NRM 12 Course Outline as of Spring 2016

CATALOG INFORMATION

Dept and Nbr: NRM 12 Title: INTRO TO ENVIRON CONSERV
Full Title: Introduction to Environmental Conservation
Last Reviewed: 1/25/2021

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	3	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	NRM 10

Catalog Description:
An introduction to principles and techniques for the management and protection of forests and other natural resources, with an emphasis on the sustainable use of wood, water, forage, recreation and wilderness resources. Includes an examination of contemporary issues affecting the management, preservation and long term sustainability of the nation's renewable natural resources for future generations.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 1A or equivalent

Limits on Enrollment:

Schedule of Classes Information:
Description: An introduction to principles and techniques for the management and protection of forests and other natural resources, with an emphasis on the sustainable use of wood, water, forage, recreation and wilderness resources. Includes an examination of contemporary issues affecting the management, preservation and long term sustainability of the nation's renewable

natural resources for future generations. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 1A or equivalent
Limits on Enrollment:
Transfer Credit: CSU;UC.
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
	C	Natural Sciences	Fall 2025	
	H	Global Perspective and Environmental Literacy		
	L5	Physical and Biological Sciences		
	L8	Student Success and Wellness		
	C	Natural Sciences	Fall 1981	Fall 2025
	H	Global Perspective and Environmental Literacy		
CSU GE:	**Transfer Area**		Effective:	Inactive:
	B2	Life Science	Fall 2003	
	E	Lifelong Learning and Self Development		
	B2	Life Science	Fall 1981	Fall 2003
IGETC:	**Transfer Area**		Effective:	Inactive:

CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:
UC Transfer:	Transferable	Effective:	Fall 1981	Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, students will be able to:
1. Define the nature of scientific inquiry.
2. Describe the values, themes, methods, and history of environmental conservation.
3. Define and discuss terms related to environmental issues.
4. Recognize and identify ecological inter-relationships between living and non-living components of the ecosystem.
5. Make decisions that affect natural resources based on evaluating basic ecological and scientific principles.
6. Recognize characteristics and general distributions of California ecosystems and determine how humans have impacted each ecosystem function.
7. Differentiate between the sources and effects of land degradation and the role of genetic engineering in the future of agriculture.
8. Discuss environmental issues related to natural resource conservation.

9. Summarize historic factors that have contributed to human population growth and to discuss theories of population growth.
10. Describe the major categories and sources of air and water pollution and summarize how these pollutants are hazardous to human health, vegetation, and all life on earth.
11. Recognize and assess human influences and potential impacts on natural resources.
12. Identify realistic career objectives in environmental conservation.

Topics and Scope:

I Introduction
- A. Concepts of Ecology and Sustainability
  - 1. Ecology as science
  - 2. Scientific inquiry to natural resource problems
  - 3. The ecological imperative
  - 4. Terms and issues related to environmental conservation
- B. Biological and Physical Principles of Ecosystem Management
  - 1. Mineral cycling and nutrient uptake
  - 2. Photosynthesis and energy transfer
  - 3. Successional patterns of resource ecosystems
- C. Historical Development of Resource Utilization

II Soils - Pesticides
- A. Soil Conservation
  - 1. Geological basis of soil conservation
  - 2. Physical and chemical properties of soil
  - 3. Principles of soil classification
  - 4. Mechanics of soil erosion and application of scientific method for prevention techniques
  - 5. Soil fertility and plant nutrition relationships
- B. Role of Pesticides
- C. Genetically Modified Organisms

III Wildlife and Other Resource Arenas
- A. Forestry and Fire Management
  - 1. Anatomy and physiology of the living tree
  - 2. Silvicultural techniques of managed forest stands
  - 3. Productivity of forests
  - 4. Inventory and ownership patterns of forest resources
  - 5. The role of fire in management of forests
- B. Range
  - 1. History of range use in the United States
  - 2. The biology of the range plant
  - 3. The biological potential and carrying capacities of native ranges in the United States
  - 4. Analysis and evaluation of range condition and range trend
  - 5. Range management techniques
- C. Wildlife Ecology
  - 1. Principles and characteristics of wildlife populations
  - 2. Methods of controlling wildlife populations
  - 3. Principles of habitat management
  - 4. Economic importance of the fish and game resource
- D. Biodiversity
- E. Wilderness
- F. Outdoor Recreation
- G. Fisheries

1. Aquatic ecology
2. Effects of siltation and pollution on fish populations
3. Commercial and sports fishery management techniques
4. A study of the conflict of uses

IV Role of Human Populations
- A. Population Dynamics
- B. Population Distribution and Control
- C. Environmental Health
- D. Pollution
- E. Water Resources
  1. Analysis of the hydrologic cycle
  2. Groundwater and surface water management principles
  3. Flood control and water pollution prevention methods
  4. The California water picture
  5. The State Water Project
  6. The Central Valley Project
- F. Energy Resources
  1. Energy use and alternative sources
  2. Mineral resources availability
  3. Resource pollution
- G. Humans and Natural Resources
- H. Career Options

Assignment:

1. Applications of scientific method may include a two-page report on soil erosion, forest productivity, range management, and/or siltation and pollution on fish populations.
2. Reading assignments that will average 20 pages per week.
3. Writing assignments from natural resource journals,or written evaluation of conservation practices and solutions; totaling twenty pages /1,000 words during the semester.
4. Book review that will average 5 typed pages.
5. A term paper that will average ten typed pages.
6. Mid-term and final examinations.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Reading reports, Term paper, summaries from journals, book reviews	Writing 20 - 40%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Application of scientific method to NR issues.	Problem solving 10 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion, Short sentence answers.	Exams 50 - 60%

Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Natural Resource Conservation Management for a Sustainable Future, Chiras, Reganold, Owen, Prentice Hall, Tenth Edition, 2009 (classic)
The Post Carbon Reader: Managing the 21st Century's Sustainability Crises, Richard Heinberg, Daniel Lerch, Watershed Media; 1st edition, 2010 (classic)
The New Economy of Nature: The Quest to Make Conservation Profitable, Gretchen C. Dailey and Katherine Ellison, Island Press, 2003 cClassic)