Natural Resources Degree

Requirements for Degree 40.5-42.5 Units

- BIOL 305 Natural History 4
- BIOL 310 General Biology 4
- ENGW 345 Technical/Professional Communication: Writing Reports 1.5
- GEOG 330 Introduction to Geographic Information Systems (3) 5 - 7
- or GEOG 334 Introduction to Desktop GIS (4)
- or CIS 300 Computer Familiarization (1)
- and CIS 315 Introduction to Electronic Spreadsheets (2)
- and CIS 305 Beginning Word Processing (2)
- and CIS 306 Intermediate Word Processing (2)
- GEOL 300 Physical Geology (3)
- or GEOG 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: ENGRD 116 or ESLR 320.
Hours: 9-90 hours LEC; 27-270 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 wildlife, fisheries, conservation biology, forest resources and management, restoration ecology or aquatic ecology. Field trips required. This course may be taken four times.

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 appreciation and understanding of the field of natural resource management, current human threats, and the protection and maintenance of natural 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 Management. 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 discussion of 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 forest 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.
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 man-
agement 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 ex-
plored. 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 quadrates. 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. In-
cluded 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 funda-
damental 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 sam-
pling. 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 manage-
ment 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; 27 hours LAB
This course explores the natural history, habitat, and management of
the black bear. Topics include the distribution, abundance, physiol-
ogy, 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 Amer-
ica; the important ecological role of these predators; problems as-
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 herba-
ceous 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 rep-
resentative 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.

NATR 342  Forest Resource Protection   4 Units
Course Transferable to CSU
Hours: 54 hours LEC, 54 hours LAB
This course examines impacts to forest resources by destructive agents such as plant diseases, insects, fire, animals, and weather. Identification of causal agents and principles of forest protection are covered along with practical management concepts. Field trips are required.

NATR 498  Work Experience in Natural Resources  1-4 Units
Course Transferable to CSU
Hours: 0-18 hours LEC; 0-150 hours LAB
This course is a cooperative effort between the college and a federal, state, local, private or nonprofit organizations involved in natural resource planning, management or public information. Internship sponsors assist students in acquisition of skills and the application of knowledge learned in the classroom. In addition to applied job related skills, students will be provided general employment training and skills such as: resume writing, job applications, taking job interviews, how to look for jobs and develop job performance objectives.