Instructor: G.A. O’Connor, 3169 McCarty A, Soil and Water Science Dept. P.O. Box 110290, 294-3167, GAO@UFL.EDU. Office hours by appointment.

Graduate Teaching Assistant: None

Course Overview
The course is intended for those preparing to be professional environmentalists and who have minimal knowledge of soil science. Thus, the primary emphasis of the course is defining and describing soil properties and processes that determine the fundamental role soils play in the environment. The instructor will assign additional readings to supplement the text and to add material depth and critical thinking exercises. An optional, associated laboratory (SWS 5050L, 1 credit) and demonstration exercises experientially reinforce the concepts presented in lecture.

Part I (sections # 1-2) of the course describes soil functions and soil formation. Part II (sections # 3-9) describes/analyzes physical, chemical, and biological soil properties and processes, and soil classification. Parts III and IV (sections # 10-15) deal with specific soil types/situations where the previously described terms and processes are integrated to address environmental management issues.

Course Objectives – Students successfully completing the course will be able to:
1. Describe the soil as a dynamic multi-phased medium, and distinguish it from an inert body by characterizing various soil processes and their relationships to the environment.
2. Demonstrate a practical understanding of: a) properties common to all or most soils, b) vocabulary sufficient to communicate with others in soil science and management, c) the different management strategies required for problem soils, d) problem-solving skills to manage soil effectively, and e) an appreciation of the importance of soils in agriculture, the environment, and our daily lives.

Prerequisites: Graduate student status.

Course Format: Three hours of lecture per week.

Frequency: Yearly, Fall semester.

Student Responsibilities:
1. Students are expected to study the appropriate text sections and suggested outside readings in anticipation of lecture coverage.

2. Students are expected to actively participate in class discussions. **Class attendance and engagement is strongly recommended** (and is rewarded – see below).

3. Students are expected to demonstrate their mastery of presented material by passing written examinations and successfully completing assigned homework.

Student Evaluation:
1. Two examinations will be given; a mid-term (100 points) and a comprehensive final (200 points). **Make-up exams are rarely authorized and must be medically justified and authenticated.** See UF policies at https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

2. Homework sets will be assigned regularly, and will be graded (total scaled value 100 points). Late homework assignments are penalized 20% per day. **You cannot pass the course unless you complete each course requirement.**

Grading Scale:
Course grades will be determined by summing all scores and dividing by the maximum score possible (400 points) and multiplying by 100 to obtain a percentage score: 100-92 = A, 91-90 = A-, 89-88 = B+, 87-81 = B, 80-79 = B-, 78-70 = C, 69-60 = D, <60 = Fail. The instructor reserves the right to add 0-5 points to the final percentage score on the basis of meaningful class participation, demonstrated student interest, and overall student dedication. See UF policies at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Academic Honesty
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: **“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”** You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures.
regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: https://sccr.dso.ufl.edu/students/student-conduct-code/

Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Training Programs
  - Community Provider Database

- Career Resource Center, First Floor JWRU, 392-1601, [www crc.ufl.edu/](http://www crc.ufl.edu/)

- U Matter We Care, [www.umatter.ufl.edu/](http://www.umatter.ufl.edu/)

Services for Students with Disabilities
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. The University encourages students with disabilities to follow these procedures as early as possible in the semester. 0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)
SWS 5050 Fall 2018
Topic Outline and Schedule

<table>
<thead>
<tr>
<th>Topic</th>
<th>Approximate # of 50 min Lectures and Dates</th>
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<tbody>
<tr>
<td>O. Course Mechanics</td>
<td>1 = 8/22 (1)</td>
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<tr>
<td>I. Overview of Soils</td>
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<tr>
<td>Section 1. Introduction to Soils</td>
<td>2 = 8/24 (1), 8/27 (1)</td>
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<tr>
<td>Section 2. Soil Formation</td>
<td>2 = 8/29 (1), 8/31 (1)</td>
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<td>Labor Day, No Class Sept 3</td>
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<tr>
<td>II. Soil Properties/Processes</td>
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<tr>
<td>Section 3. Physical Properties</td>
<td>3 = 9/5 (1), 9/7 (1), 9/10 (1)</td>
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<tr>
<td>Section 4. Soil Water/Hydrology</td>
<td>6 = 9/12 (1), 9/14 (1), 9/17 (1), 9/19 (1), 9/21 (1), 9/24 (1)</td>
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<tr>
<td>Section 5. Soil Aeration</td>
<td>1 = 9/26 (1)</td>
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<tr>
<td>Section 6. Soil Colloids</td>
<td>5 = 9/28 (1), 10/1 (1), 10/3 (1), 10/5 (1), 10/8 (1)</td>
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<tr>
<td>Section 7. Soil Solution</td>
<td>2 = 10/10 (1), 10/12 (1)</td>
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<tr>
<td>Section 8. Soil Organisms</td>
<td>2 = 2 recordings viewed on own</td>
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<tr>
<td>Section 9. Soil Classification</td>
<td>2 = 10/15 (1), 10/17 (1)</td>
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<tr>
<td>Mid-term Exam 10/19</td>
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<tr>
<td>III. Environmental Soils and Management Issues</td>
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<tr>
<td>Section 10. Soil Acidity</td>
<td>3 = 10/22 (1), 10/24 (1), 10/26 (1)</td>
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<tr>
<td>Section 11. Soil Salinity</td>
<td>2 = 10/29 (1), 10/31 (1)</td>
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<tr>
<td>Home-Coming, No Class Nov 2</td>
<td></td>
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<tr>
<td>Section 12. Anaerobic Soils</td>
<td>1 = 11/5 (1)</td>
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<tr>
<td>Section 13. Soil Pollution</td>
<td>2 = 11/7 (1), 11/9 (1)</td>
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Veterans Day, No Class Nov 12

IV. Exemplary Elemental Reactions and BMPs
   Section 14. Nitrogen  \(3 = 11/14 (1), 11/16 (1), 11/19 (1)\)

Thanksgiving Break - No Classes - 11/21-11/23

   Section 15. Phosphorus  \(3 = 11/26 (1), 11/28 (1), 11/30 (1)\)

V. “Final days”
   Review/open period  \(2 = 12/3 (1), 12/5 (1)\)

Last Day of Classes 12/5

   Final Exam Posted

Final Exam
   Take Home, Due \(\leq 12/12, 5 \text{ pm}\)