

Lassen Community College Course Outline

FOR 6 Introduction to Forest Operations

3.0 Units

I. Catalog Description

This course provides an introductory overview of forest operations and environmental issues associated with today's forest management practices including use of mechanized equipment as a tool to meet various forest management objectives. Topics include forest road design and construction, forest harvesting systems and methods, forest products and environmental issues associated with forest operations. This course has been approved for hybrid and online delivery.

Recommended Preparation: Successful completion of ENGL105 or equivalent multiple measures placement.

Transfers to CSU

General Education Area:

CSU GE Area:

51 Hours Lecture, 102 Expected Outside Class Hours, 153 Total Student Learning Hours

Scheduled: Fall

II. Coding Information

Repeatability: Not Repeatable, Take 1 Time

Grading Option: Graded

Credit Type: Degree Applicable

TOP Code: 0114.00

III. Course Objectives

A. Course Student Learning Outcomes

Upon completion of this course the student will be able to:

1. Describe basic terms and best management practices associated with forest road construction
2. Explain the principles of forest road location and design to support the development of an environmentally and economically efficient transportation system.
3. Demonstrate critical and creative thinking skills in acquiring a broad base of knowledge on forest operations and applying it to complex issues in forestry.

B. Course Objectives

Upon completion of this course the student will be able to:

1. Understand basic terms and best management practices associated with forest Road
2. Explain the principles of forest road location and design to support the development of an environmentally and economically efficient transportation system.
3. Demonstrate critical and creative thinking skills in acquiring a broad base of knowledge on forest operations and applying it to complex issues in forestry.

IV. Course Content

- A. Introduction to Forest Operations
 - 1. Definition & Terms
 - 2. History of Timber harvesting
- B. Forest Roads
 - 1. Road Terms
 - 2. Road Location and Design
 - 3. Drainage systems and stream crossing
 - 4. Road Maintenance and decommissioning
- C. Harvesting systems
 - 1. Cost Analysis
 - 2. Felling
 - 3. Ground-based extraction
 - 4. Cable extraction
 - 5. Aerial extraction
 - 6. Processing and loading
 - 7. Transport options
- D. Management practices
 - 1. Best Practices
 - 2. Soil disturbance
 - 3. Certifications Systems
 - 4. Health and safety
 - 5. Sustainability
- E. Intro to Biomass
 - 1. Residue Recovery operations
 - 2. Forest Products
- F. Research and Development
 - 1. Forest Operations research and development
 - 2. Local operational challenges

V. Assignments

A. Appropriate Readings

Required reading assignments will be made from the textbook on a regular basis. In addition, journal and articles from outside resources including video, newspapers, magazines, internet, etc. pertaining to course topics will be incorporated in the class lectures and assignments.

A. Writing Assignments

Students will be required to complete short answer written assignments, quizzes and/or submit a research paper on a forestry topic as assigned by the instructor.

B. Expected Outside Assignments

Outside assignments may include take home short answer written assignments, required reading of supplementary literature, term paper(s), and group research and reports.

C. Specific Assignments that Demonstrate Critical Thinking

Critical thinking, writing assignments as listed above. Individual and group presentations of the course topics.

VI. Methods of Evaluation

Traditional Classroom Evaluation

Comprehensive Quizzes and Exams
Written Critical Thinking Scenarios
Problem Analysis and Solution
Research and Term Papers

Online Evaluation

Same as face-to-face instruction including a variety of evaluation methods such as: research papers, asynchronous and synchronous discussions (chat/forum), exercises/assignments, online quizzes and exams, and postings to online website.

Hybrid Evaluation

All quizzes and exams will be administered during the in-person class time. Students will be expected to complete online assignments and activities equivalent to in class assignments and activities for the online portion of the course. Electronic communication, both synchronous and asynchronous (chat/forum) will be evaluated for participation and to maintain effective communication between instructor and students.

VII. Methods of Delivery

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

Traditional Classroom Delivery Correspondence Delivery

Hybrid Delivery Online Delivery

Tradition Classroom Delivery

Methods of instruction may include, but are not limited to: lecture (including guest speakers), PowerPoint, and other media presentations, discussions, scenarios, and group presentations.

Online Delivery

A variety of methods will be used, such as: research papers, asynchronous and synchronous (chat/forum) discussions, online quizzes and exams, posting to online website and email communications using the districts approved learning management system.

Hybrid Delivery

A combination of traditional classroom and online instruction will be utilized. Each semester a minimum of 17 hours, or 1/3 of the lecture hours, will be taught face-to face by the instructor and the remaining hours will be instructed online through the technology platform adopted by the District. Traditional class instruction will consist of exercises/assignments, lectures, visual aids, and practice exercises. Online delivery will consist of exercises/assignments, lecture posts, discussions, adding extra resources and other media sources as appropriate.

VIII. Representative Texts and Supplies

MacDonald, A.J., 1999. **Harvesting Systems and Equipment in British Columbia**
(<https://www.for.gov.bc.ca/hfd/pubs/docs/sil/sil468.htm>)Online

**Forest Road Contracting, Construction, and Maintenance for Small Forest
Woodland Owners**

(https://ir.library.oregonstate.edu/concern/parent/3197xn450/file_sets/qn59q517m) 2017
Online

Introduction to Forest Operations and Technology , Uusitalo Jori , 2010, JVP Forest
Systems; ISBN: 9789529252695

AMC's Complete Guide to Trail Building and Maintenance, Ryan Harvey, 2021
ISBN 9781628421040

IX. Discipline/s Assignment

Forestry

X. Course Status

Current Status: Active

Original Approval Date: 02/21/2023

Board Approval: 04/11/2023

Revised By:

Curriculum/Academic Standards Committee Revision Date: