

## Soil and Water Sciences SWS 6932: Conservation Hydrology

### Syllabus - Summer 2020

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**Description:** This course presents an overview of concepts and principles of hydrology, as described in the context of contemporary issues related to conservation and management of water resources and aquatic ecosystems. Students learn the tools used by hydrologists to quantify water as it moves through the hydrologic cycle, and use these tools to address topics such as rainwater harvesting, landscape alteration, reservoir management, groundwater, and environmental flows. Additionally, we will use contemporary methods and tools to explore case studies that illustrate how these concepts are applied to real-world situations in the southeastern United States and beyond.

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**Prerequisites:** Graduate Student Standing.

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**Time and Location:** Online through distance methods  
Summer C Semester: May 2020 to August 2020  
Chat session: Weekly, Tuesdays 6:30-7:30pm Eastern Time

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**Instructor:** Matthew Deitch, Ph.D.  
Assistant Professor, UF Soil and Water Sciences Department  
West Florida Research and Education Center  
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Office hours: Monday 11am-1pm, Tuesday 2pm-4pm

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**Text:** **Textbook for this class is available free through the UF Library System:** Hydrology and the Management of Watersheds, 4th edition, by Brooks, Ffolliott, and Magner  
ISBN: 9781118459768 (search at <https://cms.uflib.ufl.edu/>)  
Additional reading materials such as US Geological Survey reports will be provided in Canvas in each weekly module.

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**Course Objectives:** Upon completion of this course, students will be able to:

1. List important components of the water cycle, and describe how they can be affected by land and water management practices.
2. Describe how stream ecosystems are structured by hydrologic processes.
3. Use historical streamflow records to identify changes in streamflow caused by water management practices.
4. Describe the process used for developing Minimum Flows and Levels in the state of Florida

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**Weekly topics:**

Weekly Module	Date	Topic	Assignment	Due
1	May 12	Watersheds: an introduction; water resources and conservation; delineating watersheds	Activity Set 1; Ch 1	
2	May 19	Units of measure; the hydrologic cycle, water balance; (rainwater harvesting), watersheds as hydrologic units	Activity Set 2; Ch 2	AS1 (5pm)
3	May 26	Rainfall frequency and planning; Streams, part 1: data and analysis (sources, trends, etc.)	Activity Set 3; Ch 3, 4	AS2 (5pm)
4	June 2	Streams and data part 2	Activity Set 4; Ch 5, 6	AS3 (5pm)
5	June 9	<b>EXAM 1</b> ; Water management: dams and IHA; Term project explanation	Activity Set 5; Ch 9	AS4 (5pm)
6	June 16	Predicting peak flows; Physical stream processes	Activity Set 6	AS5 (5pm)
	June 23	<b>No Module or Tuesday chat this week – Summer Break</b>		
7	June 30	Virtual field trip: Big Coldwater Creek, Blackwater River State Forest	Activity Set 7; supplemental	AS6 (5pm)
8	July 7	Groundwater and contemporary groundwater issues	Activity Set 8	AS7 (5pm)
9	July 14	<b>EXAM 2</b> ; Urban hydrology, green infrastructure, and SWMM	Activity Set 9	AS8 (5pm)
10	July 21	Stream ecology; evaluating needs of a river and Minimum Flows and Levels; Lakes and wetlands	Activity Set 10	AS9 (5pm)
11	July 28	Bays, Estuaries, and coastlines; virtual field trip: Indian Bayou, Santa Rosa County		AS10 (5pm)
12	Aug. 3	Last week of classes; Term Project Presentations (date to be determined)		Literature review
<b>August 7</b>		<b>Final Project and Report due (grades from instructor due Monday, August 10)</b>		

**Course evaluation**

Online Course Evaluation Process Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students will have the opportunity to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at GatorEvals. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. It is expected that you will contribute your feedback for this course and the others in which you are enrolled this term. Summary results of these assessments are available to students at GatorEvals (<https://gatorevals.aa.ufl.edu/>).

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### Student Evaluation Methods (600 points total):

Student grades will be determined based on student performance in the following categories:

<b>Weekly Activity Sets (9)</b>	30% of grade	(20 points each)
<b>Exams (2)</b>	27% of grade	(80 points each)
<b>Term project: presentation and report</b>	27% of grade	(80 points each)
<b>Project literature review</b>	12% of grade	(60 points)
<b>Participation/attendance</b>	5% of grade	(30 points)

**Weekly Activity Sets:** At the conclusion of each class session (weeks 1-10), students will be assigned an Activity Set related to the topic discussed. Activity Sets will appear in weekly Canvas modules, to be submitted **via Canvas by the beginning of the following Tuesday chat session.**

**Exams:** Occurring twice during the semester, exams will consist of short analyses of data sets, short answer questions, and/or brief essays based on reading assignments, lectures, and exercises. Exams will occur during class time.

**Term project:** Students will work individually or in groups of two to conduct a hydrologic study related to a topic of their choice. The hydrologic study will consist of components as discussed in class, and may include collecting new data or using historical data. Students will present a summary of their hydrologic study online through DE methods; it will be accompanied by a Project Report. Expectations regarding the components of the hydrologic study, presentation, and report will be shared via handout and discussed in class after the first exam. The term project report is due August 7.

**Project literature review:** Students will conduct a review of literature and reports related to their chosen term project topic.

**Participation/attendance:** Students are expected to view all instruction materials in each weekly Module in Canvas, including online lecture materials, interviews, and field lab sessions as appropriate. Students are also expected to participate in online discussions. We will also hold one-hour chat sessions each week on Tuesdays. Chats provide the opportunity to reinforce class lessons with real-world examples and discuss data and problem sets in more detail. Additional information about class attendance at UF can be found at:

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

### Grades will be scored as follows:

Course Grade	>93	90-92.99	87-89.99	83-86.99	80-82.99	77-79.99	73-76.99	70-72.99	67-69.99	63-66.99	60-62.99	<60
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Grade Point	4	3.67	3.33	3	2.67	2.33	2	1.67	1.33	1	0.67	0

A full explanation of UF grading policies can be found at:

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

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### On-line Resources:

An e-learning site for this course is available through Canvas. This provides a format to share documents and discussions with your classmates. I will also use it to post Problem Sets and supplemental materials. This syllabus and general announcements from the instructors to students will also be posted. **IT IS YOUR RESPONSIBILITY TO CHECK CANVAS AND USE THIS RESOURCE TO STAY UP-TO-DATE WITH SCHEDULES AND CLASSWORK.** The Canvas app is free.

### Late Policy

It is critical that your Activity Sets and other course work be submitted in a timely manner. Activity Sets are due Tuesday at 5:00 pm Eastern time one week after they are assigned (unless otherwise indicated in Canvas). However, you may turn in assignments after the due date and still receive some credit. After the due date posted, late assignments will lose of 5% of their value for the first late day; 10% of their value the second day; 20% of their value the third day; and 30% of their value (i.e., a maximum of 14 points) for the rest of the week after the due date. For the following week, Problem Sets will be worth 50% of their value (i.e., a maximum of 10 points); after that, late assignments will receive no credit. All assignments must be turned in via Canvas.

### Academic Honesty

The University of Florida requires all members of its community to be honest in all endeavors. Cheating, plagiarism, and other acts diminish the process of learning. When students enroll at UF they commit themselves to honesty and integrity. I fully expect you to adhere to the academic honesty guidelines you signed when you were admitted to UF.

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/policies/student-honor-code-student-conduct-code/>

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### **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 wellbeing are encouraged to utilize the university's counseling resources. The UF Counseling and 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](http://www.counseling.ufl.edu)

- Counseling Services Groups and Workshops
- Outreach and Consultation
- Self-Help Library
- Wellness Coaching

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

- **Career Connections Center, First Floor JWRU, 392-1601, <https://career.ufl.edu>**

### **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, <https://disability.ufl.edu/>

### **Student Complaints:**

The University of Florida believes strongly in the ability of students to express concerns regarding their experiences at the University. The University encourages its students who wish to file a written complaint to submit that complaint directly to the department that manages that policy.

Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>

Online Course: <http://www.distance.ufl.edu/student-complaint-process>