

## **53:078 Principles of Hydrology**

Spring 2004

### **Instructor**

Allen Bradley  
523A Hydraulics Laboratory (335-6117)  
E-mail: allen-bradley@uiowa.edu  
Class 10:30–11:20 AM TueThu  
Office Hours: 9:30 to 10:20 AM TueThu (4115 SC)

### **Teaching Assistant**

Jennifer Holman-Dodds  
323-21 Hydraulics Laboratory  
E-mail: jennifer-holman@uiowa.edu  
Office Hours: 12:30 to 1:30 PM Mon; 3:00 to 4:00 PM Wed (1135 SC)

### **Course Description**

This course covers the fundamental processes in the water cycle, including precipitation, infiltration, runoff, and develops quantitative approaches for answering questions in engineering hydrology. After taking this course you will be able to estimate flows for a variety of civil engineering design problems, including urban stormwater analysis, floodplain mapping, and municipal water supply.

### **Topics**

- Water Budgets
- Precipitation
- Evaporation
- Infiltration and Unsaturated Groundwater flow
- Surface Water
- Hydrologic Modeling
- Frequency Analysis
- Hydrologic Design

### **Required Text**

Chin, D. A., *Water-Resources Engineering*, Prentice-Hall, 2000.

### **Class Account**

The class web site is <http://www.engineering.uiowa.edu/~flood>. The web site contains a detailed course syllabus, course news and information, class homework assignments, web-based reading assignments, and other reference information.

## Grading

- |              |     |                        |
|--------------|-----|------------------------|
| ▪ Homework   | 25% |                        |
| ▪ Exam 1     | 25% | (Tue 2 Mar)            |
| ▪ Exam 2     | 25% | (Tue 20 Apr)           |
| ▪ Final Exam | 25% | (Wed 12 May, 12:00 pm) |

The homework grade is based on (1) written homework assignments, and (2) quizzes and in-class assignments.

Homework problems are posted on the class web site with each lesson (~35 problems during the semester). Students will have 7 days to complete the assigned problems. Students must follow the *Homework Guidelines* to receive credit for their assignment.

Each homework assignment must be turned in on time; any homework received after 4:00 PM on the due date is late. Late homework will only be accepted if (1) it is turned in before the graded assignment has been returned, and (2) the student has fewer than two previous late assignments. Homework assignments may be turned in class or in the class assignment box in the CEE Office (4105 SC). Late assignments must be turned in before the beginning of class (i.e., before the assignment has been returned).

Homework problems are graded on the following basis:

- 50% of the problem grade is based on effort.  
A problem that is completed will receive full credit; no credit is given for incomplete work.
- 50% of the problem grade is based on the solution.  
Correct solutions receive full credit; no credit is given for incorrect solutions. On problems where no solution credit is given, students may resubmit their solutions. Resubmissions are due *before class* one week after the homework is returned; students receive half-credit for correct solutions on resubmitted problems. Resubmissions must be done on a separate sheet of paper and attached to the first submission. Late assignments may not be resubmitted for half-credit.

Each student must do his/her own work. Students may discuss problems with each other. However, collaboration on written or computer assignments is not permitted.

Unannounced quizzes may be given during class. Quizzes will be short (5 to 10 minutes) and cover material from recent homework assignments or material from class that day. Other individual or group problem-solving assignments may also be given in class. Quizzes and in-class assignments account for 10% of the homework grade.