

CATALOG INFORMATION

Dept and Nbr: NRM 111            Title: ORIENT NATL RES PRK MGT  
Full Title: Orientation to Natural Resources / Park Management Practices  
Last Reviewed: 10/8/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	4.00	17.5	Lab Scheduled	70.00
		Contact DHR	0		Contact DHR	0
		Contact Total	7.00		Contact Total	122.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 227.50

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

**Catalog Description:**  
Orientation to principles and practices of natural resources and park management in wildland recreation areas and other recreational facilities. Each lecture is supported by a field experience. Field trips are mandatory.

**Prerequisites/Corequisites:**

**Recommended Preparation:**  
Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:**

**Schedule of Classes Information:**  
Description: Orientation to principles and practices of natural resources and park management in wildland recreation areas and other recreational facilities. Each lecture is supported by a field experience. Field trips are mandatory. (Grade Only)  
Prerequisites/Corequisites:  
Recommended: Eligibility for ENGL 100 or ESL 100  
Limits on Enrollment:

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>		Effective:	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Certificate Applicable Course

## **COURSE CONTENT**

### **Outcomes and Objectives:**

Upon completion of this course, students will be able to:

1. Evaluate the principles of multiple-use management and ecosystem-based management sufficiently to be able to discuss their relationship to recreational opportunities in different settings.
2. Interpret the principles of wildlife and habitat management that may impact recreational use decisions.
3. Critique fishery management practices and the factors that influence management decisions and methods.
4. Justify and be able to describe how site, visitor and service management practices are/need to be integrated to ensure desired recreational experiences within the limitation of the physical, biological, and social environment.
5. Measure the natural resources of an area and synthesize them into the design of a recreation facility.
6. Compare and Critique wildland recreation areas and facilities to ensure visitor satisfaction and safety.
7. Assess, construct and maintain a wildland trail.
8. Determine the nature of watershed management practices that maintain a good watershed condition.
9. Conclude how proper use of the hand compass, topographic maps and GPS devices can be used for wildland recreational activities.
10. Justify the principles of silviculture and timber management as they relate to sustainable timber production and when this is compatible or in conflict with wildland recreational activities.
11. Recommend how and when the importance of managing rangelands for livestock production can be compatible with or necessary for wildland recreational activities.
12. Determine how fire and pests can be controlled to maintain healthy ecosystem conditions.

13. Appraise how natural resources management practices and recreational uses influence the processes of soil erosion
14. Decide and defend the methods that can be used to restore over utilized rangelands and commercially harvested forestlands. Discuss methods that can be used on managed rangelands and commercially harvested forest lands to facilitate recreational use.

## **Topics and Scope:**

### **I. Introduction**

- A. Definitions
- B. Relationship of multiple-use management to ecosystem-based management
- C. Career opportunities in natural resource management
  1. Qualifications
  2. Education

### **II. Wildlife Management**

- A. Ecological background for wildlife management
- B. Population management practices
- C. Habitat management and enhancement practices
  1. Principles
  2. Applications
    - a. Wildlife Cameras
    - b. Bat boxes
    - c. Anadromous fisheries
- D. Management of endangered wildlife species, including legal restrictions
- E. Fishery management

### **III. Park Ranger Skills**

- A. Duties of a ranger
- B. Outdoor recreation management practices
  1. Outdoor recreational activities
  2. Recreational experience
  3. Outdoor recreation management practices
  4. Visual resources management

### **IV. Design and Management of Recreation Facilities**

- A. Wilderness management principles and practices
- B. Management of developed recreation sites
  1. Maintenance needs of campground, restroom and other recreation facilities
  2. Maintenance tools and equipment and safety and repair techniques
- C. Site design
  1. Environmental considerations in recreation area design and layout
  2. Maintenance considerations in recreation area design and layout
  3. Elements of a recreation area
- D. Public Contact and Visitor Satisfaction
  1. Campground kiosk operation
  2. Development of visitor survey questionnaires
  3. Environmental interpretation and program presentations
    - a. Thematic interpretation
    - b. Preparing and presenting a talk
    - c. Presenting a guided tour
    - d. Using visual aids
    - e. Computer-generated graphics
    - f. PowerPoint

- g. Storyboards
  - h. Historic and cultural interpretation
  - i. Interpretation for children
  - j. Environmental education curricula
- 4. Interpretive planning model
  - a. Planning and preparing exhibits
  - b. Self-guided tours/trails
  - c. Audio tours, linked to phone number or website
- 5. Designing Publications
- 6. Social Media
- E. Visitor protection and safety
  - 1. Search and rescue techniques
  - 2. Law enforcement consideration in recreation area operation
- F. Elements in the Operation of Public Outdoor Recreation Facilities
  - 1. Administrative and budgetary
  - 2. Maintenance and design
  - 3. Public contact and visitor satisfaction
  - 4. Visitor protection and safety
  - 5. Resource protection
- V. Trails
  - A. Design and construction
  - B. Trail maintenance
  - C. Removal of hazards
  - D. Signage, educational and warning
  - E. Tool safety and use
- VI. Watershed and Water Management Practices
  - A. Definitions
  - B. Hydrologic cycle
  - C. Watershed management practices
    - 1. Maintaining watershed condition
    - 2. Increasing water yields
    - 3. Rehabilitation activities
  - D. Water management practices
    - 1. Developing water supplies
    - 2. Conserving water supplies
    - 3. Water quality
  - E. Effects of watershed management practices on water resources
    - 1. Environmental effects
    - 2. Water yield increases
    - 3. Riparian ecosystems
- VII. Map Reading and Compass Use and GIS and Smartphone Apps
  - A. Map scale
  - B. Contour lines and intervals
  - C. Longitude and latitude grids
    - 1. Degrees
    - 2. Minutes
    - 3. Seconds
  - D. Range and township grids
  - E. Topographic maps
    - 1. Contour lines and intervals
    - 2. Symbols
    - 3. Color system

- F. Mechanical/magnetic principles of the hand compass
- G. Route finding from a known point
- H. Use of GPS in Forestry
- VIII. Timber Management Practices
  - A. Silviculture
    - 1. Even and Uneven Aged Management
    - 2. Intermediate cuttings
    - 3. Other cultural treatments
    - 4. Natural and artificial reproduction
  - B. Timber Management
    - 1. Species composition
    - 2. Stand structure
    - 3. Regulation (CEQA and Forest Practices Rules, etc.)
    - 4. Rotation age
    - 5. Protection
  - C. Harvesting of timber
    - 1. Felling and bucking
    - 2. Skidding, loading, and transportation
    - 3. Environmental considerations
  - D. Rehabilitation methods on forestlands
- IX. Rangeland Management
  - A. Proper use of rangelands
  - B. Grazing management
  - C. Rangeland improvement
  - D. Livestock improvement
- X. Fire Control and Pest Management
  - A. Fire
    - 1. Prevention
    - 2. Fire-danger rating
    - 3. Control practices
    - 4. Prescribed burning
    - 5. Prescribed natural fire
  - B. Insect pests and diseases
    - 1. Classification
    - 2. Control practices
  - C. Integrated pest management
  - D. Ecosystem health
- XI. Soil Conservation
  - A. Processes of erosion
  - B. Erosion control methods
  - C. Prevention of soil loss
- XII. Sustainable Forestry Practices
  - A. Restoration of Overharvested Forest Lands
  - B. Sustainable forest management (growth and yield)
- XIII. Integrated Natural Resources Management
  - A. Importance of alternatives
  - B. Estimation of natural resources (to people, wildlife and ecological functions.)
  - C. Benefits and costs
  - D. Decision making
  - E. Cumulative impacts
  - F. Multiple use management

## Assignment:

1. Reading assignments that will average 15 pages per week
2. Interpretation project (3-5 pages) and 20 minute oral presentation of project
3. Weekly field experiences based on lectures
4. Field log for each field experience
5. Design a campground facility with a picnic area and interpretive feature
6. Write a management summary for a piece of land (Forest management, range management, parks and Rec) (1–2 pages)
7. Final project: Written reflection and analysis regarding personal experience in the course (5-10 pages)
8. Field demonstration and written exam on tools/equipment operation and safety
9. Final exam

## 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.

Field log; final written project; interpretation project.

Writing  
20 - 30%

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

Budget summary

Problem solving  
10 - 20%

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

Oral presentation; field demonstrations.

Skill Demonstrations  
20 - 30%

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

Midterm, Exams, and Final Exam: Multiple choice, True/false, Matching items, Completion, Short essay questions

Exams  
30 - 40%

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

Attendance and participation.

Other Category  
0 - 10%

## Representative Textbooks and Materials:

Natural Resources Management Practices: A Primer. Folliott, Peter F., Bojorquez-Tapia, Luis A., Hernandez-Narvaez, Mariano. Iowa State University Press: 2001 (classic)  
California Boating: A Course for Safe Boating. California Department of Boating and Waterways: 2003/2004 (classic)

National Red Cross First Aid & CPR Manual, current year.

U.S. Forest Service, Chainsaw and Fire Tool Maintenance and Operation Manual, current year.

(Government documents are updated as available. Many are classics in the field.)