Office of the Registrar
FORM 40 REV. 5/11

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF AN UNDERGRADUATE COURSE
(10000-40000 LEVEL)

DEPARTMENT: Agricultural and Biological Engineering
EFFECTIVE SESSION: ~~Spring 2013~~ (201420)

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

- [x] 1. New course with supporting documents
- [ ] 2. Add existing course offered at another campus
- [ ] 3. Expiration of a course
- [ ] 4. Change in course number
- [ ] 5. Change in course title
- [ ] 6. Change in course credit/type
- [ ] 7. Change in course attributes (department head signature only)
- [ ] 8. Change in instructional hours
- [ ] 9. Change in course description
- [ ] 10. Change in course requisites
- [ ] 11. Change in semesters offered (department head signature only)
- [ ] 12. Transfer from one department to another

PROPOSED:		EXISTING:	
Subject Abbreviation	ABE	Subject Abbreviation	
Course Number	48600	Course Number	
Long Title	Agricultural Engineering Design		
Short Title	Agricultural Engr Design		

Abbreviated title will be entered by the Office of the Registrar if omitted (30 CHARACTERS ONLY)

TERMS OFFERED
Check All That Apply:
[ ] Summer [ ] Fall [x] Spring

CAMPUS(ES) INVOLVED
[ ] Calumet [ ] N. Central
[ ] Cont Ed [ ] Tech Statewide
[ ] Ft. Wayne [x] W. Lafayette
[ ] Indianapolis

CREDIT TYPE
1. Fixed Credit: Cr. Hrs. 3
2. Variable Credit Range:
Minimum Cr. Hrs
(Check One) To [ ] Or [ ]
Maximum Cr. Hrs
3. Equivalent Credit: Yes [ ] No [ ]

COURSE ATTRIBUTES: Check All That Apply
1. Pass/Not Pass Only [ ]
2. Satisfactory/Unsatisfactory Only [ ]
3. Repeatable [ ]
Maximum Repeatable Credit: [ ]
4. Credit by Examination [ ]
5. Fees [ ] Coop [ ] Lab [ ] Rate Request
Include comment to explain fee
6 Registration Approval Type
Department [ ] Instructor [ ]
7 Variable Title [ ]
8 Honors [ ]
9 Full Time Privilege [ ]
10 Off Campus Experience [ ]

Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated
Lecture				
Recitation				
Presentation				
Laboratory	200	1	16	
Lab Prep				
Studio				
Distance				
Clinic				
Experiential				
Research				
Ind. Study	200	1	16	
Pract/Observ				

Cross-Listed Courses

RECEIVED
APR 23 2013
OFFICE OF THE REGISTRAR

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):

Review of topics relevant to project planning and execution in industry, including technical communication, budgeting, team management, intellectual property rights, contracts and timelines. Students will select a Capstone project and assemble a project proposal within a team environment.
Prerequisite: ABE 48400

*COURSE LEARNING OUTCOMES

*Design an environmental and natural resources system or a machine system.
*Write a comprehensive design report and/or project reports for various target audiences.
*Model/prototype and test projects in multidisciplinary teams with consultation available to students from government and industry engineers and marketing personnel.
*Enhance communication skills by presenting project progress and final reports (written and oral) in a formal setting.

Calumet Department Head	Date	Calumet School Dean	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date
Indianapolis Department Head	Date	Indianapolis School Dean	Date
North Central Faculty Senate Chair	Date	Vice Chancellor for Academic Affairs	Date
West Lafayette Department Head: Duncan Ewing	5/13/13	West Lafayette College/School Dean: [signature]	4/19/13
West Lafayette Registrar: [signature]	5/14/13		

RECEIVED
MAY 14 2013
OFFICE OF THE REGISTRAR

OFFICE OF THE REGISTRAR

UD 5/17

TO: The Faculty of the College of Engineering

FROM: The Faculty of Agricultural and Biological Engineering

RE: New Course ABE 48600

The faculty of the Department of Agricultural and Biological Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ABE 48600 Agricultural Engineering Design
Sem. 2, Lab 4 Ind 2. Cr. 3.
Requisites, Restrictions, and Attributes: ABE 48400

Description: Review of topics relevant to project planning and execution in industry, including technical communication, budgeting, team management, intellectual property rights, contracts and timelines. Students will select a Capstone project and assemble a project proposal within a team environment.

Reason: This change will extend the senior design experience to two semesters as suggested by students who completed the Department's Agricultural Engineering Design courses. This course will prepare students to work on their senior design project in the spring semester by exposing them to facets of project management that they do not receive in the curricula. It will also allow them to develop a project plan for the Capstone project they are assigned. The course has been taught as a temporary offering since the fall of 2010. The results have been positive and the faculty would therefore like to officially make the change in approach to the capstone design experience.

Bernard A. Engel, Professor and Head
Agricultural and Biological Engineering Department

COURSE CONTACT INFORMATION:

Name: Dr. Bernard Engel
Phone Number: 494-1162
E-mail Address: engelb@purdue.edu
Campus Address: ABE 219

COURSE SUBJECT ABBREVIATION AND NUMBER: ABE 48600

COURSE TITLE: Agricultural Engineering Design

COURSE CREDITS AND INSTRUCTIONAL TYPE: Sem. 2, Class 2. Arranged 3. Cr. 3.

COURSE DESCRIPTION: Execution of team projects related to contemporary issues in agricultural engineering and communication of project progress and outcomes.

A. Justification

In 2010 the ABE Department decided to extend the senior capstone experience to two semesters. The students began taking a 1 credit class in the fall semester in which they are given basic skills in project management related to their capstone experience and in which they select their project and plan their design. This was followed by a 3 credit spring semester class in which students complete their design. The two course sequence has been taught for the past three years using two ABE 49500 courses (1 credit fall semester and 3 credit spring semester). The responses from both students and faculty have been positive. The 1 credit course, ABE 48400, has been approved. The ABE faculty is now submitting this proposal for the second 3 credit course. The new 1 credit ABE 48400 (Fall) + 3 credit ABE 48600 (Spring) course sequence would replace the 4 credit ABE 48500 Spring semester course in the revised plan of study, which is being submitted as a separate document. The total number of credits in the program is not affected by this change.

Level of Course: 100% anticipated enrollment of upper division students (seniors).

B. Learning Outcomes and Method of Evaluation or Assessment

Learning outcomes:

- Design an environmental and natural resources system or a machine system.
- Write a comprehensive design report and/or project reports for various target audiences.
- Model/prototype and test projects in multidisciplinary teams with consultation available to students from government and industry engineers and marketing personnel.
- Enhance communication skills by presenting project progress and final reports (written and oral) in a formal setting.

- Experience engineering or project management practice with professionalism and ethical responsibility.

Methods of evaluation or assessment:

Grades for this course will be based on the following:

Grading:	**Grading Scale:**
Mid-term progress report: 15 %	A ≥ 90 %
Mid-term progress presentation: 15 %	B 89.9 – 80 %
Poster presentation: 20 %	C 79.9 – 70 %
Final Report: 20 %	D 69.9 – 60 %
Sponsor/technical advisor evaluation: 30 %	F < 60 %

C. Pre-requisite: ABE 48400

D. Course Instructor(s): Dr. Bernard Engel

E. Course Outline of Topics/Syllabus:

1. Introduction
2. Technical Writing
3. Design and Problem Solving Process
4. Quantitative decision making
5. Project scheduling and budgeting
6. Safety procedures when using departmental facilities and laboratories

F. Reading List/Textbook:

The following reference books are used for the course:

Design of Devices and Systems by William H. Middendorf

Fundamentals of Engineering Design by Barry Hyman

Additional material is provided on the course web page:
http://engineering.purdue.edu/~engelb/capstone/

G. Library Resources (none)

H. Example of a Course Syllabus

ABE 486 (Taught as ABE 495 in Spring 2012)
Senior Design - Spring 2012

Instructor:

Dr. Bernie Engel engelb@purdue.edu

219 ABE Office phone: 765-494-1175

Course description:

Execution of team projects related to contemporary issues in agricultural engineering and communication of project progress and outcomes.

Course website: http://engineering.purdue.edu/~engelb/capstone/

Meeting time:

Lab: MW 3:30-5:20 Location: ABE 204 & 205, ABE Shop, ADM 103 & 105

Arrange additional hours to work with your team.

Grading:	**Grading Scale:**
Mid-term progress report: 15 %	A ≥ 90 %
Mid-term progress presentation: 15 %	B 89.9 – 80 %
Poster presentation: 20 %	C 79.9 – 70 %
Final Report: 20 %	D 69.9 – 60 %
Sponsor/technical advisor evaluation: 30 %	F < 60 %

Student learning outcomes:

- Design an environmental and natural resources system or a machine system.
- Write a comprehensive design report and/or project reports for various target audiences.
- Model/prototype and test projects in multidisciplinary teams with consultation available to students from government and industry engineers and marketing personnel.
- Enhance communication skills by presenting project progress and final reports (written and oral) in a formal setting.
- Experience engineering or project management practice with professionalism and ethical responsibility.

Class polices:

Participation in lab sessions is expected unless alternate hours are arranged with instructor and group members. You are expected to meet frequently (typically weekly) with your technical advisor. You are also expected to communicate frequently with your sponsor as well.

A weekly update is to be shared with your advisor and the course instructor. The update should briefly summarize the progress in the prior week, issues/questions to be resolved working with the advisor and/or instructor, and plans for the coming week.

A midterm team presentation (approximately 15 minutes) will be made to a group including alumni with expertise on your team project.

A poster presentation describing your project is required near the end of the semester. The poster will be evaluated by alumni and others with expertise on your project.

An extensive written report documenting your project is required at the end of the semester. The report should be shared with your advisor, sponsor and course instructor.

Tentative Schedule:

Date	Content
2/27/12	Mid-term presentations & progress reports due
4/19/12	Poster presentations & judging
4/27/12	Final report due