Course Syllabus

COASTAL OCEANOGRAPHY

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Program: Oceanographic Engineering

1. Course number and name

OCEG1048 - COASTAL 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, 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)

• Smith, Ernest R. & Stephen E. Wagner. Littoral environment observation program ()

• Basco, David R.. A qualitative description of wave breaking ()

• Vera, Leonor. Comparación de la tasa anual de transporte de sedimentos de playa en la isla Jambelí, utilizando formulación sugerida por varios autores ()

• Komar, Paul D. & David B. Enfield. Short-term sea level changes and shore-line erosion ()

• Silva, Rodolfo; M. Luisa Martínez, Patricia A. Hesp, Patricio Catalan; Andrés F. Osorio, Raúl Martell, Mónica Fossati, Graziela Miot da Silva, Ismael Mariño-Tapia, Pedro Pereira, Rodrigo Cienguegos, Antonio Klein & Georges Govaere. Present and future challenges of coastal erosion in Latin America ()

• Vera, Leonor. Análisis de los procesos costeros en La Libertad ()

5. Specific course information

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

This professional training course studies the physical processes involved in the dynamics of coastal zones, sand transport and determination of beach profiles. This gives to the student a comprehensive vision of the processes that dominate and shape the marine-coastal strip, for its better understanding and conservation.

b. Prerequisites

MARINE WAVES - OCEG1049

c. This course is: Required

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6. Specific goals for the course

a. Specific outcomes of instruction

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

2. Analyze mechanisms of sediment transport in the marine-coastal zone and their relationship with the incident swell.

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

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

7. Brief list of topics to be covered

1.- Evaluation activities

2.- Coastal hydrodynamics

3.- Sediment transport

4.- Coastal processes: theory

5.- Coastal processes: impacts