

ENSC M02: ENVIRONMENT AND HUMAN INTERACTIONS

Originator

bswartz

Co-Contributor(s)
Name(s)

Putnam, Roger (rputnam)

College

Moorpark College

Discipline (CB01A)

ENSC - Environmental Science

Course Number (CB01B)

M02

Course Title (CB02)

Environment and Human Interactions

Banner/Short Title

Environ-Human Interactn

Credit Type

Credit

Start Term

Fall 2022

Catalog Course Description

Examines the biological principles that govern ecosystems and help you analyze environmental problems that relate to the human population. Covers topics such as population growth, biotic communities, weather and climate, soil health, decomposition, cellular respiration, photosynthesis, the water cycle, energy, water quality, ocean acidification, the urban environment, environmental health, toxicology, and sustainable development. Includes the study of California's major plant communities and their local environments. Emphasizes statistical and scientific methods to explore and test hypotheses in weekly labs.

Taxonomy of Programs (TOP) Code (CB03)

0301.00 - Environmental 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

May include trips to local ecosystems and industrial facilities. May include Newbury Park (Santa Monica Mountains), Ventura County beaches, Channel Islands National Park Visitors Center, Wildwood Park (Thousand Oaks), EATM (Moorpark College), Simi Valley Wastewater Treatment Plant, Simi Valley Landfill and Recycling Center, Department of Public Works (Simi Valley, LEED facility), among other natural and industrial centers that extend class content on human-environment interactions.

Grading method

(L) Letter Graded

Alternate grading methods

(O) Student Option- Letter/Pass

(P) 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

Minimum Contact/In-Class Lecture Hours

52.5

Maximum Contact/In-Class Lecture Hours

52.5

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

105

Total Maximum Contact/In-Class Hours

105

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class

Minimum Outside-of-Class Hours

105

Maximum Outside-of-Class Hours

105

Total Student Learning

Total Student Learning

Total Minimum Student Learning Hours

210

Total Maximum Student Learning Hours

210

Minimum Units (CB07)

4

Maximum Units (CB06)

4

Student Learning Outcomes (CSLOs)

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

- | | |
|---|---|
| 1 | demonstrate an understanding of the role and impacts of humans on the global ecosystem by delivering an oral presentation that relates environmental reading to class lectures on human health and the environment. |
| 2 | evaluate and assess economic, governmental, or social program decisions and their impact on the environment or human health. |

Course Objectives

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

- | | |
|---|---|
| 1 | describe and define sustainable practices and integrated relationships in an ecosystem. |
| 2 | identify basic geologic features and major plants groups in an ecosystem. |
| 3 | demonstrate basic knowledge of urban planning and sustainable design concepts. |

4	demonstrate an understanding of biological diversity and biogeochemical cycles.
5	discuss global demographic trends with emphasis on environmental assets and liabilities; calculate demographic trends given birth rates and death rates for a population.
6	demonstrate a general understanding of toxicology, the relation of dose to risk, and other health risk factors of toxins.
7	demonstrate the ability to collect data, graph and process data, and interpret the results of data.

Course Content

Lecture/Course Content

- 8.00% Ecological principles, interdependence, diversity, balances, stability, adaptation, limits and sustainability.
- 8.00% Ecosystem interactions, natural selection, trophic relationships, energy and biomass transfer.
- 8.00% Major world biotic communities, desert, grassland, tropical rain forest, and tundra; flora and fauna of each biome.
- 8.00% The Mediterranean biome of southern California (plant communities).
- 8.00% California plant communities and geography.
- 10.00% Human population structure and dynamics; growth and fluctuations; social and governmental influences.
- 8.00% Sustainable and chemical agriculture.
- 8.00% Wild species and biodiversity: an understanding of the Endangered Species Act and wildlife protection.
- 8.00% Urban impact on the coast: contamination, wetland loss, eutrophication, and unsustainable fishing.
- 10.00% Environmental hazards and human health: infections, non-infectious diseases, cardiovascular disorders, lung anatomy and respiratory diseases, and cancers.
- 8.00% Air pollution, human health, and climate change.
- 8.00% Urban development and green construction; a study of urban sprawl and smart growth principles.

Laboratory or Activity Content

- 10.00% Identify global biomes using temperature and precipitation data.
- 10.00% Study California plant communities and geography and map major natural features and plant communities throughout the state.
- 10.00% How evolution and natural selection operate, the evolutionary play in the ecological theatre.
- 10.00% Computer modeling of population growth, density, and trends in the top-ten most populated countries.
- 10.00% Pasteurization, sterilization, and farming.
- 10.00% Acid/Base principles and ocean acidification.
- 10.00% Global ecology and human impacts, life lessons from David Attenborough.
- 10.00% Wastewater treatment, how we clean poop water.
- 10.00% Trophic levels, productivity pyramids, and energy flow through ecosystems.
- 10.00% Trophic transfer and biomagnification of persistent contaminants.

Methods of Evaluation

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

Written expression
Skills demonstrations

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):

Computational homework
Film/video productions
Group projects
Individual projects
Laboratory activities
Objective exams
Oral presentations
Simulations
Skills demonstrations
Written analyses
Written homework
Other (specify)
Classroom Discussion
Projects
Participation

Reports/Papers/Journals

Other

Read relevant environmental news articles, summarize and link to the course material through written or oral communication skills.

Instructional Methodology

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

Audio-visual presentations
 Case studies
 Class discussions
 Collaborative group work
 Computer-aided presentations
 Distance Education
 Field trips
 Group discussions
 Instructor-guided interpretation and analysis
 Instructor-guided use of technology
 Internet research
 Laboratory activities
 Lecture
 Modeling
 Problem-solving examples
 Readings

Describe specific examples of the methods the instructor will use:

Visual, auditory, verbal, kinesthetic, logical, interpersonal, and intrapersonal methods are used. This may include:

1. Strong visuals that drive lab demos and discussions.
2. Linguistic and auditory approaches paired with rhetorical and logical constructs to drive discussions and reasoning.
3. Tactile pedagogical techniques that make students write and draw concepts discussed.
4. Original 'eco-pics' that students take and share to illustrate class concepts.
5. Observational and experimental labs that allow students to deconstruct science as a process, and iterate their own ideas as they explore their and test hypotheses.
6. Physical demonstrations that illustrate environmental concepts.
7. Lab group work where students showcase creative problem solving as teams.
8. Integration—take-home messages that students read intrapersonally, discuss interpersonally, and synergize for a synthetic comprehension of concepts and methods.

Representative Course Assignments

Writing Assignments

- Free-response discussion assignments on human-environment interactions.
- Current events summaries on how humans impact the environment and remediate these impacts.
- Quantitative demographic modeling using Numbers/Excel.
- Laboratory assessments and write-ups on current environmental issues.

Critical Thinking Assignments

- Original project on an environmental topic that extends from class content in human-environment interactions.
- Class discussions/debates on current environmental and policy issues.

Reading Assignments

- Reading weekly take-home messages from class lectures in preparation for class discussions on environmental topics, including scientific articles that are linked to and referenced in those discussions.
- Reading targeted scientific papers to design and deliver an oral presentation on a current environmental topic.

Skills Demonstrations

- Interpreting, analyzing, and graphing demographic data in spreadsheets.
- Leveraging digital design and technology to deliver an originally recorded research presentation on an environmental topic.

Outside Assignments

Representative Outside Assignments

- Develop an original project on a current issue in environment science, policy, and management.
- Read assignments on human-environment interactions from the zero-cost textbook, including lab readings and scientific publications linked to it.
- Conduct field explorations for photographic contributions to class discussions on current environmental topics.

Articulation

Equivalent Courses at 4 year institutions

University	Course ID	Course Title	Units
San Jose State University	ENVS 1	Introduction to Environmental Issues	3
CSU Channel Islands	ESRM 200	Principles of Resource Management, Conservation & Stewardship	3
Cal Poly San Luis Obispo	NR 142	Environmental Management	3
UC Riverside	ENSC 1	Introduction to Environmental Science: Natural Resources	4
UC Santa Barbara	ENV S 1	Introduction to Environmental Studies	4

Comparable Courses within the VCCCD

ESRM V01 - Introduction to Environmental Issues

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

Course is CSU transferable

Yes

CSU Baccalaureate List effective term:

F1995

CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

B2 Life Science

Approved

B3 Laboratory Activity

Approved

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:

UC TCA

UC TCA
Approved

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 5B: Biological Science
Approved

Area 5C: Laboratory Science
Approved

Area 6: Languages Other than English (LOTE)

Textbooks and Lab Manuals

Resource Type
Textbook

Description
Wright, Richard, and Dorothy Boorse. *Environmental Science: Toward a Sustainable Future*. 13th ed., Pearson, 2016.

Resource Type
Textbook

Description
Easton, Thomas. *Taking Sides Clashing Views on Environmental Issues*. 17th ed., McGraw-Hill, 2017.

Resource Type
Textbook

Description
Miller, G. Tyler, and Scott Spoolman. *Living in the Environment*. 20th ed., Cengage, 2020.

Library Resources

Assignments requiring library resources

Research for oral reports and assignments using the Library's print and online resources on topics such as sustainability and environmental problems.

Sufficient Library Resources exist

Yes

Example of Assignments Requiring Library Resources

Original research for an oral presentation on a topic about human-environment interactions (e.g., how do endocrine disruptors affect early childhood behavior, how combusted fossil fuel byproducts contribute to Alzheimer's, etc.)

Distance Education Addendum

Definitions

Distance Education Modalities

Hybrid (51%–99% 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 (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular discussions that facilitate students to compare/contrast, discuss, identify, analyze, and synthesize course content across lectures and modules.
E-mail	The class calendar, email, class announcements, and tools such as "Message Students Who" and "Assignment Comments" in Canvas will be used to 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.
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: • Recorded Lectures, Narrated Slides, Screencasts • Instructor created content • 3rd Party Lab Tools (e.g., Labster) • MC Online Library Resources • Canvas Peer Review Tool • Canvas Student Groups (Assignments, Discussions) • Websites and Blogs • Multimedia (e.g., YouTube, Films on Demand, 3CMedia, Google Earth, earth.nullschool.net, etc.)
Video Conferencing	To remain in sync with students in need, to help, clarify, direct, and assist with learning and success.
Telephone	To remain in sync with students in need, to help, clarify, direct, and assist with learning and success.

Synchronous Dialog (e.g., online chat)	Scheduled synchronous sessions may be organized at the instructor's discretion to demonstrate skills, address problems, and review asynchronous material. Synchronous sessions may also be used for students to unpack concepts and work on problem together. The platform for such sessions may include ConferZoom or any other approved medium for synchronous dialog.
100% online Modality:	
Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular discussions that facilitate students to compare/contrast, discuss, identify, analyze, and synthesize course content across lectures and modules.
E-mail	The class calendar, email, class announcements, and tools such as "Message Students Who" and "Assignment Comments" in Canvas will be used to 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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Examinations

Hybrid (51%–99% online) Modality
Online

Primary Minimum Qualification
EARTH SCIENCE

Review and Approval Dates

Department Chair
02/08/2022

Dean
02/08/2022

Technical Review
03/03/2022

Curriculum Committee
3/15/2022

DTRW-I

MM/DD/YYYY

Curriculum Committee

MM/DD/YYYY

Board

MM/DD/YYYY

CCCCO

MM/DD/YYYY

Control Number

CCC000432412

DOE/accreditation approval date

MM/DD/YYYY