Course Syllabus

Department: Environmental Conservation

Date: December 19, 2012

I. Course Prefix and Number: CON 101

Course Name: Principles of Soils, Waters and Forests

Credit Hours and Contact Hours: 3 credit hours and 3 contact hours

Catalog Description including pre- and co-requisites: Supporting data required for grade prerequisite of 'C' or higher.

To provide students with an introduction to principles of soil science, meteorology, hydrology, forestry and forest ecology. The student should gain knowledge and field experience in the conservation and management of these interrelated natural resources, especially as they apply to outdoor recreation, wildlife, fisheries, and land use planning.

Relationship to Academic Programs and Curriculum including SUNY Gen Ed designation if applicable:

This course is a required course for the AAS Natural Resources Conservation degree program. It may also be taken as a Conservation Elective for students in the AS Environmental Studies and the AAS Natural Resources Conservation: Law degrees. This course may also be taken as an elective for students outside of the Conservation programs.

II. Course Student Learning Outcomes: State the student learning outcome(s) for the course (e.g. Student will be able to identify…)

Upon the completion of this one semester course students will be able to:

A. Explain the origin and properties of water.
B. Describe and discuss the importance of the hydrologic cycle and of water in, on, and around the earth.
C. Discuss the basic concepts in water quality management.
D. Define and give examples for terms as they relate to soils, soil composition and components, soil nutrients and the tools and procedures used for sampling and testing.
E. Test for and recognize a variety of soils commonly found in Upstate, Central, and Western New York State.
F. Evaluate a given area’s soils using lab and field techniques and a published Soil Survey.
G. Define and describe important Forest Ecology and Forestry terms and concepts.
H. Use forest sampling equipment.
College Learning Outcomes Addressed by the Course: (check each College Learning Outcome addressed by the Student Learning Outcomes)

- [x] writing
- [ ] oral communications
- [ ] reading
- [ ] mathematics
- [ ] critical thinking
- [x] computer literacy
- [x] ethics/values
- [ ] citizenship
- [ ] global concerns
- [ ] information resources

III. Assessment Measures (Summarize how the college and student learning outcomes will be assessed): For each identified outcome checked, please provide the specific assessment measure.

<table>
<thead>
<tr>
<th>List identified College Learning Outcomes(s)</th>
<th>Specific assessment measure(s)</th>
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<tbody>
<tr>
<td>Writing</td>
<td>Students will complete a soils written research project in three steps with evaluation between steps 1&amp;2 and required revisions to be included in step 3.</td>
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<tr>
<td>Computer Literacy</td>
<td>Students will complete a survey of the FLCC wood lot or of another woodlot of comparable size and diversity. They will plot this data in tabular and graphic formats in a computer generated format using standard professional procedures as part of a required class report.</td>
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<tr>
<td>Ethics / Values</td>
<td>Students will answer quiz and exam questions relating to the importance of the hydrological cycle, and of water in, on, and around the earth. They will be required to discuss the affects humans have had and continue to have on water in these contexts.</td>
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IV. Instructional Materials and Methods

Types of Course Materials:
- ♦ Text book and Instructor provided topic specific reference materials
- ♦ Videos presented in class with study guides provided by instructor
- ♦ In-class workshops developed by instructor that relate to the specific topic to be covered
- ♦ Published and on-line references
- ♦ Library resources

Methods of instruction (e.g. Lecture, Labs, Seminars …):
- ♦ Lecture with handouts, power point, videos, and visual examples
- ♦ Demonstration of testing procedures, tools, and techniques
- ♦ Workshops of guided learning and practice in techniques
- ♦ Individual feedback and group discussion following various segments of technique development
- ♦ Hands-on, in-field practice with various techniques

Required textbook:
V. General Outline of Topics Covered:

Soils Section
Introduction / Soil Formation / CROPT
Soil Physical Properties / OM / Soil Biology
Soil Chemical Properties / pH / CEC
Soil Water Properties / Weathering / Erosion / Nutrients
Soil Pollution / Protection / Eutrophication

Waters Section
Class introduction / Origin of water and its chemical and physical properties
The hydrologic cycle / Weather
Surface water / Stream hydrology
Groundwater
Water quality management

Forests Section
Introduction/ Forest Types/Forest Ecology
Old Growth defined/ Forest Measurement
Forest Measurements/ Forest Inventory
Data Analysis/ Forest Management
Regeneration and harvesting techniques