AGRICULTURAL AND RESOURCE ECONOMICS MAJOR

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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Prerequisite Courses</strong></td>
<td></td>
</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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**Specialization (from list below)**

- Agribusiness
- Agricultural and Resource Economics
- Environmental and Resource Economics

Total Credits 42

Specializations:

Agribusiness

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<td>Farm Management and Sustainable Food Production</td>
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<td>Computer-Based Analysis in Agricultural and Resource Economics</td>
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Agricultural and Resource Economics

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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

**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:  
- **Agriculture Science**  
- Advanced Degree Preparation  
- Food Production  
- Political Process  
- Student Designed Field  

Total Credits  

### Environmental and Resource Economics

Course | Title | Credits  
--- | --- | ---  
Select five of the following courses:  
- **AREC382**  
  Computer-Based Analysis in Agricultural and Resource Economics  
- **AREC405**  
  Economics of Production  
- **AREC422**  
  Econometric Applications in Agricultural and Natural Resource 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:  
- **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 I  
- **MATH240**  
  Introduction to Linear Algebra  
- **MATH241**  
  Calculus II  
- **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**  
  Fundamentals of Agricultural Mechanics  
- **PLSC100**  
  Introduction to Horticulture  
  or **PLSC101**  
  Introductory Crop Science  
- **ENST105**  
- **ANSC101**  
  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)  
  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**  
  Fundamentals of Physics I  
  or **PHYS121**  
  Fundamentals of Physics II  
- **BSCI170**  
  Principles of Molecular & Cellular Biology  
  & **BSCI171**  
  Principles of Molecular & Cellular Biology Laboratory
Student Designed Field

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<tr>
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<td>This field requires a written proposal listing at least three courses totaling at least 9 credits. 1</td>
<td>18</td>
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</table>

Total Credits 18

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