

Course Syllabus

BIOLOGICAL OCEANOGRAPHY

Printed by: jcedeno

Program: Oceanographic Engineering

1. Course number and name

OCEG1014 - BIOLOGICAL 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

- Carol M. Lalli & Timothy R. Parsons. Biological Oceanography: An Introduction (2nd Edition)

5. Specific course information

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

This course is professional training and seeks to provide students in the career of Marine Biology and Oceanic Engineering with the basic knowledge of spatial distribution of the pelagic, planktonic and ichthyological communities that are part of the biological processes that are carried out in the oceans and that are studied by biological oceanography; In addition, the flow of energy and matter in relation to the environment is analyzed in such a way that they can make decisions to reduce the impact of fishing and aquaculture exploitation.

The course consists of nine chapters. The first chapters introduce the basic knowledge of the oceanic environment and a description of the planktonic community is made in terms of its chemical composition and distribution of the organisms. The intermediate chapters focus on primary production than the beginning of the pelagic trophic chain and on the biology of fish populations. The last chapters present topics such as the El Niño Phenomenon and the effects of climatic variability on fishing.

b. Prerequisites

BIOLOGY - BIOG1001

DESCRIPTIVE OCEANOGRAPHY - OCEG1001

c. This course is: Required

6. Specific goals for the course

a. Specific outcomes of instruction

1.- Acquire skills as a Technical Evaluator of Bioecological Processes in National Parks, Marine Land and Wetlands.

2.- Facilitate production processes in the Ecuadorian coast, applying oceanic biological



Course Syllabus

BIOLOGICAL OCEANOGRAPHY

Printed by: jcedeno

Program: Oceanographic Engineering

knowledge and how they can be exploited.

3.- Acquire capacity as a manager of new commercial alternatives to analyze, improve and solve problems in bio-processes and biomedicine, using marine biotechnological tools.

4.- Knowing techniques of the processes involved in biological oceanography, through collective and electronic media for environmental protection and conservation of pelagic species.

5.- Interpret the population dynamics of pelagic fish in relation to the life cycle, migrations and the impact of human intervention on marine resources and the effects of climatic variability and El Niño events on fishing based on knowledge of oceanographic processes biological

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

- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

7. Brief list of topics to be covered

- 1.- Introduction
- 2.- Phytoplankton and primary productivity
- 3.- Zooplankton
- 4.- Energy flows and nutrient cycles
- 5.- Necton
- 6.- Contemporary themes in biological oceanography