

# Environmental Sustainability

Bachelor of Sciences

Proposed By:

Student's Name

UID#

Local Address

Student's Phone Number

Email Address

Sponsored By:

Mentor's Name

Department

Campus Address

Campus Phone Number

Email Address

## Introduction

Before coming to the University of Maryland, I had an interest in the “Go Green” movement, but I was not very familiar with the specifics of the subject. It was only after I came to the University of Maryland that my interest really began to blossom. I began taking a variety of classes to complete my CORE requirements and to explore the majors and departments of the university. As I took class after class, I began to become more and more aware of my interest in the environment and climate, and how human interactions and practices influenced them. I learned about what sustainability was and the initiatives the university was taking to become more sustainable. I truly became inspired after seeing a presentation freshman year from the Office of Sustainability staff that explained those initiatives and goals for the future of the university. With help and connections from various staff and faculty members, I started to become more involved in sustainability-related events, classes, and programs on campus. I learned of the brand-new Sustainability Studies minor months before it was officially approved, and was the first official student to declare it. My persistence and true excitement for the approval of the minor was a clear indicator of my passion for the subject.

It was when I took my first course in my new minor, Introduction to Sustainability, that I realized that I had to make this subject my major. I was enthralled by the topics covered in class: “going green”, “saving the planet”, and “being eco-friendly.”

That course revealed to me a clear vision of what I wanted to do: environmental sustainability. I knew that my goal was to expand the Sustainability Studies minor to become a customized major for myself. I visited the Individual Studies Program and felt confident that I had finally found a solution to my problem of declaring a major and was on the right track for my future.

That semester I also started work as an intern for the Office of Sustainability. My work is with the Green Office Program and I am really excited about my work because through it I am able to change

practices on campus to ones that are more sustainable. This is similar to the goals I have for a career in the future.

I want to build my own Environmental Sustainability major because I feel this will give me the opportunity to create the exact program to fit my interests and future goals.

Sample B

## Definition of Environmental Sustainability

Environmental Sustainability is defined as the ability to provide needs for society without being harmful to the environment or depleting natural resources. Being able to provide these needs for the present and for future generations is a key focus of sustainability. The major combines the following three focus areas: Environmental Science, Environmental Policy, and Society and Sustainability. These three areas allow one to understand of the interaction between humans and their environment, as well as their effect on climate, conservation of resources, and environmental limitations.

**Environmental Science** relates to Environmental Sustainability because it is important to understand the technical, geological, and climatic workings of our environment. The main topics of the courses included in this area are climate, atmospheric systems, ecosystems, soil and plant science, and environmental health. These topics are key parts in understanding the climate that humans are altering. That understanding gives one the tools for comprehending the consequences that climate change brings to humans and the environment. The realization that anthropogenic climate change is occurring is key to the practice of Environmental Sustainability.

**Environmental Policy** relates to Environmental Sustainability because government involvement is needed to begin the process of achieving a more sustainable society. Courses in Environmental Policy include basics in economics and policy, resource management and protection, urban planning, and food distribution. These concepts are important to Environmental Policy because they allow one to understand the economic roles in sustainability. In order to change governmental practices to support sustainable initiatives, it is necessary to understand the inner workings of policy-making. The courses in the curriculum teach one the foundation of economics and policy, as well as learn of more in-depth issues. The ability to understand economics and policy, in the practice of environmental sustainability, is crucial for contributing to a more sustainable future.

The final section of the Environmental Sustainability major is **Society and Sustainability**. The courses include land use, population, and human connections to climate change. These topics are important to the major because they allow one to understand society's role in climate change and how they must alter their practices to lessen their impact. This curriculum allows one to understand environmental issues, learn the policies and economic actions to fix the issues, and thus be able to motivate the population to make a change towards a more sustainable future.

Sample B

## Learning Objectives and Future Goals

I am constructing this area of study in an attempt to broaden my knowledge of environmental sustainability. The Environmental Sustainability major allows me to understand environmental issues and the policies needed to fix these issues, and be able to apply this knowledge to encourage adoption of sustainable practices. My Individual Studies Program major is designed not only to provide me with the basic foundation of the subject of sustainability, but also to allow me to gain a deeper understanding. I plan to work for a few years after college to gain experience in the field, and then attend graduate school to apply my experiences to my Master's program. Sustainability is an up-and-coming discipline and I am enthusiastic to join the field.

Although it is early in my academic career, I have begun some research on graduate programs related to sustainability. I am interested in programs provided by Antioch University (New England) and the University of Pennsylvania. Antioch University offers a Master of Science (MS) in Environmental Studies with a Concentration in Sustainable Development and Climate Change, whereas the University of Pennsylvania offers a degree in Environmental Sustainability through their Master of Environmental Studies (MES) Program. I am interested in Antioch's program because I find that understanding climate is a very important part of understanding the urgent need to be sustainable. This program will also offer professional internships that will add to my understanding of the subject, as well as provide me with work experience and connections to a future career. I am also interested in the Master's Program at the University of Pennsylvania because it allows me to choose a track within Environmental Sustainability. These two tracks are Environmental Management or Design/Development. I also like the program at the University of Pennsylvania because it is close to where I live and where I would like to start my career in the future. By attending graduate school and working at internships in my local area, I can gain connections to careers near to where I will be living in the near future.

My plan for an internship this summer is to work with the Mount Laurel Green Team. Their goal is to provide the Mount Laurel Community with organization, resources, and education for reaching sustainable goals. This internship would be important to me because it involves outreach in the town where I grew up and still live, so I have a connection to the community. There are many sustainable actions implemented at the university and in towns near to Mount Laurel that I would like to help implement in Mount Laurel over my summer break. My goals for future internships include continuing my internship at the University of Maryland's Office of Sustainability in later semesters.

When looking into future careers, I find that there are many different options for someone in my field. Throughout my internship at the Office of Sustainability, I have come to realize community outreach is a passion of mine within sustainability and that I would like to continue that path in the future. I can achieve this goal by working, for example, at a campus sustainability office (much like my supervisor at the Office of Sustainability does currently). I can also achieve this goal at the public or private level by working for corporations, the government, or non-profits. My undergraduate degree in Environmental Sustainability directly aligns me to be successful in all of my future goals.

My Capstone thesis will link together the three pillars of sustainability: environmental science, environmental policy, and society and sustainability. According to the Aluminum Association, creating an aluminum can out of recycled materials uses only five percent of the energy needed to create a brand new can. My research will focus on the economics and costs, environmental effects, technology, and cultural effects of aluminum production and recycling. Through this research I will develop an in-depth understanding of the relative benefits of aluminum recycling and the disadvantages production may cause.

## Coursework by Concentration

*\*Coursework already taken  
(CE) Currently enrolled*

### Environmental Science

<b>AOSC123*</b>	<b>3</b>	<b>Causes and Implications of Global Change:</b> Also offered as GEOG123, and GEOL123. This course offers a unique experience in integrating physical, chemical, geological and biological sciences with geographical, economic, sociological and political knowledge skills toward a better understanding of global change. Review of environmental science relating to weather and climate change, acid precipitation, ozone holes, global warming and impacts on biology, agriculture and human behavior. Study of the natural, long-term variability of the global environment, and what influence mankind may have in perturbing it from its natural evolution. Concepts of how physical, biological and human behavioral systems interact, and the repercussions which may follow from human endeavors. The manner in which to approach decision and policy making related to issues of global change.
<b>AOSC458R</b>	<b>3</b>	<b>Special Topics in Atmospheric Oceanic Science: Earth, Life, and Sustainability:</b> The Earth System operates through some fundamental cycles such as the Water, Energy, and the Carbon Cycles. A long-term perspective is offered in this course starting with the evolution of the solar system, the earth-moon system to place the energy balance of the Earth System in the perspective of the run away warming of Venus and the run-away cooling of Mars and the Greenhouse effect that places the habitable earth in the continuous habitable zone with water in all its phases.
<b>ENSP101</b>	<b>3</b>	<b>Introduction to Environmental Science:</b> One of two required courses that introduce students to the topics studied and methods employed in environmental science and policy. Emphasis on scientific ways of knowing; the systems, cycles, flows, and interfaces that characterize the atmosphere, lithosphere, hydrosphere, and biosphere; the analysis of human impacts on these systems; and the nature of scientific uncertainty and methods of quantifying environmental processes.
<b>ENST233*</b>	<b>3</b>	<b>Introduction to Environmental Health:</b> How humans are affected by the quality of our air, water, soil, and food supply as well as how human activities altered these survival necessities are examined. Students will learn how the evolution and prosperity of human populations have resulted in degradation of our environment and the impact of environmental degradation on the health of people.



<b>ENST333</b>	<b>3</b>	<p><b>Ecosystem Health and Protection:</b> Recommended: ENST233. Discussion of the philosophies, principles, and practices for assessing ecosystem health with emphasis on an ecosystem perspective rather than a human health perspective. Degradation associated with human activities will be emphasized. Topics will range from local to regional to global issues, including a discussion on global warming and its possible impacts on ecosystems. Concepts will be clarified using case histories from the Chesapeake Bay watershed.</p>
<b>ENST405</b>	<b>3</b>	<p><b>Energy and Environment:</b> Prerequisite: MATH140 or MATH220. Introduction to the role of energy in environmental and human-dominated systems. Discussion of the historical and modern production and consumption of energy. Introduction to energy systems computer simulation and energy auditing</p>
<b><u>Environmental Policy</u></b>		
<b>AGNR300 (CE)</b>	<b>3</b>	<p><b>Introduction to Sustainability:</b> Designed for students whose academic majors would be enhanced by the complementary study of a widely shared but hard-to-operationalize aspiration: that present choices should preserve or improve future options rather than foreclose or degrade them. How should we understand sustainability? How might we achieve it? How would we know if we had achieved it? And how could sustainability activists of a rising generation lead by example?</p>
<b>AREC240</b>	<b>4</b>	<p><b>Introduction to Economics and the Environment:</b> Costs and social impacts of pollution and human crowding in the modern environment. The economic, legal and institutional causes of these problems. Public policy approaches to solutions and the costs and benefits of alternative solutions.</p>
<b>AREC365</b>	<b>3</b>	<p><b>World Hunger, Population, and Food Supplies:</b> An introduction to the problem of world hunger and possible solutions to it. World demand, supply, and distribution of food. Alternatives for leveling off world food demand, increasing the supply of food, and improving its distribution. Environmental limitations to increasing world food production.</p>
<b>ECON200*</b>	<b>4</b>	<p><b>Principles of Micro-Economics Prerequisite:</b> MATH110 or placement in MATH113/MATH115/MATH111. It is recommended that students complete ECON200 before taking ECON201. Introduces economic models of the behavior of individual consumers and business firms, problems of international trade, the distribution of income, policies for eliminating poverty and discrimination, the problems of environmental</p>

pollution, and the impact of different market structures upon economic activity.

- ECON201\***      **4**      **Principles of Macro-Economics:** Prerequisite: MATH110 or placement in MATH113/MATH115/MATH111. It is recommended that students complete ECON200 before taking ECON201. An introduction to the problems of unemployment, inflation, and economic growth. Emphasis on roles of monetary and fiscal policy in the conduct of macroeconomic policy.
- ENSP102**      **3**      **Introduction to Environmental Policy:** Second of two courses that introduce students to the topics studied and methods employed in environmental science and policy. Emphasis on the process of formulating, implementing, and evaluating policy responses to environmental problems, with particular attention to policy controversies related to scientific uncertainty, risk assessment, the valuation of nature, and distributional equity. May be taken before or after ENSP101.
- ENSP340**      **3**      **Water: Science, Ethics and Law:** Prerequisite: permission of department. Recommended: ENSP101, ENSP102. Exploration of legal, policy, ethical, and scientific aspects of water resource protection and management. Focus on water pollution, water availability, ecosystems, and sustainability.
- PUAF386 (CE)**      **3**      **Experiential Learning:** Individual Instruction course: contact department or instructor to obtain section number. Prerequisite: permission of department. Repeatable to 12 credits if content differs.
- URSP250**      **3**      **The Sustainable City: Exploring Opportunities and Challenges:** An exploration, through an interdisciplinary approach, of a number of issues related to making cities more sustainable in terms of environmental protection, economic opportunity, and social justice. The course assist students to develop skills in critical analysis and systems thinking and to use those skills in analyzing sustainability related problems and potential solutions, and to expand students' understanding of the political implications of crafting and moving towards a sustainable urban future.

### Society and Sustainability

**ANTH468C (CE)3**

**Anthropology and Climate Change:** Climatic changes have helped shape hominin evolution, contributed to the rise and fall of complex societies, and affected socio-ecological systems. Human activities now

influence ongoing climatic change, and the outcome remains uncertain for communities and cultures around the world. This interaction between humans and climate provides a rich area of study for anthropologists in an interdisciplinary context. In this course, we will explore past, present, and future interactions between humans and climate. Discussions, methods-oriented activities, case study analyses, and a final project provide students a foundation for appreciating the role of anthropology in understanding, responding to, and preparing for climate change.

- ENST440 (CE) 3**      **Crops, Soils and Civilization:** Role and importance of crop and soil resources in the development of human civilization. History of crop and soil use and management as they relate to the persistence of ancient and modern cultures.
- GEOG330 3**      **As the World Turns: Society and Sustainability in a Time of Great Change:** Prerequisite: GEOG201, GEOG202, ANTH220, or ANTH260; or permission of department. Cultural geography course on society and sustainability. Culture is the basic building block that is key to sustainability of societies. Course will cover sustainability of societies on different scales, examining local, regional, and worldwide issues. Sustainability will be examined as a key element of environmental sustainability. How societies adjust to rapid world change will be examined as a positive and/or negative factor in sustainability.
- GEOG331 3**      **Introduction to Human Dimensions of Global Change:** Prerequisites: GEOG201, GEOG202, ANTH220, or ANTH260; or permission of department. Introduction to global-scale interrelationship between human beings and the environment. The development of global issues including but not limited to the environment, food, energy, technology, population, and policy.
- GEOG415 3**      **Land Use, Climate Change, and Sustainability:** Prerequisite: GEOG123 (AOSC123), GEOG306, or permission of department. Recommended: GEOG201/211, GEOG340, GEOG342, or GEOG331. The issues of climate change and land use change as two interlinked global and regional environmental issues and their implications for society and resource use are explored.
- SOCY305 (CE) 3**      **Scarcity and Modern Society:** Prerequisite: three credits of sociology. Resource depletion and the deterioration of the environment. Relationship to lifestyles, individual consumer choices, cultural values, and institutional failures. Projection of the future course of American society on the basis

of the analysis of scarcity, theories of social change, current trends, social movements, government actions, and the futurist literature. (Sociology 100 and 105 already taken).

**SOCY498E      3      Environmental Sociology:** Currently no course description

**Individual Studies**

- |                 |                |  |
|-----------------|----------------|--|
| <b>IVSP317</b>  | <b>(1)</b>     | <b>Progress Report</b>                 |
| <b>IVSP318</b>  | <b>(3 – 9)</b> | <b>Independent Learning Activities</b> |
| <b>IVSP420</b>  | <b>(3)</b>     | <b>Capstone Project</b>                |
| <b>ENGL398V</b> | <b>(3)</b>     | <b>Writing about the Environment</b>   |

**Total 300+ Level Credits (excluding IVSP courses):**

42/27 required credits, in 14 courses

**Total Credits (including IVSP courses):**

79-85 credits

**Current Status:**

13 /79-85 credits completed, 12 currently enrolled, 54-60 credits remaining

## Core Coursework

<b>FUNDAMENTAL STUDIES</b>			
<b>CATEGORY</b>	<b>COURSE#</b>	<b>COURSE TITLE</b>	<b>SEMESTER TAKEN</b>
<b>FE</b>	ENGL101	ACADEMIC WRITING	FALL 2010
<b>FM</b>	MATH140	CALCULUS I	TRANSFERRED FALL 2010
<b>JE</b>		EXEMPT	

<b>DISTRIBUTIVE STUDIES</b>			
<b>HUMANITIES AND THE ARTS</b>			
<b>CATEGORY</b>	<b>COURSE#</b>	<b>COURSE TITLE</b>	<b>SEMESTER TAKEN</b>
<b>HL</b>	ARAB298B	THE ARABIAN NIGHTS AND THE ART OF STORYTELLING	TBA
<b>HA</b>	MUET210	THE IMPACT OF MUSIC ON LIFE	SPRING 2011
<b><u>HA/HL/HO/IE</u></b>	MUSC205	HISTORY OF POPULAR MUSIC, 1950-PRESENT	FALL 2011
<b>SCIENCE AND MATHEMATICS</b>			
<b>CATEGORY</b>	<b>COURSE#</b>	<b>COURSE TITLE</b>	<b>SEMESTER TAKEN</b>
<b><u>PL/LL</u></b>	ANTH220	INTRODUCTION TO BIOLOGICAL ANTHROPOLOGY	FALL 2010
<b><u>LL/LS/PL/PS</u></b>	GEOL104	DINOSAURS: A NATURAL HISTORY	FALL 2010
<b><u>LL/LS/MS/PL/PS/IE</u></b>	MATH140	CALCULUS I	TRANSFERRED FALL 2010
<b>SOCIAL SCIENCES AND HISTORY</b>			
<b>CATEGORY</b>	<b>COURSE#</b>	<b>COURSE TITLE</b>	<b>SEMESTER TAKEN</b>
<b>SH</b>	HIST219	20 <sup>TH</sup> CENTURY WORLD HISTORY	TRANSFERRED FALL 2010
<b>SB</b>	ECON200	PRINCIPLES OF MICRO-ECONOMICS	FALL 2010
<b><u>SB/IE</u></b>	ECON201	PRINCIPLES OF MACRO-ECONOMICS	SPRING 2011

<b>ADVANCED STUDIES</b>			
<b>CATEGORY</b>	<b>COURSE#</b>	<b>COURSE TITLE</b>	<b>SEMESTER TAKEN</b>
<b>AS</b>	SOCY325	THE SOCIOLOGY OF GENDER	TBA
<b>AS</b>	IVSP420	SENIOR PAPER	

<b>HUMAN CULTURAL DIVERSITY</b>			
<b>CATEGORY</b>	<b>COURSE#</b>	<b>COURSE TITLE</b>	<b>SEMESTER TAKEN</b>
<b>D</b>	ANTH220	INTRODUCTION TO BIOLOGICAL ANTHROPOLOGY	FALL 2010

## Coursework By Semester

### Fall 2012

SOCY498E- Environmental Sustainability	(3)
URSP250- The Sustainable City: Exploring Opportunities and Challenges	(3)
ENGL398V- Topics in Professional Writing: Writing about the Environment	(3)
ENST333- Ecosystem Health and Protection	(3)

---  
**(12)**

### Spring 2013

ENST405- Energy and Environment	(3)
AREC365- World Hunger, Population, and Food Supplies	(3)
ENSP102- Introduction to Environmental Policy	(3)
ARAB298B- The Arabian Nights and the Art of Storytelling	(3)

---  
**(12)**

### Fall 2013

ENSP340- Water, Science, Ethics and Law	(3)
GEOG330- As the World Turns: Society and Sustainability in a Time of Great Change	(3)
GEOG331- Introduction to Human Dimensions of Global Change	(3)
ENSP101- Introduction to Environmental Science	(3)
IVSP317- Progress Report	(1)

---  
**(13)**

### Spring 2014

AREC240- Introduction to Economics and the Environment	(4)
IVSP420- Senior Paper	(3)
SOCY325- The Sociology of Gender	(3)
AOSC458R- Special Topics in Atmospheric Oceanic Science: Earth, Life, and Sustainability	(3)

---  
**(13)**

Name:

Major Title: Environmental Sustainability

For Office Purposes Only	COURSE#	Course Title	Credits
	AGNR300	Introduction to Sustainability	3
	ANTH468C	Anthropology and Climate Change	3
	AOSC123	Causes and Implications of Global Change	3
	AOSC458R	AOSC458R Special Topics in Atmospheric Oceanic Science: Earth, Life, and Sustainability	3
	AREC240	Introduction to Economics and the Environment	4
	AREC365	World Hunger, Population, and Food Supplies	3
	ECON200	Principles of Micro-Economics	4
	ECON201	Principles of Macro-Economics	4
	ENSP101	Introduction to Environmental Science	3
	ENSP102	Introduction to Environmental Policy	3
	ENSP340	Water: Science, Ethics and Law	3
	ENST233	Introduction to Environmental Health	3
	ENST333	Ecosystem Health and Protection	3
	ENST405	Energy and Environment	3
	ENST440	Crops, Soils and Civilization	3
	GEOG330	As the World Turns: Society and Sustainability in a Time of Great Change	3
	GEOG331	Introduction to Human Dimension of Global Change	3
	GEOG415	Land Use, Climate Change, and Sustainability	3
	PUAF386	Experiential Learning	3
	SOCY305	Scarcity and Modern Society	3
	SOCY498E	Environmental Sociology	3
	URSP250	The Sustainable City: Exploring Opportunities and Challenges	3
<b>Total 300+ Level Credits (excluding IVSP courses)</b>			<b>42</b>
	IVSP317	Progress Report	1
	IVSP318 (optional)	Independent Learning Activities	3 – 9
	IVSP420	Senior Paper	3
	Writing Craft Course	ENGL398V	3
<b>Total Credits (including IVSP courses)</b>			<b>79-85</b>