Course Syllabus

COASTAL OCEANOGRAPHY

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Program: Oceanographic Engineering

1. Course number and name

OCEG1008 - COASTAL OCEANOGRAPHY

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

JONATHAN MARCELO CEDEÑO OVIEDO

4. Text book, tittle, author, and year

• Davidson-Arnott, Robin. Introduction to Coastal Processes and Geomorphology (1st Edition)

a.Other supplemental materials

• U.S. Coastal Engineering Research Center. Shore Protection Manual (SPM) (4th Edition)

• U.S. Coastal Engineering Research Center. Coastal Engineering Manual (CEM) (2nd Edition)

• Sorensen, Robert M.. Basic Coastal Engineering (3rd Edition)

5. Specific course information

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

This course studies the physical processes that intervene in the dynamics of coastal zones, the transport of sand, and the determination of beach profiles. This allows to generate an integral vision of the processes that dominate and give shape to the marine-coastal strip, for its better understanding and conservation.

b. Prerequisites

MARINE WAVES - OCEG1006

c. This course is: Required

6. Specific goals for the course

a. Specific outcomes of instruction

1.- Understand the processes of wave transformation from deep water to shallow water, and how these influence the determination of coastal processes on the coast.

2.- Analyze the transport mechanisms of sediments in the marine-coastal zone, and their relationship with the incident waves.

3.- Evaluate the different factors that govern coastal processes, integrating the concepts of climate variability, extreme events, and natural threats.

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

• An ability to recognize ethical and professional responsibilities in engineering

situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

7. Brief list of topics to be covered

1.- Wave transformation

2.- Radiation stress

3.- Sediment transport

4.- Coastal processes