Miami Dade College

Course Description

EVR1001 | Introduction to Environmental Science | 3.00 credits

This course is a survey of basic chemical, biological, and physical principles of environmental science and their applications to environmental issues. This course is appropriate for students in a wide range of disciplines or programs. Student learning outcomes: students will apply critical thinking to analysis and interpretation of environmental information and model output; students will apply the scientific method to explain natural experiences and phenomena; students will explain the basic chemical, biological, and physical principles of environmental science; and students will use empirical evidence to describe the historical and modern context of environmental problems and their solutions. Special Fee.

Course Competencies:

Competency 1: The student will demonstrate knowledge of how the principal systems that support and affect life on Earth operate by:

1. Listing the basic concepts of the physical, chemical, and biological factors involved in key environmental systems
2. Describing the process of natural selection as it operates to refine the fit between organism, habitat, and niche
3. Identifying the structure of an ecosystem and describing why sustained life on Earth is a characteristic of ecosystems
4. Describing how each significant component of Earth's global system (atmosphere, hydrosphere, lithosphere, and biosphere) is involved and linked with biogeochemical cycles (e.g., the carbon cycle, nitrogen cycle, oxygen cycle, phosphorus cycle, and water cycle)
5. Charting the flow of energy in ecosystems

Competency 2: The student will analyze the impact of human activities on the systems that support life on Earth by:

1. Describing why human population growth is a fundamental environmental issue
2. Identifying human consumption patterns that affect environmental sustainability and the ability of future generations to meet their needs
3. Explaining that the misuse of soil reduces soil fertility, pollutes streams, and requires expensive remediation, and how to prevent this
4. Listing the various kinds of water use and describing problems associated with each
5. Describing challenges associated with managing terrestrial and oceanic resources
6. Describing local challenges to managing urban impact in South Florida
7. Summarizing the cause and effect of atmospheric problems
8. Examining the issue of global climate change from economic, climatological, social, political, cultural, and agronomic perspectives

Competency 3: The student will demonstrate knowledge of the economic, social, cultural, and political processes that determine the way that we interact with the environment by:

1. Summarizing how decision-making about environmental issues involves society, politics, culture, economics, values, and science
2. Evaluating resource acquisition and consumption patterns and the subsequent impacts on the natural and human environments
3. Discussing how political lobbying groups impact resource development
4. Explaining how governmental, community, and individual action can force companies to meet environmental standards

Competency 4: The student will acquire an environmental awareness based on the principles of sustainable development by:

1. Discussing energy conservation education
2. Understanding a sustainable plan for addressing an environmental issue
3. Considering mitigation strategies and solutions to an environmental problem
4. Describing why solutions to environmental problems involve making value judgments based on scientific research and cultural, political, socioeconomic, and other considerations
5. Comparing the environmental benefits and challenges of urbanization

Competency 5: The student will identify Earth ethics issues facing the world today by:

1. Analyzing the relationship between various worldviews and the ethical decisions made by society that impact the environment
2. Identifying how the ethical components of human population growth, poverty, resource depletion, and habitat loss perpetuate environmental degradation
3. Applying the precautionary principle to science, society, and environmental justice questions
4. Understanding and analyzing the various demands for natural resources
5. Identifying how relationships and tolerance between persons, cultures, and other lives encourage peace, integrity, resiliency, and a sustainable planet

General Education Learning Outcomes:

- Solve problems using critical and creative thinking and scientific reasoning
- Describe how natural systems function and recognize the impact of humans on the environment