Syllabus

BEE 458/558, NonPoint Source Pollution Management and Control, Spring 2014

Instructor: Dr. Desiree Tullos  
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Lectures: 10:00-11:20 Tuesday, Thursday

Office Hours: Wednesdays, 3-5pm; 233 Gilmore Hall

Course Description: This course is designed to (1) introduce and demonstrate methods for evaluating the extent, rate, timing, and fate of nonpoint source (NPS) pollutants in agricultural, rural residential, forested, and urban environments; and (2) require students to apply methods and design principles for evaluating and designing NPS control systems with incomplete information. The application, data, design criteria, and maintenance of common treatment practices (e.g., treatment wetlands, bioretention, green roofs, permeable pavement) will be discussed. Students will complete weekly homework and discussion assignments aimed at critical thinking about basic principles and processes in NPSP. Individual design projects will also be required of all students. The target audience is both OSU students and the broader community (e.g., engineers and practitioners, regulators, watershed council coordinators).

Course Credits (3 Credits): This course will meet three hours per week as lecture.

Prerequisites: This course is open to graduate students and undergraduate juniors and seniors who have completed an introductory hydrology course (e.g., BEE 512, CE 412).

Learning Resources: No textbook is required but students will be required to access materials that are made available via Blackboard.

Instructional objectives and student learning outcomes of the course. In accordance with ABET’s a-k learning outcomes, students completing this course will possess:

Measurable Student Learning Outcomes
Student learning will be assessed using the following outcomes for the undergraduate and graduate sections:

- Demonstrate basic knowledge of terms and concepts
- Differentiate assessment methods for appropriateness
- Apply general engineering principles to new problems and situations
- Construct, manipulate, and interpret graphs of time series and spatial data
- Communicate problem, including design criteria and assumptions, and solutions effectively in writing
ABET Learning Outcomes
In accordance with the Accreditation Board for Engineering and Technology (ABET) A-K learning outcomes, students completing this course will possess and be evaluated on their:

1. Ability to identify, formulate, solve engineering problems (homework assignments, midterm exam, term project)
2. Ability to communicate effectively (homework assignments, online discussions, and term project)
3. Knowledge of contemporary issues (homework assignments, online discussions, term project)

Assignments relevant to these three outcomes will be kept and shared with ABET evaluators. Further, students will be given self-assessment surveys on the final day of the course to evaluate the success of the class in advancing key skills in this field.

Evaluation of Student Performance
Student learning will be evaluated through a total of 5 homework assignments, participation in online discussions, a midterm exam, and a term-long individual design project. Students enrolled in BEE 558 will have a more extensive set of term project deliverables than students enrolled in BEE 458.

Grades and overall evaluation of student performance will be based on course activities in the following proportions:

**BEE 458 and 548**
Weekly homework assignments (x 7) – 35%
Reading Quizzes and Bb posts – 10%
Mid-term exam - 25%
Final design project - 30%

**Due dates and times:** 10% (one letter grade) will be deducted for every day an assignment is submitted late. Assignments will not be accepted after the solution has been posted or discussed.

University and Departmental Policies.
**Students with Disabilities:** "Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know, or who need special arrangements in the event of evacuation, should make an appointment with the instructor as early as possible, no later that the first week of the term. In order to arrange alternative testing, the student should make the request at least one week in advance of the test. Students seeking accommodations should be registered with the Office of Services for Students with Disabilities."

**Rules on Civility and Honesty:** The Biological and Ecological Engineering Department follows the university rules on civility and honesty. These can be found at: www.osu.orst.edu/instruct/cssa556/CIVHON556.

Cheating or plagiarism by students is subject to the disciplinary process outlined in the Student Conduct Regulations. Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:
* cheating- use or attempted use of unauthorized materials, information or study aids
* fabrication- falsification or invention of any information
* assisting- helping another commit an act of academic dishonesty
* tampering- altering or interfering with evaluation instruments and documents
* plagiarism- representing the words or ideas of another person as one's own

Behaviors disruptive to the learning environment will not be tolerated and will be referred to the Office of Student Conduct for disciplinary action.

“The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. Our rules are formulated to guarantee each student's freedom to learn and to protect the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office.”