

## Course Syllabus

### PHYSICAL OCEANOGRAPHY

Printed by: jcedeno

Program: Oceanographic Engineering

#### 1. Course number and name

OCEG1003 - PHYSICAL OCEANOGRAPHY

#### 2. Credits and contact hours

3 credits and 4 contact hours

#### 3. Instructor's course or coordinator's name

JONATHAN MARCELO CEDEÑO OVIEDO

#### 4. Text book, title, author, and year

- Stewart, Robert. Introduction to Physical Oceanography (Sept 2008 Edition)
  - a. Other supplemental materials
    - Pond, Stephen & George L. Pickard. Introductory Dynamical Oceanography (2nd Edition)
    - Open University. Seawater: its composition, properties and behaviour (2nd Edition)
    - Open University. Ocean circulation (2nd Edition)
    - Enfield, David B.. Manual de prácticas de oceanografía física ( )

#### 5. Specific course information

- a. Brief description of the content of the course (catalog description)

The course of Physical Oceanography is designed to provide students with an overview of ocean dynamics, as well as temporal and spatial variability of the ocean-atmosphere system. This is achieved through analysis of seawater properties such as temperature, salinity and density; water masses, and the equation of motion and its different balances.

- b. Prerequisites

FLUID MECHANICS I - MECG1005

SUPERIOR MATHEMATICS - MATG1027

CLIMATOLOGY AND METEOROLOGY - OCEG1025

- c. This course is: Required

#### 6. Specific goals for the course

- a. Specific outcomes of instruction

1.- Interpret the large-scale distribution of seawater properties for understanding the physical, chemical, biological and geological processes that govern it.

2.- Analyze the basic principles of ocean physics, consequences of land rotation, stratification, and current dynamics from data that allows calculation of those processes.

3.- Quantify oceanic processes from in-situ data or from remote sensors.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course



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- An ability to communicate effectively with a range of audiences in Spanish.

#### 7. Brief list of topics to be covered

- 1.- Properties of water
- 2.- Water masses
- 3.- Equation of motion in Oceanography
- 4.- Currents without friction
- 5.- Currents with friction