

# Urban Soil and Water Systems

## SWS 4204/6209

### Instructors:

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**Course credits:** 3

### Teaching Format and Course Communications:

- Exclusively online (no on-campus instruction and all online activities asynchronous).
- Pre-recorded lectures, supplementary readings, discussion boards, assignments and project.
- Canvas eLearning Login: <http://elearning.ufl.edu/>
- Contact instructors by office phone or through email (directly or through Canvas messaging system). Allow 24 hours for a response during the week. Questions posted over the weekend will not receive a response until Monday.

**Pre-Requisites:** SWS 3022 (Introduction to Soils in the Environment)

### Required Textbook:

- Sedlak, David L. 2014. Water 4.0: The past, present, and future of the world's most vital resource. 332 pages.
  - Note: Available in hard copy (2014), paperback (2015) or ebook format (Kindle, iBooks).
- Additional required readings are available in Canvas.

### Course Description:

This course introduces students to issues and opportunities related to soil and water quality in urban systems. Through a combination of asynchronous lectures, quizzes, assignments, and online discussions, students will explore and discuss the impacts of urbanization on soil and water systems and approaches for strengthening resiliency in urban communities.

## Course Learning Objectives:

After successfully completing the course, students will be able to:

- Define urban soil and water systems and describe the types of ecosystem services they provide.
- Describe the consequences of urban growth on soil and water systems.
- Analyze the various issues related to urban contaminants (toxic metals, organic compounds, excessive nutrients) and impacts on ecosystem services.
- Describe challenges and opportunities related to water supply, wastewater and stormwater in urban systems.
- Analyze approaches for strengthening resiliency of urban soil and water systems to impacts of climate change and urban growth.

## Topic Outline:

Weeks	Module	Topics
1-2	1 Introduction to Urban Soil and Water Systems	Course introduction
		Identifying Information Sources
		Introduction to Studying Systems
		Introduction to Ecosystem Services
		Introduction to the Urban Ecosystem
		Urban Growth
		History of Urban Infrastructure
		Module Review
3-4	2 Urban Soil Systems	Direct and Indirect Effects of Urbanization on Soils
		Characteristics of Urban Soils
		Urban Soils and Ecosystem Services
		Components of Urban Soil Systems
		Biogeosociochemistry
		Module Review
5-7	3 Urban Water Systems	Effects of Urbanization on Water Demand and Quality
		Urban Water Systems
		Urban Water and Ecosystem Services
		Components of Urban Water Systems
8	4 Review/ Wrap Up/ Midterm Evaluation	
9	SPRING BREAK	

Weeks	Module	Topics
10-12	5 Challenges for Urban Soil and Water Systems	Introduction
		Soil and Water Contamination
		Water Availability
		Infrastructure
		Climate change
		Flooding and Sea Level Rise
		Module Review
13-15	6 Improving Resilience of Urban Soil and Water Systems	Green infrastructure
		Water reuse
		Improving health of urban soils
		Climate change adaptation
		Regulatory tools
		Community planning
16	7 Review/ Wrap up / Final Evaluation	

### Disclaimer:

As we go through the semester, specific topics and activities on the syllabus may change to enhance the class learning opportunity. Such changes, communicated clearly and in advance, are not unusual and should be expected.

### Grading Structure:

Assessment Type	Percent of Final Grade
Quizzes	5
Midterm	15
Final	15
Assignments	25
Discussions	10
Project	30

Graduate students have additional exam questions and responsibilities during projects and assignments to receive graduate level credits for this class.

Rubrics will be provided with graded activities. See Canvas assignments for individual rubrics.

## Grading Scale:

Letter Grade	Numerical Grade	GPA Points
A	90 – 100%	4.0
B+	87 – 89%	3.33
B	80 – 86%	3.0
C+	77 – 79%	2.33
C	70 – 76%	2.0
D+	67 – 69%	1.33
D	60 – 66%	1.0
E	< 60%	0

Current UF grading policy for assigning grade point averages can be found here:

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

## Attendance and Late Policy:

Requirements for class attendance (online participation) and 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>

Late submission of assignments and assessments must be approved by instructors in advance and may be subject to a grade penalty.

**Online 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 semesters, 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>.

## UF Policies

**University Policy on Accommodating Students with Disabilities:** Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc](http://www.dso.ufl.edu/drc)) by providing appropriate documentation. Once registered, students will receive an accommodation letter, which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

**University Policy on Academic Conduct:** UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code. On all work submitted for credit by students 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." The Honor Code

(<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the class instructor.

**Class Demeanor or Netiquette:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.

**Getting Help, Technical difficulties:** For issues with technical difficulties for Canvas, please contact the UF Help Desk.

<http://helpdesk.ufl.edu>  
(352) 392-HELP (4357)  
Walk-in: HUB 132

Note, any requests for make-ups due to technical issues **MUST** be accompanied by the ticket number received from the Help Desk 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.

**Getting Help, Other Concerns:** *Resources* are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

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