# Environmental and Natural Resource Economics, B.S.

## Degree Offered

- Bachelor of Science

## Nature of the Program

The objective of this major is to provide students with the necessary training for the application of economic theory and analysis to environmental and natural resource issues. The flexibility of this major allows students to design (with their advisor) a program of study which focuses on environmental and natural resource issues tailored to the student's own interests (such as water use and quality, soil protection, waste management, ecosystem management, and land use). The curriculum reflects the breadth of training required to prepare students for careers in private and government sectors dealing with environmental and natural resource management and policy analysis.

Students with this major can expect to find employment with state and federal government agencies or with private industry in environmental policy analysis and management of natural resources. Many students, upon completion of this degree, may find it desirable to obtain a graduate degree to expand their career opportunities. Students completing this degree will be prepared for graduate study in environmental and natural resource economics and policy.

## General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. **(**http://registrar.wvu.edu/gef/**)**

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

| Code | Title | Hours |
|---|---|---|
| **General Education Foundations** | | |
| F1 - Composition & Rhetoric | | 3-6 |
| ENGL 101 | Introduction to Composition and Rhetoric | |
| & ENGL 102 | and Composition, Rhetoric, and Research | |
| or ENGL 103 | Accelerated Academic Writing | |
| F2A/F2B - Science & Technology | | 4-6 |
| F3 - Math & Quantitative Reasoning | | 3-4 |
| F4 - Society & Connections | | 3 |
| F5 - Human Inquiry & the Past | | 3 |
| F6 - The Arts & Creativity | | 3 |
| F7 - Global Studies & Diversity | | 3 |
| F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree) | | 9 |
| Total Hours | | 31-37 |

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

## Degree Requirements

| Code | Title | Hours |
|---|---|---|
| University Requirements | | 36 |
| Environmental and Natural Resources Economics Major Requirements | | 84 |
| Total Hours | | 120 |

## University Requirements

| Code | Title | Hours |
|---|---|---|
| General Education Foundations (GEF) 1, 2, 3, 4, 5, 6, 7, and 8 (31-37 Credits) | | |
| Outstanding GEF Requirements 1, 5, 6, and 7 | | 15 |
| ANRD 191 | First-Year Seminar | 1 |

| | |
|---|---|
| General Electives | 20 |
| Total Hours | 36 |

## Environmental and Natural Resource Economics Major Requirements

| Code | Title | Hours |
|---|---|---|
| Lab Requirement (Two 4-Credit Lecture/Lab Courses) | | 8 |
| ESWS 202<br>& 202L | Principles of Soil Science<br>and Principles of Soil Science Laboratory | |
| BIOL 101<br>& 101L | General Biology 1<br>and General Biology 1 Laboratory | |
| CHEM 111<br>& 111L | Survey of General, Organic, and Biological Chemistry 1<br>and Survey of Chemistry 1 Laboratory | |
| GEOL 101<br>& 101L | Planet Earth<br>and Planet Earth Laboratory | |
| PLSC 206<br>& 206L | Principles of Plant Science<br>and Principles of Plant Science Laboratory | |
| AGEE 110 | Microcomputer Applications in Agricultural Education | 3-4 |
| or CS 101 | Intro to Computer Applications | |
| ARE 150 | Introductory Agricultural and Agribusiness Economics (GEF 4) | 3 |
| or ECON 201 | Principles of Microeconomics | |
| ARE 187 | Energy Resource Economics (GEF 8) | 3 |
| ARE 220 | Introductory Environmental and Resource Economics | 3 |
| ARE 382 | Agricultural and Natural Resources Law | 3 |
| ARE 410 | Environmental and Resource Economics (Counts as Writing Course Requirement) | 3 |
| ARE 445 | Energy Economics | 3 |
| ARE 450 | Agriculture, Environmental and Resource Policy | 3 |
| ARE 488 | Career Development | 1 |
| ARE 496 | Senior Thesis (Capstone Experience) * | 3 |
| ECON 202 | Principles of Macroeconomics (GEF 8) | 3 |
| ECON 225 | Elementary Business and Economics Statistics (GEF 8) | 3 |
| or STAT 211 | Elementary Statistical Inference | |
| ECON 301 | Intermediate Micro-Economic Theory | 3 |
| ECON 302 | Intermediate Macro-Economic Theory | 3 |
| ECON 421 | Introduction to Mathematical Economics | 3 |
| ECON 425 | Introductory Econometrics | 3 |
| Calculus Requirement (GEF 3): | | 3 |
| MATH 150 | Applied Calculus | |
| MATH 153<br>& MATH 154 | Calculus 1a with Precalculus<br>and Calculus 1b with Precalculus | |
| MATH 155 | Calculus 1 | |
| RESM 440<br>& 440L | Foundations of Applied Geographic Information Systems<br>and Foundations of Applied Geographic Information Systems Laboratory | 3 |
| RESM 480 | Environmental Regulation | 3 |
| Restricted Electives (selected in consultation): ** | | 21 |
| Student must select either an approved minor or at least 12 hours at the 300 or 400 level in AGRN, ARE, DSGN, ECON, ENVP, FMAN, FOR, GEOG, HORT, PLSC, RESM, or WMAN. | | |
| Total Hours | | 84 |

*

Consult with Undergraduate Coordinator for approval of Capstone Experience (Senior Thesis).

## SUGGESTED PLAN OF STUDY

**First Year**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| ANRD 191 | 1 | ARE 150 (GEF 4) | 3 |
| ENGL 101 (GEF 1) | 3 | CS 101 | 4 |
| MATH 124 (GEF 3) | 3 | ESWS 155 (Suggested Restricted Elective - GEF 8) | 3 |
| GEF 2 (Science with Lab) | 4 | ECON 225 | 3 |
| GEF 5, 6, or 7 | 3 | MATH 150 | 3 |
| | 14 | | 16 |

**Second Year**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| ARE 187 | 3 | ESWS 202 & 202L (Suggested Restricted Elective) | 4 |
| ARE 220 | 3 | ECON 202 | 3 |
| ENGL 102 (GEF 1) | 3 | GEF 5, 6, 7 | 3 |
| GEF 8 (Science with Lab) | 4 | Free Elective | 3 |
| GEF 5, 6, or 7 | 3 | Free Elective | 3 |
| | 16 | | 16 |

**Third Year**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| ARE 382 | 3 | ARE 440 (Suggested Restricted Elective) | 3 |
| ARE 488 | 1 | ARE 445 | 3 |
| ECON 301 | 3 | ECON 302 | 3 |
| RESM 440 & 440L | 3 | RESM 480 | 3 |
| Restricted Elective | 3 | Free Elective | 3 |
| Free Elective | 3 | | |
| | 16 | | 15 |

**Fourth Year**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| ARE 496 | 1 | ARE 410 | 3 |
| ECON 421 | 3 | ARE 450 | 3 |
| ESWS 355 (Suggested Restricted Elective) | 3 | ARE 496 | 2 |
| Restricted Elective | 3 | ECON 425 | 3 |
| Free Elective | 3 | Free Elective | 3 |
| | 13 | | 14 |

Total credit hours: 120

# Major Learning Outcomes

## ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS

After completing this major students will be able to:

1. Apply the tools of economic analyses to environmental issues.
2. Demonstrate how to apply economic theory to the management of renewable and non-renewable natural resources.
3. Articulate the laws and regulations related to environmental protection, energy use, and management of natural resources.
4. Demonstrate the utilization of quantitative analysis tools.
5. Communicate effectively in a business or professional setting (written and oral).