Syllabus for EVE 605.001
Water Quality I
Fall Semester 2009

W
6 to 9 pm
Room SEB 144

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Textbooks and Supplies:


Web site: http://egrweb.mercer.edu/eve605/default.htm

Catalog Description: A study of the theory, analysis and design of wastewater treatment facilities for the reduction and elimination of organic and inorganic contaminants.

Course Objectives: (Learning Objectives) Upon successful completion of this course, you should be able to do the following:

1. Students will be able to list and discuss the physical, chemical, and biological parameters used for assessing water quality and used in the design and operation of wastewater treatment facilities.
2. Students will be able to analyze, select, and design conventional unit operations and processes used in treating wastewater to a specified level.
3. Students will be able to analyze, select, and design advanced unit operations and processes used in treating wastewater to a specified level.
4. Students will demonstrate their ability to communicate a technical subject by preparing a technical paper on some contemporary global issue on wastewater treatment.

Prerequisites: (and/or corequisites) graduate student admission.

Course Content:
Course Standards:

1. **Assignments are due at the beginning of the class period on the date due.** Students missing classes are responsible for material covered in the lectures and for any announced changes to the schedule. Students missing examinations will receive a ‘zero’ grade except under very special circumstances (hospitalization, member of armed forces involved in mobilization, etc). Athletes who miss class due to scheduled events in which they are officially participating are expected to make arrangements in advance of their absence. **Students must turn assignments in on the due date. If you know in advance that you are going to miss class, then have a classmate turn in your assignment or drop it off at the instructor’s office yourself. Assignments turned in late will receive a grade of ‘zero’**.

2. **Attendance is required** due to the large amount of material covered in-class. Attendance means more than just showing up for class; you must come to class prepared and be engaged.

3. **Homework:** Homework problems are listed on the course outline. Students will be required to work the problems and submit at the beginning of each class. **Late assignments will receive a grade of zero.** All assignments shall be presented in a professional manner on engineering paper. Name, course number and section, and date shall be listed at the top of each page. Each problem should contain a problem statement: what is given and what is to be found, followed by a logical stepwise solution. Work shall be presented on the front side of the paper and not on the back. Figures or diagrams should accompany the solution if necessary; and note all assumptions made. Answers should be “boxed-in” and reported to 3 significant figures. You cannot “make up” experiential learning and to perform well in the course, it is essential that you complete work homework problems. For those whose handwriting is not good; I suggest that you consider printing out your results using the Equation Editor in Word.
4. **Technical Paper:** Each student is required to write a technical paper. It should focus on some contemporary, global issue related directly to wastewater treatment. The paper should be on the order of 5 to 10 double-spaced pages, not including the references. A minimum of seven quality journals should be referenced to qualify for a grade of 70; eight to qualify for 80; and nine to qualify for 90. Quality journals include: Water Research, Research Journal WEF, Journal of Environmental Engineering, Journal of Environmental Science and Health, Journal Soil, Water, and Pollution Control. The technical papers must have a **Title Page, Introduction, Literature Review or Background, Body (results and discussion), Summary and Conclusions, and References.** Misspellings and typos will result in a one-point deduction per occurrence. Poor grammar, sentence structure, and lack of continuity will result in lower grades. Students will be required to turn in a draft of their paper that has been reviewed and marked up by another student in the class or by a friend when the final paper is submitted on December 2, 2009. A copy of the first page of each article must be copies and attached in the appendix of the technical paper.

5. **Exams:** The mid-term and final exams will be **CLOSED BOOK and OPEN NOTES.** The format may be a combination of multiple choice, discussion, problems, acronyms, and definition of terms. Carefully review your course notes and handouts when studying for exams. 85 to 90% of the exam questions will be based on material presented during lectures. 10 to 15% of the exam questions will require you to synthesize and apply information presented in class and in the text. The mid-term and final exams are the major means of assessing student performance in the course. The **Final Exam is comprehensive, but primarily will focus on material from after the mid-term.**

6. **Class preparation:**
   a) Prior to each class attendance, read and study materials in *Wastewater Engineering: Treatment and Reuse,* by Metcalf and Eddy.
   b) Complete homework assignments and read any articles or materials handed out.

7. **Grading** encompasses every aspect of the course, from participation through final products. You can assume that every task requested directly or indirectly factors into your grade. Regular feedback will be given on documents handed in. The final grade will be determined as follows: homework (20%), technical paper (20%), mid-term (30%), and final exam (30%). Your final grade will be calculated by dividing the total number of points earned by the total points possible. The following weighted average numerical grade will determine each student’s final letter grade: A = ≥ 90; B+ = ≥ 85 but < 90; B = ≥ 80 but < 85; C+ = ≥ 75 but < 80; C = ≥ 70 but < 75; D = 60 but < 70; and F = < 60. Your final grade will depend on your interest and organization. Attend class and ask questions. If you don’t understand something, ask about it before it’s too late.

8. You are encouraged to schedule a **conference** at any point that you need it. If you need to see me, catch me after class to schedule a time or e-mail to get on my calendar.

9. Out of courtesy for all those participating in the learning experience, all cell phones and pagers must be turned off before entering any class, lab, or formal academic or performance event.

10. The **honor code** provisions as outlined in the *Bulletin* and in the student handbook, *The Lair,* will be assumed for everyone. It should be clear from class discussion, which projects will be collaborative and which ones must be individual. When in doubt, please ask to avoid potentially embarrassing situations. Plagiarism is a violation of the honor code and is prohibited. All exams will be **closed book and open note.** You will not be allowed to consult any references.
11. This syllabus is subject to change.

Electronic Communication:
Electronic communication is an important adjunct to face-to-face communication, including from professor to students, students to professor, and students to students. You must have regular access to your e-mail. If you do not have an active e-mail address on the first day of class, please secure one. Access to the Web and to the Internet is also integral to the class work. A number of laboratories on campus will provide access, in addition to EGC 102, EGC 216-A, and EGC 216-B.

File-naming conventions will be prescribed in order to avoid needless confusion about electronically submitted documents. Set your e-mail so as to assure that you get a time-and-date confirmation of any assignments submitted electronically. You are responsible for using the correct mailing address to me.

Important Additional Information:
“Students with a documented disability should inform the instructor at the close of the first class meeting or as soon as possible. If you are not registered with Disability Services, the instructor will refer you to the Student Support Services office for consultation regarding documentation of your disability and eligibility for accommodation under the ADA/504. In order to receive accommodations, eligible students must provide each instructor with a “Faculty Accommodation Form” from Disability Services. Students must return the completed and signed form to the Disability Services Coordinator on the 3rd floor of the Connell Student Center. Students with a documented disability who do not wish to use academic accommodations are strongly encouraged to register with Disability Services and complete a Faculty Accommodation Form each semester, also. For further information, please contact Carole Burrowbridge, Disability Services Coordinator, at 301-2778 or visit the website at http://www.mercer.edu/stu_support/swd.htm.”

From the ASCE Code of Ethics

Engineers uphold and advance the integrity, honor, and dignity of the engineering profession by:
1. Using their knowledge and skill for the enhancement of human welfare and the environment;
2. Being honest and impartial and serving with fidelity the public, their employers and clients;
3. Striving to increase the competence and prestige of the engineering profession; and;
4. Supporting the professional and technical societies of their disciplines.

CANON 1. Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.