CE 4513/6513. Engineering Hydrology
Spring 2016

Instructor*:* *John J. Ramírez-Avila*
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Office Hours: *M, W, F 1:00 to 4:30 PM*
Class Time: *M, W, F. 11:00 M - 11:50 PM*
Location: *Walker 304*

On Campus students are strongly encouraged to communicate with me through visits to resolve questions.

Distance students are strongly encouraged to communicate with me through e-mail to resolve questions

Description: *Three hours lecture. Hydrologic principles; hydrologic analysis; frequency analysis; hydrologic modeling; hydrologic design, groundwater hydrology.*

Textbook:
Hydrology and Floodplain Analysis, 5th Ed. Philip B. Bedient, Wayne C. Huber, and Baxter E. Vieux. Pearson Publishing Company (2013). 816 pgs.

Reference Textbooks:
Hydrology. A Science for Engineers, Benoit Hingray,Cécile Picouet, André Musy. CRC Press (2014) 572 pp.

Modern Hydrology and Sustainable Water Development.1st. Ed. S. K. Gupta. Wiley-Blackwell (2011). 436 pp.

Introduction to Hydrology, 5th Ed. W. Viessman and Lewis, G.L. Prentice Hall (2003). 612 pgs.

Ground and Surface Water Hydrology. Larry W. Mays. Wiley (2011). 617 pgs.

Grading:

Tests (2)	*30%*	
Homework	*40%*	
Class project (Final Report and presentation)	*30%*	

Assignments
Assignments will be turned in on the due date by the beginning of the scheduled class period (11:00 am). Assignments turned in after the due date and hour will be accepted for up three days

after the due date, receiving a 50% reduction in grade except in unusual mitigating circumstances. No assignments will be accepted more than three days late. If the due date is in a Wednesday, late assignments will be accepted if turned before Friday ONLY. Assignments from on-campus students will not be accepted in digital form except in unusual mitigating circumstances previously notified and accepted by the instructor.

Answers, with numerical solutions consisting of a magnitude, units, and direction/sign as applicable, will be boxed or highlighted.

Assignments must be presented completely organized. Units must be included on each step performed to solve any exercise and on each plot. Grade on each exercise will be reduced if units are not included on each solution step or plot. Cartesian plots will be presented as described by the instructor, considering always an abscissa-ordinate (x-y) relationship (eg: time-flow).

In addition with the specifications written above, students MUST follow the Format Specifications for Homework Problems presented in the last page of this Syllabus

No orientation will be given to students the date of submission of an assignment.

Quizzes
Quizzes will be given at instructor discretion on topics from the previous lecture. Quiz grades will be counted equally with homework grades. Absence from a quiz or no submission at the specified deadline without a certified medical excuse or prior instructor approval will result in a grade of zero.

Exams/Special Assignments
Exams will be designed to assess and promote a student's mastery of the material and to attain the instructional objectives listed above.

Exams will usually be closed textbook and closed notes. Students may use a single 8.5" by 11" summary note sheet (front and back) for reference.

Absence from an exam without a certified medical excuse or prior instructor approval will result in a grade of zero. Excused missed exams can be made up by a special exam near the end of the semester.

Class Project
The class project will consist of a written report and a power point presentation on a topic agreed upon by both the students and professor. The power point presentation will be turned in along with a final report in person at the assigned hour and day the final exam is scheduled by MSU. On-Campus and Vicksburg students are required to give a 15 minutes oral presentation to the class the day of the final exam in addition with the final report and the power point file. Other distance learning students will not be required to give the presentation, only to prepare it.

Learning outcomes:
Upon successful complete of the course, students should be able to:

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1. Define, explain and correctly use terms and concepts to describe the hydrologic cycle and other basic physical hydrologic processes.
2. Search, analyze and properly use hydrologic information.
3. Solve basic hydrologic problems to estimate the magnitude and frequency of hydrologic events.
4. Use basic hydrologic methods, equations and models to characterize watersheds and quantitatively measure and estimate physical processes.
5. Understand and be able to develop fundamental design applications in hydrology that are routinely used in engineering and related analyses.
6. Read and discuss hydrologic research publications.
7. Develop an independent case study involving watershed characterization, and hydrologic modeling and design.

Course Outline

1. *Hydrologic Principles*
2. *Hydrologic Analysis*
3. *Frequency Analysis*
4. *Flood Routing*
5. *Groundwater Hydrology*
6. *Hydrologic Simulation Models*
7. *Design Applications in Hydrology*

Policies

Academic honesty is a basic requirement and academic misconduct will be handled in accordance with guidelines and procedures outlined in the Academic Misconduct Policy, which may be accessed on the web at: http://www.msstate.edu/dept/audit/1207A.html

Please note especially that plagiarism is forbidden (students are expected to understand plagiarism and how to avoid it).

The MSU Honor Code states: "As a Mississippi State University student, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will accept the actions of those who do." Any occurrences of academic misconduct will be dealt with in accordance with MSU policy as described in the Honor Code http://www.honorcode.msstate.edu/.

Collaboration of any kind on exams or take home tests is prohibited. Students are encouraged to collaborate on assignments, with the understanding that collaboration consists of exchanging ideas and helping each other, not copying what someone else has already done nor presenting the same printed pages or outputs from any software used in the performance of the class. If that condition occurs a grade of zero will be given and corresponding disciplinary measurements will be taken.

Students are expected and required to use the MyCourses class web page and email to stay abreast of course events and requirements.

The instructor will communicate with students outside of class by MyCourses. Email will be addressed to the email address registered in MyCourses unless other arrangements have been made.

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MSU is committed to complying with Title IX, a federal law that prohibits discrimination, including violence and harassment, based on sex. This means that MSU's educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence and/or harassment by any member of the University community, you are encouraged to report the conduct to MSU's Director of Title IX/EEO Programs at 325-8124 or by e-mail to titleix@msstate.edu. Additional resources are available at
http://www.msstate.edu/web/security/title9-12.pdf, or at
http://students.msstate.edu/sexualmisconduct/