

## NATURAL RESOURCE CONSERVATION: FRSC 1190

DR WAID

Room 116, YOW Bldg. Phone: 391-4811 (Voice Messaging)

Office Hrs: Posted @ Rm 116 & Classroom

Course Prerequisites: None

Text: Natural Resource Conservation (Owen) (recommended)

Course Objectives:

This course is designed to provide students with demonstrable competence in the fundamental concepts and major areas of emphasis, outlined below, related to management of natural resources.

Students enrolled in the Forestry, and Wildlife Technology Programs will be expected to demonstrate an understanding of subject matter requiring higher order processing skills. Examination questions may include essay, synthesis, analysis, and application; as well as completion, multiple choice, true-false, and matching. Computational skills and drawing or diagramming may also be required.

GRADING:

Progress in this course will be evaluated based on performance on three (3) one-hour exams during the semester, and a comprehensive final examination. The hourly exams will each count 20% towards your grade (hourly exam total = 60%), the final exam will count 40%. Course Grade will be determined based on the grade scale below.

<u>GRADE</u>	
A	90 - 100%
B	80 - 89%
C	70 - 79%
D	60 - 69%
F	< 60%

COURSE OUTLINE:

### I. Introduction

- A. Environmental Crisis - Human Population Explosion, Pollution, Excessive Consumption of Natural Resources, Lack of Respect for the Land
- B. History - Major Periods of Use and Abuse, Increased Conservation Awareness, Important Legislation
- C. Principles of Conservation - Individual Responsibility, Multiple Use, Inventories, Resource Relationships

### II. Ecological Concepts

- A. Environment - Organization Levels
- B. Nutrient Cycles and Energy Flow, Food Chains and Food Webs
- C. Succession - Biomes

### III. Soil

- A. Formation Process
- B. Soil Properties
- C. Orders of Soils
- D. Management - Problems Facing Agriculture
- E. Erosion - Causes and Cures
- F. Soil Nutrients

#### IV. Water

- A. Sources
- B. Extremes - Droughts and Floods
- C. Management - Watersheds, Dams, Channelization, Irrigation
- D. Pollution - Nutrients, Organic Waste, Thermal Pollution, Pathogens, Sediments, Heavy Metals, Toxins

#### V. Fresh Water Fisheries

- A. The Lake Ecosystem - Spatial Zones, Thermal Zones
- B. The Stream Ecosystem - Current, Land-Water Interface, Oxygen Levels, Thermal Stratification
- C. Environmental Resistance to Fish Population
- D. Fisheries Management - Regulations, Introductions, Habitat Improvement, Angler Management etc.
- E. The Questions Surrounding Watershed Development - The Dam and the Darter

#### VII. Rangelands

- A. Classification - Plants and Soils
- B. Stocking Levels
- C. Pests and Control - Animals and Plants

#### VIII. Forests

- A. Forest History - Softwoods and Hardwoods, Government Forestry Agencies (Federal and State)
- B. Importance of Forest Products - Uses
- C. Tree Physiology and Growth
- D. Silvicultural Techniques
- E. Monoculture - Advantages and Disadvantages
- F. Forest Pests - Disease and Insects
- G. Wildfire - Prevention and Suppression
- H. Prescribed Burning - A Tool
- I. Meeting Future Forest Products Demands

#### IX. Wildlife

- A. Importance - Aesthetic, Recreational, Scientific, Economical
- B. History of Wildlife Abuse - Extinction and Extirpation
- C. Endangered Species
- D. Sigmoid Population Growth Form
- E. Wildlife Population Behavior
- F. Habitat- Food, Water, and Cover
- G. Wildlife Movements- Migration, Emigration, Home Range
- H. Responsibility for Wildlife- State and Federal

#### V. Air Pollution

- A. Sources
- B. Effects on Climate
- C. Effects on Human Health
- D. Global Problems - Global Warming, Acid Rain, Ozone Depletion
- E. Abatement and Control

#### VI. Energy

- A. Sources
- B. Alternative Sources
- C. Conservation

#### XI. Natural Resources and Recreation