

Water 389: Hydrology

Spring 2019

Lecture: Monday and Wednesday 1-2 TNR 120

Lab: computer lab TNR 322 (Wednesdays 2-3:40)

Prerequisites: NRES 250, 251; MATH 355.

Professor: Katherine Clancy

Office: TNR 244

Phone: 715.346.3429

Email address: kclancy@uwsp.edu

Office hours (for student questions, concerns, or chats): 2-3 Mondays, 11:30-12:30 Thursdays

Comprehensive Final Exam: May 13th Monday at 10:15-12:15

Course website is as follows: <https://uwsp.courses.wisconsin.edu/> (you need an email account, so you log-in as you would to your email)

Course folder: <\\uwsp.edu\files\cnr\coursedata\water389>

Expectations: Understand basics of how to use a spreadsheet (i.e. excel) and college algebra and statistics.

Objectives: After completing the reading assignments and laboratories in this course you should be able to do the following:

1. Describe the basic physical processes involved in the hydrologic cycle.
2. Obtain and interpret hydrologic and climatic data.
3. Apply appropriate statistical analysis to hydrologic data.
4. Create tables and graphs in excel and import them into a word document.
5. Make maps using ArcMap

Laboratory Procedures and Materials: Bring textbook, calculator, ruler, pencil, pens, etc.

Group Work: In general, you may work with a partner on lab calculations. The final write up **MUST** be your own analysis and reflect your understanding of the problem or assignment. **In class quizzes, tests, and take home tests are to be your own work, and you may not consult other people for help with these types of assignments.**

Group Work Expectations: For group assignments, you are expected to come to class/lab. If you cannot, you need to inform me and your group. Time designated for group work requires that you work on the group project.

Textbook:

Environmental Hydrology (EH) 2nd ed. By A. Ward and S. Trimble (all readings are from this book unless otherwise stated)

Statistical Methods in Water Resources. Helsel and Hirsch, 2002 (pdf online)

Online: You will have a short online lecture that introduces the purpose and main strategies for completing the lab. You need to complete this before you come to lab. To help keep you on task, there is a quiz associated with these online materials. Really, though you should want to watch the lab video, because it will make your experience in the lab much more enjoyable and you will better be able to learn the material. The online quizzes are 5 points each (so they do add up). Failure to take three or more of these quizzes can result in a reduction of your grade by 10%.

Schedule: Readings and Topics are subject to change, so you must come to class

Week	Topic	Lab Assignment	Reading
1: Jan 22-25	Statistics and Introduction to Hydrology	online quiz	Helsel and Hirsch Ch 1-4
2: Jan 28-Feb 1	Statistics and Frequency Analysis	Excel Lab 1 (lab quiz)	EH 2.4-2.9
3: Feb 4-8	Precipitation and Statistics	Online quiz	EH 11.1-11.4, 11.7
4: Feb 11-15	Groundwater	Excel Lab 2 (lab quiz)	EH 5.4-5.7
5: Feb 18-22	Groundwater Management	Online quiz	EH Chapter 3
6: Feb 25-Mar 1	Evaporation and ET	Excel Lab 3 (lab quiz)	EH Chapter 4
7: Mar 4-8	Infiltration/Soil Physics	Online quiz/review	Online practice excel exam and quiz
8: Mar 11-13	Review (3/11) and Midterm (3/14)	Excel Quiz	Study!!
Mar 18-22	Spring Break (no class)		
9: March 25-29	Baseflow and Hydrographs	Online quiz/homework	EH 5.1-5.5
10: Apr 1-5	Hydrographs 2	GIS Lab 1 (lab quiz)	Online reading
11: Apr 8-12	Runoff	Online quiz	EH Chapter 6
12: Apr 15-19	Runoff, Landuse and Watersheds	GIS Lab 2 (lab quiz)	EH Chapter 6
13: Apr 22-26	Streams and Streams Statistics	GIS Lab 3 (lab quiz)	Online reading
14: Apr 29-May 3	Hydrology Models vs. Hydrology Observed	GIS review	Online reading
15: May 6-10	Hydrology Topics and review (May 10)	Hydrology Lab exam	Study!!!!
May 13th	Final Exam 10:15-12:15		

Policies and Procedures

I. UWSP Community Bill of Rights and Responsibilities

UWSP values a safe, honest, respectful, and inviting learning environment. In order to ensure that each student has the opportunity to succeed, a set of expectations have been developed for all students and instructors. This set of expectations is known as the Rights and Responsibilities document, and it is intended to help establish a positive living and learning environment at UWSP. For more information go to: <http://www.uwsp.edu/stuaffairs/Pages/rightsandresponsibilities.aspx>.

The Rights and Responsibilities document also includes the policies regarding academic misconduct, which can be found in Chapter 14. A direct link can be found here: <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>.

II. Americans with Disabilities Act

The Americans with Disabilities Act (ADA) is a federal law requiring educational institutions to provide reasonable accommodations for students with disabilities. For more information about UWSP's policies, check here: <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/ADA/rightsADAPolicyinfo.pdf>.

If you have a disability and require classroom and/or exam accommodations, please register with the Disability Services Office and then contact me at the beginning of the course. I am happy to help in any way I can. For more information, please visit the Disability Services Office, located on the 6th floor of the Learning Resource Center (the Library). You can also find more information here: <http://www4.uwsp.edu/special/disability/>.

III. Attendance and Participation

Attending class meetings and arriving promptly are expectation for the course. If you must miss class, please email me. Participation expectations include having required readings completed before class, bringing necessary materials (course text, equipment for taking notes), listening attentively to others, being respectful of instructor and peers, contributing to class discussion/activities, and completing assignments by the due date. Participation points will be lost if you miss class, unless you have an excused absence. Absences are excused for students who have mandatory, academic, UWSP sponsored events (such as class fieldtrips, conference presentation) or students who are participating in a varsity level sport, which is organized and overseen by a UWSP coach (or coaching team).

- Student missing 3 or more labs will incur a 10% penalty from their final grade.

- Missing group labs may incur additional penalty.
- **I expect professional behavior toward your classmates and instructor. Disruptive behavior may be considered anything other than paying attention and taking notes in class. Examples of disruptive behavior are as follows: habitually coming to class tardy, talking, sleeping in class, texting, reading the newspaper, and eating. Unusually you will be given a warning in the form of a written email. This may be followed by removal of your extra credit and/or a deduction of 10 percent of your final grade.**

IV. Exam/Test Policy

Tests are closed notes and closed book. You may not work with another individual during an exam. Makeup exams are scheduled for students who have mandatory, academic, UWSP sponsored events (such as class fieldtrips, conference presentation) or students who are participating in a varsity level sport which is organized and overseen by a UWSP coaching team. If you want to have an alternative exam time for these types of exception, then you must meet the following criteria: 1) have the sponsoring faculty member send me an email with the date, time, and nature of the event at least one week in advance of the exam; and 2) schedule an alternative time for the exam **BEFORE** the in-class exam time. Otherwise makeup exams are scheduled at the discretion of the instructor.

V. Grade Calculations

I.	Laboratories, homework: 100 pts	Grade	Percent	Grade	Percent
II.	Discussions 25 pts	A	93-100%	C	70-74%
III.	GIS lab pts 60 pts	A-	90-93%	C-	65-69%
IV.	Attendance/Participation 20	B+	87-89%	D+	62-64%
V.	Online quizzes: 50 points	B	83-86%	D	55-61%
VI.	Exam I: 100 pts	B-	80-82%	F <	55%
VII.	Final Exam: 120 pts	C+	75-79%		

VI. Lab Policies:

1. **Labs must be typed. Handwritten portions of the lab will be accepted at the discretion of your instructor.**
2. Messy labs with poor grammar and spelling errors may be docked up to 30%.
3. Incomplete labs and homework will be docked additional points. If the lab is missing several components, it may not be graded at all.
4. **All homework and labs are due one week from when they are assigned unless otherwise stated.**
5. **Late Assignments:** *I will not accept more than two late labs per person. I do not accept labs after I have graded and handed them back (this includes other sections).*

VII. Lab Presentation:

1. **STAPLE:** Staple any lab with multiple pages. Unstapled labs will not be accepted.
2. **Typesetting:** Embed your graphs and charts within your word document. Among other things, it reduces paper waste.
3. **Page Numbers:** Number your lab pages and answers to lab questions.
4. **Units:** Any quantity that has units associated with it, must have units.
5. **Graphs/Figures:** **All graphs should be labeled with units and the series data should be distinguishable and readable.**
6. **Typesetting equations:** All equations should be entered using the equation editor.
7. **Answers:** Your answers to questions should restate the questions within the lab package, so that when you study for exams you do not have refer to the lab document.
8. **Sample calculations:** **A sample calculation is required for all calculations unless otherwise stated. Sample calculations may be neatly handwritten. All sample calculations should have three steps. They should begin with the equation; have the substituted data, and then finally an answer. Sample calculations should be clear and easy to read.**
9. **Significant figures:** data presented within charts should not have more significant figures than the data used to calculate the values.
10. **Captions:** All figures, charts, and tables should have captions. Generally, captions include the graph title and a brief description.
11. **Presentation:** Messy and incomplete labs may not be graded.
12. **Excel dumps:** **Do not copy large portions of your excel sheets and turn them in with your lab. This includes t-test results (read the lab for guidance on how to report statistical results).**