

SWS 4550/5551: Soils, Water, and Public Health
Spring, 2024
3 credit hours

Instructor:

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Professor

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Office Hours

By appointment in office, by phone, or by Zoom

Please email aogram@ufl.edu to schedule a time to talk.

Course Meeting Times

On campus sections: Monday, Wednesday, Friday 3rd period (9:35 am). Class room: G001 McCarty Hall D.

On-Line sections: Asynchronous distance education format. All lectures are recorded during the on-campus lectures and posted on Canvas. Recorded lectures may be viewed at any time throughout the semester.

Chat Session: A weekly internet chat session will be held Wednesdays at 6 pm ET. These chat sessions are optional, but serve as excellent opportunities to review the previous week's material.

Prerequisites

Undergraduate: CHEM 2045 and 2046 and BSC 2009 or 2010 – or consent of instructor

Graduate: none

Course Website

The course website is through the UF e-Learning portal <https://elearning.ufl.edu/>

Log into Canvas to access. You will need your UF username and password to log in.

Course Description and Goal

The course explores important instances where soil/water science and public health intersect; how humans are exposed to environmental contaminants; and how public health threats are addressed. The overarching goal of the course is for students to take an integrative approach to characterizing, evaluating, and managing current public health problems by applying basic concepts from the fields of soil/water science and public health.

Course Objectives

Upon successful completion of the course, the student will be able to:

- Describe the *disciplines of public and environmental health* and *soil and water science*, and discuss *issues/legislation* that shape the fields
- Describe *basic soil characteristics* and *physical/chemical/biological processes* that enable preliminary *estimates of how various contaminants may move, react, and dissipate* in dynamic soil and aquatic environments
- Describe various *physical/chemical/biological hazards* and *protective factors*
- Describe factors which influence *exposure pathways, exposure behaviors, and health outcomes* as they relate to soil properties, water/soil quality, and water/soil management
- Highlight important and/or innovative *strategies and techniques* from the field of soil and water science that serve to protect and promote public health
- Describe processes of *site evaluation, risk assessment, data reporting, and public communication*
- Explain how *risk evaluations develop into standards*
- Describe *soil, water, and public health topics* from *different geographical perspectives*

Student Learning Outcomes and Competencies

This course contributes to the following Soil and Water Science Department learning outcomes and expected competencies:

- Graduate students
 - Demonstrate comprehensive understanding in soil and water sciences.
 - Synthesize and interpret scientific findings.
 - Employ scientific methods to generate new information and knowledge.
 - Demonstrate the ability to apply the scientific methods learned in the program to problems in soil and water sciences (transferable skills).
- Undergraduate students
 - Critically evaluate the sustainability of water resources in relation to human needs and natural ecosystem function (water science specialization) and soil forming factors and soil morphology related to field-scale processes (soil science specialization).
 - Demonstrate quantitative problem-solving abilities by applying, analyzing, and synthesizing content knowledge related to soil and water chemistry and physics.

Attendance Policy: Attendance is **required** for on-campus sections.

Required Texts

- The textbook for the course, Environmental and Pollution Science, 2nd Edition, Academic Press, by Pepper, Gerba, and Brusseau, is available as an ebook via the UF Library Course Reserve System ARES. **Students will have access to the ebook while they are registered for the course, such that there is no need to purchase the book.**

Other Assigned Readings

Readings will be assigned and provided in electronic format as the course progresses, so ***be sure to check the course webpage each week for posted materials.*** Many of the readings are listed in the Course Topics, Schedule, and Due Dates table at the end of the syllabus.

What YOU Should Expect From Your INSTRUCTOR and This Course

- Recorded lectures and tutorials
- Timely and thorough answers to questions posted to the discussion board and in emails – but do not expect instantaneous replies from me or your coursemates. Plan accordingly!
- Respect, guidance, and constructive criticism in feedback to submitted assignments

What Your INSTRUCTOR Expects From YOU in This Course

Daily:

- Check for new **Announcements** on the course webpage

Weekly:

- Check the **Weekly Unit**. You are responsible for completing each unit **in its entirety** within its assigned week. Posted information will follow the Course Topics, Schedule, and Due Dates table at the end of this syllabus.
- Post comments/questions to the discussion board and/or blogs.
- Complete any posted assignments.

On due dates:

- Submit assignments through the appropriate Weekly Unit on Canvas. Most assignments will be due by 11:59 pm ET on Sundays.

Always:

- Be respectful to your course mates and instructor.

Instructional Methods and Course Technology

This course is delivered completely online and in an asynchronous format (i.e. no live meeting times are required, although optional “live” chat sessions will be held). Course content and assignments are posted in Weekly Units. Weekly Units typically include recorded lectures, reading assignments, and discussion board postings. In addition, some Weekly Units include homework assignments, quizzes, and/or exams.

Student Evaluation

Grades will be determined by the accumulation of points received for the completion of the following course requirements. **Ten percentage points are subtracted for each day an assignment is late, and no late assignments will be accepted 3 or more days after the due date. Work completed for other courses cannot be “recycled” for this course. All work must be original. If you have a question about modifying previous work, please ask first. Make up exams are rarely authorized.**

** Any requests for make-ups due to technical issues **must** be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You **must** e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Requirements for make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Information on current UF grading policies for assigning grade points can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Graduate students (SWS 5551):

| | |
|--------------------------------|--------------------|
| 1. Term paper | 250 pts |
| (Including 25 pts for outline) | |
| 2. Exams (3 @ 225 pts each) | 675 pts |
| 3. Peer Review of term papers: | 100 pts |
| 4. Weekly Quizzes | |
| (9 @ 20 pts each) | |
| 5. Weekly Discussion | |
| (9 @10 pts each) | |
| Total: | 1355 points |

Undergraduate students (SWS4550)

| | |
|--------------------------------|--------------------|
| 1. Exams (3 @ 225 points each) | 675 pts |
| 2. Review grad student papers | 100 pts |
| 3. Weekly Quizzes | |
| (9 @ 20 pts each) | |
| 4. Weekly Discussion | |
| (9 @ 10 pts each) | |
| Total: | 1105 points |

Grading Scale:

100-92% = A; 91-90% = A-; 89-87% = B+; 86-82% = B; 81-80% = B-; 79-77% = C+; 77-72% = C; 71-70%= C-; 69-67% = D+; 67-62% = D; 61-60=D-; ≤59% = E

****Note:** Please keep a copy of all returned communication in case you have a question regarding your final grade.

Requirement Descriptions

- Three exams** will be given throughout the semester. Each exam will be designed to require no more than one hour for most students, and will be comprised of a mixture of multiple choice, true/false, and short answer questions. Students will have considerable flexibility as to when they take the exams within a window of approximately 14 hours. All exams will be proctored through Honor Lock, requiring students to register for each exam through Honor Lock. More information on Honor Lock is provided on a separate document.
- Weekly quizzes** will be associated with the lecture and reading components. The quizzes are open book. Two attempts will be allowed for each quiz.
- Discussion topics** will be added to the Canvas site each Monday. Student responses to the posts should be thoughtful. This will be a good forum for students to share opinions and individual experiences that pertain to the topic. Responses are due by the following Sunday at 11:30 pm ET.
- A **term paper** is required for graduate students (250 points). Students will write a paper on a topic relevant to the course material. The term paper subject matter will be selected by the student in consultation with the instructor and a final outline will be submitted for 5% of the total term paper grade. Late papers will be penalized 5% for each day after the deadline. Consult separate documents provided by the instructor regarding details, including deadlines. Papers will be reviewed for plagiarism by Turnitin. Review the university policy on plagiarism. Papers should be approximately 10 to 15 pages in length, 12 font, double spaced. The papers should be fully referenced. Style of citation is up to the individual.
- Students will **review papers** written by fellow students. The reviews will be completely anonymous to all but the instructor (i.e., names will be removed from both the paper and the review prior to return). Reviews should be approximately one page in length (12 font, double spaced). Reviews should contain a summary of the paper and a critical evaluation.
- Optional final exam:** Students have the option of taking the final exam to replace the lowest regular exam. On-campus students with no more than four unexcused absences are eligible to take the optional final.

Course Policies

- Students are responsible for all information in the assigned texts and information presented in class materials.
- Students are expected to read all assigned materials prior to contributing to discussion boards or completing related assignments/activities.
- Students should always consider the possibility of technology failure, and complete assignments to allow adequate time to correct for potential technology problems.
- Students are expected to communicate respectfully with their coursemates and instructor. Disrespectful or threatening interactions will not be tolerated. Students in violation of these expectations will be given ONE warning. If the behavior continues or is repeated, the student will be banned from the discussion board and will automatically lose all subsequent discussion board-related points.
- Cheating or plagiarism of any kind will not be tolerated. Any violations of this policy will result in a zero for the given assignment, and the zero will be figured into the final

grade. Additionally, students may be subject to University disciplinary action, including possible suspension/expulsion.

- **Attendance Policy:** Attendance is strongly encouraged for all on-campus sections.

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: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

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.

Technical Support

For issues with technical difficulties for E-learning in Sakai, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP
- <https://lss.at.ufl.edu/help.shtml>

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the University’s counseling resources. Resources are available for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance. The Counseling and Wellness Center provides confidential counseling services at no cost for currently enrolled students. The Career Resource Center provides support ranging from career planning to major exploration.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,*
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/
- *University Police Department*, 392-1111 or 9-1-1 for emergencies

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

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

SWS 4550/5551 Tentative Schedule

Spring 2023

Weekly assignments will include:

- Readings

| Week | Topic | Discussion | Quiz |
|-------------|---|-------------------|-------------|
| 1 | Course Introduction Soil, Water, and Public Health Interactions | 10 pts | 20 pts |
| 2 | Interactions (cont'd) | 10 pts | 20 pts |
| 3 | Fundamentals: Soil | 10 pts | 20 pts |
| 4 | Fundamentals: Water | 10 pts | 20 pts |
| 5 | Fundamentals: Biology | 10 pts | No Quiz |
| 6 | Physical Contaminants Exam 1 | 10 pts | 20 pts |
| 7 | Chemical Contaminants | 10 pts | 20 pts |
| 8 | Biological Contaminants Fate and Transport | 10 pts | 20 pts |
| 9 | Spring Break | | |
| 10 | Contaminant Fate and Transport (cont'd) | 10 pts | No quiz |
| 11 | Risk Assessment Exam 2 | 10 pts | 20 pts |
| 12 | Risk Assessment (Cont'd) | 10 pts | 20 pts |
| 13 | Protecting Environmental and Human Health | 10 pts | 20 pts |
| 14 | Protecting Environmental and Human Health | 10 pts | 20 pts |
| 15 | Protecting Environmental and Human Health | 10 pts | 20 pts |
| 16 | The End: Final Thoughts Exam 3 | 10 pts | No Quiz |

- Quizzes on lectures and readings
- Reactions on Discussion topics, due the Sunday following their post.