

**CE 365K HYDRAULIC ENGINEERING DESIGN**  
**Spring 2016**  
**SYLLABUS**

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**UNIQUE NUMBER:** 15560

**INSTRUCTOR:** David R. Maidment  
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**OFFICE HOURS:** Tuesday and Thursday 2-3:30PM, ECJ 8.610

**TEACHING ASST:** Cassandra Fagan, [fagan.cassandra@gmail.com](mailto:fagan.cassandra@gmail.com)  
Office Hours: Tues-Thurs 10:30AM to 12 noon, ECJ 8.102

**LECTURES:** Tuesday and Thursday, 12:30-2PM, ECJ 6.406

**OBJECTIVES:** This course is designed to present these Academic/Learning Goals

- Principles and methods of hydraulic engineering design
- Use of computer models to support hydraulic engineering design
- Development of a hydraulic engineering design project

**PREREQUISITES:** Elements of Hydraulic Engineering: CE 356

**COMPUTER:** Proficiency with computers and familiarity with Excel is expected. There will be some computer assignments using HEC and Bentley computer programs, and the ArcGIS Geographic Information System to be completed in the LRC.

**TEXT:** "Computer Applications in Hydraulic Engineering" (Eighth Edition) by Haested Methods Water Solutions, published by Bentley Institute Press. Instructions on how to obtain this text have been provided separately.

**CLASS FORMAT:** Lectures supplemented with outside reading, homework, and two in-class exams. There will be a major design project carried out within a project team for which an oral and written report will be presented at the end of the semester. There will be no Final Exam.

**CLASS OUTLINE:** See attached.

**GRADING:** Quizzes, 2 @ 20% = 40%  
Homework = 30%  
Design Report = 30%

I will assign grades using the scale:

A = 95 – 100%; A- = 90 – 94%;

B+ = 87 – 89%; B = 83 – 86%; B- = 80 – 82%;

C+ = 77 – 79%; C = 73 – 76%; C- = 70 – 72%;

D = 60 – 69%; F < 60%

Any problems, personal or otherwise, affecting grades should be brought to the instructor's attention.

**HOMEWORK POLICY:** Homework assignments are due in by 5PM on the day assigned and will be turned in as pdf documents using the Canvas web site for the class. If hand computations are required, you should scan your computations into a pdf document.

**EXAMINATIONS:** There will be two 75 minute in-class examinations. Each examination will be closed book, although you will be allowed a 1-page review sheet. Missed examinations may be made up only if the reason for missing was illness or some other emergency. The in-class exams will take place on Thursday March 10 and

Thursday April 18. There will be no final exam since the class design project submitted at the end of the semester is the summary task of the course.

**EVALUATION:** An evaluation of the course instructor and teaching assistant will be conducted at the end of the semester using the approved UT Course/Instructor evaluation process.

**DROP POLICY:** From the 1<sup>st</sup> through the 12<sup>th</sup> class day, an undergraduate student can drop a course via the web and receive a refund, if eligible. From the 13<sup>th</sup> through the university's academic drop deadline, a student may Q drop a course with approval from the Dean, and departmental advisor. .

**DISHONESTY:** University procedures will be followed in dealing with cases of suspected scholastic dishonesty.

**ATTENDANCE:** Regular class attendance is expected in accordance with The University's General Information catalog. Class attendance will not be used as part of the course credit assignment.

**IMPORTANT NOTE:** The University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities. For more information, see the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, 471-6259 (voice) or 512-410-6644 (video phone) or the web site: <http://www.utexas.edu/diversity/ddce/ssd/>

**DESIGN PROJECT:** Since this is a Level II Elective course, an important component is the engineering design project that will be carried out in collaboration with a group of 3 or 4 students. You will be expected to present the resulting project in Oral and Written form at the end of the semester. Additional detail about design project requirements will be provided in class.

**COURSE CONTENT:** A schedule topics to be covered in each week of the class is given below.

<i>Week #</i>	<i>Date</i>	<i>Topic</i>
1	1/18/2016	Basic Hydraulics <i>FlowMaster</i>
2	1/25/2016	Basic Hydrology: Rainfall <i>HEC-HMS</i>
3	2/1/2016	Basic Hydrology: Runoff <i>HEC-HMS</i>
4	2/8/2016	Curb Gutter and Inlet Design <i>FlowMaster</i>
5	2/15/2016	Storm Sewer Design <i>StormCad</i>
6	2/22/2016	Culvert Design <i>CulvertMaster</i>
7	2/29/2016	Using GIS in Hydraulic Design <i>ArcGIS</i>
8	3/7/2016	Project Status, Review, and First Exam
9	3/14/2016	Spring Break
10	3/21/2016	Water Surface Profiles (Channels) <i>HEC-RAS</i>
11	3/28/2016	Water Surface Profiles (Bridges) <i>HEC-RAS</i>
12	4/4/2016	Detention Pond Design <i>HEC-HMS</i>
13	4/11/2016	Detention Pond Design for WQ
14	4/18/2016	Project Status, Review, and Second Exam
15	4/25/2016	Design Studio
16	5/2/2016	Design Presentations

