

CE/HWRS/ATMO/ARL 423/523 HYDROLOGY

Spring 2017

Lectures: TR 9:30-10:45 ECE 102

Instructor: Juan B. Valdés
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Office Hours: TR 1:30-3:00 PM

Course Description: This course is designed to enable the student to learn the fundamental laws of surface water hydrology and how to apply these laws in hydrologic design and analysis. The class will consist on discussion and analysis of major topics of the hydrologic cycle and their interrelationships, such as rainfall, infiltration, evaporation, and runoff. Statistical and probabilistic methods in water supply and flood hydrology.

Main References:

Mays, L. **Ground and Surface Water Hydrology**, 1st ed., J. Wiley, 2012
Chow, V.T., D. Maidment and L. Mays, **Applied Hydrology**, McGraw-Hill Publ., 1988.
(GB661.2.C43). **This book is out of print but selected chapters will be placed in the D2L course site.**

Additional References:

Ahrens, G.D. **Meteorology Today**, 9th Edition, Brooks and Cole, 2009.
Dingman, L., **Physical Hydrology**, 2nd edition, Waveland Press, 2008.
Viessman, W., G. Lewis and J.W. Knapp, **Introduction to Hydrology**, 5th Edition, Harper and Row Publ., 2003, (GB661.2.V44)

Also, videos of the class will be available in D2L for those instances in which the personal instruction will not be made.

Evaluation

Undergraduates:

Homeworks & Class Participation	40%
Tests (2)	60%

Graduates:

Homeworks & Class Participation	20%
Term Project	20%
Tests (2)	60%

Class Attendance and Participation

No attendance will be taken. However if you decide to attend it is expected that you would **actively participate in the class**, e.g. arriving in time, no private conversations, no Wildcat reading, no working on homeworks, etc.

ACADEMIC DISHONESTY will not be tolerated. The UA policy will be followed. Students committing academic dishonesty will receive an “E” for the course and the proper university officials will be notified.

Tentative Course Outline

Topic

1. Introduction: Hydrology, Climate Change and Sustainability
 2. Hydrologic Processes
 3. Surface Runoff
 4. Reservoir and Surface Routing
 5. Probability, Risk and Uncertainty Analysis
 6. Design Storms
 7. Hydrologic Design
 8. Groundwater
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Graduate Term Paper/Project Guidelines

I will provide a list of topics from which you will need to select one for your term paper. In the term paper you will need to use some of the concepts taught in the class.

Graduate term papers/projects, should have a length of approximately 10 pages (Times New Roman 12pt font, 1.5 spaces). The term paper/project should utilize and/or address a topic covered in the class.

The paper should contain the following elements (maximum number of pages in parenthesis):

1. Title of project
2. Author(s)
3. Introduction (1 page)
4. Objectives (1 page)
5. Methodology (2 pages)
6. Application of Methodology to a Case Study (4 pages)
7. Discussion of Results (2)
8. Conclusions and Recommendations for Future Research (1)
9. References
10. Appendices

The references and appendices sections do not count towards the 10 pages.

You will need to provide a printed copy of the paper (10 pages). In addition you will need to provide the term paper, supporting data, programs and results in a zip file to be dropped in D2L. Please name your zip file following the format used in the homework.

Deadlines:

1. March 1 COB: you need to submit to D2L a one-page description of your term project, including objectives and deliverables. I will provide a list of topics for your paper and you will need to select one of them.
2. May 3 COB: you need to provide a printed copy of your term paper, in addition to the zip files with all the information requested.