Continuing Education
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SCI 916 Monterey Bay National Marine Sanctuary

Independent Study Online Course Syllabus

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Course Description

This course presents the rich history of discovery, destruction, and redemption that have shaped the Monterey Bay. Through the text, videos, and rich resources offered on the Internet, including virtual tours, and **optional** site visits, students will learn how Monterey Bay overcame enormous odds through the efforts of individuals committed to marine conservation. Impacted by the early Spanish settlers, the Chinese squid hunters and the conservationists, this area has recovered and now exhibits the wonders of marine life in a unique environment. This course explores the history, environment, and fabulous sea life known to the region which can in turn be shared with students in the classroom through integrated lessons that align to state, district or national standards, including the Common Core Standards.

Note: Required textbook(s) must be purchased separately.

Required Texts and Course Materials

Textbooks and Readings: Students are required to purchase the textbook*:*

Palumbi, S. & Sotka, C. (2010). The Death and Life of the Monterey Bay: A Story of Revival. (2nd ed.) Washington, DC: Island Press. ISBN-13: 978-1610911900
This book may be purchased new or used from Amazon.com: https://goo.gl/UpKMaf

Online Resources: Relevant online resources that support the course content and encourage further investigation will be available throughout the course assignments. Active hyperlinks are utilized throughout the course and will link to the appropriate information when clicked.

Moodle: Moodle is a web-based course management system used to support flexible teaching and learning in both face-to-face and distance courses (e-learning). www.moodle.org // www.moodle.org/demo // https://docs.moodle.org

Course Dates

Self-paced; students may enroll at any time and take up to one year, from the date of registration, to complete assignments. Students may complete assignments in no less than three weeks (one week per credit), to complete the course.

National Standards Addressed in This Course

National Board for Professional Teaching Standards
In an effort to enhance the learning experiences, as well as demonstrate knowledge, skills, abilities, and commitment, teachers will infuse the five core propositions set forth by The National Board for Professional Teaching Standards in their teaching practices. This will be accomplished as teachers successfully implement appropriate activities in their classroom and reflect upon the experience. In addition, teachers will be networking with their colleagues as part of a learning community.
(http://www.nbpts.org/)

1. Teachers are committed to students and their learning.
2. Teachers know the subjects they teach and how to teach those subjects to students.
3. Teachers are responsible for managing and monitoring student learning.
4. Teachers think systematically about their practice and learn from experience.
5. Teachers are members of learning communities.

Next Generation Science Standards
Framework for K-12 Science Education
In July 2011 the first step in the creation of the Next Generation Science Standards was released. The ***Framework for K-12 Science Education***, provides a sound, evidence-based foundation for standards by drawing on current scientific research, including research on the ways in which students learn science effectively. The framework identifies the key scientific ideas and practices all students should learn by the end of high school. This framework laid the foundation for the development of the Next Generation Science Standards.

The Framework is made up of three dimensions that broadly outlines the knowledge and practices of the sciences and engineering that all students should learn by the end of high school:

- Dimension 1 describes scientific and engineering practices.
- Dimension 2 describes crosscutting concepts—that is, those having applicability across science disciplines.
- Dimension 3 describes core ideas in the science disciplines and of the relationships among science, engineering, and technology.

Next Generation Science Standards

The **Next Generation Science Standards** identify the science all K-12 students should know. The standards are rich in content and practice and arranged in a coherent manner across disciplines and grades to provide all students an internationally benchmarked science education.

The concepts covered in this course align within the following Disciplinary Core Ideas in the areas of **Life Sciences (LS)** and **Earth and Space Sciences (ESS)** in Elementary, Middle School and High School: *LS1.A: Structure and Function, LS1.B: Growth and Development of Organisms, LS2.A: Interdependent Relationships in Ecosystems, LS2.B: Cycles of Matter & Energy Transfer in Ecosystems, LS2.C Ecosystem, Dynamics, Functioning, and Resilience, LS2.D: Biodiversity and Humans, EES2.C: The Roles of Water in the Earth's Surface Processes, EES3.A: Natural Resources, and ESS3.C: Human Impacts on Earth's Systems.*

National Standards

The National Academy of Sciences is one of many organizations that have established national learning standards in the area of science for K-4, 5-8 and 9-12 grade levels. Located on the Central Coast of California, The Monterey Bay Marine Sanctuary provides excellent examples of the following scientific concepts and principles:

1. Categorize plants and animals into groups.
2. Classify rocks and soils into groups.
3. Describe the processes by which rocks and soils are formed.
4. Identify parts of an ecosystem.
5. Describe how parts of the ecosystem interact and influence each other.

6. Describe the components and relationships of the earth system.
7. Describe the life cycles of plants and animals.
8. Understand that an organism's characteristics are determined by both genetic and environmental influences.
9. Identify processes that slowly change the surface of the earth.
10. Recognize that fossils provide evidence of plants, animals and environments that existed long ago.
11. Explain how organisms can sustain life.
12. Describe how biological evolution accounts for species diversity.
13. Describe how an organism's behavior is influenced by its environment.
14. Analyze the effects of natural events and human activities on the earth's capacity to sustain biological diversity.
15. Compare and contrast multiple solutions to a scientific problem.

Throughout this course, you will have the opportunity to apply science concepts by integrating them into a thematic teaching unit for your grade level using your state or district standards.

Continuing Education Program Student Learning Outcomes

CE 1	Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.
CE 2	Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
CE 3	Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.
CE 4	Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.
CE 5	Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.
CE 6	Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given

	enquiry, locate and critically evaluate sources, and accurately and effectively share that information.

Student Learning Outcomes (SLOs) for This Course

LS1.A: Structure and Function, LS1.B: Growth and Development of Organisms, LS2.A: Interdependent Relationships in Ecosystems, LS2.B: Cycles of Matter & Energy Transfer in Ecosystems, LS2.C Ecosystem, Dynamics, Functioning, and Resilience, LS2.D: Biodiversity and Humans, EES2.C: The Roles of Water in the Earth's Surface Processes, EES3.A: Natural Resources, and ESS3.C: Human Impacts on Earth's Systems.

By the end of this course student will be able to:	**National Standards Addressed in This Course***	**Continuing Education Program Student Learning Outcomes Addressed****
1. Discuss the roles of the scientific, social economic and aesthetic forces that have shaped the Monterey Bay area.	NGSS LS1.A, NGSS LS1.B NGSS, NGSS LS2.A, NGSS LS2.B, NGSS LS2.C, NGSS LS2.D, NGSS LS4.D, EES2.C, EES3.A, EES3.C	CE 1, CE 2, CE 4
2. Identify the marine life in and around the Monterey Bay.	NGSS LS1.A, NGSS LS2.A, NGSS LS2.B, NGSS LS2.C	CE 1, CE 2, CE 4
4. Develop a chronological list of events that led to the devastation and revival of the Monterey Bay.	NGSS LS2.A, NGSS LS2.C, NGSS LS2.D, EES3.A EES3.C	CE 1, CE 2, CE 4
5. Identify and critically evaluate grade-level appropriate resources related to the history of the Monterey Bay.	NBPTS 1,2,4,5	CE 4, CE 6
6. Synthesizing what you have learned through the content of the course, Apply grade level state or district science learning standards to develop integrated lesson plans with other subjects including math, natural	NBPTS 1,2,3,4,5	CE 1, CE 2, CE 4, CE 6

history and social studies.		
7. Collaborate with colleagues through the use of web-based technologies.	NBPTS 5	CE 3
7. Assess and reflect upon teaching practices and the classroom environment in relation to the course content by responding to focus questions.	NBPTS 4, 5	CE 3

* Please refer to the section on **National Standards Addressed in This Course**
** Please refer to the section on **Continuing Education Program Student Learning Outcomes**

Topics, Assignments, and Activities
Prior to beginning Module 0: Course Orientation, please watch the Welcome Video and read the Syllabus.

Module Title	Module Assignments and Activities	Points Possible for Each Assignment	Estimated Time to Complete Activity
Module 0: Course Orientation	● Read the Course Orientation, Overview, Goals, and Objectives ● View the Course Orientation presentation ● 0.0: Introductions Discussion Forum ● 0.1: What grade level do you teach?		1 hour 2 hours
Module 1: Standards- Based Instruction	● Read Module 1: Overview, Goals, and Objectives ● Read the Standards-Based Instruction information ● 1.0: The Framework for K-12 Science Education Discussion Forum	2 points	14 hours 2 hours
Module 2: The Death and Life of the Monterey Bay	● Read Module 2: Overview, Goals, and Objectives ● Read The Death and Life of the Monterey Bay: A Story of Revival ● 2.0: The Death and Life of the Monterey Bay Timeline Assignment ● 2.1: Events in the Death and Life of the Monterey Bay Reflection Assignment	10 points 10 points	16 hours 15 hours 2 hours
Module 3:	● Read Module 3: Overview, Goals,		

Exploring the Monterey Bay Aquarium	and Objectives ● Explore the Monterey Bay Aquarium website ● 3.0: Monterey Bay Aquarium Reflection ● 3.1: Monterey Bay Aquarium Assignment ● 3.2 Sharing Monterey Bay Aquarium Activities Discussion Forum	 10 points 10 points 2 points	 8 hours 2 hours 12 hours 2 hours
Module 4: The Worlds Below	● Read Module 4: Overview, Goals, and Objectives ● View The Worlds Below ● 4.0: The Worlds Below Quiz	 10 points	 1 hour 1 hour
Module 5: Visiting the Monterey Bay (on-site visit or virtual)	● Read Module 5: Overview, Goals, and Objectives ● Read Planning the Virtual Trip or Field Study to the Monterey Bay ● 5.0: Visiting the Monterey Bay Assignment ● 5.1 Visiting the Monterey Bay Discussion Forum	 10 points 2 points	 13 hours 25 hours 2 hours
Module 6: Monterey Bay Bibliography	● Read Module 6: Overview, Goals, and Objectives ● 6.0: Monterey Bay Annotated Bibliography Assignment ● 6.1: Sharing Monterey Bay Resources Discussion Forum	 10 points 2 points	 10 hours 2 hours
Module 7: Lesson Design	● Read Module 7: Overview, Goals, and Objectives ● View Develop Environments that Enable Students to Learn ● 7.0: Develop Environments that Enable Students to Learn Discussion Form ● 7.1: Integrated Unit Assignment ● 7.2 Sharing Lesson Plans Discussion Forum	 2 points 15 points 2 points	 1 hour 2 hours 18 hours 2 hours
Module 8: Final Reflection	● Read Module 8: Overview, Goals, and Objectives ● 8.0: Final Reflection Assignment	 3 points	 2 hours
	TOTAL POINTS / HOURS	**100 points**	**136 hours**

Grading Policies and Rubrics for Assignments

- Assignments will be graded per criteria presented in the course grading rubrics.
- Students must earn a minimum of 80% to receive credit for the assignment.
- A = 90-100% and B= 80-89%, (anything below 80% will not receive credit.)
- Grading Policies:
  - The discernment between an A or a B is at the discretion of the instructor based on the quality of work submitted (see assignment rubrics).
  - Coursework falling short of a quality equaling a B or a Credit Grade will be returned with further instructions.
  - All assignments must be completed to receive a grade. In addition, all assignments are expected to reflect the quality that teacher-training institutions require of professional educators. If completed assignments do not meet this standard, students will be notified with further instructions from the instructor.

Writing Requirements

- **Superior:** Writing is clear, succinct, and reflects graduate level expectations.
- **Standard:** Writing is acceptable with very few mistakes in grammar and spelling.
- **Sub-standard:** Writing contains noticeable mistakes in grammar and spelling.
- **Written assignments and papers need to follow APA formatting** (1" margins, Times New Roman font - size 12, double spaced; **c**entered title, student first and last name on paper. Instructors may add additional APA writing requirements as needed.)

Discussion Forum Requirements

- **Superior:** Thoroughly answered all the posed questions, followed all the assignment directions, correctly followed APA formatting, proper grammar and no spelling errors. Language is clear, concise, and easy to understand. Uses terminology appropriately and is logically organized.
- **Standard:** Answered all the questions but did not provide an in-depth analysis, followed some of the assignment directions, minor APA formatting issues, proper grammar and no spelling errors. Language is comprehensible, but there a few passages that are difficult to understand. The organization is generally good.
- **Sub-standard:** Did not answer all the required questions and/or statements or responses were superficial, vague, or unclear, did not follow many of the assignment directions or submitted response late, many APA formatting errors, many grammatical and spelling errors. Is adequately written, but may use some terms incorrectly; may need to be read two or more times to be understood.

Services for Students with Disabilities

Students with disabilities are eligible for reasonable accommodations in their academic work in all classes. In order to receive assistance, the student with a disability must provide

the Academic Support Center with documentation, which describes the specific disability. The documentation must be from a qualified professional in the area of the disability (i.e. psychologist, physician or educational diagnostician). Students with disabilities should contact the Academic Support Center to discuss academic and other needs as soon as they are diagnosed with a disability. Once documentation is on file, arrangements for reasonable accommodations can be made. For more information and for downloadable forms, please go to https://www.fresno.edu/students/academic-support/services-students-disabilities.

Plagiarism and Academic Honesty

All people participating in the educational process at Fresno Pacific University are expected to pursue honesty and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled per the procedures set forth in the Fresno Pacific University Catalogue - https://www.fresno.edu/students/registrars-office/academic-catalogs

Discussion Forums

Participation is an important expectation of this course and all online courses. Online discussions promote reflection and analysis while allowing students to appreciate and evaluate positions that others express. While students may not be engaging with the same students throughout this course they will be expected to offer comments, questions, and replies to the discussion question whenever possible. The faculty role in the discussion forum is that of an observer and facilitator.

Technology Requirements

To successfully complete the course requirements, course participants will need Internet access, can send and receive email, know how to manage simple files in a word processing program, and have a basic understanding of the Internet. Please remember that the instructor is not able to offer technical support. If you need technical support, please contact your Internet Service Provider.

Moodle:
This course will be delivered totally online. Moodle is a learning management system that provides students access to online resources, documents, graded assignments, quizzes, discussion forums, etc. with an easy to learn and use interface. To learn more about Moodle, go to: (https://docs.moodle.org/30/en/Student_FAQ). There are some student tutorials on the Center for Online Learning website at Fresno Pacific University – http://col.fresno.edu/student.

Moodle Site Login and Passwords – (or other online course access information):
Students will need to have internet access to log onto https://ce-connect.fresno.edu. The username and password numbers for Moodle access will be sent to you by the university

using the email address you submitted at the time of registration. The instructor will then contact you with a welcome letter and login instructions. If you need help with the username and password recovery, please contact the Center for Professional Development at (800) 372-5505 or (559) 453-2000 during regular office hours - Mon-Fri 8:00 am to 5:00 pm. or email prof.dev@fresno.edu.

Getting Help with Moodle:
If you need help with Moodle, please contact the Center for Online Learning (COL), by telephone or the website. Help by phone (559) 453-3460) is available Mon-Thurs 8:00 am to 8:00 pm and on Fridays from 8:00 am to 5:00 pm, or by filling out a "Request Services" form at http://col.fresno.edu/contact/request-services. Please identify that you are with the "School = Continuing Education".

Instructor/Student Contact Information

Throughout the course participants will be communicating with the instructor and their classmates on a regular basis using asynchronous discussion forums. A virtual office is utilized for class questions and students are provided with instructor contact information in the event they want to make phone or email contact. In addition, students are encouraged to email or phone the instructor at any time. Students will also receive feedback on the required assignments as they are submitted.

Final Course Grade and Transcripts

When all work for the course has been completed, students will need to logon to the Continuing Education website (https://ce.fresno.edu/my-account) and "Request Final Grade". Once the instructor receives the requests and submits the grade online, students may log back in to view their Final Grade Report or order transcripts online. Please allow at least two weeks for the final grade to be posted. For more information, see the Continuing Education Policies and Procedures at https://ce.fresno.edu/ce-policies-and-procedures.

University Policies and Procedures

Students are responsible for becoming familiar with the information presented in the Academic Catalog and for knowing and observing all policies and procedures related to their participation in the university community. A summary of university policies may be found on the university website at http://registrar.fpu.edu/catalog.

Fresno Pacific University Student Learning Outcomes

Student Learning Outcomes Oral Communication: Students will *exhibit* clear, engaging, and confident oral communication – in both individual and group settings – and will critically *evaluate* content and delivery components.

Written Communication: Students will *demonstrate* proficient written communication by *articulating* a clear focus, *synthesizing* arguments, and utilizing standard formats in order to *inform* and *persuade* others.
Content Knowledge: Students will *demonstrate* comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
Reflection: Students will *reflect* on their personal and professional growth and *provide evidence* of how such reflection is utilized to manage personal and vocational improvement.
Critical Thinking: Students will *apply* critical thinking competencies by *generating* probing questions, *recognizing* underlying assumptions, *interpreting* and *evaluating* relevant information, and *applying* their understandings to new situations.
Moral Reasoning: Students will *identify* and *apply* moral reasoning and ethical decision-making skills, and *articulate* the norms and principles underlying a Christian world-view.
Service: Students will *demonstrate* service and reconciliation as a way of leadership.
Cultural and Global Perspective: Students will *identify* personal, cultural, and global perspectives and will employ these perspectives to *evaluate* complex systems.
Quantitative Reasoning: Students will accurately *compute* calculations and symbolic operations and *explain* their use in a field of study.
Information Literacy: Students will *identify* information needed in order to fully understand a topic or task, *explain* how that information is organized, *identify* the best sources of information for a given enquiry, *locate* and critically *evaluate* sources, and accurately and effectively *share* that information.