CE 491/591 STORMWATER MANAGEMENT
5:00 to 6:30 PM Tu and Th
Fall 2007 room 347 H.M. Comer

Instructor: Robert Pitt, P.E., Ph.D., DEE, Cudworth Professor of Urban Water Systems
Office: B.H. Comer 347b
Office Hours: Tu and Th after class (or most any time when I am in the office, except right before class)
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Catalog Data:
Quality and quantity of urban stormwater. Receiving water problems and sources of pollutants. Runoff quality and quantity characteristics. Selection and design of controls; regulations.

Prerequisites:
Water Resources Engineering (CE 378) and Hydrology (CE 475), or permission of instructor

Required Texts:
Course handouts, Internet sources, and public domain computer programs and associated documentation, available from the Internet. Much of the course material will be available on the course web page.

Course Objectives:
At the successful completion of this course, the student will understand new regulations pertaining to stormwater and review receiving water impacts due to stormwater discharges, sources of pollutants, and how this information will enable effective control options to be identified, integrate drainage design for both quality and quantity issues for a wide range of storm conditions, costs of stormwater controls, and apply decision analyses to select the most efficient stormwater management solutions.

Course Topics
1. Stormwater regulations and TMDL requirements
2. Stormwater problems and receiving water beneficial use impairments
3. Stormwater characteristics and pollutant sources
4. Stormwater controls
5. Use of stormwater models to evaluate local problems and to develop cost-effective solutions

Course Website
http://unix.eng.ua.edu/~rpitt/ then select “classes and workshops” and stormwater management:
http://unix.eng.ua.edu/~rpitt/Class/StormWaterManagement/MainSWM.html

Required Texts and References
Assorted readings; course material available from the Internet and from CD ROM disk. Stormwater Effects Handbook for some readings at:

Suggested Texts and References
Will be listed during course. Many are located at:
http://unix.eng.ua.edu/~rpitt/Publications/Publications.shtml
Grading

Major Course Assignments: The class assignments will consist of two parts;
1) About 25% of course grade: Select and review a local TMDL report addressing urban stormwater components. Prepare a summary of the problems identified, the methods used to predict the sources of the problem pollutants, and the control strategy needed to meet the receiving water objectives. You will also present a short PowerPoint presentation on your findings.
2) About 75% of course grade: You will be assigned a development project for which you will prepare a comprehensive stormwater management plan. An analysis of pollutant and flow sources, considering site conditions, will precede the analysis of alternative stormwater control options. A decision analysis approach will be used to select the most appropriate stormwater management plan considering levels of pollutant and flow control and costs, amongst other appropriate attributes. A final PowerPoint presentation will also be made during the scheduled final period. We will be working on a class project to design a stormwater management system for the downtown area of the City of Tuscaloosa. The project will be related to this plan.

Attendance Policy
Students are expected to attend all lectures. In an absence is unavoidable, the student should contact the instructor before the class meets. Excessive unexcused absences may result in grade reductions.

Homework Policy
Late submittals of assigned material will be subject to a reduction in grade.

Exam/Quiz Policy
There will be no in-class exams or quizzes. The course grade will be comprised of project submittals.

Policy on Missed or Late Coursework
There will be trips to regional project sites. These will be scheduled to minimize scheduling conflicts. Students unable to attend these trips will inform the instructor and alternatives will be agreed upon.

Other Course Policies
None

Course Portfolio Material
The CE program requires a portfolio to be assembled by each undergraduate student for graduation. This portfolio will be made up of examples of assignments from different classes and will verify that the degree outcomes have been met. A class portfolio will need to be assembled by each undergraduate showing examples of class work that meets the outcome objectives (see below).

Academic Misconduct
Any act of dishonesty in any work constitutes academic misconduct. The Academic Misconduct Disciplinary Policy will be followed in the event of academic misconduct and will be handled by the Dean’s office.

Accommodations
Reasonable accommodations are made on an individualized basis. It is the responsibility of persons with disabilities, however, to seek available assistance and make their needs known. The University has designated the Office of Disability Services as the campus coordinating office for the provision and delivery of services and reasonable accommodations that ensure the University's programs, services, and activities are accessible to students with disabilities. The Office of Disability Services is available to assist any student who has a qualified and documented disability. Please contact the Office of Disability Services at 348-4285 for additional information.

Schedule/Topic Outline
Main Class Topics:
1. Stormwater regulations
2. Stormwater problems and receiving water beneficial use impairments
3. Stormwater characteristics and pollutant sources
4. Stormwater controls
5. Use of stormwater models to evaluate local problems and to develop cost-effective solutions

Midterm Exam Date(s)
There is no scheduled midterm for this class.
**Final Exam Date:** Final: Monday, December 10, 2007, 7 to 9:30 PM (Power Point presentation and final report due)

**Other Important Dates:**
- First day of class: August 23, 2007
- Last class period: December 6, 2007
- Thanksgiving holiday (no class): November 22, 2007

**Other Course Information**
Enter any other information students may need to be successful in the course.

### Relation of course to program outcomes:

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<tr>
<th>Outcome</th>
<th>Description</th>
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| **Outcome T1:**  
(Level 3) | The class assignments utilize mathematical and scientific skills and tools. (level 3)                                                      |
| **Outcome T3:**  
(Level 3) | This class applies modern tools and skills in the emerging area of stormwater management. (level 3)                                         |
| **Outcome T4:**  
(Level 5) | Stormwater management is a multidisciplinary field and considers many aspects of society’s needs, along with technical conflicts. The design of stormwater management systems during this class illustrates these attributes. (level 5) |
| **Outcome T7:**  
(Level 1) | The emerging field of stormwater management has many key elements that will be defined during this class. (level 1)                             |
| **Outcome P1:**  
(Level 4) | Many conflicting professional and ethical issues need to be addressed in stormwater evaluations. (level 4)                                    |
| **Outcome P2:**  
(Level 4) | The final student project design is submitted as a written report, along with a PowerPoint presentation. (level 4).                         |
| **Outcome P4:**  
(Level 3) | The changing nature of stormwater management is illustrated through daily news. These contemporary issues are identified and considered in the formulation of engineering solutions. (level 2) |