

## **Appendix N**

### **Graduate Certificate in Environmental Sustainability**

## From 2008-2010 Graduate Catalog

### Environmental Sustainability: Graduate Certificate

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Sustainability is a concept that is applicable across many disciplines including environmental studies, business, economics, engineering, chemistry, geography, sociology, anthropology, political science, and biological sciences. The need for graduate studies in sustainability is based on numerous global issues including: 1) the pressure to address energy consumption issues, including alternative fuels; 2) the need for societal awareness of the environmental impacts of personal consumer choices; 3) new business models that are incorporating environmental auditing in management and production decisions; and 4) the emergence of new approaches to land use planning and construction that includes green building design to reduce adverse environmental and health effects of housing.

This certificate program offers non-Environmental Studies majors the necessary multidisciplinary skills and global awareness needed to understand the broader impacts of personal consumer choices on the environment. The certificate will expose graduate students from many disciplines to the economic, societal, and environmental effects of consumer choice and enhance the graduate degree of the student by incorporating problem-solving and critical thinking skills into the certificate program. The certificate also will allow students to improve their understanding of basic concepts of sustainability as they relate to their specific degree program and provide opportunities for working professionals (i.e. teachers and business leaders) to enhance their professional careers.

Students currently enrolled in a graduate degree program can add the certificate by completing an Application for Update of Programs available at the Graduate Studies office. Students not currently enrolled in a graduate degree program must complete a non-degree application as described in the Graduate Catalog.

The basis of the certificate program is to address a comprehensive study of environmental sustainability including the four areas of: 1) economy, 2) society, 3) environment and 4) technology. Students will be required to take 5 classes to complete the certificate; the total number of credit hours for the certificate will be 20-24. To accomplish this, the certificate curriculum will use a combination of existing and new courses.

### Required Courses

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- [ES 560 - Concepts in Environmental Sustainability and Leadership](#)
- [ES 692 - Environmental Studies Internship](#)
- Students must take at least 2 credit hours of ES 692

# Electives

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Take one from each category.

## Economy

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- [ECON 513 - Economics of the Environment](#)
- [ECON 525 - Public Policy Economics](#)
- [ECON 531 - Economics of Transportation](#)
- [ECON 535 - Economics of Energy](#)
- [ECON 550 - Economic Development](#)
- [GEOG 529 - World Economic Geography](#)
- [GEOG 531 - Geography of Africa](#)
- [GEOG 539 - Geographic Patterns in Developing Countries](#)

## Society

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- [AAS 530 - Social Theories of Underdevelopment](#)
- [GEOG 533 - Appalachia: Land and People](#)
- [GEOG 544 - Agricultural Ecosystems](#)
- [GEOG 547 - Natural Resource Conservation](#)
- [GEOG 556 - City and the Environment](#)
- [HIST 533 - Oil and World Power](#)
- [POLS 541 - African Politics](#)
- [POLS 557 - National Security](#)
- [POLS 588 - Public Dispute Resolution](#)
- [SOC 532 - Political Sociology](#)

## Environment

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- [ANTH 578 - Human Ecology](#)
- [BIOS 529 - Marine Biology](#)
- [BIOS 581 - Animal Conservation Biology](#)
- [GEOG 517 - Landscape Ecology](#)
- [GEOG 521 - Population Geography](#)
- [GEOG 540 - Environmental Impact Analysis](#)
- [GEOG 553 - Environmental Planning](#)
- [GEOL 527 - Water Geochemistry](#)
- [GEOL 529 - Contaminant Geochemistry](#)
- [GEOL 532 - Origin and Classification of Soils](#)
- [GEOL 553 - Physical Limnology](#)

- [GEOL 571 - Advanced Environmental Geology](#)
- [GEOL 580 - Principles of Hydrogeology](#)
- [PBIO 537 - Ecosystem Ecology](#)
- [POLS 525 - Environmental and Natural Resources Politics](#)

## **Technology**

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- [C E 554 - Green Engineering](#)
- [C E 561 - Environmental Analysis of Transportation Systems](#)
- [CH E 560 - Atmospheric Pollution Control](#)
- [GEOG 540 - Environmental Impact Analysis](#)
- [GEOG 558 - Environmental Hazards](#)
- [M E 522 - Stirling Cycle Machine Analysis](#)
- [M E 523 - Fuel Cell Design](#)
- [M E 535 - Energy Engineering and Management](#)
- [TCOM 566 - Technology, Communication, and Culture](#)
- [TCOM 665 - Communication and Development](#)