

Discipline: Agriculture	Sub-discipline: Forestry/Natural Resources
General Course Title: Forest Ecology	Min. Units: 3 Semester
Proposed Suffix: L	
<p>Course Description:</p> <p>The forest community is used as a model to discuss ecological principles as they apply to forest management. Students will gain a better understanding of Biological Organization and community classification, biotic and abiotic environmental factors, population and community ecology, and the role of disturbance in forested ecosystems. In addition, biogeochemical cycling, forest succession, and the role of natural selection will be discussed. Students will be expected to apply scientific principles and critical thinking skills to all lab activities and research papers. Laboratory required.</p>	
Required Prerequisites or Co-Requisites ¹	
Advisories/Recommended Preparation ²	
<p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> • Recognize ecosystem components and be able to describe their structure and functions. • Model energy flow through an ecosystem by applying a basic knowledge of production ecology • Understand the response of ecosystems to natural and human-induced disturbances. • Apply critical thinking to analyze ecological attributes of forest communities • Apply the scientific method to collect and analyze ecosystem data. • Prepare and present scientific papers following professional publication guidelines. • Discuss the role of succession and its impact on community structure and function. • List biological or environmental factors that affect forest ecosystem growth and development. 	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. Introduction <ul style="list-style-type: none"> A. Using Library Resources B. Critical Thinking C. Scientific Method D. Making Observations and Inferences E. Consideration of Scale 2. Forests as Ecosystems <ul style="list-style-type: none"> A. System Models –Concepts and Applications B. Energy in Forest Ecosystems: Production Ecology C. Energy in Forest Ecosystems: Budgets and Flows D. Hydrologic Cycle E. Biogeochemical Cycles 3. Forest Environment <ul style="list-style-type: none"> A. Abiotic Factors <ul style="list-style-type: none"> a. Climate b. Solar Radiation c. Temperature and Microclimate d. Water e. Soil <p>Forest Ecology (Content Continued)</p>	

¹ Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

² Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

- B. Biotic Factors
 - a. Micro Organisms
 - b. Macro Organisms
 - c. Site Quality Assessment and Classification
- 4. Forest Ecosystem Temporal Dynamics
 - A. Long Term Processes:
 - a. Evolution
 - b. Extinction
 - c. Migration
 - B. Mid Term Processes:
 - a. Population Ecology
 - b. Succession
 - c. Stand Development
 - d. Deforestation
 - e. Cumulative Effects
- 5. Forest Ecosystem Spatial Dynamics
 - A. Community Ecology
 - B. Environmental Gradient
 - C. Disjunction in an Environmental Gradient

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

Methods of Evaluation: Lecture Comprehensive Quizzes and Exams Written Critical Thinking Scenarios Problem Analysis and Solution Research and Term Papers	Methods of Evaluation: Laboratory Laboratory Skill Validation by Observation Laboratory Reports Laboratory Research Projects and Reports Laboratory Skill Practicum Exams
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Typical Textbooks, Manuals, or Other Support Materials
Forest Ecology. Barnes, B.V., D.R. Zak, S. Denton, and S.H. Spurr. 1998. John Wiley and Sons
Forest Ecology—A foundation for sustainable forest management and environmental Ethics in Forestry. Kimmins, J. P., 2003. Prentice Hall 3rd Edition.

Other References Include:
California Forests and Woodlands—A natural history. Johnston, B. R., 1994. U. C. Press.
Trees and Shrubs of California Stuart & Sawyer, 2001.

Statewide Articulation: Currently articulated to universities as specific equivalent by individual community colleges, additional statewide course equivalency articulation currently underway, also currently transfers as lower division elective

FDRG Lead Signature: _____ Date: _____

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