COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

Created by: Kevin Grady Date: Jan. 20, 2020
Effective Term: Fall 2020

A. **Identification:**

1. Subject Area: Forestry and Natural Resources (FNR)
2. Course: 211
3. Course Title: Conservation Practice and Evaluation
4. Credit Hrs: 3 credits
5. Catalog Description: Conservation Practice and Evaluation. This course is designed to complement youth conservation corps work experience. Students will receive technical training in a variety of topics that may include: chainsaw operation and maintenance; herbicide application; plant identification of invasive weeds and ecologically and culturally important native forbs, grasses, and trees; methods for vegetative reclamation such as tree planting, pole planting, plug planting, seed drilling, and seed spreading; deployment of climate adaptation methods such as assisted migration and species migration; fire suppression treatments such as forest thinning; fuelwood provisioning; recreational trail development; spring restoration; design of weirs and check-dams; wildlife and pasture animal management; exotic plant management; use of GPS and drones, and; monitoring of vegetative recovery, insect diversity, and soils. Students will implement such treatments in a variety of ecosystems around the Colorado Plateau.

B. **Course Goals:**

To prepare students for careers in Natural Resource Management, entrance to professional Forestry and Environmental Science programs at a 4-year college, and to fulfill requirements of a Restoration Certificate training program. This course is designed for equivalency to introductory Forest Measurements courses required in professional Forestry programs.

C. **Course Outcomes:**

Students will be able to:

1. Describe a diverse array of measurement techniques that are useful for describing forest stand structure, ecosystem properties and processes, and ecosystem rehabilitation effectiveness for multiple functions;
2. Develop and apply allometric equations to estimate stand biomass;
3. Estimate and predict forest stand carbon stocks;
4. Develop and use transect protocols for estimating survival of reforestation efforts;
5. Implement standard protocols for determining insect biodiversity;

6. Explain standard forest health monitoring protocols such as FIA, Browns transects, USFS stand exams, and LTER/ForestGeo);
7. Demonstrate proficiency in a variety of conservation treatments as described in Catalog Description;
8. Describe ecosystem health issues and design treatments to improve ecosystems to desired conditions.

D: **Course Outcomes Assessment**

Must include:

1. Field demonstrations showing proficiency in a range of conservation treatments;
2. Completion of activities designed to improve knowledge in monitoring techniques;
3. Group discussions;
4. Reading and follow-up writing and group discussion responses;
5. Journal documenting number of hours of work experience in each conservation treatment.

E. **Course Content:**

May include:

1. conservation treatments in a variety of ecosystems around the Colorado Plateau. These treatments may include: chainsaw operation and maintenance; herbicide application; plant identification of invasive weeds and ecologically and culturally important native forbs, grasses, and trees; methods for vegetative reclamation such as tree planting, pole planting, plug planting, seed drilling, and seed spreading; deployment of climate adaptation methods such as assisted migration and species migration; fire suppression treatments such as forest thinning; fuelwood provisioning; recreational trail development; spring restoration; design of weirs and check-dams; wildlife and pasture animal management; exotic plant management; use of GPS and drones

2. hands-on field experience in monitoring of vegetative recovery following conservation treatments, insect diversity, and soils.

3. an overview of conservation issues of the Colorado Plateau and solutions to those issues.

4. For each work experience: documentation and sharing of problems encountered, lessons learned, and ideas for improving restoration.