

## NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE COURSE SYLLABUS

**Course Title:** INTRODUCTION TO ENVIRONMENTAL SCIENCE **Course #:** EVS\* 100

**Course Description:** 3 semester hours (3 lecture hours): This three credit, non-laboratory science course is designed to provide an overview of long-term effects on the well-being of the planet and its inhabitants. The course will also examine population, resources, pollution, and attitudes.

**Pre-requisite/Co-requisite:** Placement into ENG\* 101

**Goals:** To provide students with a basic understanding of major environmental challenges facing modern societies and understand choices and trade-offs these challenges pose; to help students grasp scientific principles underlying basic phenomena of environmental change; to provide students with an understanding of technologies associated with major environmental problems and those that may help solve these problems; to assist students in distinguishing environmental impacts of industrial vs developing societies; to provide students with a basic understanding of different societies perceive environmental problems and pursue different solutions; to delineate how issues discussed in the course are connected to decisions and choices students make in their personal lives; to help students appreciate that complexities and intricacies of environmental problems demand a holistic approach, manifest by team work and group communication.

**Outcomes (Lecture):** At the end of the course, students should be able to:

- Define the term environment and identify some important environmental concerns we face today
- Compare and contrast how different ethical perspectives shape our view of nature and our role in it and describe how religious and cultural traditions, worldviews, and core values influence our perceptions of nature
- Summarize the methods, applications, and limitations of the scientific method.
- Summarize the major biogeochemical cycles, including the hydrologic cycle, and how each is balanced over time in the hydrosphere, lithosphere, and atmosphere.
- Describe the soil properties of porosity and permeability and characterize a soil sample.
- Describe how environmental factors determine which species live in a given ecosystem and where or how they live.
- Appreciate the potential of exponential growth and define fecundity, fertility, birth rates, life expectancy, death rates, and survivorship; compare and contrast density-dependent and density-independent population processes.
- Recognize characteristics of major aquatic and terrestrial biomes, identify important factors that determine the distribution of each type, and describe ways in which humans disrupt or damage each of these ecosystem types.
- Diagram and categorize the relationships between organisms of various trophic levels within a community and explain the functions of each aspect of a food web.
- Trace the history of human population growth, discuss the environmental and social impacts of human population growth, and explain the process of demographic transition.
- Identify human contributions to global climate change and what effects modifications have on physical and biological systems.

- Summarize benefits humans derive from biodiversity and identify sources of biodiversity loss in the modern world.
- Identify land use practices, problems, and policy.
- Interpret and assess the effects of land use practices on the porosity, permeability, and erosivity of the soil.
- Recognize the origins and current problems of national parks in America and other countries.
- Analyze the various strategies being utilized to conserve biodiversity and ecosystems.
- Identify some major infectious organisms and hazardous agents that cause environmental diseases and examples of emergent human and ecological diseases.
- Distinguish between toxic and hazardous chemicals, including pesticides, and between chronic and acute exposures and responses.
- Differentiate between famine and chronic undernutrition and understand the relation between natural disasters and social or economic forces in triggering food shortages.
- Describe the pros and cons of various food sources and identify the life cycle of major food crops in modern society.
- Predict, using systems thinking, agricultural challenges that might result from climate change.
- Make recommendations for sustainable agricultural practices in a hypothetical scenario.
- Identify ways to reduce the ecological footprint of food and evaluate the movements of localism and organic as effective strategies in sustainable food systems.
- Summarize our current supply and needs, including the costs/benefits of all conventional energy sources, and explain briefly how energy use has changed through history.
- Appreciate the opportunities for energy conservation and renewable energy sources available to us.
- Describe the major categories and sources of air pollution, judge how air quality around the world has improved or degraded in recent years, and suggest what we might do about problem areas.
- Appreciate the causes and consequences of water shortages around the world, what they mean in people's lives in water-poor countries, and what the future projections for water shortages entail.
- Analyze personal water consumption and evaluate water-saving strategies.
- Define water pollution, including sources and effects of some major types, judge impacts of water pollution legislation, and differentiate between best available/best practical technology and total maximum daily pollution loads.
- Identify the major components of the waste stream, including toxic and hazardous wastes, and describe how wastes have been - and are being - disposed of in North America and around the world.
- Analyze personal trash production and identify strategies to reduce solid and hazardous waste.
- Explain how resource supply and demand affect price and technological progress.
- Define ecological economics and identify its basic tenants.
- Recognize opportunities for making a difference through goods and services, as well as limits of green consumerism.
- Identify 'greenwashing' practices within companies, governments, and non-governmental organizations.
- Appreciate the importance of wicked problems, resilience, and adaptive management in environmental planning.
- Evaluate how green politics and environmental citizenship can help protect the earth.
- Evaluate the major environmental risks we face and how risk assessment and risk acceptability are determined.
- Formulate their own philosophy and action plan for what they can and should do to create a better world and a sustainable environment

## Evaluation:

Mastery of outcomes will be evaluated through a mix of projects, writing assignments, discussions, and quizzes. Please see the Grading Criteria below for details.

## College Policies:

- **Plagiarism:** Plagiarism and Academic Dishonesty are not tolerated at Northwestern Connecticut Community College. Violators of this policy will be subject to sanctions ranging from failure of the assignment (receiving a zero), failing the course, being removed/expelled from the program and/or the College. Please refer to your "Student Handbook" under "Policy on Student Rights," the Section entitled "Student Discipline," or the College catalog for additional information.
- **Americans with Disabilities Act (ADA):** The College will make reasonable accommodations for persons with documented learning, physical, or psychiatric disabilities. Students should notify Dr. Christine Woodcock, the Counselor for Students with Disabilities. She is located at Green Woods Hall, in the Center for Student Development. Her phone number is 860-738-6318 and her email is [cwoodcock@nwcc.edu](mailto:cwoodcock@nwcc.edu).
- **School Cancellations:** If snowy or icy driving conditions cause the postponement or cancellation of classes, announcements will be made on local radio and television stations and posted on the College's website at [www.nwcc.edu](http://www.nwcc.edu). Students may also call the College directly at **(860) 738-6464** to hear a recorded message concerning any inclement weather closings. Students are urged to exercise their own judgment if road conditions in their localities are hazardous.
- **Use of Electronic Devices:** Some course content as presented in Blackboard Learn is not fully supported on mobile devices at this time. While mobile devices provide convenient access to check in and read information about your courses, they should not be used to perform work such as taking tests, quizzes, completing assignments, or submitting substantive discussion posts.
- **Sexual Assault and Intimate Partner Violence Resource Team:** NCCC is committed to creating a community that is safe and supportive of people of all gender and sexual identities. This pertains to the entire campus community, whether on ground or virtual, students, faculty, or staff.

Sexual assault and intimate partner violence is an affront to our national conscience, and one we cannot ignore. It is our hope that no one within our campus community will become a victim of these crimes. However, if it occurs, NCCC has created the SART Team - Sexual Assault and Intimate Partner Violence Resource Team - to meet the victim's needs.

SART is a campus and community based team that is fully trained to provide trauma-informed compassionate service and referrals for comprehensive care. The team works in partnership with The Susan B. Anthony Project to extend services 24 hours a day, 7 days a week throughout the year.

### The NCCC team members are:

Ruth Gonzalez, Ph.D.	860-738-6315	Green Woods Hall Room 207
Susan Berg	860-738-6342	Green Woods Hall Room 223
Kathleen Chapman	860-738-6344	Green Woods Hall Room 110
Michael Emanuel	860-738-6389	Founders Hall Annex Room 308
Seth Kershner	860-738-6481	Library
Jane O'Grady	860-738-6393	Founders Hall Annex Room 212
Robin Orloski	860-738-6416	Business Office Room 201
Patricia Bouffard, Ex-Officio	860-738-6319	Founders Hall Room 103
Savannah Schmitt		Student Representative

At NCCC we care about our students, staff and faculty and their well-being. It is our intention to facilitate the resources needed to help achieve both physical and emotional health.