

Course Syllabus

COASTAL MODELING

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Program: Oceanographic Engineering

1. Course number and name

OCEG1018 - COASTAL MODELING

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

- Roelvink, Dano & Ad Reniers. A guide to modelling coastal morphology (1st Edition)
 - a. Other supplemental materials
- Winckler, Patricio. Modelado de procesos costeros (1era Edición)

5. Specific course information

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

Analyze the possible scenarios that can be developed in the coastal environment due to the interaction of the hydrodynamic and morphodynamic processes using computational numerical models, in order to understand the system and propose possible engineering solutions to the problems that may be occurring.

- b. This course is: Required

6. Specific goals for the course

- a. Specific outcomes of instruction

1.- Understand the processes that occur in the coastal environment by studying the basic concepts to relate them to morphodynamic changes in coastal areas

2.- Analyze the advantages and disadvantages of computational numerical models by studying the governing equations of the hydrodynamic and morphodynamic processes that are solved within the models in order to investigate the levels of uncertainty they have.

3.- Evaluate possible scenarios through the use of computational numerical models to understand the study area and be able to design engineering solutions to the different problems that exist.

b. Explicitly 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.- Introduction to coastal modeling
- 2.- Littoral hydrodynamics
- 3.- Littoral morphodynamics
- 4.- Coastal modeling

