

**OCE 3008 OCEANOGRAPHY**  
ABET Course Syllabus

**1. Course number and name:** OCE 3008 Oceanography

**2. Credits and contact hours:** 3 credits / Two 80-minute lectures each week

**3. Instructor's or course coordinator's name:** Dr. Nayak

**4. Text Book, title, author, and year:**

Alan P. Trujillo and Harold V. Thurman, Essentials of Oceanography, Prentice Hall, 13th Ed. (2020), ISBN 978-0-321-81394-7

**5. Specific course information:**

(a) Brief description of the content of the course (catalog description): The course deals with nature of sea water; trace and major constituents; the ocean carbon, phosphorous, and nitrogen cycles; basins, continental shelf, deep ocean floor; thermal vents, manganese nodules, marine sediments; marine life; plate tectonics; estuaries and mixing processes; pollution; corrosion and biofouling; winds, waves, tides, currents and ocean circulation processes; energy (heat, light, sound); depth, temperature, salinity, and other physical effects.

(b) Prerequisites: CHM 2045 (with a grade of C or above).

(c) Indicate whether a required, elective, or selected elective course in the program: Required.

**6. Specific goals for the course:**

(a) Specific outcomes of instruction (course specific objective): The objective of the course is to provide the students with a basic knowledge of the important chemical, physical, geological and biological processes of the marine environment necessary for advancement to higher level marine science/engineering coursework.

(b) Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course. The learning outcomes of the course (and related ABET Criterion 3) outcomes are:

1. The broad education necessary to understand the impact of ocean engineering solutions in a global and societal context (4).

2. Knowledge of contemporary issues involving oceans (4).

**7. Brief list of topics to be covered:**

- Introduction to planet earth.
- Plate tectonics and the ocean floor.
- Marine provinces and marine sediments.
- Water and seawater.
- Air-sea interaction.
- Ocean circulation.
- Waves and water dynamics.

- Tides.
- The coastal ocean.
- Biological oceanography.
- The oceans and climate change.