# 7/24/2020

# brcc keystone logo

Baton Rouge Community College

*Academic Affairs Master Syllabus*

Date Approved: 11 September 2020

Term and Year of Implementation: Fall 2020

**Course Title:** Introduction to Oceanography

**BRCC Course Rubric:** BIOL 2413

**Previous Course Rubric**: BIOL 241

**Lecture Hours per week-Lab Hours per week-Credit Hours**: 3-0-3

**Per semester: Lecture Hours-Lab Hours-Instructional Contact Hours**: 45-0-45

**Louisiana Common Course Number:**

**CIP Code:** 26.1302

**Course Description:** Introduces. the world ocean origins and interactions between physical, geological, chemical, and biological processes in the marine environment. Covers use and abuse of oceans and coastal ecosystems with emphasis on the Gulf coast region.

**Prerequisites:**  None

**Co-requisites:** None

**Suggested Enrollment Cap:** 30

**Learning Outcomes.** *Upon successful completion of this course, the students will be able to:*

1. Explain fundamental concepts of oceanography in the areas of geology, chemistry, and physics in oceanic and coastal ecosystems.

2. Explain the diversity of life within the oceans and describe how it must adapt to the challenges imposed by the environment.

3. Interpret images, graphs, models, and maps used to illustrate oceanographic concepts.

4. Understand how concepts of oceanography relate to the natural world and to society especially to the Gulf coast region.

**General Education Learning Outcome(s):** This course supports the development of competency in the following area(s). Students will:

Apply scientific concepts to explain the natural world. (General Education Competency in Scientific Reasoning)

**Assessment Measures.** Assessment of all learning outcomes will be measured using the following methods:

1. Administration of unit exams during the semester and a comprehensive final exam at the end of the semester.

2. Instructor-designed assignments including, but not limited to, written and oral assignments, projects, homework, and quizzes. All assignments will be graded using an instructor-designed rubric.

**Information to be included on the Instructor’s Course Syllabi:**

* ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.
* ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor’s and/or the department’s policy for make-up work. For example in a speech course, “Speeches not given on due date will receive no grade higher than a sixty” or “Make-up work will not be accepted after the last day of class”.
* ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.
* ***General Policies*:** Instructors’ policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.
* ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.
* ***Safety Concerns:*** In some courses, this may be a major issue. For example, “No student will be allowed in the lab without safety glasses”. General statements such as, “Items that may be harmful to one’s self or others should not be brought to class”.
* ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

**Expanded Course Outline:**

I. Introduction to Oceanography

A. What is Oceanography?

B. Geography: Oceans of World versus Continents

C. Origins of Earth and Oceans

D. History of Oceanography- Explorations of the Oceans

E. Oceanography and the Gulf coast region

II. Geological Oceanography

A. Earth Structure; Chemical and Physical

B. Historical Notes on Geological Oceanography

C. Principles of Plate Tectonics and Supporting Evidence

D. Plate Boundaries: today, past, and future

E. Explanatory Applications of Plate Tectonics

F. Marine Provinces: Continental Margins and Ocean Basins

G. Marine Sediments and their Value

III. Chemical Oceanography

A. Basic Chemical Concepts: Atoms, Ions, Molecules

B. Properties of Water and Their Significance

C. Seawater Composition

D. Chemical Equilibrium and Residence Time

E. Dissolved Gases and Role of Ocean for Biosphere

F. Ocean Buffering Capacity

G. Pollution in Coastal Regions

IV. Physical Oceanography

A. Temperature, Salinity and Density of Seawater

B. Light and Sound in Seawater

C. Circulation of the Atmosphere

D. Circulation of the Ocean

E. The Oceans, Weather, and Climate

F. Upwelling and Downwelling

G. Waves and Water Dynamics

H. Tides

I. Coasts: Beaches and Shoreline Processes, Estuaries

V. Biological Oceanography

A. Classification of Life

B. Divisions of Marine Biomes

C. Marine Habitats

D. Marine Organisms and their Adaptations

E. Availability of Solar Radiation and Nutrients

F. Primary Productivity: Phytoplankton and Marine Plants

G. Comparisons of Productivity in Different Parts of Ocean

H. Energy Transfer–Tropic Levels and Food Webs

I. Biogeochemical Cycling

J. Marine Invertebrates

K. Marine Vertebrates