



0810E101

Introduction to Environmental Science

Instructor: TBA

Time: May 17, 2027 - June 18, 2027

Office Hours: By appointment

Contact Hours: 60 (50 minutes each)

Credits: 4

Email: TBA

Course Description

Introduction to Environmental Science will focus on the science-based physical, geological, ecological, marine, and atmospheric aspects of environmental sciences. The most important topics that will be covered include trends in energy use and generation (fossil fuels and alternatives), water and air pollution, weather, and climate (and the biosphere's response to climate).

Course Goals

Upon successful completion of this course, you should be able to:

- Define Environmental Science and identify the shared characteristics of the natural sciences.
- Understand the process of scientific inquiry.
- Explain the concept of sustainability and its social, political, and cultural challenges.
- Interpret environmental issues as systems problems by identifying the inter-relationships (context and connections), perspectives (each actor has their own unique perception of the situation) and boundaries (agreeing on scope, scale and what might constitute an improvement) of ecosystems, agriculture, and land-use.

- Evaluate how human population and human activities affect the Earth's natural systems and vice versa.
- Apply quantitative methods to identify, evaluate, and solve environmental problems.
- Describe the major biogeochemical cycles and their relationship to life on Earth.
- Evaluate and design strategies for optimizing biodiversity, ecological restoration, and conservation within our environment.
- Gain a working knowledge of the role of fossil fuels and alternatives for generating power and economic growth in the future.
- Understand the wide-ranging causes, impacts and possible adaptations to climate change. Create your own strategy to advocate for an environmental issue important to you.

Grading Policy

Tests	60%
Final Exam	15%
<u>Homework</u>	<u>25%</u>
Total	100%

Grading Scale

The instructor will use the grading system as applied by JNU:

Definition	Letter Grade	Score
Excellent	A	90~100
Good	B	80~89
Satisfactory	C	70~79
Poor	D	60~69
Failed	E	Below 60

Course Outline

Please note that the outline is meant to give an overview of the major concepts in this course. Changes may occur as needed to aid in the student's development.

Module 1

- Science and Sustainability: An Introduction to Environmental Science
- Environmental Systems: Matter, Energy, and Ecosystems

Homework 1

Module 2

- Evolution, Biodiversity, and Population Ecology

Test 1

Module 3

- Species Interactions and Community Ecology
- Human Population

Homework 2

Module 4

- Biodiversity and Conservation Biology

Test 2

Module 5

- Geology, Minerals, and Mining

Homework 3

Module 6

- Fresh Water, Oceans, and Coasts

Test 3

Module 7

- Atmospheric Science, Air Quality, and Pollution Control
- Global Climate Change

Homework 4

Module 8

- Nonrenewable Energy Sources, Their Impacts, and Energy Conservation
- Renewable Energy Alternatives

Test 4

Module 9

- Economics, Policy, and Sustainable Development

Final Exam

Academic Integrity

As members of the Jinan University academic community, students are expected to be honest in all of their academic coursework and activities. Academic dishonesty, includes (but is not limited to) cheating on assignments or examinations; plagiarizing, i.e., misrepresenting as one's own work any work done by another; submitting the same paper, or a substantially similar paper, to meet the requirements of more than one course without the approval and consent of the instructors concerned; or sabotaging other students' work within these general definitions. Instructors, however, determine what constitutes academic misconduct in the courses they teach. Students found guilty of academic misconduct in any portion of the academic work face penalties that range from the lowering of their course grade to receiving a failing grade (E) in the course.