Proposal Form For Addition And Revision Of Courses

1. Proposing College / School: Agriculture, Engineering
   Department: Biosystems Engineering

2. Course Prefix and Number: BSEN 5510
3. Effective Term: Fall 2012

4. Course Title: Ecological Engineering
   Abbreviated Title (30 characters or less): Ecological Engineering

5. Requested Action:
   ○ Renumber a Course
   ○ Add a Course
   ○ Revise a Course
   Current Course Number: BSEN 5510
   Proposed Course Number: BSEN 4510
   Type of Revision:

6. Course Credit:
   Contact/Group Hours
   Scheduled Type (e.g.: Lab, Lecture, Practicum, Directed Study)
   Weekly or Per Term?
   Credit Hours
   Anticipated Enrollment
   Maximum Hours (Repeatability):
   3
   Lecture
   Weekly
   3
   40
   Total Credit Hours: 3

7. Grading Type:
   ○ Regular (ABCDF)
   ○ Satisfactory/Unsatisfactory (S/U)
   ○ Audit

8. Prerequisites/Corequisites:
   Use “P:” to indicate a prerequisite, “C:” to indicate a corequisite, and “P/C:” to indicate a prerequisite with concurrency.
   P: BSEN 3230 or departmental approval

9. Restrictions: List specific restriction in space above.
   ☐ College  ☐ Major  ☑ Standing  ☐ Degree

10. Course Description:
    (20 Words or Less; exactly as it should appear in the Bulletin)
    Ecological engineering non-point source transport of nutrients, sediment, pesticides, pathogens, & chemicals from from agricultural, forestry, and urban activities.

11. May Count Either:
    Program Type or Program Title
    (e.g.: minor, major, etc.) (e.g.: MS in Chemistry, Performance Option, Minor in Art)
    Requirement or Elective?
    (required or optional?)

12. Affected Program(s):
    (Respond “N/A” if not included in any program; attach memorandum if more space is required)
    Major
    BS Biosystems Engineering

13. Overlapping or Duplication of Other Units’ Offerings:
    (If course is included in any other degree program, is used as an elective frequently by other unit(s), or is in an area similar to that covered by another college/school, attach correspondence with relevant unit)
   ○ Applicable
   ○ Not Applicable
14. Justification:

Course is already being taught. Change is for the Accelerated Masters Program

(Include a concise, yet adequate rationale for the addition/revision of the course, citing accreditation, assessments (faculty, graduate, and/or external) where applicable)

15. Resources:

No additional resources are required.

(Indicate whether existing resources such as library materials, classroom/laboratory space, and faculty appointments are adequate to support the proposed addition/revision; if additional resources are required, indicate how such needs will be met, referencing the appropriate level of authorization -- i.e.: Dean -- where necessary; if no additional resources or shifting of resources will be necessary, respond “Not Applicable”)

16. Student Learning Outcomes:

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<tr>
<td>1. To understand sources and nature of NPS pollution originating from agricultural, forestry, and urban activities;</td>
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<tr>
<td>2. To estimate NPS pollution from a watershed using currently available methods and models;</td>
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<td>3. To understand how NPS pollution affects physical, chemical and biological integrity of aquatic ecosystems and water usage; and</td>
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<tr>
<td>4. To design best management practices to prevent NPS pollution.</td>
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(State in measurable terms (reflective of course level) what students should be able to do when they have completed this course)

17. Course Content Outline:

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<table>
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<tbody>
<tr>
<td>Instructor: Dr. Puneet Srivastava</td>
<td>Rm 206 Corley Building</td>
</tr>
<tr>
<td>Phone: 844-7426</td>
<td>E-mail: <a href="mailto:srivap@auburn.edu">srivap@auburn.edu</a></td>
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<tr>
<td>1. Credit Hours: 3 lecture hours/week for 15 weeks.</td>
<td>Prerequisite: BSEN 3230 or departmental approval</td>
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<td>Corequisite: None</td>
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<td>2. Text/Major Resources</td>
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<td>3. Course Description:</td>
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<td>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.</td>
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<td>4. Course Objectives:</td>
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<td>The specific objectives of the course are to:</td>
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<td>(1) understand sources and nature of NPS pollution originating from agricultural, forestry, and urban activities;</td>
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<td>(4) design best management practices to prevent NPS pollution.</td>
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<td>5. Course Content and Schedule:</td>
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<tr>
<td>Week 1: Introduction to Ecological Engineering</td>
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<td>Week 1-2: Laws, regulations, and Policies Affecting Water-Pollution</td>
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Week 2-3: Basic Concept of Diffuse Pollution
Week 4-6: Hydrologic Considerations
Week 7: Mid-Term Exam
Week 7-8: Soil Pollution and Its Mitigation
Week 9: Groundwater and Baseflow Contamination
Week 10: Urban and Highway Diffuse Pollution and Control
Week 11: Abatement of Agricultural Diffuse Pollution
Week 12: Integrated Watershed Management
Week 13-14: Waterbody Assessment
Week 15: Estimating Loads and Loading Capacity by Models

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 6 homework sets.
   The course grade will be determined as follows:
   First Mid-term Exam  20%
   Second Mid-term Exam  20%
   Final Exam  20%
   Homeworks  40%
   TOTAL  100%

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

Class Policy Statements:
(a) Class Attendance: It is critical that you attend class regularly to be
   successful in the course. Class attendance and participation will be taken
   into consideration in case of a borderline final grade. If you miss a class, it
   is the student's responsibility to become informed of any material presented
   or assignments announced during an absence.
(b) Electronic devices: Only calculators approved by the National Council of
   Examiners for Engineering and Surveying (NCEES) are permitted for use
   on exams, quizzes, etc. The following are currently the only calculators
   permitted: (1) Hewlett Packard – HP 33S, (2) Casio – FX 115MS or FX
   115MSPlus (may have SR designation), (3) Texas Instruments – TI 30X
   IIS, and (4) Texas Instruments – TI 36X SOLAR. Students may check with
   the instructor to see if any other calculator may be permitted. Use of other
   electronic devices with communication capabilities are also prohibited
   during exam or quiz periods (e.g. computers, cell phones, cameras, PDAs,
   beepers, pagers, iPods, Zunes, cameras, etc.) If these types of electronic
   devices are seen in use during the quiz or exam, they may be confiscated
   and the student may face disciplinary action through the academic honesty
   policy.
(c) Cell phones: To provide the optimal learning environment for all
   students, all cellular phones must be turned OFF or otherwise inactivated
   during class, lab, quiz, and exam periods. Text messaging or emailing
   during class is prohibited.
(d) Disputes over grades: All grade objections are to be submitted to the
   instructor in writing no later than one week after an assignment is returned
   to the class. Otherwise, grade objections will not be entertained. Grade
   objections should be very specific; i.e., objections that simply ask that a
   problem be re-graded without providing detailed explanation will not be
   considered. The original exam or assignment that corresponds with the
   objection must be submitted along with the written objection. All reviewed
   objections are final, and multiple objections for the same assignment by the
   same student are prohibited.
Auburn University Diversity Statement
Diversity at Auburn University encompasses the whole of human experience and includes such human qualities as race, gender, ethnicity, physical ability, nationality, age, religion, sexual orientation, economic status, and veteran status. These and other socially and historically important attributes reflect the complexity of our increasingly diverse student body, local community, and national population. Diversity is a core value at Auburn University. The Office for Diversity and Multicultural Affairs strives to offer a comprehensive range of exemplary educational programs that foster and sustain an environment that promotes academic excellence, respects differences, and accepts inclusiveness. Auburn University recognizes and values the considerable educational benefits emanating from diversity as we prepare our students for life and leadership in a multicultural world. Students who interact with and learn about people from a variety of backgrounds are more apt to understand, appreciate, and excel in the community they inhabit. In this context, diversity is aligned with Auburn University's land grant mission of providing its students with a superior education in service to the needs of Alabama, the nation, and the world. More information can be found at www.auburn.edu/diversity/

Academic Honesty Statement:
Academic Honesty Policy: The Auburn University student academic honesty code can be found at https://sites.auburn.edu/admin/universitypolicies/Policies/AcademicHonestyCode.pdf. All academic honesty violations or alleged violations of code will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee.

Students with Disabilities Statement:
Disability Accommodations: Students who need special accommodations in class, as provided for by the Americans with 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 or follow the steps on the website for the office to request for accommodation (https://www.auburn.edu/disability/students/requestaccommodations.asp)

(Provide a comprehensive, week-by-week breakdown of course content, including assignment due dates)

18. Assignments / Projects:
First Mid-term Exam  20%
Second Mid-term Exam  20%
Final Exam  20%
Homeworks  40%
TOTAL  100%

(List all quizzes, projects, reports, activities and other components of the course grade -- including a brief description of each assignment that clarifies its contribution to the course's learning objectives)

19. Rubric and Grading Scale:
Grades will be assigned as follows (T= % of total points):
T ≥ 90% A
89% ≥ T ≥ 80% B
79% ≥ T ≥ 70% C
69% ≥ T ≥ 60% D
T ≤ 59% F

(List all components of the course grade -- including attendance and/or participation if relevant -- with point totals for each; indicate point totals and ranges or percentages for grading scale; for S/U grading, detail performance expectations for a passing grade)

20. Justification for Graduate Credit: N/A
(Include a brief statement explaining how the course meets graduate educational standards (i.e.: rigorous standards for evaluation, development of critical thinking and analytical skills, etc.))

(Included below are standard statements regarding course policies. If necessary, a statement may be altered to reflect the academic policies of individual faculty members and/or the academic unit or department, provided that there is no conflict with the Tiger Cub, Faculty Handbook, or any existing university policy.)

POLICY STATEMENTS

Attendance: Although attendance is not required, students are expected to attend all classes, and will be held responsible for any content covered in the event of an absence.

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 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. Please see the Tiger Cub for more information on excused absences.

Make-Up Policy: Arrangement to make up a 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 of the end of the period of the excused absence(s). Except in unusual circumstances, such as the continued absence of the student or the advent of university holidays, a make-up exam will take place within two weeks of the date 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 first exam period begins.

Academic Honesty Policy: All portions of the Auburn University student academic honesty code (Title XII) found in the Tiger Cub will apply to university courses. 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.

Disability Accommodations: Students who need special accommodations in class, as provided for by the Americans With Disabilities Act, should arrange for a confidential meeting with the instructor during office hours in the first week of classes (or as soon as possible if accommodations are needed immediately). The student must bring a copy of their Accommodation Letter and an Instructor Verification Form to the meeting. If the student does not have these forms, they should make an appointment with the Program for Students with Disabilities, 129B Haley Center, 844-2086 (V/TT).