

**RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE**

ENVI 101: ENVIRONMENTAL STUDIES

I. Basic Course Information

A. Course Number and Title: ENVI 101: Environmental Studies

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Fall Year: 2018

D. Effective Term: Fall 2019

E. Sponsoring Department: Science & Engineering

F. Semester Credit Hours: 3

G. Weekly Contact Hours: 3 Lecture: 3
 Laboratory: 0
 Out of class student work per week: 6

H. Prerequisites/Corequisites: None

I. Laboratory Fees: No

J. Department Chair & Divisional Dean: Dr. Marianne Baricevic,
marianne.baricevic@raritanval.edu, Dr. Sarah Imbriglio, sarah.imbriglio@raritanval.edu

II. Catalog Description

Prerequisites: None.

This course is an introduction to environmental studies. Students will explore current topics to understand the causes and consequences of environmental problems facing the world and efforts being made to address them. Students will apply scientific methods and technological tools to analyze and evaluate how these environmental concerns relate to their own lives from both global and local perspectives. One weekend field trip is required. Students cannot receive credit for both ENVI 101 and ENVI 102. This course may be used to fulfill one semester of a non-laboratory science requirement for non-science majors or as an elective for science majors.

III. Statement of Course Need

- A. This course is a comprehensive introduction to understanding the environment and the effects of human activities on it. In the general absence of basic environmental curricula in the public education system, this is the first course that many students are taking on this subject. By covering a wide array of environmental issues, the course is likely to appeal to the broadest range of potential student interests. By focusing on basic aspects of human life (e.g., food, energy, air, water, etc.), moreover, the course is likely to be relevant and meaningful both to students engaged in formal environmental programs of study, as well as the public in general. Rather than teaching the course from the relatively narrow view of traditional environmental science concepts and methods, this course broadens the perspective to also include the various political, economic, cultural and philosophical dimensions in which these issues are embedded in the real world. From this vantage, students are not only likely to get a better sense of the complexity of these issues, but of the various causes and consequences that need to be addressed in order to devise solutions to them.
- B. No laboratory component is required.
- C. This course generally transfers as a general education science (non-lab) course, and may transfer as an introductory core course in an Environmental Science or Environmental Studies degree programs.

IV. Place of Course in College Curriculum

- A. Free Elective
- B. This course serves as a General Education Science (Non-Lab) course.
- C. This course meets the Core Environmental Science program requirement for the Environmental Science A.S. and Environmental Studies A.A.
- D. Course transferability: To see course transferability: a) for New Jersey schools, go to the NJ Transfer website, www.njtransfer.org; b) for all other colleges and universities, go to the individual websites.

V. Outline of Course Content

- A. Introduction to Environmental Studies
 - 1. Defining “Environment”
 - 2. Relation to other disciplines
 - 3. Online environmental databases
 - a. Using scientific method and online public databases to analyze local and global environmental problems
 - i. water quality – USGS, MyEnvironment, National Tapwater, Scorecard, NRDC (bottled water), Private Well Test Act Program Databases
 - ii. air pollution – ToxMap, Scorecard, MyEnvironment, NJDEP, TRI
 - iii. pesticide residues in produce – USDA Pesticide Residues Program, Pesticide Action Network, Beyond Pesticides Databases
 - iv. toxins in consumer products – SkinDeep Cosmetics Database

v. e-waste – EPEAT, Silicon Valley Toxics Coalition, Basel Action Network

vi. local toxic waste sites – Superfund NPL Sites, ToxMap, MyEnvironment

b. Use scientific method to evaluate significance and develop solutions

2. Beach clean-up

1. Standards and methods of data collection
2. Data analysis and comparison
3. Evaluation

B. Water Pollution

- a. The Water Cycle and Fresh Water Scarcity
- b. Major Categories and Causes of Water Pollutants
- c. Case Studies
 1. Surface and Ground Water Quality in U.S.
 2. Ocean Pollution
 3. Tap Water vs. Bottled Water
- d. Other Water Issues
 1. Droughts and Water Scarcity
 2. Floods
 3. Dams and Water Diversion

C. Air Pollution

- a. Air Quality and Atmospheric Science
- b. History of Air Pollution and Regulation
- c. Major Categories of Air Pollutants
- d. Case Studies
 1. Leaded Gasoline
 2. CFC's and the Ozone Layer

D. Waste and Recycling

- a. Human "Waste" and Natural Systems
- b. Solid Waste Management
- c. Where Your Garbage Goes...
 1. Garbage Barges and Landfills
 2. Recycling
 3. Incineration
- d. Case Studies
 1. Paper vs. Plastic Bags
 2. Life Cycle Analysis
 3. Marine Plastic Debris

E. Toxic Waste, Toxins and Toxicity

- a. Types of Toxins
- b. Determining Toxicity
- c. Hazardous Waste Management
- d. Case Studies
 1. E-Waste
 2. Love Canal and Bhopal
 3. Household Products and Consumer Safety

- F. The Built Environment
 - a. Shelter, Architecture and the Environment
 - b. Conventional vs. Sustainable Building Materials and Methods
 - c. Case Studies
 - 1. Vinyl Siding and PVC
 - 2. Old Growth Redwoods and Deforestation
 - 3. Pressure-Treated Wood
 - 4. LEED and Forest Product Certification Systems
- G. Transportation
 - a. Physics and History of Transportation
 - b. Fuel Efficiency Standards and Regulations
 - c. Public Transportation and Other Alternatives
 - d. Case Studies
 - 1. Electric Cars
 - 2. Great American Trolley Car Scandal
- H. Climate Change and Alternative Energies
 - a. Global Warming: Science and Politics
 - b. Alternative Energies and Energy Conservation
 - c. Case Studies
 - 1. Light Pollution
 - 2. Conservation Power Plants
 - 3. Incandescent vs. Compact Fluorescent Lighting
- I. Sustainability: Politics, Economics and the Environment
 - a. Natural Limits to Economic “Growth”
 - b. Individual and Corporate Power
 - c. Environmental Rights and Responsibilities
 - d. Consumerism and Industrial Economics
 - e. “Free” and “Fair” Global Trade
 - f. Sustainability and the “Triple Bottom Line”

VI. General Education and Course Learning Outcomes

A. General Education Learning Outcomes:

At the completion of the course, students will be able to:

1. apply the scientific method to analyze environmental problems and draw conclusions from data and evidence (GE-NJ3);
2. understand ethical issues and situations related to environmental problems (GE-NJ ER);
3. use technological resources **to access, process and present** scientific data to answer questions about local and/or global environmental quality (GE-NJ 4, IL);

B. Course Learning Outcomes:

At the completion of the course, students will be able to:

1. describe the current state and trends of our air, water, energy, land and food resources;
2. evaluate and think critically about information related to the scientific, political, economic, social, and historical dimensions of environmental issues

C. Assessment Instruments

Given the outcomes described above, the following assessment methods may be used:

- A. examinations
- B. online database analyses
- C. beach cleanup data collection and analysis
- D. presentations
- E. essays
- F. journals

VII. Grade Determinants

The following may be used to determine the final grade:

- A. mid-term and final exam
- B. online database analyses
- C. beach cleanup data collection and analysis
- D. presentations
- E. class/homework assignments
- F. service learning

Given the goals and outcomes described above, the primary formats, modes, and methods for teaching and learning that may be used in the course include:

- A. lecture/discussion
- B. small-group work
- C. computer-assisted instruction
- D. guest speakers
- E. student oral presentations
- F. student collaboration
- G. independent study

VIII. Texts and Materials

The following types of course materials may be used:

- A. Suggested Texts:
Stander, E. and J. Kelly. 2016. Introduction to Environmental Issues.
- B. Articles from scientific journals and periodicals
- C. Interview transcripts
- D. Book Reviews
- E. Student Writing
- F. Films and Documentaries

G. Radio Recordings

H. Internet Databases and Information Sources

I. Library Article Databases

(Please Note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.)

IX. Resources

A. RVCC van and/or bus rental;

B. Library databases and other resources;

C. Film and documentaries from the RVCC Science Library

D. Tablets/Computers for in-class internet assignments