Soil Resources and Conservation  
AGRN 5083/6086  
Rationale

Credit Hours: 04  
Instructor: Dr. Dennis A. Shannon  
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Pre-requisites: AGRN 2040 Basic Soil Science (or equivalent), Senior or graduate standing.

Required Text:


Required Materials:

- Videos of laboratory sessions – provided online in Blackboard
- Videos & Films – provided online in Blackboard
  - Wind erosion
  - Conservation tillage
  - Earthworms
  - No-Till
  - Guest Lecture – 1 – Ben Moore
  - Guest Lecture – 2 – Eve Brantley
  - Guest Lecture – 3 – Earl Norton
- Booklets mailed by Auburn University
- Other materials mailed by Auburn University

Course Overview:

This course is the first in a series of courses in Agronomy, Crops, Soils and Environmental Science to be made available by distance learning as part of a planned graduate degree program in the Department of Agronomy and Soils. **Soil Resources and Conservation** covers topics related to land use planning and the management of soils as a resource for sustainable crop production, urban and industrial development, and environmental protection. In the first unit, we will cover various ways to assess land for agricultural and other uses, the long-term consequences of land use, soil erosion by water and by wind, and soil and water conservation measures. The second unit will cover soil quality for agriculture and soil assessment for non-agricultural uses. The third unit will cover wetlands. The fourth unit will deal with water-related issues: non-point source (NPS) pollution and best management practices for abatement of NPS pollution, and finally stormwater management.

This course is useful for anyone planning a career in agriculture or environmental science, as well as those interested in the effects of land use management on water
quality. It addresses the major areas of concern to the USDA Natural Resources Conservation Service, as well as soil erosion and water quality issues related to urban development.

Objectives of Course:

- Provide sound principles and procedures for planning the wise use and management of soil resources for agricultural and non-agricultural purposes.

Students will learn:
- Long-term effects of land use management on land degradation or sustainable production
- Information available on land resources
- Land capability classifications
- Types of soil erosion and factors affecting soil erosion
- Soil erosion prediction models and how to use the Universal Soil Loss Equation and the RUSLE2 model
- Erosion control measures
- Factors affecting soil quality for agriculture
- How soils are assessed for suitability for construction, septic systems and other uses
- Wetland classification systems and how wetlands are identified and delineated to comply with the Environmental Protection Act
- Non-point source (NPS) pollution and best management practices to abate NPS pollution in agriculture and forestry
- NPS pollution and abatement regulations in mining
- Stormwater management for erosion control and NPS pollution control in urban settings

Activities:

The on-campus course and the distance course are for the most part identical in their content, assignments and evaluations. The on-campus students will have face-to-face lectures in a classroom setting while the distance students will watch voice over lectures in Powerpoint format and in videos. Both the on-campus and distance students read lecture notes, have the same text assignments, answer self-quizzes, view videos of laboratory exercises, complete laboratory exercises and reports. Both the on-campus and distance students will write a term paper on a topic related to the course and present a 15 minute oral presentation using Powerpoint. Both on-campus and distance students will take 4 timed exams during the semester, and one comprehensive exam at the end of the course. The distance students will take their exams on-line, but the material covered will be identical.

Assignments:

While the on-campus students have hands-on experience of the laboratory sessions, the distance students will have the opportunity to view the laboratory exercises as video sessions. After viewing the laboratory exercises, the students will complete 15 laboratory
reports. Some reports will require calculations, while others will involve summarizing information presented on video recordings. A term paper will be submitted by each student, followed by an oral presentation on the same subject. The students will receive feedback on their term paper before they do the oral report using Wimba Liveclassroom in Blackboard. Timed exams will cover 1) Sections I and II, 2) Sections III and IV, 3) Sections V, VI and VII, 4) Sections VIII and IX. A proctored final exam will be administered at the end of the course. The final exam will be comprehensive, covering all of the course material. Both the distance and on-campus students are given the same amount of time to complete the examinations and evaluated for the same number of points.

Methods students will use to interact with the professor:

The students will watch and listen to recorded lectures by professor and guest lecturers. They will be able to communicate with the instructor and teaching assistant via email and telephone during specified virtual hours that will be communicated to the distance students.

Evaluation:

Assignments and evaluations are the same for both the on-campus and distance education students. Students are expected to read from the text book and the lecture notes made available on the course website in Blackboard each session. They are also expected to complete laboratory assignments, term paper and oral report. Distance education students will be evaluated identically. Both the distance and on-campus students will have four timed exams, totalling 47% of the grade and a final proctored examination worth 22% of the grade. The laboratory reports, term paper and oral report will make up the remainder of the grade. Graduate students are expected to achieve higher standard of quality of term paper and oral presentations as compared to undergraduate students. They are required to submit a longer term paper and to reference more scientific papers in both the written and oral reports. This is the same for both campus and distance education students.

Final Exam:

Both the on-campus and the distance students will take a proctored final exam. This comprehensive exam is designed to give the students an opportunity to review all that they have learned throughout the course. It includes true/false questions, multiple choice, matching, fill-in-the-blank and sort answer questions, as well as some simple calculations, designed to test whether the student has learned certain formulas and principles taught in the course.

Final Exam Process:

After the first session, the distance student must select a proctor to supervise the final examination. Examples of approved proctors are academic administrators in the learner’s locale: school superintendents or principals, academic deans or department heads at colleges, or an independent learning office test supervisor at another college, or an education officer at a military installation. All proposed proctors are verified for
appropriateness by Distance Learning and Outreach Technology (DLOT) student services staff at 334-844-3106 or audl@auburn.edu. At the time of the final examination, the proctor and the student fill out the Examination Information Verification form. The proctored final examination is administered via Blackboard to the distance students while the on-campus students take a paper-pencil examination in the classroom.

**Materials:**

The textbook and reading requirements are the same for both the courses.

**Course Description, Objectives, Grading and Syllabus:**

See the syllabus and schedule.