Miami Dade College

Course Description

OCE1001 | Introduction to Oceanography| 3.00 credits

Using the scientific method, critical thinking skills, and data analysis, this course will examine the fundamental processes of the ocean system, composed of an atmosphere, hydrosphere, lithosphere, and biosphere, through time. The course will also explore interactions between these spheres, including critical analysis of scientific theories and emphasize oceanic connections with humanity. Student learning outcomes: students will use critical thinking to recognize the rigorous standards of scientific theories; students will analyze and synthesize oceanographic data to draw scientifically valid conclusions; students will recognize the different time scales associated with different ocean processes; students will describe interactions between humans and the ocean realm; and students will apply their understanding of oceanographic principles to various marine issues.

Course Competencies:

Competency 1: The student will use critical thinking to recognize the rigorous standards of scientific theories by:

1. Evaluate the evidence and arguments in scientific theories to determine their validity.
2. Critiquing scientific theories by examining their underlying principles' logical consistency and coherence.
3. Comparing and contrasting different scientific theories to identify commonalities and differences in their approaches and conclusions.

Competency 2: The student will analyze and synthesize oceanographic data to draw scientifically valid conclusions by:

1. Collecting and organizing oceanographic data from various sources to create a comprehensive dataset.
2. Applying statistical analysis techniques to identify patterns and trends in oceanographic data.
3. Interpret and integrate the findings from the data analysis to draw scientifically valid conclusions about ocean processes.

Competency 3: The student will recognize the different me scales associated with different ocean processes by:

1. Differencing between short-term and long-term ocean processes based on their characteristic I scales.
2. Relating specific ocean processes to their corresponding me scales to understand their temporal dynamics.
3. Classifying ocean processes based on their me scales to facilitate analysis and study.

Competency 4: The student will describe interactions between humans and the ocean realm by:

1. Describing and identify the various ways in which humans interact with the ocean, including fishing, tourism, and pollution.
2. Examining and evaluating the impacts of human activities on the ocean ecosystem and its resources.
3. Analyzing and proposing strategies to mitigate negative interactions and promote sustainable practices in the ocean realm.

Competency 5: The student will apply their understanding of oceanographic principles to various marine issues by:

1. Analyzing and evaluating marine issues, such as coral bleaching or overfishing, using oceanographic principles as a framework.
2. Proposing and justifying solutions or interventions based on oceanographic principles to address the identified marine issues.
3. Communicating and advocating for the importance of applying oceanographic principles in addressing marine issues to a broader audience.

Learning Outcomes:

- Create strategies that can be used to fulfill personal, civic, and social responsibilities
- Communicate effectively using listening, speaking, reading, and writing skills

- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information