MRSC A185L: COASTAL OCEANOGRAPHY LAB

Item	Value
Curriculum Committee Approval Date	02/09/2022
Top Code	040100 - Biology, General
Units	1 Total Units
Hours	54 Total Hours (Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Associate Arts Local General Education (GE)	• OC Physical/Biological Sci - AA (OB)
Associate Science Local General Education (GE)	• OCC Physical/Biological Sci-AS (OSB)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5C Laboratory Activity (5C)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5C Laboratory Activity (5C)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B3 Laboratory Activity (B3)

Course Description

Scientific laboratory and field investigations of physical, geological, and chemical oceanography related to the Southern California coastal ocean. PREREQUISITE: MRSC A100; and MRSC A185 or concurrent enrollment. Transfer Credit: CSU; UC.

Course Level Student Learning Outcome(s)

1. Understand the history, formation, and processes that affect local coastal dynamics.
2. Collect field data and organize the information into tables and graphs.
3. Interpret and analyze data in well-written reports that explain student results in the context of oceanographic concepts.

Course Objectives

- 1. Understand the history, formation, and processes affecting the local coastline.
- 2. Interpret coastal features of southern California beaches.
- 3. Work in groups and collect data in the field and in labs.
- 4. Organize and analyze data.
- 5. Interpret results and explain why they make sense.
- 6. Discuss findings in a scientifically acceptable format.
- 7. Understand how scientists communicate information.

Lecture Content

This is a lab only course.

Lab Content

Orientation / Data Analysis Techniques Regional coastal geology formation Field studies: Coastal geology / Interpretation of Dana Point Harbor features Field studies: Beach structure formation / Beach profiling Data analysis Waves, currents coastal armoring / Scientific reports Field studies: Wave influence / Local currents / Coastal armoring Water columns Estuaries Field studies: Water columns / Watersheds estuaries Coastal water quality Field studies: Water parameter analysis / Identifying environmental influences Harvesting Coastal Resources

Method(s) of Instruction

- Lab (04)

Instructional Techniques

A. Lab based group assignments B. Reading assignments D. Field Trips E. Internet/Computer based activities

Reading Assignments

Read assigned chapters from textbooks/lab manual.

Writing Assignments

Written reports from field studies.

Out-of-class Assignments

Complete lab reports.

Demonstration of Critical Thinking

Demonstrate how to use oceanographic equipment to measure natural coastal phenomena. Tabulate and interpret data obtained from field studies conducted by the class to include in a written scientific report.

Required Writing, Problem Solving, Skills Demonstration

Written reports from field studies.

Eligible Disciplines

Biological sciences: Masters degree in any biological science OR bachelors degree in any biological science AND masters degree in biochemistry, biophysics, or marine science OR the equivalent. Masters degree required. Earth science: Masters degree in geology, geophysics, earth sciences, meteorology, oceanography, or paleontology OR bachelors degree in geology AND masters degree in geography, physics, or geochemistry OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Kelly, D.. The Coastal Sea of Southern California Oceanography of the Southern Bight, 1st ed. Self, 2002 Rationale: Only textbook written on this topic to give an overview of the southern California Coastal Area.

Manuals Resources

1. Ellis, R.; Baker, K. Coastal Oceanography Lab Manual, Self , 07-01-2021