading is not permitted as part of the program of study (i.e., courses listed on GS-6 Form) unless (i) the course is only offered as pass-fail and (ii) the student receives approval from the Chair of the Graduate Committee prior to taking the course.

1.2.4 Courses

Full-time students at CSU must register for 9 credits per semester. Core courses are taken by all Ph.D. students, while field courses are taken by all students within a specialization (Agricultural

Economics or Environmental and Natural Resource Economics). Elective courses are chosen by the student to fulfill the minimum credit requirements of the degree.

1.2.4.1 Core Courses

To maintain good academic standing students must complete the following core classes by the end of the second year after admission into the Ph.D. program:

- AREC 615: Optimization Methods for Applied Economics
- AREC 635: Econometric Theory I
- AREC 735: Econometric Theory II
- AREC 736: Advanced Econometric Methods: A (Discrete Choice Models), B (Panel Data Models), C (Time Series), or D (Causal Inference)
- AREC 606: Microeconomic Analysis I
- AREC 706: Microeconomic Analysis II
- AREC 570: Methodology of Economic Research
- ECON 501: Quantitative Methods for Economists
- One graduate macroeconomics course (ECON 604/704 or other approved graduate level macroeconomics course)

1.2.4.2 Field Courses

Field courses depend on the chosen specialization.

Students pursuing a field in Agricultural Economics are required to successfully complete the following classes:

- AREC 605 (3 credits): Agricultural Production and Cost Analysis
- AREC 610 (3 credits): Agricultural Marketing and Demand Analysis
- AREC 705 (3 credits): Advanced Production and Technological Change
- AREC 710 (3 credits): Advanced Agricultural Marketing Issues

Students pursuing a field in Environmental and Natural Resource Economics are required to successfully complete the following classes:

- AREC 540 (3 credits): Environmental and Natural Resource Economics
- AREC 740 (3 credits): Advanced Natural Resource Economics

- AREC 741 (3 credits): Advanced Environmental Economics

1.2.4.3 Elective Courses

Specific course electives beyond the required core, method and field courses will be selected and agreed upon by the student and their advisor in consideration of the student's background and objectives. Such courses can be from any department and can include 300 and 400 level courses. However, 300 level AREC and/or ECON courses, considered prerequisites to enter the Ph.D. program, cannot be counted toward the minimum credit requirement.

1.2.5 Qualifying Examinations

Students pursuing the Ph.D. are required to pass two qualifying examinations: microeconomic theory and quantitative methods (econometrics). The intent of the examinations are to test and certify that students have mastered the fundamental core knowledge necessary to succeed in advanced Ph.D. coursework and a chosen field of study.

Each qualifying examination will be administered as a closed-book, written examination. Doctoral students are expected to sign-up and take the test immediately after completing the supporting coursework (see following sections). Students who do not pass each qualifying examination on the first attempt must retake the examination at its next offering. Failure to take the test at the subsequent offering constitutes an automatic fail. **Students who do not complete the qualifying exams in a timely manner demonstrate unsatisfactory academic progress and will lose their good academic standing.**

In rare situations where students fail to pass the second exam attempt due to extenuating circumstances beyond their control, students may petition the Graduate Committee for a third attempt (see Ph.D. Exam Appeal Policies).

1.2.5.1 Econometrics Core Theory Qualifying Exam

The Econometrics Qualifying Exam is offered twice each summer in May and August, shortly after the end of the spring term and shortly before the beginning of the fall term. This exam covers econometric topics discussed in AREC/ECON 635 (offered in Fall) and AREC/ECON 735 (offered in Spring), but also tests more basic concepts and intuition typically presented in M.S. level courses. Students will take the quantitative qualifying exam following successful completion of AREC/ECON 735. Failure to take the exam in the absence of a formal exemption, granted by the Graduate Committee, will be considered a failed exam.

1.2.5.2 Microeconomic Core Theory Qualifying Exam

The Microeconomic Qualifying Exam is offered in January and May or June of each year, shortly before the beginning of the spring term and shortly after the end of the spring term. This exam will cover topics discussed in ECON 501 (offered in Fall), AREC/ECON 606 (offered in Spring), and AREC/ECON 706 (offered in Fall). Students will be automatically enrolled in the microeconomic qualifying exam following successful completion of AREC/ECON 706. Failure to take the exam in the absence of a formal exemption, granted by the Graduate Committee, will be considered a failed exam.

1.2.6 Preliminary Exam

The Preliminary Exam (also known as 'Proposal Defense') is the final step to Ph.D. candidacy (also known as A.B.D., "All But Dissertation"). Per Graduate School regulations, the Preliminary Examination must be completed *at least two terms, summer included, before the Final Examination*. In DARE, completing the Preliminary Examination involves the following three components: research proposal, written exam and oral exam.

The written and oral exams can only occur after meeting the following requirements:

1. Passing the Microeconomics and Econometrics Qualifying Exams
2. The research proposal has been approved as "ready to defend" by all members of the advisory committee
3. Successful completion of the AgEcon or ENRE PhD field courses listed in the GS6:
    a. AgEcon: AREC 605, AREC 610, AREC 705, AREC 710 (12 credits total)
    b. ENRE: AREC 540, AREC 740, AREC 741 (9 credits total)

The intention to hold a Preliminary Examination is to be publicized to the Department at least two weeks before the date of the exam. An abstract of the research proposal prepared by the student, and approved by the members of the advisory committee, shall be shared with the DARE faculty at this time. The written component is to be assigned two weeks before the oral exam. Students have one week to return written materials for evaluation by their committee.

1.2.6.1 Research proposal

The objective of the research proposal is to lay the foundation for the doctoral dissertation. While there is no specific requirement, the research proposal should assure that substantial progress has been made on a portion of the research, the student is conducting PhD-level work, and, for the research that remains, there is a reasonable and complete plan of work. This will imply showing that data is available (if appropriate), the methods for analysis are known and understood, and that hypothesized results are provided. As a general rule, the student should engage and request feedback from all members of their advising committee in an iterative process. This iterative process continues until all committee members are in favor of proceeding to the written component of the exam, or the advising committee determines that the student has lost the status of good academic standing because of a lack of satisfactory progress towards the degree (see section 1.2.9)

A basic template and suggested structure of a research proposal is:

One research contribution (*i.e.* a chapter) should be close to completion and be representative of the quality and rigor the advisory committee expects from a PhD student in their doctoral dissertation. This involves an extensive literature review, a well formulated research question, appropriate methods, robust results, coherent conclusions and relevant discussion.

The second and third contributions / chapters can be at a more preliminary state, and may build or extend on the first contribution. At the very minimum, the following questions must be clearly addressed.

1) What is your primary research question for this contribution? How does this fit into the broader literature?
2) Why (and for whom) is this research question important?
3) How do you approach the research question? Can you document that the necessary information/data is accessible and/or how you will collect it?
4) What is novel about your approach, compared to what has been used in the previous literature? What is your unique contribution to the literature?
5) What results do you expect, and why?

1.2.6.2 Written component of the preliminary examination

After a research proposal is approved, the advisory committee will devise a set of questions for the written component of the exam. Every DARE member of the advisory committee is required to write at least one question; the outside member is encouraged but not required to write a question. The main advisor is in charge of compiling all the questions, adjusting for any redundancy, and administering the exam. The written exam is open-book, open-notes and take-home, but no other outside help can be accessed (the student can discuss the questions with the committee members as appropriate). The answers must include a signed statement of academic integrity: ***"I have not given, received, or used any unauthorized assistance. "***Students taking the written preliminary exam must disclose the use of Artificial Intelligence (AI) to formulate any of their answers by adhering to the following policy:

"For each question, disclose whether and how you used AI in formulating your answers, indicating specifically: 1) the AI assistants / chatbots / services you employed, and 2) the prompts you used. Note that you ***will*** be considered fully responsible for the correctness of all the responses you provide. You are expected to fully understand, and to be able to defend, and describe the intuition behind each of the answers you provide."

The written component of the preliminary exam is not a stand-alone exam, but rather the first part of the preliminary examination. Its primary function is to allow the members of the advising committee to ask complex and in-depth questions about the proposed research plan, which may be hard to address during an oral examination. Possible questions include (but are not limited to) the following objectives:

1) Address potential flaws or uncertainties in the research proposal.
2) Assess student knowledge and understanding of the broader methods and concepts relative to the chosen field of expertise (AgEcon, ENRE), even if not immediately related to the research proposal.
3) Survey student knowledge of the academic literature relevant to the research proposal, and challenge the relevance of the proposed contributions.
4) Test student knowledge of the methods and tools relevant to the proposed dissertation work.
5) Further explore interdisciplinary dimensions and connections with the non-economic literature.

The members of the advisory committee will determine the timing and content of the exam, but the exam will be limited to occur over not more than five business days. The committee will

assess the student performance on the written exam before the oral component, but the pass/fail determination is made only at the end of the oral component.

1.2.6.3 Oral component of the preliminary examination

The oral exam will involve a 30-45 minute presentation by the student illustrating the research proposal, followed by questioning by the advising committee. At their discretion, committee members can follow up on the questions and answers provided in the written component of the exam and/or inquire about the feasibility/methodological soundness of the research conducted and proposed. Per graduate school rules, participation in the oral exam by the student and/or one or more members of the examining committee may be virtual so long as all are participating simultaneously and all committee members and the student have agreed to this in advance.

At the end of the oral exam, each faculty member on the advisory committee will express a vote of pass/fail based on the overall performance of the student in the 1) written exam and related follow up questions during the oral exam, and 2) the merit of the research conducted and proposed. If the majority is opposed (or there is a tie), the student fails and works with the committee to devise a remediation path. Regardless of the outcome, a GS16 "Report of Preliminary Examination" (GS Form 16) is filed with the graduate school. The student is responsible for ensuring that the Report of Preliminary Examination is completed after the conclusion of the examination.

A candidate who fails the Preliminary Examination may be reexamined once and, for the reexamination, may be required to complete further work. The reexamination must be held not later than 12 months after the first examination. The examination must not be held earlier than two months after the first examination unless the student and committee agrees to a shorter time period. Failure to pass the second preliminary exam results in dismissal from the Graduate School.

1.2.6.4 Timing and Milestones to Degree Completion for Ph.D.

The following guidelines are suggestions intended to favor an expeditious completion of the degree requirements. Sample Ph.D. programs of study are presented in the Appendix.

Ph.D. students entering the program with an M.S. degree from a program comparable to the DARE M.S. (transferring 30 credits) are required to take five classes associated with the preliminary examinations (AREC 606, 706, 635, 735, and ECON 501), plus AREC 736A, 736B, 736C, or 736D, within their first two years, two methods courses (AREC 570, 615) and the required field courses (AREC 605, 610, 705, 710 or 540, 740, 741) within their first three years. The Chair of the Graduate Program may consider waiving one or more of these requirements if the student can demonstrate the equivalence of coursework eligible for transfer credit. Students may also use a maximum of 12 credits of the variable credit AREC 799: Dissertation course towards their degree. Although there are a maximum number of thesis credits from AREC 799 that can be formally counted towards the degree, there is no limit to the number of thesis credits for which a student may register. **As such, a typical full-time Ph.D. degree program would consist of 9 credits of formal coursework per semester (three classes)**. Formal coursework from a properly planned degree program can thus be completed in five semesters with a

previously earned M.S. Note, however, that certain courses (notably field courses) are only offered every other year, so planning is essential. For the catalog description of DARE classes, see https://catalog.colostate.edu/general-catalog/courses-az/arec/.

Typical timing for the Ph.D. degree is as follows:

Ph.D. Milestones	**Normal Progress**	**Limit**
Quantitative Core Exam	Summer after 2nd semester	Summer after 4th semester
Microeconomic Core Exam	January after 3rd semester	Summer after 4th semester
Select thesis advisor/committee	End of 2nd semester	End of 3rd semester
Preliminary Oral Exam	End 5th semester	
Final Dissertation Exam	End of 7th semester	End of 10 years

Students entering the PhD program without transferring M.S. degree credits will develop and follow the full 72 credit program, which will include, in addition to the program just described, the M.S. core and field classes. A template for such a program is provided in the Appendix.

1.2.7 Dissertation

Students take primary responsibility for identifying a dissertation topic, developing the dissertation content, and preparing the presentation and format of the dissertation. The dissertation is supervised by the student's advisor and committee, and must be approved by them. As an alternative to the standard monographic dissertation format, the advisor and committee may approve a dissertation constructed of three shorter, stand-alone articles integrated around a central theme. This approach is often favored because it expedites the process of submission and publication of original dissertation work in academic journals.

The final dissertation defense must occur at least two terms after the preliminary exam of the dissertation proposal (one term between the preliminary and final defense). So, if a student passes the preliminary exam in the fall term, they cannot defend the dissertation in the ensuing spring term and needs to wait until the summer term (exceptions to this policy can be petitioned to the Graduate School).

The Ph.D. degree is completed when the student's advisory committee and the Department Head have approved the dissertation, the dissertation is filed with the Graduate School, all appropriate forms have been submitted and approved, and an electronic copy of the dissertation is submitted to the Department of Agricultural & Resource Economics.

1.2.8 Assessing Academic Performance

To meet the requirements for graduation and to remain in good academic standing, a student must demonstrate acceptable performance as outlined by the Graduate School. It is the responsibility of the graduate student to be knowledgeable of current Graduate School policy. The information provided below is current as of Spring 2023.

https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/#scholastic-standards

Grade requirements:

1. An overall 3.00 grade point average must be maintained in regular (course numbers less than x82) and non-regular (course numbers x82 to x99) courses graded traditionally (A through F).

2. The grade point average in courses included on the approved Program of Study (GS-6) must also equal at least 3.00.

3. Grades of C or higher must be earned in all courses on a Program of Study.

4. D grades may be accepted in background courses (outside the Program of Study), but such courses must be included in the computation of the cumulative grade point average.

Standards and requirements for off-campus graduate study are the same as those standards and requirements on campus. The academic Department Head has the basic responsibility for the implementation of this policy.

Academic probation: failure to maintain good academic standing results in the student being placed on academic probation and a loss of eligibility for departmental funding. The probationary period extends for one semester beyond the one in which this status is acquired. During the probationary period, the student must register for traditionally graded courses that affect the grade point average. With permission of the student's advisory committee, the student may register for continuous registration instead of traditionally graded courses. Continuous registration may be used to extend the probationary period for a maximum of two semesters, after which traditionally graded courses must be taken. The period allowed between being placed on probation and registering for courses that affect the grade point average shall be limited by the student's advisory committee within their criteria for determining satisfactory progress. Students on probation are subject to dismissal by the academic department or the Dean of the Graduate School at the end of the probationary semester unless good academic standing has been regained. This requires adequate improvement in cumulative grade point averages (3.000) and/or satisfactory progress as determined by the student's graduate advisory committee.

New regularly admitted students will not be placed on probation until they have completed 12 regular credits or two semesters of graduate work, whichever comes first. Students not making satisfactory progress due to their grade point average will be under academic watch and will be required to create a progress plan with their advisors.

Students who were admitted after waiver of the minimum undergraduate GPA requirement are considered provisionally admitted. Such students must achieve a regular and overall GPA of 3.000 or higher their first semester or they will be dismissed from their programs and the Graduate School.

Note: There is no repeat/delete option in Graduate School. If a student repeats a course that is on the Program of Study, both courses will be listed on the Program of Study. The Program of Study GPA will be calculated with the higher course grade only, and not with the average grade of both courses. The grades for both courses are included in the GPA calculation for the overall course GPA and regular course GPA from courses taken within and outside of the Program of Study.

1.2.9 Assessing Degree Progress

In addition to grade point average requirements, good academic standing requires satisfactory progress in the overall graduate program**.** For DARE Ph.D. students, this includes sufficient progress on the qualifying and field exams, as well as the dissertation proposal and final dissertation defense. Students' individual graduate advisory committees may render judgments as to whether satisfactory progress is being made toward the degree, taking into account all aspects of academic performance, not necessarily course work alone. A positive judgment is required to remain in good academic standing.

When a student's graduate advisory committee or an appropriate departmental graduate committee finds that a student is making unsatisfactory progress toward the degree due to factors other than grade point average and that satisfactory progress cannot be anticipated, a plan should be created and the following steps should be taken.

1. Inform the student of the concerns, create a progress plan with the student, develop a timeline and inform the student of the potential consequences (dismissal) if the progress is not satisfactory.

2. The committee should keep in contact with the student to give feedback during the progress plan timeline and document such contacts and their outcomes.

At the end of the timeline, if progress is not adequate, the committee may recommend dismissal from the program. The recommendation must be referred to the Department Head for approval and the Dean of the Graduate School for final action. The student may appeal such an immediate dismissal through the existing Graduate School appeals procedure.

2 Department Policies and Procedures

2.1 Forming an Advisory Committee

The graduate experience involves engagement in a host of activities and the simultaneous pursuit of several competing requirements. Careful and comprehensive planning is a must. This planning is done by the student, the advisor, and the graduate advisory committee and should take place early in the graduate career. Comprehensive planning assures that the greatest possible benefit will be gained from graduate study.

Temporary and permanent advisor: Upon entering the graduate program, the Chair of the Graduate Program will serve as temporary advisor. Students are expected to consult with the departmental faculty and choose their permanent advisor within one year of entering the program. The advisor helps the student in planning the pursuit of their degree, following the student throughout their graduate career on all matters related to the degree program. A close, cordial, and professional relationship is therefore of the utmost importance. Both student and advisor should work at achieving mutual understanding and respect. It is the student's responsibility to identify a permanent advisor and a committee, all of whom are willing and qualified to serve. The Department Head and the Chair of the Graduate Program will use their best efforts to facilitate selection of the committee and subsequent changes therein.

The graduate advisory committee is appointed through filing a GS6 Form with the Graduate School, which is due before the student registers for their fourth regular semester at the latest. The purpose of the advisory committee is to make available to the student a broad range of knowledge and expertise. It aids in general advising of the student and assists in planning the major elements of the program. The committee also evaluates student progress throughout their graduate career and administers the preliminary and final examinations. Members of the committee should be chosen on the basis of the student's interests, the student's experience with faculty members, and the advisor's knowledge and expertise. Students may find it helpful to look at faculty publications as an indicator of the wide diversity of departmental research interests. The makeup of a graduate committee must be approved by the Department Head and agreed to by the potential members themselves. ***The committee is not responsible for reminding students of published deadlines or monitoring procedural details. The student should manage such matters independently.***

With notification, temporary replacement of a member may be arranged. A member, including the advisor, may resign from the committee and in such cases, the affected student and the Department Head will be notified promptly by the departing member. It is then the student's responsibility to obtain a replacement, assisted as needed by the Department Head and Chair of the Graduate Program. Any permanent changes are recorded through the filing of GS9A Form.

Advisory committee for M.S. students: the committee must consist of at least **three faculty members**. Committee members are as follows: 1) the advisor who serves as chair (or co-chairs of the committee of any appointment type within the department); 2) one or more additional members from the department; and 3) one member from an outside department who is chosen by the student, but appointed by the Vice Provost for Graduate Studies and represents the Graduate School. The outside committee member appointed by the Vice Provost for Graduate Studies must hold a regular, special, transitional, joint, or emeritus/emerita faculty appointment at Colorado State University.

Advisory committee for Ph.D. students: the committee must consist of at least **four faculty members**. Committee members are as follows: 1) the advisor who serves as chairperson of the committee of any appointment type within the department; 2) one or more additional faculty members from the department; 3) any non-departmental faculty member who may be appropriate; and 4) one member from an outside department who is chosen by the student, but appointed by the Vice Provost for Graduate Studies and represents the Graduate School. The

outside committee member appointed by the Vice Provost for Graduate Studies must hold a regular, special, transitional, joint, or emeritus/emerita faculty appointment at Colorado State University.

According to the graduate school manual, "The outside member should serve as an impartial external evaluator on the committee, ensuring quality of scholarship and fairness in process." The chair of the advisory committee will ensure that the outside member is fully informed of the departmental policies and procedures, especially with regard to the exams administered by the advisory committee (final examination for M.S., preliminary and final dissertation defense for Ph.D.).

Persons who are not academic faculty[1] of Colorado State University may be appointed full voting members of graduate student advisory committees following the procedures outlined in the "graduate study – advisory system" section of the Graduate Professional Bulletin.

The student may, with the Department Head's approval, change the advisor and (or) committee members. Committees can be changed by filing a GS-9A form. More information about advisors, committees, and other requirements can be found under "Graduate Study" in the Graduate and Professional Bulletin.

2.1.1 Graduate School Forms

Graduate School forms are handled electronically and will progress through the Dynamic Form workflow as appropriate persons sign.

2.1.2 GS-3: Transfer Credit Evaluation

You may request an evaluation of previously earned graduate-level course credits, or for a previously awarded Master's degree, to find out if they can transfer and count toward your degree program. You can do this when you're admitted or anytime while attending CSU. If you're considering a transfer credit evaluation, you can do that concurrently when submitting your GS6 Program of Study form (see below) , as approved transfer credits may change what coursework is required for you to complete your degree.

2.1.3 GS-6: Program of Study

The Program of Study is a document which lists all courses taken in pursuit of the degree as well as the graduate committee. This is the formal statement of what is done to achieve the degree and provides a summary of all academic planning. The Program of Study must be filed with the Graduate School before the student registers for their fourth regular semester. Students who fail

[1] According to the *Academic Faculty and Administrative Professional Manual* (section E.1) "The faculty includes all personnel who carry academic rank (professor, associate professor, assistant professor, instructor, and faculty affiliate) and additional personnel as defined by C.R.S. 23-31-104."

to meet this requirement may be denied subsequent registration. In addition, this form must be submitted to the Graduate School prior to applying for graduation.

2.1.4 GS-9A: Petition for Committee Member Changes

This form is used to make changes to a student's committee **after the student's GS-6 Program of Study has been approved by the Graduate School**. A student's committee must be up-to-date at the time of the preliminary examination (Ph.D. students), final examination/defense, and thesis/dissertation submission.

2.1.5 GS-16: Report of Preliminary Examination for the Ph.D. Degree

A preliminary examination shall be administered at least two terms before the final examination/defense to determine whether the student is qualified to continue toward the doctorate. The completed and signed form must be submitted to the Graduate School Office within two working days after the results of the examination are known.

2.1.6 GS-24: Report of Final Examination Results

All Ph.D. students and Master's Plan A and Plan B students are required to complete and pass a final examination/defense. The examination must be held by the published deadline of the student's graduating term. The completed and signed form must be submitted to the Graduate School Office within two working days after the results of the examination are known.

2.1.7 GS-25: Application for Graduation

A student must apply for graduation by the published deadline of the student's graduating term. A student applying to graduate for the first time must submit this form. During the intended term of graduation (fall, spring, or summer), graduate degree candidates must be enrolled for at least one credit or CR.

2.1.8 Reapplication for Graduation

An online process is in place for a student who has applied to graduate in a previous term and who needs to update to a future term. A student must reapply for graduation by the published deadline of the student's updated graduating term.

2.1.9 GS-30: Thesis/Dissertation Submission

This form is required of all Master's Plan A students and Ph.D. students submitting a thesis or dissertation after the final thesis/dissertation has been reviewed and approved by the student's committee. The completed and signed form must be submitted to the Graduate School Office by the published deadline date of the student's graduating term and **before** the electronic submission of the thesis or dissertation.

2.1.10 Continuing Registration

All students admitted to a graduate program at Colorado State University are required to be continuously registered in the fall and spring semester throughout their degree programs. This policy applies from the time of first enrollment through the graduation term. Students may fulfill this requirement by registering for any graduate credit-bearing course (regular or non-regular). If there is an interruption in successive semester-to-semester registration in a degree program, enrollment will lapse and graduate students will need to reapply for admission. This applies to all graduate students, on-campus resident instruction or on-line.

As an alternative, students may opt for a Continuous Registration (CR) status. Registration for CR status is accomplished in the same way as registration for courses. Section ID numbers appear in the class schedule under the CR prefix. Students registering for CR will be charged a fee for each semester of CR registration and should register **before** the first day of the term. Late registration fees will be charged if they register on or after the first day of the term. During the intended term of graduation (fall, spring, or summer), graduate degree candidates must be enrolled for at least one credit or CR.

Students in their 1st / 4th / 8th semester of CR must submit a Student Plan for Degree Completion to their Advisors for review by the Advisory Committee. The plan should state intention and progress toward degree completion with academic expectations and timelines. The goal of the plan is to ensure students and their committee are in agreement of the academic path that will support satisfactory progress toward degree completion. Students will be notified that they must submit a student plan to their advisors; advisors will forward approved and modified plans to students and department head, and kept on record.

2.2 Assistantship Policies & Procedures

2.2.1 Eligibility for Departmental Funding

The Department of Agricultural and Resource Economics has typically funded a limited number of graduate students from the Department's budget sources that are based on State of Colorado appropriated funds: teaching or agricultural experiment station allocations, contracts and grants. Departmental assistantships are assigned by the Department Head. As funding is limited, the allocation of this support is competitive and will be reviewed annually.

Graduate assistants (GAs), regardless of funding source, are funded as "employees at will", as stated in the Graduate and Professional Bulletin. Depending on individual circumstances, all funded students will enter into employment contracts of no longer than one academic year, and no shorter than one academic semester. Renewals of contracts will be made at the discretion of the Department Head and the Chair of the Graduate Program. **Renewal of contracts is not guaranteed. An unsatisfactory performance evaluation by the supervising professor, or a notification from the Graduate School placing the student on probation, may results in eliminating department funding opportunities.**

2.2.2 Duration of Assistantships

The duration of guaranteed assistantship funding is limited and provided in each student's offer letter. Assistantship funding beyond this period is at the discretion of the Department Head.

2.2.3 Obligations for Student on Assistantship

Obligations are dependent on the type of assistantship awarded:

Graduate Research Assistantships: the student duty is to assist the supervisor in their research program. It is the responsibility of the supervisor to make expectations and assigned duties clear.

Graduate Teaching Assistantships: the primary duty of a teaching assistant is to assist the supervising faculty member with the instruction of classes. This may include grading papers, preparing class materials, substituting in the classroom, and/or tutoring students. Depending on student experience/interest and departmental needs, a teaching assistant may be assigned to be the primary instructor of a course.

Joint research assistant/graduate teaching assistant appointments are also possible. The advisor or immediate supervisor is responsible for seeing that the assistantship obligations are balanced based on sources of funding so that all expectations can be realistically fulfilled.

2.2.4 Performance Review Process and DEV (Duties and Evaluation) plans

GAs will be subject to a performance review each semester they receive a paid assistantship. If an assistantship is split between two assignments (*e.g.* a 10-hour RA appointment and a 10-hour TA appointment or being a TA for two different classes) two separate performance review processes must take place. The performance review process will be comprised of the following steps:

1) Expectation-setting meeting. A meeting between the supervisor and the GA must take place prior to the beginning of the semester. During this meeting, the supervisor and the GA will devise and agree upon a plan specifying the duties to be performed by the GA, and the evaluation criteria that will be used to assess their performances. A copy of the plan will be signed by both supervisor and GA and shared with the Grad Coordinator for record keeping.
2) Mid-semester / intermediate performance review. The supervisor and GA will meet mid-semester (week seven or eight) to assess whether expectations set in the previous meeting were exceeded, met, or not met (Exceeds / Meets / Below expectations). If areas emerge in which the GA fails to meet expectations, the supervisor and the GA must agree on a remediation plan which, if implemented properly, would allow the GA's performance to reach satisfactory levels before the semester's end. The remediation plan may include changes to the DEV plan, if necessary. A document signed by both supervisor and GA summarizing the mid-semester performance review and the remediation plan must be shared with the Grad Coordinator for record keeping.
3) End-of-semester meeting / final performance review. A third meeting between supervisor and GA needs to take place during either the last week of classes or finals week. If any below-expectation performance emerged during the mid-semester performance review, the supervisor and GA will review progress made towards remediating those deficiencies. Any

remaining, or newly emerging below-expectation performances will be documented and communicated to the Grad Committee Chair and the Department Head. In all cases, a document signed by both supervisor and GA including a summary of the final performance review must be shared with the Grad Coordinator for record keeping.

2.3 Facility and Building Key Policies

2.3.1 Desk Space Policies

The Department of Agricultural and Resource Economics will attempt to supply all graduate students with desk space. However, space is limited and therefore not everyone will always have a desk. Desk allocation is discussed between the Graduate Chair and Coordinator, but final decisions are made at the discretion of the Department Head.

2.3.2 Keys

Your student ID will serve as your building, suite and office key.

2.3.3 Computer Lab

The Nutrien Data Simulation (103) and Innovation Gym (1st floor) serve as computer lab(s) for all CAS students. The equipment, paper and service calls on lab computers are paid for by student computer technical fees. Each DARE graduate office will have their own printer and will use the papercut software to charge for pages printed.

2.3.4 Email Accounts

Email accounts must be obtained at http://eID.colostate.edu when creating your eID. You will need your CSU ID. If you do not know your CSU ID, contact the Registrar's office at (970) 491-4860.

Graduate students are expected to set-up and keep current on their CSU email, as it will be the primary mode of communication between the Department, University and students.

2.4 Appeal and Course Substitution Policies

2.4.1 Coursework Substitution Policy

A student may work with his/her advisor to identify appropriate substitution or transfer course(s), up to a maximum of 10 credits. If a student develops a program of study substituting or transferring from another institution any of the core and field courses, they are required to submit a proposal in writing for consideration and formal approval by the Chair of the Graduate Committee.

2.4.2 Ph.D. Exam Appeal Policies

Ph.D. students are given two attempts to pass each qualifying core or field exam. A failed attempt must be followed by a second attempt at the subsequent exam offering. Failing the

second attempt of either qualifying exam will result in automatic dismissal from the graduate program. An appeal process is in place to grant a third attempt to students who experienced extenuating circumstances which may have hindered performance in the exams. To appeal, the student will submit a letter to the Chair of the Graduate Program. The Chair will work with the student to understand the situation and then present the case to the Graduate Committee. The Department Head will make the final determination based on the recommendation of the committee.

Approving third attempts will be the exception. It is the student's burden to provide evidence that both of the conditions below are true:

- Circumstances beyond their control resulted in a situation that made passing the exam on the second attempt difficult to impossible (e.g., illness, family illness, a death in the family, etc.), **AND**
- That such extenuating circumstances have been or will be resolved shortly so that there is a reasonable expectation that the student will succeed if granted another opportunity. A student's case for requesting a third exam will be stronger if the appeal details specific information documenting that a third attempt will likely result in success.

2.4.3 Other Appeal Policies

Proposed exceptions to any of the requirements or policies contained herein must be submitted in writing to the Graduate Committee for consideration, usually via the student's academic advisor and/or the Chair of the Graduate Program.

3 Graduate Student Rights, Responsibilities, and Opportunities

3.1 Academic Rights and Responsibilities

The student is responsible for knowing departmental and University requirements and standards. If any questions arise, the student should seek clarification within the department or from the Graduate School. For more information, including a detailed documentation of evaluation and scholastic standards, please review the Graduate and Professional Bulletin at: https://catalog.colostate.edu/general-catalog/graduate-bulletin/.

The student is responsible for keeping his/her advisor and advisory committee members informed of progress in the program of study and for regularly consulting the advisor and committee. If changes are made in the program of study, the student is responsible for securing approval of all members of the committee beforehand.

3.2 Non-Academic Rights, Responsibilities, and Opportunities

3.2.1 Establishing Residency

If you are a domestic student, it is essential that you establish Colorado residency to ensure you are only charged in-state tuition after your first year (beginning of the third semester). **Students**

are responsible for out-of-state tuition if residency is not established before their third semester! This applies to ALL domestic students.

Residency is granted by the State of Colorado and Colorado State University cannot guarantee that residency will be granted. Residency is generally granted if you:

- Obtain a Colorado state driver's license
- Register your vehicle in Colorado (if applicable)
- Register to vote in Colorado
- Change your permanent address to Colorado and update it with the University on RAMweb: click on "Address View/Update" under "Records" section.

The above requirements must be in place for 12 continuous months before residence is granted. As such, please complete them by mid-August (entering fall) or early January (entering spring), so that you will be charged in-state tuition starting from the third semester!

In addition, you should do the following during your first year:

- Keep a copy of your signed housing documents (lease, rental agreement, etc.) in a safe place.
- Keep your pay stubs for proof of Colorado employment.
- File Colorado state income taxes by April 15th and locate copies of your previous state tax forms for the previous year.
- Attend a Residency Orientation class.
- **By late-March (entering Fall) or late-October (entering Spring), visit the Tuition Classification website to ensure you have taken all necessary steps to petition for residency.**

Additional information on residency requirements can be found at https://financialaid.colostate.edu/residency/.

3.2.2 Updating Contact Information

It is very important for the department to have each student's current contact information. It is the student's responsibility to notify the front office if/when you change your phone number, mailing address or email address.

3.2.3 Graduate Orientation (Fall Semester)

The Department hosts a yearly orientation week that we hope will make the transition to Graduate School and the Department as smooth as possible. These activities begin **approximately** one week before classes begin and include: department orientation, various

University activities, “math camp” and “code camp” to ensure each student has the skills necessary to succeed in their courses, and a few social opportunities. The department orientation is mandatory for all incoming students, math and code camp are required for funded students, but highly recommended for all students.

Math Camp

Math camp is a prerequisite for ECON 501 and helps incoming students refresh their understanding of the basic mathematical concepts frequently used in the study of economics. ECON 501: Quantitative Methods for Economists, is generally the first class in the Microeconomics sequence for Ph.D. students or for M.S. students who are considering continuing their education beyond the M.S. level. We strongly recommend that all incoming graduate students attend math camp before beginning their programs.

Code Camp

The code camp is designed to help students become acquainted with computer programming packages used in graduate-level coursework and research. The sessions during the orientation week will help students learn programming skills related to data management, statistical analysis, and visual representations of empirical results. We strongly recommend that all incoming graduate students participate in the code camp.

3.2.4 DARE Graduate Student Association

DARE encourages the graduate students to maintain a self-governing, student-run organization that can facilitate communication between students and faculty and organize social activities.

3.2.5 Additional Information/Graduate School Handbook

CSU’s Graduate School is a very important source of information concerning required forms, financial aid, university graduate school requirements, etc. Please visit https://graduateschool.colostate.edu/ for general information or bookmark the Graduate School Handbook for more detailed information: https://graduateschool.colostate.edu/current-students/.

4 Appendix

4.1 Sample[2] Programs

4.1.1 MS AgEcon and ENRE

MS with field in Agricultural Economics - Thesis Option (Plan A)

Year 1 of MS program

Fall	Cr Hr	Spring	Cr Hr
AREC 506 (Applied Micro Theory)	3	AREC 507 (Applied Welfare Econ)	3
AREC 535 (Applied Econometrics)	3	AREC 610 (Ag Marketing & Demand)	3
ECON 501 (Quantitative Methods)	3	Elective course	3
	9		9

Year 2 of MS Program

Fall		Spring	
AREC 615* (Optimization Methods)	3	AREC 699 (Thesis credits)	3
AREC 605 (Production & Cost Analysis)	3		
Elective course OR Thesis credits	3		
	9		3

*AREC 635 (Econometric Theory I) is an alternative to AREC 615

[2] Sample programs are meant to provide an example, but will need to be adapted to changes in teaching schedule or student's transferred credits. Students are responsible to ensure that their program of study meets all the requirements in sections 1.1.3.-1.1.4 (MS) and 1.2.3-1.2.4 (Ph.D).

MS with field in Env and Natural Resource Economics - Thesis Option (Plan A)

Year 1 of MS program

Fall	Cr Hr	Spring	Cr Hr
AREC 506 (Applied Micro Theory)	3	AREC 507 (Applied Welfare Econ)	3
AREC 535 (Applied Econometrics)	3	AREC 540 (Env. and Nat. Resource Econ)	3
ECON 501 (Quantitative Methods)	3	Elective course	3
	9		9

Year 2 of MS Program

Fall		Spring	
AREC 615* (Optimization Methods)	3	AREC 699 (Thesis credits)	3
Elective course	3		
Thesis credits	3		
	9		3

*AREC 635 (Econometric Theory I) is an alternative to AREC 615

4.1.2 PhD, AgEcon Field. 72 Credits Requirement

PhD with field in Agricultural Economics - start program in odd year

Year 1 of PhD program

Fall	Cr Hr	Spring	Cr Hr
AREC 615 (Optimization Methods)	3	AREC 606 (Micro Theory I)	3
AREC 635 (Econometric Theory I)	3	AREC 610 (Ag Marketing & Demand)	3
ECON 501 (Quantitative Methods)	3	AREC 735 (Econometric Theory II)	2
	9	AREC 736B (Panel Data Models)	1
			9
		Quantitative QE	

Year 2 of PhD Program

Fall		Spring	
AREC 706 (Micro Theory II)	3	ECON 604 (Macro Analysis I)	3
AREC 605 (Production & Cost Analysis)	3	Elective Course	3
AREC 710 (Adv Ag Marketing Issues)	3	Elective Course	3
	9		9
Microeconomics QE			

Year 3 of PhD Program

Fall		Spring	
AREC 570 (Research Methods)	3	AREC 705 (Production and Tech Change)	3
Elective Course	3	Elective Course	3
Elective Course	3	Elective Course	3
	9		9
		Preliminary defense	

Year 4 of PhD Program

Fall		Spring	
AREC 799 (Dissertation Credits)	3	AREC 799 (Dissertation Credits)	9
Elective Course	3		
Elective Course	3		
	9		9
		Dissertation defense	

PhD with field in Agricultural Economics - start program in even year

Year 1 of PhD program

Fall	Cr Hr	Spring	Cr Hr
AREC 615 (Optimization Methods)	3	AREC 606 (Micro Theory I)	3
AREC 635 (Econometric Theory I)	3	AREC 610 (Ag Marketing & Demand)	3
ECON 501 (Quantitative Methods)	3	AREC 735 (Econometric Theory II)	2
	9	AREC 736B (Panel Data Models)	1
			9
		Quantitative QE	

Year 2 of PhD Program

Fall		Spring	
AREC 706 (Micro Theory II)	3	ECON 604 (Macro Analysis I)	3
AREC 605 (Production & Cost Analysis)	3	AREC 705 (Production and Tech Change)	3
AREC 570 (Research Methods)	3	Elective Course	3
	9		9
Microeconomics QE			

Year 3 of PhD Program

Fall		Spring	
AREC 710 (Adv Ag Marketing Issues)	3	Elective Course	3
Elective Course	3	Elective Course	3
Elective Course	3	Elective Course	3
	9		9
Preliminary defense			

Year 4 of PhD Program

Fall		Spring	
AREC 799 (Dissertation Credits)	3	AREC 799 (Dissertation Credits)	9
Elective Course	3		
Elective Course	3		
	9		9
		Dissertation defense	

4.1.3 PhD, ENRE field. 72 Credits Requirement

PhD with field in Env. and Natural Resource Economics - start program in odd year

Year 1 of PhD program

Fall	Cr Hr	Spring	Cr Hr
AREC 615 (Optimization Methods)	3	AREC 606 (Micro Theory I)	3
AREC 635 (Econometric Theory I)	3	AREC 540 (Env & Nat Resource Econ)	3
ECON 501 (Quantitative Methods)	3	AREC 735 (Econometric Theory II)	2
	9	AREC 736B (Panel Data Models)	1
			9
		Quantitative QE	

Year 2 of PhD Program

Fall		Spring	
AREC 706 (Micro Theory II)	3	ECON 604 (Macro Analysis I)	3
AREC 570 (Research Methods)	3	AREC 741 (Advanced Env Economics)	3
Elective Course	3	Elective Course	3
	9		9
Microeconomics QE			

Year 3 of PhD Program

Fall		Spring	
AREC 740 (Adv Resource & Env Econ)	3	Elective Course	3
Elective Course	3	Elective Course	3
Elective Course	3	Elective Course	3
	9		9
Preliminary defense			

Year 4 of PhD Program

Fall		Spring	
AREC 799 (Dissertation Credits)	3	AREC 799 (Dissertation Credits)	9
Elective Course	3		
Elective Course	3		
	9		9
		Dissertation defense	

PhD with field in Env. and Natural Resource Economics - start program in even year

Year 1 of PhD program

Fall	Cr Hr	Spring	Cr Hr
AREC 615 (Optimization Methods)	3	AREC 606 (Micro Theory I)	3
AREC 635 (Econometric Theory I)	3	AREC 540 (Env & Nat Resource Econ)	3
ECON 501 (Quantitative Methods)	3	AREC 735 (Econometric Theory II)	2
	9	AREC 736B (Panel Data Models)	1
			9
		Quantitative QE	

Year 2 of PhD Program

Fall		Spring	
AREC 706 (Micro Theory II)	3	ECON 604 (Macro Analysis I)	3
AREC 740 (Adv Resource & Env Econ)	3	AREC 741 (Advanced Env Economics)	3
AREC 570 (Research Methods)	3	Elective Course	3
	9		9
Microeconomics QE			

Year 3 of PhD Program

Fall		Spring	
Elective Course	3	Elective Course	3
Elective Course	3	Elective Course	3
Elective Course	3	Elective Course	3
	9		9
Preliminary defense			

Year 4 of PhD Program

Fall		Spring	
AREC 799 (Dissertation Credits)	3	AREC 799 (Dissertation Credits)	9
Elective Course	3		
Elective Course	3		
	9		9
		Dissertation defense	