Agricultural and Resource Economics Major

Program Director: Lars Olson, Ph.D.

Agricultural and Resource Economics majors complete a set of prerequisite courses, a core of classes offered by the Agricultural and Resource Economics Department, and one or more fields comprised of selected courses from outside the department. The core includes courses in economic reasoning, agribusiness management, environmental and resource policy, agricultural policy, economic development, and analytical methods. The program permits students flexibility in choosing fields to fit their career interests. Majors must complete one and are strongly encouraged to complete two fields. The curriculum balances breadth and depth, and lets students develop academic skills in two or more areas. The program provides a good foundation for careers in economics, resource or environmental policy, agribusiness, and international agriculture. Students are also able to minor in Agricultural and Resource Economics.

Program Learning Outcomes

Upon completion of the degree program, students should have acquired the following knowledge and skills:

1. An understanding of economic terms and concepts.
2. An ability to draw inferences from data.
3. A knowledge of relevant laws, institutions, and policies.

Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td><strong>Prerequisite Courses</strong></td>
<td></td>
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</tr>
<tr>
<td>ECON200</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON201</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>AREC326</td>
<td>Intermediate Applied Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON321</td>
<td>Economic Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or BMGT230</td>
<td>Business Statistics</td>
<td></td>
</tr>
<tr>
<td>MATH120</td>
<td>Elementary Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>or MATH140</td>
<td>Calculus I</td>
<td></td>
</tr>
<tr>
<td>STAT100</td>
<td>Elementary Statistics and Probability</td>
<td>3</td>
</tr>
<tr>
<td>or MATH107</td>
<td>Introduction to Math Modeling and Probability</td>
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</table>

| Specialization (from list below) | | |
| Agribusiness | | |
| Environmental and Resource Economics | | |

Total Credits | 42 |

Agricultural and Resource Economics

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Select five of the following courses:</strong></td>
<td></td>
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<tr>
<td>AREC306</td>
<td>Farm Management and Sustainable Food Production</td>
<td>15</td>
</tr>
<tr>
<td>AREC382</td>
<td>Computer-Based Analysis in Agricultural and Resource Economics</td>
<td></td>
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<tr>
<td>AREC405</td>
<td>Economics of Production</td>
<td></td>
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<tr>
<td>AREC422</td>
<td>Econometric Analysis in Agricultural and Environmental Economics</td>
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<tr>
<td>AREC425</td>
<td>Economic Methods and Food Consumption Policy</td>
<td></td>
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<tr>
<td>AREC426</td>
<td>Commodity Pricing and Markets</td>
<td></td>
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<tr>
<td>AREC430</td>
<td>Introduction to Agricultural and Resource Law</td>
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<tr>
<td>AREC431</td>
<td>Agricultural Water Quality Policy and Legal Issues</td>
<td></td>
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<tr>
<td>AREC433</td>
<td>Food and Agricultural Policy</td>
<td></td>
</tr>
<tr>
<td>AREC435</td>
<td>Commodity Futures and Options</td>
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<tr>
<td>AREC445</td>
<td>Agricultural Development, Population Growth and the Environment</td>
<td></td>
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<tr>
<td>AREC446</td>
<td>Sustainable Economic Development</td>
<td></td>
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<tr>
<td>AREC453</td>
<td>Natural Resources and Public Policy</td>
<td></td>
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<tr>
<td>AREC454</td>
<td>The Economics of Climate Change</td>
<td></td>
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<tr>
<td>AREC455</td>
<td>Economics of Land Use</td>
<td></td>
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<tr>
<td>AREC456</td>
<td>Energy and Environmental Economics</td>
<td></td>
</tr>
<tr>
<td>AREC481</td>
<td>Environmental Economics</td>
<td></td>
</tr>
<tr>
<td>AREC489</td>
<td>Special Topics in Agricultural and Resource Economics</td>
<td></td>
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</tbody>
</table>

Other upper-level AREC courses with permission of advisor.

Select three courses from one of the following fields: 9

Business Management

Farm Management and Entrepreneurship

Student Designed Field

Total Credits | 24 |
Agricultural and Resource Economics Major

AREC481  Environmental Economics
AREC489  Special Topics in Agricultural and Resources Economics

Other upper-level AREC courses with permission of advisor.

Select three courses from one of the following fields:  9
Agriculture Science
Advanced Degree Preparation
Food Production
Political Process
Student Designed Field

Environmental and Resource Economics

Course  Title  Credits
Select five of the following courses:  15
AREC382  Computer-Based Analysis in Agricultural and Resource Economics
AREC405  Economics of Production
AREC422  Econometric Analysis in Agricultural and Environmental Economics
AREC431  Agricultural Water Quality: Policy and Legal Issues
AREC445  Agricultural Development, Population Growth and the Environment
AREC446  Sustainable Economic Development
AREC453  Natural Resources and Public Policy
AREC454  The Economics of Climate Change
AREC455  Economics of Land Use
AREC456  Energy and Environmental Economics
AREC481  Environmental Economics

Other upper-level AREC courses with permission of advisor.

Select three courses from one of the following fields:  9
Advanced Degree Preparation
Natural Science
Social Science

Total Credits  24

Fields:

Advanced Degree Preparation

Course  Title  Credits
Choose three of the following courses:
ECON407  Advanced Macroeconomics
ECON414  Game Theory
ECON415  Market Design
ECON422  Econometrics I
ECON423  Econometrics II
ECON425  Mathematical Economics
MATH141  Calculus II
MATH240  Introduction to Linear Algebra
MATH241  Calculus III
STAT401  Applied Probability and Statistics II
STAT410  Introduction to Probability Theory
STAT420  Theory and Methods of Statistics

STAT430  Introduction to Statistical Computing with SAS
Any other upper-level ECON/MATH/STAT course chosen in consultation with advisor.

Agricultural Science

Course  Title  Credits
Choose three of the following courses:
PLSC204
PLSC100
or PLSC101
ENST105  Principles of Animal Science
AGRI SCI  Other courses in agricultural science, chosen in consultation with an advisor 1

1 Substitutions to the above listed courses may be made with the permission of advisor.

Business Management

Course  Title  Credits
Choose three of the following courses:
BMGT340  Business Finance (BMGT340N) 1
BMGT350  Marketing Principles and Organization (BMGT350N)
BMGT364  Managing People and Organizations (BMGT364N)
BMGT380  Business Law I (BMGT380N)

1 Course has prerequisites that do not count toward major requirements.

Farm Management and Entrepreneurship

Course  Title  Credits
Choose three of the following courses:
ENES140  Discovering New Ventures
ENES461  Advanced Entrepreneurial Opportunity Analysis in Technology Ventures
ENES471  Legal Aspects of Entrepreneurship
INAG103  Agricultural Marketing
INAG201  Agricultural Human Resources Management
INAG204  Agricultural Business Management
INAG205  Analyzing Alternative Enterprises
BMGT289E  Entrepreneurial Thinking for Non-Business Majors: How Not to Miss Great Opportunities Your Life Throws at You
or ENES210  Entrepreneurial Opportunity Analysis and Decision-Making in 21st Century Technology Ventures
or INAG102  Agricultural Entrepreneurship

Food Production

Course  Title  Credits
Choose three of the following courses:
PHYS117
or PHYS121  Fundamentals of Physics I
Student Designed Field

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This field requires a written proposal listing at least three courses totaling at least 9 credits.</td>
<td>18</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

1. The proposal must be submitted to the Undergraduate Committee of the AREC department. Committee approval must be obtained 30 or more credit hours before graduation. A student designed field may be used to study a foreign language as part of the AREC curriculum.

Other Requirements for the Major

All courses must be passed with a grade of "C-" or better to count towards prerequisite courses, major core courses, or field requirements. "C- or better" means any grade for which the University awards 1.7 or more quality points in calculating GPA. Beginning with students matriculating Fall 2012, to be awarded a baccalaureate degree, students must have a minimum (2.00) cumulative grade point average across all courses used to satisfy major degree requirements.

Four Year Plan

Click here (http://www.gened.umd.edu/for-students/forstudents-4yearplans-agnr.html) for roadmaps for four-year plans in the College of Agricultural and Natural Resources.

Additional information on developing a four-year academic plan can be found on the following pages:

- 4yearplans.umd.edu (http://4yearplans.umd.edu)
- the Student Academic Success-Degree Completion Policy (https://academiccatalog.umd.edu/undergraduate/registration-academic-requirements-regulations/academic-advising/) section of this catalog