

CE 491/591/691 – International Urban Water Systems

Course pre-requisite is instructor permission
Wednesday evening 5 to 6:45 pm to review and discuss modules: AIME 215 (ITS lab)

Course Goals: Learn fundamentals of urban water conservation design from international experts and other students from around the world through this Internet-based class.

Prerequisite by Topic: Basic algebra and drainage design. Depending on some options, more advanced background in stormwater modeling and hydrology will be necessary.

Special Course Information: This is a special Internet-based course. Four international stormwater experts will be directing this class, Dr. Bob Pitt at UA the overall leader; Dr. Shirley Clark at Penn State-Harrisburg, Dr. Neil Armitage at the University of Cape Town in South Africa, and Dr. Liz Fassman, at the University of Auckland in New Zealand. This class is a unique opportunity to collaborate with students and experts from very different cultures. This will not be a basic correspondence class. The class assignments will be coordinated to allow collaboration between the students. We will also meet locally once a week to review the material, assignments, and questions. Class projects will be posted onto individual student's web pages by the due date. Each student will be assigned a subset of fellow-student's work to review and to post review comments. Each student will then respond to the posted comments on their web pages. The class listserve is hosted by YahooGroups. I will need a list of emails of all students and others to "invite" to join this closed group.

IntUrbanWater@yahoogroups.com

Textbook: via Internet.

The home page and the main course material will be located at:
<http://unix.eng.ua.edu/~rpitt/Class/Classes.shtml>

Important EPA links for the course:
EPA's "Surf your watershed" homepage:
<http://www.epa.gov/surf/>

Clean Water Act homepage:
<http://www.epa.gov/region5/water/cwa.htm>

National Environmental Publications Information System (over 10,000 online EPA documents):
<http://nepis.epa.gov/>

EPA stormwater web pages:
<http://www.epa.gov/eftpages/watestormwater.html>

Urban Watershed Management Branch:
<http://www.epa.gov/ednrmrl/>

in addition, the following URL is for the joint UA/UAB student AWRA page that includes downloadable NURP databases from the EPA and USGS archives. It also includes a lengthy bibliography associated with urban drainage:
<http://www.eng.ua.edu/~awra/download.htm>

Pitt's research web site also contains many of his wet weather flow publications (reports, papers, and books):
<http://www.eng.ua.edu/~rpitt/Publications/Publications.shtml>

UA Course Coordinator: Robert Pitt, P.E., Ph.D., Professor.

<http://www.eng.ua.edu/~rpitt/>

rpitt@eng.ua.edu (UA)

rpittal@charter.net (home)

Here are the home pages and email addresses for the other course instructors:

• Shirley Clark at Penn State-Harrisburg:

<http://www.personal.psu.edu/faculty/s/e/sec16/>

seclark@psu.edu

• Liz Fassman at the University of Auckland in New Zealand:

http://www.cee.auckland.ac.nz/people/elizabeth_fassman.aspx

e.fassman@auckland.ac.nz

• Neil Armitage is at University of Cape Town in South Africa:

<http://www.uct.ac.za/>

armitage@ebe.uct.ac.za

The following table lists the major course topics and class dates:

#	Developer	Posting	Due	Topic
0	Bob	Jan 11	Jan 18 or Feb 8	Introduction: preliminaries for all modules; getting connected and started.
1	Bob and Shirley	Jan 11	n/a	Historical overview of urban water systems
2	Bob	Jan 18	Feb 1	Water use and conservation
3	Neil	Feb 1	Feb 22	The removal of urban solid waste from stormwater drainage
4	Bob	Feb 22	March 15	Stormwater controls and water quality modeling (WinSLAMM)
5	Shirley	March 15	April 12	Urban water risk assessment
6	Liz	April 12	May 3	Stormwater planning at the local and regional scales

First class meeting: Jan. 11

MLK day holiday: Jan 16 (a Monday)

UA Spring break: March 17 to March 24

Last class meeting: May 3

Class final: May 10

There will periodically be Wednesdays when we will not have class meetings due to travel or holidays. So far, I am scheduled to be out of town on:

- February 1 (EPA Science Advisory Board committee meeting on homeland security, Wash DC)
- February 22 (Stormwater Modeling Conference, Toronto)
- March 22 (UA Spring break)

I will correspond by the class listserv to let you know of other days when class will be cancelled. There is no in-class final scheduled for this class. However, all material (including all reviews and responses) must be posted on the student web page by the official final date of May 10, 2005.

It is likely that Auckland and Cape Town students will not start the course until Feb 1, due to their later starting date for the academic term. Therefore, they may not be participating on the 1st and 2nd modules. It is expected that they will do the "0" module (setting up their web page) by February 8 and prepare the modules 3 through 6. Since their

terms extend beyond the ending dates for the North American students, it may be suitable for them to prepare the 1st and 2nd modules in May and June.

The assignments are to be posted on the student's web sites 3 weeks after the module posting date listed above. The reviews are to be posted one-half week after that (by Saturday morning), and the responses to the review one-half week later (by Wednesday evening). All posted material (either project assignments or review comments and responses) must be supported by adequate and complete references.

Students are strongly encouraged to read all the module materials and to do additional reference work to obtain further related information for the modules (expected of graduate students and encouraged for undergraduate students). It will also be beneficial to review the web pages of all other students, even if not preparing the comments for a specific student.

Each module has:

- About 50 to 150 pages of assigned reading - this will be posted on the Internet on the course web page, or directed to materials posted elsewhere.
- An assignment to be posted on the Internet by the student, such as
 - (1) a short review paper, or
 - (2) download a program and sample input data file, run sensitivity on it and report on the results, or
 - (3) a specific calculation.
- Note that students also critic the other students' work and post their critics on the Internet.
- Each instructor will grade their own students' work, but will evaluate all students for their authored module.

Course specifics:

- All students will do assignments and their assignments must be posted on the Internet - every student has their own WebPage and all students read other students' submissions.
- Students are encouraged and expected to work together across the continents.
- All students and instructors must subscribe to the course listserver. Email me your email address(es) where you wish to receive course communications. I will then "invite" you to join the IntUrbanWater@yahoo.com group. You will have to accept the invitation on the email you receive from Yahoo. It is strongly recommended that you edit your preferences with Yahoo to minimize spam, etc.

Design Activities: Examine stormwater design guidelines and procedures. Compare special issues affecting our area with conditions elsewhere. Develop suitable design guidelines.

Computer Activities: Since this class is an Internet-based class, all of the course material will be delivered via computer and assignments will be posted on the Internet. In addition, the modeling activities rely heavily on computer applications.

Laboratory Activities: None.

Demonstration of Written Communication Skills: All module assignments are by written project reports that will be posted to the students' individual WebPage.

Demonstration of Oral Communication Skills: Oral presentations and discussions are to be given by the students during the weekly meetings.

Understanding of Ethical, Social, Economic, and Safety Considerations: Safety issues and environmental protection are fundamental in stormwater management. Various class module assignments will stress ethical issues, especially across international boundaries.