Instructor: Dr. Puneet Srivastava  
Rm 206 Corley Building  
Phone: 844-7426  
E-mail: srivapu@auburn.edu

1. Credit Hours: 3 lecture hours/week for 15 weeks.

Prerequisite: BSEN 3220, BSEN 3310

Corequisite: None

2. Text/Major Resources

3. Course Description:
The course introduces students to ecological engineering. It covers topics such as non-point source (NPS) transport of nutrients, sediment, pesticides, pathogens, and a multitude of other chemicals from agricultural, forestry, and urban activities. Major emphasis is placed on basic concepts of pollutant transport through soils and with overland flow. In addition, the course will focus on evaluation, management, and prevention of non-point pollution of surface and groundwater. Topics include laws, regulation, and policies affecting abatement of NPS pollution; hydrologic considerations; atmospheric deposition; erosion and sedimentation; pollutant interactions with soils and sediments; groundwater and baseflow considerations; agricultural, forestry, and urban NPS pollution; modeling and monitoring of NPS pollution; control of NPS pollution (BMPs and wetlands); and impact of NPS pollution on receiving waters.

4. Course Objectives:
The specific objectives of the course are to:
(1) understand sources and nature of NPS pollution originating from agricultural, forestry, and urban activities;
(2) estimate NPS pollution from a watershed using currently available methods and models;
(3) understand how NPS pollution affects physical, chemical and biological integrity of aquatic ecosystems and water usage; and
(4) design best management practices to prevent NPS pollution.

5. Course Content and Schedule:

<table>
<thead>
<tr>
<th>Week No.</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Ecological Engineering</td>
</tr>
<tr>
<td>1-2</td>
<td>Laws, regulations, and Policies Affecting Water-Pollution</td>
</tr>
<tr>
<td>2-3</td>
<td>Basic Concept of Diffuse Pollution</td>
</tr>
<tr>
<td>4-6</td>
<td>Hydrologic Considerations</td>
</tr>
<tr>
<td>7</td>
<td>Mid-Term Exam</td>
</tr>
<tr>
<td>7-8</td>
<td>Soil Pollution and Its Mitigation</td>
</tr>
<tr>
<td>9</td>
<td>Groundwater and Baseflow Contamination</td>
</tr>
</tbody>
</table>
6. Course Requirements/Evaluation/Grade Assignment

The grade for the course will be determined from the two in-class mid-term exams, homework sets, and the final exam. The final exam will not be comprehensive. These exams, or portions of them, may or may not be open book - open notes. There will be a minimum of 8 homework sets. The course grade will be determined as follows:

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Mid-term Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Second Mid-term Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Homeworks</td>
<td>40%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Grade Assignment

A = 90 - 100 %
B = 80 - 89.9 %
C = 70 - 79.9 %
D = 60 - 69.9 %
F = below 60 %

7. Course Policy Statements:

a. Attendance. Attendance is optional.

b. Deadlines. Homeworks are due when specified. A 10% homework grade reduction per university day will be assessed. Homework will not be accepted after graded homeworks are returned.

c. Homework Format. All homework must be performed on engineering paper or computer printout.

Whether class and/or labs are attended does not relieve the student of responsibility. All covered material including tests, handouts, lecture material, and homework are due when stated regardless of whether the student is present or not.

Excused Absences: Students are granted excused absences from class for the following reasons: Illness of the student or serious illness of a member of the student’s immediate family, the death of a member of the student’s immediate family, trips for student organizations sponsored by an academic unit, trips for University classes, trips for participation in intercollegiate athletic events, subpoena for a court appearance, and religious holidays. Students who wish to have an excused absence from this class for any other reason must contact the instructor in advance of the absence to request permission. The instructor will weigh the merits of the request and render a decision.

When feasible, the student must notify the instructor prior to the occurrence of any excused absences, but in no case shall such notification occur more than one week after the absence. Appropriate documentation for all excused absences is required.
Make-Up Policy: Arrangement to make up missed major examination (e.g. hour exams, mid-term exams) due to properly authorized excused absences must be initiated by the student within one week from the end of the period of the excused absences. Except in unusual circumstances, such as continued absence of the student or the advent of University holidays, a make-up exam will take place within two weeks from the time that the student initiates arrangements for it. Except in extraordinary circumstances, no make-up exams will be arranged during the last three days before the final exam period begins. The format of the make-up exam will be the same as the examination that was missed.

Cellular telephones: Use of communication devices (e.g. cell phones, cameras, PDAs, beepers, pagers, iPods, Zunes, etc.) are prohibited during class periods and exams. This includes texting during class. If prohibited electronic devices are seen in use during a quiz or exam, they may be confiscated and the student may face disciplinary action through the academic honesty policy.

8. Academic Honesty Statement:

Academic Honesty Policy: All portions of the Auburn University student academic honesty code (Title XII) found in the Tiger Cub will apply to this class. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee.

9. Students with Disabilities Statement:

Disability Accommodations: Students who need special accommodations in class, as provided for by the American Disabilities Act, should arrange a confidential meeting with the instructor during office hours the first week of classes - or as soon as possible if accommodations are needed immediately. You must bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have these forms but need accommodations, make an appointment with The Program for Students with Disabilities, 1244 Halley Center, 844.2096 (V/TT) or email: scw0005@auburn.edu