

NR 001L: CONSERVATION OF NATURAL RESOURCES LAB

Originator

kleuschner

Justification / Rationale

This course has been taught successfully using an all online format for the past 3 semesters.

Having an all online option will benefit many of our students who work during the week or on Saturdays and cannot attend a face to face class. We would like to have the option to be able to teach this course either face to face, hybrid, or all online, depending on the circumstances and the needs of our students. For example, the Saturday section could be all online and the weekday sections could use the hybrid format, meeting face to face every other week.

Effective Term

Spring 2022

Credit Status

Credit - Degree Applicable

Subject

NR - Natural Resources

Course Number

001L

Full Course Title

Conservation of Natural Resources Lab

Short Title

CONSV NATRL RES LAB

Discipline**Disciplines List**

Agriculture

Modality

Face-to-Face

100% Online

Hybrid

Catalog Description

A laboratory designed to supplement the Conservation of Natural Resources course (NR 001) by providing laboratory and field experiences in environmental subject areas. Suggested for Biological Science General Education Requirements.

Schedule Description

This laboratory course is designed to supplement the Conservation of Natural Resources course (NR 001) by providing laboratory and field experiences in ecology and environmental subject areas. Prerequisite: NR 001 or concurrent enrollment IGETC: 5C

Lecture Units

0

Lab Units

1

Lab Semester Hours

54

In-class Hours

54

Out-of-class Hours

0

Total Course Units

1

Total Semester Hours

54

Prerequisite Course(s)

NR 001 or concurrent enrollment

Limitation on Enrollment

24

Required Text and Other Instructional Materials**Resource Type**

Book (Recommended)

Author

Withgott, Jay

Title

Essential Environment

Edition

Latest

Publisher

Pearson Publishing

Year

2018

For Text greater than five years old, list rationale:

The text Essential Environment is required for the companion lecture class NR 001 Conservation of Natural Resources and is only recommended, but not required, for NR 001L. We always use the latest edition. The text is usually updated every 3-4 years.

Class Size Maximum

24

Entrance Skills

Demonstrate an understanding of several fundamental concepts of ecology, environmental problems and conservation.

Requisite Course Objectives

NR 001-Demonstrate an understanding of several fundamental concepts of ecology, environmental problems and conservation.

Entrance Skills

Explain several basic ecological principles.

Requisite Course Objectives

NR 001-Explain several basic ecological principles.

Entrance Skills

Formulate solutions to reduce several major environmental problems.

Requisite Course Objectives

NR 001-Formulate solutions to reduce several major environmental problems.

Entrance Skills

Comprehend the heavy demands being placed on this planet's natural resources by human beings and be able to suggest alternatives for reducing our impact.

Requisite Course Objectives

NR 001-Comprehend the heavy demands being placed on this planet's natural resources by human beings and be able to suggest alternatives for reducing our impact.

Entrance Skills

Demonstrate an understanding of the selection and implementation of natural resource management procedures based on ecological and economic criteria.

Requisite Course Objectives

NR 001-Demonstrate an understanding of the selection and implementation of natural resource management procedures based on ecological and economic criteria.

Entrance Skills

Apply principles learned in this course to their personal lives by independently developing methods for conserving resources.

Requisite Course Objectives

NR 001-Apply principles learned in this course to their personal lives by independently developing methods for conserving resources.

Entrance Skills

Demonstrate an awareness of sound procedures for responding to potential environmental problems in personal and business arenas.

Requisite Course Objectives

NR 001-Demonstrate an awareness of sound procedures for responding to potential environmental problems in personal and business arenas.

Course Content

1. Field observations of basic ecological concepts, such as:
 - a. energy flow, food chains, food webs, biomass, population fluctuation, limiting factors, competition, life zones, primary and secondary succession.
2. Water testing: using chemical, colorimetric, mechanical and/or electronic test procedures
3. Water reclamation and wastewater treatment
4. Energy resources: both conventional and emerging sources
5. Quantitative field analysis of native flora via a basic plant survey lab
6. Population growth curves studies via computer analysis

Lab Content

- Field observations of basic ecological concepts, such as:
 - a. energy flow, food chains, food webs, biomass, population fluctuation, limiting factors, competition, life zones, primary and secondary succession.
- Water testing: using chemical, colorimetric, mechanical and/or electronic test procedures
- Water reclamation and wastewater treatment
- Energy resources: both conventional and emerging sources
- Quantitative field analysis of native flora via a basic plant survey lab
- Population growth curves studies via computer analysis

Course Objectives

	Objectives
Objective 1	Demonstrate knowledge of basic ecological concepts.
Objective 2	Recognize and discuss basic ecological concepts in the field, such as: energy transfer, food chains, food webs, biomass relationships, limiting factors, carrying capacity, competition, life zones, primary and secondary succession.

Objective 3	Demonstrate an understanding of the selection and implementation of natural resource management procedures based on ecological and economic criteria.
Objective 4	Recognize the ecological importance of biodiversity.
Objective 5	Conduct some basic lab tests and field studies relating to water quality and plant population surveys, and be able to interpret the results.

Student Learning Outcomes

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

Outcome 1	Respond to a variety of conservation-related subject areas such as wind and solar power, biomass energy, endangered species and botanical surveying.
Outcome 2	Examine potential career opportunities in the conservation field.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Lecture	Weekly modules serve as lectures and will contain the information needed for students to successfully complete the week's tasks. Instructor will be available via zoom, email, and phone to help the students understand the material.
Experiential	Virtual field trips to various sites (sewage treatment plants, biomass energy plants, wind farms, etc.) will allow students to experience and to learn directly from expert in these fields about how specific resources are managed.
Laboratory	Lab exercises including water analysis, plant surveys, GIS, and population demographics give students hands on experiences with important conservation topics.

Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Term or research papers	A written research paper on an environmental topic is required	Out of Class Only
Presentations/student demonstration observations	An oral presentation to the class on the research paper topic is required.	In Class Only
Written homework	occasional homework assignments will be required as a follow-up to the past week's topic	Out of Class Only
Student participation/contribution	Students will participate in weekly class discussion either online or during in-person site visits with experts in the field.	In and Out of Class
Laboratory projects	Students will participate in a variety of lab exercises including water testing and analysis, population demographics, GIS, and native plant surveys.	In Class Only
Field/physical activity observations	During our site visits and field trips, students will be expected to make observations and to record their findings on a worksheet with instructor guidance.	Out of Class Only
Group activity participation/observation	Some activities will require students to work in small groups in order to complete the weekly assignment.	In and Out of Class
Reading reports	Reports will be assigned in some weeks and students will be expected to read them in order to answer associated questions.	In and Out of Class

Assignments

Other In-class Assignments

1. Students will complete lab exercises and video quizzes as assigned
2. Lab reports will be completed and graded

3. A term project is assigned, which is a combination written & oral presentation
4. Students are expected to participate in class discussions and partner/group exercises

Other Out-of-class Assignments

1. Students will write a research paper using the APA format on an environmental topic.
2. Weekly lab assignments may sometimes be completed out-of-class.

Grade Methods

Letter Grade Only

Distance Education Checklist

Include the percentage of online and on-campus instruction you anticipate.

Online %

50

On-campus %

50

Lab Courses

How will the lab component of your course be differentiated from the lecture component of the course?

The lab component is designed to give students direct, hands-on experiences with different aspects of natural resources studied in the lecture class. Students will learn from the experts and also gain valuable insights into potential career paths in these fields.

From the COR list, what activities are specified as lab, and how will those be monitored by the instructor?

The instructor will explain and then be available for guidance (and eventually grading) of the following activities:

field observation of ecological concepts
water testing and analysis
water reclamation/wastewater treatment
energy resources: conventional and emerging
plant survey lab and native plant identification
GIS
population demographics including growth curves and population profiles

How will you assess the online delivery of lab activities?

This course will be assessed on a regular basis to ensure that the goals of the lab activities are being met and match up with the student learning outcomes.

Instructional Materials and Resources

If you use any other technologies in addition to the college LMS, what other technologies will you use and how are you ensuring student data security?

Nothing is anticipated outside the LMS.

Effective Student/Faculty Contact

Which of the following methods of regular, timely, and effective student/faculty contact will be used in this course?

Within Course Management System:

Discussion forums with substantive instructor participation
Online quizzes and examinations
Private messages
Regular virtual office hours
Timely feedback and return of student work as specified in the syllabus
Weekly announcements

External to Course Management System:

Direct e-mail
Telephone contact/voicemail

For hybrid courses:

Field trips
Library workshops
Orientation, study, and/or review sessions
Scheduled Face-to-Face group or individual meetings
Supplemental seminar or study sessions

Briefly discuss how the selected strategies above will be used to maintain Regular Effective Contact in the course.

My goal is to be as available to students as I possibly can during the entire semester and to give feedback in a very timely manner. Using the various strategies selected above will enable me to maintain a high level of regular and effective contact with my students.

Other Information**Provide any other relevant information that will help the Curriculum Committee assess the viability of offering this course in an online or hybrid modality.**

By offering this course in a hybrid format, it will benefit so many students who need to take this course but may not be able to meet face-to-face every week of the semester. Since there are a number of field trips and alternate meeting sites, it will also reduce the strain that we have placed on these sites (with large groups and multiple visits each semester) over the years that has become even worse since Covid 19 shut down all visits. In the case of the Saturday section, having an all online option will ensure that we will be able to offer this section every semester to students who work during the week and are not able to take this course Monday through Friday. We look forward to being able to expand the number of sections of NR 001L we can offer each semester and to reach many more students without having to hire additional staff to teach on a Saturday which has been a challenge in the past.

COD GE

C1 - Natural Sciences

CSU GE

B3 - Laboratory Activity

IGETC GE

5C - Science Laboratory

MIS Course Data**CIP Code**

03.0101 - Natural Resources/Conservation, General.

TOP Code

011500 - Natural Resources

SAM Code

D - Possibly Occupational

Basic Skills Status

Not Basic Skills

Prior College Level

Not applicable

Cooperative Work Experience

Not a Coop Course

Course Classification Status

Credit Course

Approved Special Class

Not special class

Noncredit Category

Not Applicable, Credit Course

Funding Agency Category

Not Applicable

Program Status

Program Applicable

Transfer Status

Transferable to both UC and CSU

General Education Status

Y = Not applicable

Support Course Status

N = Course is not a support course

Allow Audit

No

Repeatability

No

Materials Fee

No

Additional Fees?

No

Approvals**Curriculum Committee Approval Date**

11/18/2021

Academic Senate Approval Date

12/09/2021

Board of Trustees Approval Date

01/21/2022

Chancellor's Office Approval Date

03/11/2010

Course Control Number

CCC000336075

Programs referencing this coursePower Generation and Distribution (<http://catalog.collegeofthedesert.eduundefined/?key=139>)Desert Ecologist Certificate of Achievement (<http://catalog.collegeofthedesert.eduundefined/?key=150>)Field Ranger Certificate of Achievement (<http://catalog.collegeofthedesert.eduundefined/?key=151>)Desert Naturalist Certificate (<http://catalog.collegeofthedesert.eduundefined/?key=189>)Liberal Arts: Math and Science AA Degree (<http://catalog.collegeofthedesert.eduundefined/?key=29>)Geographic Information Systems Certificate of Achievement (<http://catalog.collegeofthedesert.eduundefined/?key=315>)Environmental Horticulture AS Degree (employment preparation) (<http://catalog.collegeofthedesert.eduundefined/?key=47>)Turfgrass Management AS Degree (<http://catalog.collegeofthedesert.eduundefined/?key=50>)Natural Resources AS Degree (employment preparation) (<http://catalog.collegeofthedesert.eduundefined/?key=70>)Natural Resources AS Degree (transfer preparation) (<http://catalog.collegeofthedesert.eduundefined/?key=71>)Environmental Horticulture Certificate of Achievement (<http://catalog.collegeofthedesert.eduundefined/?key=90>)Turfgrass Management Certificate of Achievement (<http://catalog.collegeofthedesert.eduundefined/?key=95>)