Natural Resources Degree
Requirements for Degree  40.5-41.5 Units

Biol 305  Natural History ...................................................... 4
Biol 310  General Biology .................................................... 4
Engwr 344  Technical/Professional Communication:
  Writing Reports ............................................................... 1.5
Geg 330  Introduction to Geographic Information .............. 5 - 6
  Systems (3)
  and Greg 334  Introduction to Desktop GIS (3)
  or Cisc 300  Computer Familiarization (1)
  and Cisa 315  Introduction to Electronic Spreadsheets (2)
  and Cisa 305  Beginning Word Processing (2)
  or Cisa 306  Intermediate Word Processing (2)
Geol 300  Physical Geology (3) ........................................... 3
  and Geol 300  Physical Geography: Exploring Earth’s
  Environmental Systems (3)
Natr 300  Introduction to Natural Resource Management ....... 3
Natr 302  Introduction to Wildlife Biology ........................... 3
Natr 304  Introduction to Forestry ........................................ 3
Natr 310  Natural Resource Measurements (4) ...................... 4
  or Natr 311  Natural Resource Measurements-Land Surveying
  Methods (1)
  and Natr 312  Natural Resource Measurements-Field Methods
  and Study Design (1)
  and Natr 313  Natural Resource Measurements-vegetation
  Analysis and Forest Sampling (1)
  and Natr 314  Natural Resource Measurements-Aquatic Resource
  Sampling (1)
Natr 320  Principles of Ecology ........................................... 3
Natr 330  Identification of Native Trees and Shrubs .............. 4
Stat 301  Introduction to Probability and Statistics ............. 3

Associate Degree Requirements: The Natural Resources Associate in
Science (A.S.) Degree may be obtained by completion of the required
program, plus general education requirements, plus sufficient electives
to meet a 60-unit total. See ARC graduation requirements.

Natural Resources Certificate
Requirements for Certificate  20 Units

Natr 300  Introduction to Natural Resource Management ....... 3
Natr 302  Introduction to Wildlife Biology ........................... 3
Natr 304  Introduction to Forestry ........................................ 3
Natr 310  Natural Resource Measurements (4) ...................... 4
  or Natr 311  Natural Resource Measurements-Land Surveying
  Methods (1)
  and Natr 312  Natural Resource Measurements-Field Methods
  and Study Design (1)
  and Natr 313  Natural Resource Measurements-Vegetation
  Analysis and Forest Sampling (1)
  and Natr 314  Natural Resource Measurements-Aquatic Resource
  Sampling (1)
Natr 320  Principles of Ecology ........................................... 3
Natr 330  Identification of Native Trees and Shrubs .............. 4

Natr 294  Topics in Natural Resources  .5-5 Units
Prerequisite: To be determined for each topic.
Advisory: ENSGRD 116 or ESSLR 320.
Hours: 90 hours LEC, 270 hours LAB
Topics in natural resources management will be examined through
various course offerings designed to cover field study activities and
subjects relevant to natural resources and forestry not covered by
regular catalog offerings. Topics and field study locations vary.
Course content and unit credit to be determined by instructional
area. Course topics may include advanced subjects related to wild-
life, fisheries, conservation biology, forest resources and management,
restoration ecology or aquatic ecology. Field trips required. This
course may be taken four times.

Natr 298  Work Experience in Natural Resources  1-4 Units
Hours: 72 hours LEC
General Education: AA/AS Area III(b)

Natr 300  Introduction to Natural Resource Management  3 Units
General Education: AA/AS Area IV
Course Transferable to UC/CSU
Hours: 54 hours LEC
This course is an overview of ecosystems and natural resource
management. It considers non-renewable and renewable natural
resources such as water, land, soils, air, wildlife and their vegetative
communities. Additionally, this course provides a greater apprecia-
tion and understanding of the field of natural resource management,
current human threats, and the protection and maintenance of natu-
ral resource systems. Field trips are required.

Natr 302  Introduction to Wildlife Biology  3 Units
General Education: AA/AS Area IV
Course Transferable to CSU
Hours: 36 hours LEC, 54 hours LAB
This course is an introduction to Wildlife Biology and the basic
principles and techniques related to the practice of Wildlife Manage-
ment. Emphasis is based on ecological principles of populations
and communities as they relate to the interdependence of wildlife
and human populations. This course includes the discussion of the
social, political and biological implications of Wildlife Management.
Additionally, this course includes habitat and population sampling,
radio telemetry and the development of a wildlife management plan.
Field trips are required.

Natr 304  Introduction to Forestry  3 Units
General Education: AA/AS Area IV
Course Transferable to UC/CSU
Hours: 54 hours LEC
This course covers basic biological and physical science concepts
important to a general understanding in forestry. Topics include for-
est history, forests of the United States, general tree taxonomy, forest
ecology, soils, silvics, insects and diseases of forest trees, role of fire in
forest management, forest measurements, multiple use management,
forest issues and policies. Field trips are required.

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NATR 306 Introduction to Range Management 3 Units  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course examines the historical developments of range management and theory and application of grazing strategies. This course focuses on the effects of grazing on range ecosystems, the taxonomy and physiology of range plants, ruminant nutrition and physiology. In addition, sampling techniques of field vegetation, the use of fire and other methods for range conversion and maintenance are explored. Field trips are required.

NATR 310 Natural Resource Measurements 4 Units  
Course Transferable to CSU  
Hours: 54 hours LEC; 54 hours LAB  
This course provides basic natural resource measurement and survey skills. Included are elementary surveying, public land surveying, distance and direction measurement, topographic map reading, stream flow measurement, basic aquatic and water quality sampling. It focuses on forest and herbaceous vegetation sampling techniques such as transects and quadrats. Also included are the fundamentals of wildlife sampling techniques such as radio telemetry, population sampling techniques, Global Positioning Systems (GPS), Geographic Information Systems (GIS), and use of the internet as a research tool. Field trips are required.

NATR 311 Natural Resource Measurements-Land Surveying Methods 1 Unit  
Course Transferable to CSU  
Hours: 9 hours LEC; 27 hours LAB  
This course provides basic natural resource land survey skills. Included in this course are elementary surveying, public land survey, distance and direction measurements, and topographic map reading. Field trips are required.

NATR 312 Natural Resource Measurements-Field Methods and Study Design 1 Unit  
Course Transferable to CSU  
Hours: 9 hours LEC; 27 hours LAB  
This course provides basic statistics and study design as well as fundamental wildlife sampling techniques and an introduction to field applications of Global Positioning Systems (GPS) and Geographic Information Systems (GIS). Field trips are required.

NATR 313 Natural Resource Measurements-Vegetation Analysis and Forest Sampling 1 Unit  
Course Transferable to CSU  
Hours: 9 hours LEC; 27 hours LAB  
This course provides basic forest and vegetation sampling skills. Included in this are forest sampling techniques such as tree heights, diameters, volume, and age. Vegetation sampling techniques such as quantitative and semi-quantitative analysis, and single species surveys will be covered. Field trips are required.

NATR 314 Natural Resource Measurements-Aquatic Resource Sampling 1 Unit  
Course Transferable to CSU  
Hours: 9 hours LEC; 27 hours LAB  
This course provides basic aquatic resource sampling skills. Included in this course are stream flow measurements and water quality sampling. Sampling techniques for fisheries and other aquatic organisms will also be addressed. Field trips are required.

NATR 320 Principles of Ecology 3 Units  
General Education: AA/AS Area IV  
Course Transferable to UC/CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course covers basic principles of ecology, including the physical and biological factors of different environments in relation to the distribution of plants and animals. Emphasis will be on the management of ecosystems using ecological principles and the understanding of current ecological issues. Field trips are required.

NATR 325 Black Bear Ecology and Management in California 2 Units  
Course Transferable to CSU  
Hours: 27 hours LEC  
This course explores the natural history, habitat, and management of the black bear. Topics include the distribution, abundance, physiology, reproduction, and behavior of black bears. A field trip into black bear country is required to allow observation of bear sign and appreciation of the natural habitat of this animal.

NATR 326 Analysis of a Predator-The Mountain Lion 1.5 Units  
Course Transferable to CSU  
Hours: 27 hours LEC  
This course explores the natural history and political history of the mountain lion. Topics include the distribution and abundance of mountain lions in California and throughout western North America; the important ecological role of these predators; problems associated with mountain lions, and the legal status of mountain lions in California. A field trip into mountain lion country is required to allow observation of lion sign and appreciation of the natural habitat of this predator.

NATR 330 Identification of Native Trees and Shrubs 4 Units  
Course Transferable to CSU  
Hours: 54 hours LEC; 54 hours LAB  
This course will focus on the identification of native trees and shrubs of California by means of plant keys. In addition, this course will also include sight identification of some grasses, and other herbaceous and wetland plants. The ecology of vegetative communities and the natural history of native plants will be explored. A collection of at least seventy-five plant specimens is required. Field trips are required.

NATR 332 Wildflowers of the Sacramento Region 4 Units  
General Education: AA/AS Area IV  
Course Transferable to UC/CSU  
Hours: 54 hours LEC; 54 hours LAB  
This course focuses on the wildflowers of the Sacramento Region. The identification, distribution, and interrelationships of herbaceous plants in their natural environment, ecological principles, and representative plant communities are examined. Special emphasis will be given to the study of plant families in our local grasslands, vernal pools, oak woodlands and foothills, and the use of taxonomic keys. AA/AS area A

NATR 340 John Muir “Conservationist” 2 Units  
Course Transferable to CSU  
Hours: 36 hours LEC  
This course covers the life, writings and philosophy of one of the founders of the American Conservation Movement. This course focuses on John Muir’s significant contributions to the formation of the National Park System. This course is recommended to Elementary and Secondary Educators and those interested in natural resources, conservation and California history. Some class sessions will be held at the Muir National Historical Site in Martinez, the Muir Redwoods and Yosemite National Park. Field trips are required.