

MST R170: BIOLOGICAL MARINE RESOURCE MANAGEMENT

Originator

snewby

College

Oxnard College

Discipline (CB01A)

MST - Marine Studies

Course Number (CB01B)

R170

Course Title (CB02)

Biological Marine Resource Management

Banner/Short Title

Biol Marine Resources Mgmt

Credit Type

Credit

Start Term

Fall 2021

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

BIOL R170

Taxonomy of Programs (TOP) Code (CB03)

0401.00 - Biology, General

SAM Priority Code (CB09)

E - Non-Occupational

Control Number

CCC000231874

Primary Minimum Qualification

BIOLOGICAL SCIENCES

Department

Biology (2021)

Division

Oxnard Math/Science/HED/Athletics/PE

Catalog Course Description

This field course is an introduction to topics in marine biology related to current resource management issues in this region. Trips to natural areas where biological, geological, and oceanographic resources can be observed will be combined with related information about resource management at the federal, state, and local levels.

Taxonomy of Programs (TOP) Code (CB03)

0401.00 - Biology, General

Course Credit Status (CB04)

D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)

B (Transferable to CSU only)

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

Will be required

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

Channel Islands, local beaches, nearby aquaria such as Aquarium of the Pacific, local harbors

Grading method

Letter Graded

Alternate grading methods

Student Option- Letter/Pass

Pass/No Pass Grading

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****Activity****Laboratory****Minimum Contact/In-Class Laboratory Hours**

52.5

Maximum Contact/In-Class Laboratory Hours

52.5

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****Total Student Learning****Total Student Learning****Total Minimum Student Learning Hours**

52.5

Total Maximum Student Learning Hours

52.5

Minimum Units (CB07)

1

Maximum Units (CB06)

1

Corequisites

GEOL R178 or MST R178

Requisite Justification**Requisite Type**

Corequisite

Requisite

GEOL R178

Requisite Description

Course not in a sequence

Level of Scrutiny/Justification

Content review

Requisite Type

Corequisite

Requisite

MST R178

Requisite Description

Course not in a sequence

Level of Scrutiny/Justification

Content review

Student Learning Outcomes (CSLOs)

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

- | | |
|---|--|
| 1 | Students will be able to design an experiment based on their observations and journal entries of one of their field trip locations |
| 2 | Students will summarize different biological marine resources, how they are used, and managed |
| 3 | Students will assess the biological resources available in different marine habitats |

Course Objectives

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

- | | |
|---|--|
| 1 | Identify different marine habitats and the biological resources found within |
| 2 | Apply the basic techniques of field studies within the discipline of marine biology |
| 3 | Verbalize technical vocabulary terms, such as transect, quadrat, abiotic component, biotic component, point source pollution, and non-point source pollution |
| 4 | Describe the connectedness of human activities on land with biological marine resources such as the effect of runoff on local marine organism |
| 5 | Identify State and Federal Agencies tasked with the management of biological marine resources such as the California Department of Fish and Game, and the National Oceanic and Atmospheric Administration |
| 6 | Identify the purpose of State and Federal laws, such as the Marine Mammal Protection Act, with respect to biological resources within the marine environment |
| 7 | Explain the goal of marine management techniques, such as marine biological reserves, and their use by State and Federal Agencies to fulfill the purpose of the laws designed to protect marine biological resources |
| 8 | Identify several career options related to biological marine resources |

Course Content**Lecture/Course Content**

1. Identification of Marine Habitats and Biological Resources Found Within
 - a. Intertidal
 - b. Open ocean
 - c. Island
2. Field Techniques
 - a. Scientific method
 - b. Identification and use of appropriate marine field equipment
 - c. Recording and managing data records
 - d. Data analysis and discussion
3. Connectedness of Land-based Human Activities and Biological Marine Resources

- a. Point source pollutants
 - b. Non-point source pollutants
- 4. State and Federal Organizations Responsible for the Management of Biological Marine Resources
 - a. California Coastal Commission
 - b. California Department of Fish and Game
 - c. U.S. Department of Fish and Wildlife
 - d. National Oceanic and Atmospheric Administration
- 5. State and Federal Laws Applicable to the Management of Marine Resources
 - a. California Marine Life Protection Act
 - b. California Endangered Species Act
 - c. National Marine Sanctuaries Act
 - d. Marine Mammal Protection Act
- 6. Techniques used to Manage the Biological Marine Resources of California
 - a. Marine biological reserves
 - b. Minimum size limits
 - c. Quota system
 - d. Restocking plans
- 7. Careers Related to Management of Biological Marine Resources
 - a. Fisheries scientist
 - b. Game warden
 - c. Environmental law

Laboratory or Activity Content

- 1. Identification of Marine Habitats and Biological Resources Found Within
 - a. Intertidal
 - b. Open ocean
 - c. Island
- 2. Field Techniques
 - a. Scientific method
 - b. Identification and use of appropriate marine field equipment
 - c. Recording and managing data records
 - d. Data analysis and discussion
- 3. Connectedness of Land-based Human Activities and Biological Marine Resources
 - a. Point source pollutants
 - b. Non-point source pollutants
- 4. State and Federal Organizations Responsible for the Management of Biological Marine Resources
 - a. California Coastal Commission
 - b. California Department of Fish and Wildlife
 - c. National Oceanic and Atmospheric Administration
- 5. State and Federal Laws Applicable to the Management of Marine Resources
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- 6. Techniques used to Manage the Biological Marine Resources of California
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 - a. Fisheries scientist
 - b. Game warden
 - c. Environmental law

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
Skills demonstrations

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
 Essays
 Group projects
 Individual projects
 Laboratory activities
 Laboratory reports
 Objective exams
 Oral presentations
 Projects
 Problem-Solving Assignments
 Problem-solving exams
 Quizzes
 Role playing
 Reports/papers
 Research papers
 Skills demonstrations
 Written creation (poem, screenplay, song)

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
 Case studies
 Distance Education
 Demonstrations
 Field trips
 Group discussions
 Guest speakers
 Instructor-guided interpretation and analysis
 Internet research
 Laboratory activities
 Lecture
 Practica
 Small group activities

Describe specific examples of the methods the instructor will use:

1. Instructor will use lecture, video, and field presentations to introduce students to different types of marine habitats, biological resources and management techniques. Example: Protecting kelp forest habitats using marine protected areas and fishery quotas.
2. Instructor will demonstrate field methods used to assess marine organisms. Example: How to conduct a random transect assessment of the rocky intertidal.
3. Students will participate in group field activities to learn skills associated with organism assessment. Example: Sample rocky intertidal location using quadrats.

Representative Course Assignments**Writing Assignments**

1. Summary journal entries of field activities. Example: Summarize different boat and gear types used for commercial catch of market squid observed in Ventura Harbor.
2. Summary of guest speaker lecture. Example: Compare and contrast what the representative from Channel Islands Restoration identified as the two most difficult hurdles to doing native plant restoration at Channel Islands National Park compared to on the mainland.
3. Report about a career related to the management of marine biological resources. Example: Fisheries scientist, wildlife biologist, National Park Supervisor, Marine Sanctuary Supervisor, or Fish and Game warden

Critical Thinking Assignments

1. Develop a proposed management plan for a coastal habitat such as an intertidal saltwater marsh.
2. Predict what would happen if one of the organisms was eliminated from the community or returned to the community. Example: Abalone used to be abundant in the rocky intertidal areas of Santa Cruz Island but the populations were decimated by overfishing and disease. What would you expect the impacts to be on the community if the abalone were returned to their previous numbers through the efforts of captive breeding?

Reading Assignments

1. Stock assessment reports produced by California Fish and Game or the U.S. Department of Fish and Wildlife.
2. Summary of laws and statutes used in biological marine resource management.
3. Selected sections from natural history books and field guides.

Skills Demonstrations

1. Students will demonstrate proper use of tools used in assessment of marine resources. Examples: quadrats, transect lines, sediment samplers and corers, plankton net, and secchi disc.
2. Students will demonstrate how to estimate organism population size using transect or survey data.

Other assignments (if applicable)

1. Group discussion of roles and points of view of different stakeholders in biological resource management.
2. Attend a public meeting related to management plan reviews or revisions for local marine resources.

Outside Assignments**Representative Outside Assignments**

Laboratory course

District General Education**A. Natural Sciences****A1. Biological Science**

Approved

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

Manual

Description

National Research Council (2001). *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems*. Washington, DC National Academy Text. This is the most recent edition.

Resource Type

Textbook

Classic Textbook

No

Description

T. Beatley, D.J. Brower and A.K. Schwab (2002). *An Introduction to Coastal Zone Management* (2nd). Washington, DC Island Press. This is the most recent edition.

Resource Type

Other Instructional Materials

Description

J. Sobel and C. Dahlgren (2004). *Marine Reserves: A Guide to Science, Design, and Use*. Washington, DC Island Press. This is the most recent edition.

Resource Type

Other Resource Type

Description

Reading packet which includes current literature on the topic and text of Local, State, and Federal legislation related to marine resources such as the Marine Mammal Protection Act and the Magnuson-Stevens Fishery Conservation and Management Act.

Resource Type

Other Resource Type

Description

Guide to California's Marine Life Management Act (<http://www.fgc.ca.gov/mlma/contents.html>).

Resource Type

Other Resource Type

Description

PEW Oceans Commission Summary Report. 2003. *America's Living Oceans Charting a Course for Sea Change* (https://www.pewtrusts.org/-/media/assets/2003/06/02/poc_summary.pdf)

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) | Students will post on discussion board topics relevant to weekly lab topic such as a comparison between State and Federal marine protected areas and to ask and/or answer questions from their fellow students regarding lab content. |

| Other DE (e.g., recorded lectures) | Faculty may record video lectures on the course content including how to identify marine organisms using a field guide. |
|---|---|
| E-mail | Faculty will communicate with students via email regarding course information and concerns. |
| Video Conferencing | Faculty may utilize online live meetings with students to answer questions or provide information regarding specific course related materials. These will be recorded and posted for asynchronous viewing. |
| Hybrid (51%–99% online) Modality: | |
| Method of Instruction | Document typical activities or assignments for each method of instruction |
| Asynchronous Dialog (e.g., discussion board) | Students will post on discussion board topics relevant to weekly lab topic such as a comparison between State and Federal marine protected areas and to ask and/or answer questions from their fellow students regarding lab content. |
| Other DE (e.g., recorded lectures) | Faculty may record video lectures on the course content including how to identify marine organisms using a field guide. |
| E-mail | Faculty will communicate with students via email regarding course information and concerns. |
| Video Conferencing | Faculty may utilize online live meetings with students to answer questions or provide information regarding specific course related materials. These will be recorded and posted for asynchronous viewing. |
| 100% online Modality: | |
| Method of Instruction | Document typical activities or assignments for each method of instruction |
| Asynchronous Dialog (e.g., discussion board) | Regular use of asynchronous discussion boards encourages various types of interaction and critical thinking skills among all course participants. Questions and topics posed will allow students to discuss, compare and contrast, identify, and analyze elements of the course outcomes. Students will be required to respond to one another with substantive comments with the intent of creating a dialog. Other discussion boards may be used for Q&A and general class discussion by students and instructor to facilitate student success and strengthen student learning outcomes. |
| E-mail | E-mail, class announcements and various learning management system tools such as "Message Students Who" and "Assignment Comments", will be used to regularly communicate with all students on matters such as clarification of class content, reminders of upcoming assignments and/or course responsibilities, to provide prompt feedback to students on coursework to facilitate student learning outcomes, or to increase the role of an individual educator in the academic lives of a student. Students will be given multiple ways to email instructor through both the learning management system inbox and faculty provided email accounts. |
| Face to Face (by student request; cannot be required) | The instructor will hold weekly, scheduled office hours either in person or via-web conferencing, for students to be able to meet and discuss course materials or individual progress. Students can request additional in-person or web conferencing meetings with faculty member as needed. Faculty may encourage online students to form "study groups" in person or online. |
| Other DE (e.g., recorded lectures) | Faculty will use a variety of ADA compliant tools and media integrated within the learning management system to help students reach SLO competency. Tools may include: <ul style="list-style-type: none"> • Recorded Lectures, Narrated Slides, Screencasts • Instructor created content • OC Online Library Resources • Canvas Peer Review Tool • Canvas Student Groups (Assignments, Discussions) • 3rd Party (Publisher) Tools (MyOpenMath) • Websites and Blogs o Multimedia (YouTube, Films on Demand, 3CMedia, Khan Academy, etc.) |

Synchronous Dialog (e.g., online chat)

Instructor will provide a set time each week where they will be available for synchronous chat and be available in the discussion board and can answer questions in live time.

Video Conferencing

Video tools such as ConferZoom can be used to provide live synchronous or asynchronous sessions with students. ADA compliance will be upheld with Closed Captioning during the session or of the recorded session. Recordings of all live sessions will be made available within the LMS. Video Conferences will be used to facilitate SLOs and student-to-student group meetings will also be encouraged.

Telephone

Students can request for instructor to call or vice versa in order to answer one-on-one questions about course material or student progress.

Examinations

Hybrid (1%–50% online) Modality

Online

On campus

Hybrid (51%–99% online) Modality

Online

On campus

Primary Minimum Qualification

BIOLOGICAL SCIENCES

Additional Minimum Qualifications

Minimum Qualifications

Ecology

Review and Approval Dates

Department Chair

09/15/2020

Dean

09/16/2020

Technical Review

10/14/2020

Curriculum Committee

10/14/2020

DTRW-I

12/10/2020

Curriculum Committee

01/13/2021

Board

01/19/2021

CCCCO

MM/DD/YYYY

Control Number

CCC000584542

DOE/accreditation approval date

MM/DD/YYYY

