

GEOL R103: INTRODUCTION TO OCEANOGRAPHY

Originator

toneil

College

Oxnard College

Discipline (CB01A)

GEOL - Geology

Course Number (CB01B)

R103

Course Title (CB02)

Introduction to Oceanography

Banner/Short Title

Introduction to Oceanography

Credit Type

Credit

Start Term

Fall 2021

Co-listed (Same-as) Course(s)

MST R103

Taxonomy of Programs (TOP) Code (CB03)

1930.00 - Earth Science

SAM Priority Code (CB09)

E - Non-Occupational

Control Number

CCC000584547

Primary Minimum Qualification

BIOLOGICAL SCIENCES

Department

Marine Study (2020)

Division

Oxnard Math/Science/HED/Athletics/PE

Catalog Course Description

This course is a broad survey of the field of oceanography. Topics include geology and geography of the ocean basins and coastlines, plate tectonics, waves, currents, tides, properties of seawater, methods of oceanographic exploration, and an introduction to Marine Biology.

Taxonomy of Programs (TOP) Code (CB03)

1930.00 - Earth Science

Course Credit Status (CB04)

D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)

A (Transferable to both UC and CSU)

Course Basic Skills Status (CB08)

N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)

E - Non-Occupational

Course Cooperative Work Experience Education Status (CB10)

N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)

Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)

N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)

Y - Not Applicable

Course Noncredit Category (CB22)

Y - Credit Course

Funding Agency Category (CB23)

Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)

1 - Program Applicable

General Education Status (CB25)

Y - Not Applicable

Support Course Status (CB26)

N - Course is not a support course

Field trips

May be required

Faculty notes on field trips; include possible destinations or other pertinent information

Local beaches, harbors, and the Channel Islands

Grading method

Letter Graded

Does this course require an instructional materials fee?

No

Repeatable for Credit

No

Is this course part of a family?

No

Units and Hours

Carnegie Unit Override

No

In-Class

Lecture

Minimum Contact/In-Class Lecture Hours

52.5

Maximum Contact/In-Class Lecture Hours

52.5

Activity

Laboratory

Total in-Class

Total in-Class

Total Minimum Contact/In-Class Hours

52.5

Total Maximum Contact/In-Class Hours

52.5

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class

Minimum Outside-of-Class Hours

105.0

Maximum Outside-of-Class Hours

105.0

Total Student Learning

Total Student Learning

Total Minimum Student Learning Hours

157.5

Total Maximum Student Learning Hours

157.5

Minimum Units (CB07)

3

Maximum Units (CB06)

3

Student Learning Outcomes (CSLOs)

Upon satisfactory completion of the course, students will be able to:

- | | |
|---|--|
| 1 | List, explain, and evaluate global and local earth science hazards such as earthquakes, volcanoes, landslides, and seismic sea waves |
| 2 | Describe the Plate Tectonic model for movement of the lithospheric plates |
| 3 | Describe global oceanic circulation |

Course Objectives

Upon satisfactory completion of the course, students will be able to:

- | | |
|---|--|
| 1 | Explain the fundamental physical and chemical processes that operate in the oceans |
| 2 | Describe the common methods of marine exploration |
| 3 | Describe the bathymetry of the ocean basins |
| 4 | Describe the major features of the local coastline |
| 5 | Explain the scientific method |
| 6 | Demonstrate a conceptual understanding of the fundamental concepts, principles, and interactions of the World Ocean's systems that are applicable to the Physical Oceanographic Sciences |

Course Content**Lecture/Course Content**

1. Development of oceanography through the ages
2. Discussion of major discoveries, developments, and research voyages
3. Introduction to geologic time and processes
4. Use of the metric system in science
5. Chemistry of water
6. Discussion of the latest theories concerning the origin of the earth
7. Explanation of the Doppler Shift
8. Explanation of geologic time and the events separating major time divisions
9. Marine sedimentation and sub-sea geologic processes
10. Description of conditions associated with sediment accumulation
11. Explanation of why calcium carbonate is absent in deep sea sediments
12. Development of plate tectonic theory
13. General description of coastal geology and erosion with specific discussions of the coast of Southern California and the local processes that shape it
14. Weather and climate and their effects on ocean circulation and vice versa
15. Explanation of Coriolis Force
16. Vertical ocean circulation; the course of upwelling along the continental margins and the importance of vertical circulation and upwelling
17. The scientific method

Laboratory or Activity Content

None

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Problem solving exercises
Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Essay exams
Group projects
Individual projects
Objective exams
Problem-solving exams
Quizzes
Reports/papers
Research papers

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Audio-visual presentations
Computer-aided presentations

Collaborative group work
 Class activities
 Class discussions
 Distance Education
 Demonstrations
 Field trips
 Group discussions
 Guest speakers
 Internet research
 Lecture

Describe specific examples of the methods the instructor will use:

1. Instructor will introduce students to the material through lecture and example. The instructor will explain the material to be covered and demonstrates concepts. This includes a general description of coastal geology and erosion with specific discussions and examples along the coast of Southern California about the local processes that shape the coast.
2. Instructional methods include visual aids. Students observe PowerPoint displays of coastal beach features.
3. Instructional methods also include group activities, visual aids, and question and answer periods. Students discuss in groups the development of oceanography through the ages.
4. Students participate in question and answer sessions about local oceanographic features.

Representative Course Assignments

Writing Assignments

1. Assigned exercises (e.g., origin of tides, a marine organism) are to be completed by students outside of class and turned in for evaluation and grading.
2. Summarize the pertinent information from videos on key areas of study.

Critical Thinking Assignments

After viewing a video and reading articles supplied by the instructor, students will post responses to these two questions on a discussion board:

#1 - What causes the erosion at Hueneme Beach?

#2 - What can be done to lessen the erosion at Hueneme Beach?

After completing the assignment students will submit a post of at least 200 words on what is currently being done to lessen the erosion at Hueneme Beach. Additionally, students must comment on or critique at one other student's post.

Reading Assignments

1. Each chapter of text (e.g., tides, waves) studied in class is to be read by students prior to the corresponding lecture.
2. Students will be assigned to read selected articles on oceanography subjects using such journals as: *Discovery*, *Scientific American*, *National Geographic*, and *Nature*.

Other assignments (if applicable)

1. Reviewing notes, studying for tests, and doing class-related Internet searches.
2. Visit a local beach or harbor to recognize landforms, erosional or depositional features, and oceanographic processes. Recognize the oceanographic processes or principles impacting the local area.

Outside Assignments

Representative Outside Assignments

Study published weather map data for a week and interpret changes

Study the likelihood of Southern California being struck by a Tsunami

Field trips to local harbors like Channel Islands Harbor

Write notes from provided information or textbook to prepare for exams

Field trips to local beaches like Oxnard Shores

Field trip to the Channel Islands

Photograph and research the wave patterns at the entrance to Channel Islands Harbor

Participate in on-line discussion boards on course material and present relevant questions and answers

Field trip to observe the dredge barge at Channel Islands Harbor

Use on-line learning systems/tools and practice quizzes to prepare for exam

Write a summary of instructor-made videos and other video resources

Articulation

Equivalent Courses at 4 year institutions

University	Course ID	Course Title	Units
CSU Northridge	GEOL 122	The World Ocean	3
UC Riverside	GEO 9	Oceanography	4
UC Santa Barbara	EARTH 4	Introduction to Oceanography	4
Cal Poly Pomona	GSC 120	Intorduction to Oceanography	4

Comparable Courses within the VCCCD

GEOL M05 - The World Ocean

GEOL V11 - Introduction to Oceanography

Equivalent Courses at other CCCs

College	Course ID	Course Title	Units
Pierce CC	OCEA 1	Oceanography	3
Santa Monica CC	GEOL 31	Introduction to Oceanography	3

District General Education

A. Natural Sciences

B. Social and Behavioral Sciences

C. Humanities

D. Language and Rationality

E. Health and Physical Education/Kinesiology

F. Ethnic Studies/Gender Studies

CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

Area C: Arts and Humanities

Area D: Social Sciences

Area E: Lifelong Learning and Self-Development

Area F: Ethnic Studies

CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

IGETC

Area 1: English Communication

Area 2A: Mathematical Concepts & Quantitative Reasoning

Area 3: Arts and Humanities

Area 4: Social and Behavioral Sciences

Area 5: Physical and Biological Sciences

Area 6: Languages Other than English (LOTE)

Textbooks and Lab Manuals

Resource Type

Textbook

Description

O'Neil, T (2020). *Oceanography Workbook*. Oxnard Oxnard College.

Resource Type

Textbook

Description

Webb,Paul. (2019) . *Introduction to Oceanography*. Rebus Community.

Resource Type

Other Instructional Materials

Description

Maps (e.g., seafloor, world).

Resource Type

Other Instructional Materials

Description

Videos (e.g., local beaches).

Resource Type

Other Instructional Materials

Description

PowerPoint demonstrations (e.g., tides, waves).

Library Resources

Sufficient Library Resources exist

Yes

Distance Education Addendum**Definitions****Distance Education Modalities**

Hybrid (51%–99% online)

Hybrid (1%–50% online)

100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular Asynchronous discussion boards will be used to encourage discussion among students where they can compare and contrast/discuss /identify and analyze elements of course outcomes. Other Discussion boards will also be used for Q&A and general class discussion by students and instructor to facilitate student learning outcomes. E.g. - Students will use the discussion board in canvas to comment/respond to the validity of critics' claims that global warming is not occurring.

E-mail	Email, class announcements and tools such as “Assignment Comments” in Canvas will be used to regularly communicate with all students to clarify class content, remind of upcoming assignments, and provide immediate feedback to students on coursework to facilitate student learning outcomes. Students will be given multiple ways to email instructor through Canvas inbox and faculty provided email account through their own canvas email and school email.
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Other DE (e.g., recorded lectures)	Faculty will use a variety of tools and media integrated within the LMS to help students reach SLO such as: o Recorded Lectures, Narrated Slides, o Instructor created content Oxnard College Online Library Resources Canvas Peer Review Tool
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Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular Asynchronous discussion boards will be used to encourage discussion among students where they can compare and contrast/ discuss /identify and analyze elements of course outcomes. Other Discussion boards will also be used for Q&A and general class discussion by students and instructor to facilitate student learning outcomes. E.g. - Students will use the discussion board in canvas to comment/ respond to the validity of critics' claims that global warming is not occurring.
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Other DE (e.g., recorded lectures)	Faculty will use a variety of tools and media integrated within the LMS to help students reach SLO such as: o Recorded Lectures, Narrated Slides, Instructor created content Oxnard College Online Library Resources Canvas Peer Review Tool Canvas Student Groups (Assignments, Discussions) Websites and Blogs Multimedia (YouTube, Films on Demand, 3CMedia, Google Earth, Earth, etc.)

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular Asynchronous discussion boards will be used to encourage discussion among students where they can compare and contrast/ discuss /identify and analyze elements of course outcomes. Other Discussion boards will also be used for Q&A and general class discussion by students and instructor to facilitate student learning outcomes. E.g. - Students will use the discussion board in canvas to comment/ respond to the validity of critics' claims that global warming is not occurring.

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Examinations

Hybrid (1%–50% online) Modality

Online
On campus

Hybrid (51%–99% online) Modality

Online
On campus

Primary Minimum Qualification

EARTH SCIENCE

Review and Approval Dates

Department Chair

09/02/2020

Dean

09/02/2020

Technical Review

09/23/2020

Curriculum Committee

09/23/2020

DTRW-I

01/14/2021

Curriculum Committee

10/28/2020

Board

01/19/2021

CCCCO

MM/DD/YYYY

Control Number

CCC000331868

DOE/accreditation approval date

MM/DD/YYYY

