

ENVS-115: INTRODUCTION TO ENVIRONMENTAL SCIENCE

Effective Term

Fall 2021

BOT Approval

03/11/2021

SECTION A - Course Data Elements

CB04 Credit Status

Credit - Degree Applicable

Discipline

Minimum Qualifications	And/Or
Earth Science (Master's Degree)	
Geography (Master's Degree)	

Subject Code

ENVS - Environmental Science

Course Number

115

Department

Environmental Science

Division

Science and Engineering (SE)

Full Course Title

Introduction to Environmental Science

Short Title

Intro to Environmental Science

CB03 TOP Code

0301.00 - Environmental Science

CB08 Basic Skills Status

NBS - Not Basic Skills

CB09 SAM Code

E - Non-Occupational

Rationale

Course modification to align with C-ID. Changes include course title, TOP Code, catalog description, SLOs, Objectives, Content, method of evaluation update, and textbook update.

SECTION B - Course Description

Catalog Course Description

Introduction to environmental issues from a scientific perspective and the role of science in finding sustainable solutions. Focus is on understanding the physical, chemical, and biological processes of the Earth System and the interaction between humans and these processes. Topics include ecological principles, biodiversity, human population growth, climate change, management of renewable and non-renewable energy, water, land, soil, mineral resources, and waste management.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit

No

Repeatability

Not Repeatable

Grading Options

Letter Grade or Pass/No Pass

Allow Audit

Yes

Requisites**SECTION D - Course Standards****Is this course variable unit?**

No

Units

3.00

Lecture Hours

54.00

Outside of Class Hours

108

Total Contact Hours

54

Total Student Hours

162

Distance Education Approval**Is this course offered through Distance Education?**

Yes

Online Delivery Methods

DE Modalities	Permanent or Emergency Only?
Entirely Online	Permanent
Hybrid	Permanent
Online with Proctored Exams	Permanent

SECTION E - Course Content**Student Learning Outcomes**

Upon satisfactory completion of the course, students will be able to:	
1.	Identify and describe major global, regional, and local environmental issues.
2.	Analyze the scientific basis of major environmental issues and identify and evaluate potential solutions.
3.	Recognize the relationships between human actions and environmental issues and examine the impacts of human population growth and the environment.

Course Objectives

Upon satisfactory completion of the course, students will be able to:	
1.	Evaluate and understand the scientific method and terminology.
2.	Debate and discuss major global, regional, and local environmental issues from a science-based perspective.
3.	Distinguish between science and pseudoscience.
4.	Use population and community dynamics to examine specific environmental issues and the sustainability of solutions.

5. Analyze the scientific basis of environmental issues and apply the knowledge of biological, chemical, and physical processes of the Earth to identify and evaluate potential solutions.
6. Evaluate conflicting arguments on environmental issues by applying critical thinking skills and scientific methodologies.
7. Research, evaluate, and cite information from publications and personal communications.
8. Create and interpret scientific tables, graphs, and figures.
9. Identify social, economic, and cultural considerations related to environmental issues and analyze their effects on solving environmental problems.
10. Analyze natural resource issues and evaluate strategies for ethical conservation and sustainability of those resources.

Course Content

1. Introduction to Environmental Science and Sustainability
 - a. Scientific methodologies
 - b. The role of science in solving environmental issues
 - c. Natural resources and ecosystem services
 - d. Environmental sustainability
2. Environmental Systems and Ecology
 - a. Energy flow and matter cycling through ecosystems
 - b. Biogeochemical cycles
 - c. Populations: evolution, population ecology, human demographics
 - d. Communities: species interactions, niche, succession, biodiversity
3. Water
 - a. Water as a resource
 - b. Ground and surface water pollution
 - c. Social, economic, and cultural impacts
4. Soil
 - a. Soil composition and formation
 - b. Nutrients
 - c. Soil degradation
 - d. Impacts on agriculture and food supply
5. Air
 - a. Air as a resource
 - b. Air pollution
 - c. Social, economic, and cultural impacts
6. Minerals and Mining Practices
 - a. Physical and chemical composition and processes of Earth
 - b. Mineral formation and source locations
 - c. Mineral extraction and the ethical impact of the land and workers
 - d. Land reclamation
 - e. Sustainable use of mineral resources
7. Energy
 - a. Conservation and efficiency
 - b. Fossil fuels
 - c. Nuclear
 - d. Renewable
 - e. Energy strategies
 - f. Social, economic, and cultural impacts
8. Forests and Protected Lands
 - a. Forests as a resource
 - b. Deforestation
 - c. Management practices
 - d. Land Management Agencies and Protected Lands
9. Waste Management
 - a. Solid waste
 - b. Hazardous waste
 - c. Reduction, reuse, recycling

- d. Legislation and policy
 - e. Social, economic, and cultural impacts
10. Economics and Policy
- a. Economics and the environment
 - b. U.S. environmental law and policy: historical and current
 - c. International environmental law and policy: historical and current
 - d. Legislation, Acts, and Agreements

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Lecture	

Online Adaptation

Types	Examples of learning activities
Activity	
Directed Study	
Discussion	
Group Work	
Individualized Instruction	
Journal	
Lecture	

Instructor-Initiated Online Contact Types

Announcements/Bulletin Boards
 Chat Rooms
 Discussion Boards
 E-mail Communication
 Telephone Conversations
 Video or Teleconferencing

Student-Initiated Online Contact Types

Chat Rooms
 Discussions
 Group Work

Course design is accessible

Yes

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Exams/Tests	Exams may consist of questions relating environmental processes, environmental issues, and human survival. Examples: 1) Explain how human population, affluence, and technology affect the environment. 2) Describe the environmental and social impacts of mining.
Quizzes	Quizzes covering current lecture topics may be given throughout the course. Examples: 1) What are ecosystem services? 2) How does evolution generate and shape biodiversity?

Projects	Report/project Examples: 1) Environmental Sustainability in practice. Research a company and identify their sustainable practices and environmental footprint. 2) Case Study. Research and examine an actual environmental problem or issue and explain the impact and/or problem and what solutions are being incorporated.
Other	Field Trip Examples: 1) Class field trip on campus to observe sustainable practices. 2) Self-guided field trip to a protected land, as directed by a field guide provided by the instructor.
Homework	Homework covering current lecture topics may be given throughout the course. Examples: 1) Summarize a current event article and discuss its relevance to the topics covered in class. 2) Complete worksheets related to chapter topic.
Other	Journal/Notebook - Students may keep an organized journal/notebook of their observations, analysis, and reflections on current environmental issues and topics. The journal/notebook will be evaluated by the instructor throughout the course.

Assignments

Reading Assignments

Reading assigned chapters from the textbook.

Reading professional publications, internet research, and class handouts provided by the instructor.

Examples:

- 1) Reading assigned topics from the textbook such as: "Environmental Effects of Using Mineral Resources".
- 2) Reading excerpts from professional publications, such as Journal of Environmental Sciences.

Writing Assignments

Each assignment will have individual or collaborative research problems. Examples:

- 1) Compare and contrast two current environmental science articles with opposing views.
- 2) Analyze the causes and impacts of soil erosion and land degradation and discuss solutions.

SECTION F - Textbooks and Instructional Materials

Material Type

Textbook

Author

Withgott, J.H. and Laposata, M.

Title

Essential Environment: The Science Behind the Stories

Edition/Version

6th

Publisher

Pearson

Year

2019

SECTION G - Diversity, Equity and Inclusivity

Course Codes (Admin Only)

CB00 State ID

CCC000449091

CB10 Cooperative Work Experience Status

N - Is Not Part of a Cooperative Work Experience Education Program

CB11 Course Classification Status

Y - Credit Course

CB13 Special Class Status

N - The Course is Not an Approved Special Class

CB23 Funding Agency Category

Y - Not Applicable (Funding Not Used)

CB24 Program Course Status

Program Applicable

Allow Pass/No Pass

Yes

Only Pass/No Pass

No