

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

ADD 3/10/05

DEPARTMENT ENE EFFECTIVE SESSION Fall 2010

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

- | | |
|---|--|
| <input type="checkbox"/> 1. New course with supporting documents (complete proposal form) | <input checked="" type="checkbox"/> 7. Change in course attributes |
| <input type="checkbox"/> 2. Add existing course offered at another campus | <input type="checkbox"/> 8. Change in instructional hours |
| <input type="checkbox"/> 3. Expiration of a course | <input type="checkbox"/> 9. Change in course description |
| <input type="checkbox"/> 4. Change in course number | <input type="checkbox"/> 10. Change in course requisites |
| <input type="checkbox"/> 5. Change in course title | <input type="checkbox"/> 11. Change in semesters offered |
| <input checked="" type="checkbox"/> 6. Change in course credit/type | <input type="checkbox"/> 12. Transfer from one department to another |

PROPOSED: Subject Abbreviation <input type="text"/>	EXISTING: Subject Abbreviation <u>SEminar in Engr Educ</u>
Course Number <input type="text"/>	Course Number <u>ENE 50100</u>
Long Title <u>Seminar in Engineering Education</u>	
Short Title <u>Seminar in Engineering Education</u>	

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

TERMS OFFERED
Check All That Apply:

Summer Fall Spring

CAMPUS(ES) INVOLVED

Calumet N. Central
 Cont Ed Tech Statewide
 Ft. Wayne W. Lafayette
 Indianapolis

CREDIT TYPE

1. Fixed Credit: Cr. Hrs. 1.0

2. Variable Credit Range:
Minimum Cr. Hrs
(Check One) To Or
Maximum Cr. Hrs

3. Equivalent Credit: Yes No

4. Thesis Credit: Yes No

COURSE ATTRIBUTES: Check All That Apply

1. Pass/Not Pass Only Remove

2. Satisfactory/Unsatisfactory Only

3. Repeatable
Maximum Repeatable Credit:

4. Credit by Examination

5. Special Fees

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				
Lab Prep				
Studio				
Distance				
Clinic				
Experiential				
Research				
Ind. Study				
Pract/Observ				

Cross-Listed Courses

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
Remove Pass/Not Pass only. (Course should be graded - this was an error in the earlier document)

Calumet Department Head _____ Date _____	Calumet School Dean _____ Date _____	Calumet Undergrad Curriculum Committee _____ Date _____
Fort Wayne Department Head _____ Date _____	Fort Wayne School Dean _____ Date _____	Fort Wayne Chancellor _____ Date _____
Indianapolis Department Head _____ Date _____	Indianapolis School Dean _____ Date _____	<u>R. J. Cipra</u> 4/27/10 Undergrad Curriculum Committee _____ Date _____
North Central Faculty Senate Chair _____ Date _____	Vice Chancellor for Academic Affairs _____ Date _____	Date Approved by Graduate Council _____
<u>[Signature]</u> 3/29/10 West Lafayette Department Head _____ Date _____	<u>[Signature]</u> 5/25/10 West Lafayette College/School Dean _____ Date _____	<u>[Signature]</u> 5/25/10 Graduate Council Secretary _____ Date _____
Graduate Area Committee Convener _____ Date _____	Graduate Dean _____ Date _____	<u>[Signature]</u> 6/4/10 West Lafayette Registrar _____ Date _____

OFFICE OF THE REGISTRAR

12/31/09

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

AFD 31-05

DEPARTMENT ENE EFFECTIVE SESSION Fall 2010

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

<input type="checkbox"/> 1. New course with supporting documents (complete proposal form)	<input checked="" type="checkbox"/> 7. Change in course attributes
<input type="checkbox"/> 2. Add existing course offered at another campus	<input type="checkbox"/> 8. Change in instructional hours
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<input type="checkbox"/> 5. Change in course title	<input type="checkbox"/> 11. Change in semesters offered
<input checked="" type="checkbox"/> 6. Change in course credit/type	<input type="checkbox"/> 12. Transfer from one department to another

PROPOSED: Subject Abbreviation: _____ Course Number: _____ Long Title: <u>Seminar in Engineering Education</u> Short Title: <u>Seminar in Engineering Education</u> <small>Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)</small>	EXISTING: Subject Abbreviation: <u>Seminar in Engr Educ</u> Course Number: <u>ENE 50100</u>	TERMS OFFERED Check All That Apply: <input type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring CAMPUS(ES) INVOLVED <input type="checkbox"/> Calumet <input type="checkbox"/> N. Central <input type="checkbox"/> Cont Ed <input type="checkbox"/> Tech Statewide <input type="checkbox"/> Ft. Wayne <input checked="" type="checkbox"/> W. Lafayette <input type="checkbox"/> Indianapolis
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CREDIT TYPE 1. Fixed Credit: Cr. Hrs. <u>1.0</u> 2. Variable Credit Range: Minimum Cr. Hrs _____ (Check One) To <input type="checkbox"/> Or <input type="checkbox"/> Maximum Cr. Hrs _____ 3. Equivalent Credit: Yes <input type="checkbox"/> No <input type="checkbox"/> 4. Thesis Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>	COURSE ATTRIBUTES: Check All That Apply 1. Pass/Not Pass Only <i>Remove</i> <input type="checkbox"/> 2. Satisfactory/Unsatisfactory Only <input type="checkbox"/> 3. Repeatable <input type="checkbox"/> Maximum Repeatable Credit: _____ 4. Credit by Examination <input type="checkbox"/> 5. Special Fees <input type="checkbox"/> 6. Registration Approval Type Department <input type="checkbox"/> Instructor <input type="checkbox"/> 7. Variable Title <input type="checkbox"/> 8. Honors <input type="checkbox"/> 9. Full Time Privilege <input type="checkbox"/> 10. Off Campus Experience <input type="checkbox"/>
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Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Cross-Listed Courses
Lecture					
Recitation					
Presentation					
Laboratory					
Lab Prep					
Studio					
Distance					
Clinic					
Experiential					
Research					
Ind. Study					
Pract/Observ					

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
 Remove Pass/Not Pass only. (Course should be graded - this was an error in the earlier document)

Calumet Department Head _____ Date _____	Calumet School Dean _____ Date _____	Calumet Undergrad Curriculum Committee _____ Date _____
Fort Wayne Department Head _____ Date _____	Fort Wayne School Dean _____ Date _____	Fort Wayne Chancellor _____ Date _____
Indianapolis Department Head _____ Date _____	Indianapolis School Dean _____ Date _____	<i>R. J. Cipra</i> 4/27/10 Undergrad Curriculum Committee _____ Date _____
North Central Faculty Senate Chair _____ Date _____	Vice Chancellor for Academic Affairs _____ Date _____	Date Approved by Graduate Council _____
<i>[Signature]</i> 3/29/10 West Lafayette Department Head _____ Date _____	<i>[Signature]</i> 5/10/10 West Lafayette College/School Dean _____ Date _____	<i>[Signature]</i> 5/25/10 Graduate Council Secretary _____ Date _____
Graduate Area Committee Convener _____ Date _____	Graduate Dean _____ Date _____	<i>[Signature]</i> 6/4/10 West Lafayette Registrar _____ Date _____

OFFICE OF THE REGISTRAR

1310

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

EFD 31-05

DEPARTMENT ENE EFFECTIVE SESSION Fall 2010

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

- | | |
|---|--|
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| <input checked="" type="checkbox"/> 6. Change in course credit/type | <input type="checkbox"/> 12. Transfer from one department to another |

PROPOSED: Subject Abbreviation <input type="text"/> Course Number <input type="text"/> Long Title <u>Seminar in Engineering Education</u> Short Title <u>Seminar in Engineering Education</u> <small>Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)</small>	EXISTING: Subject Abbreviation <u>Seminar in Engr Educ</u> Course Number <u>ENE 50100</u>	TERMS OFFERED Check All That Apply: <input type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring CAMPUS(ES) INVOLVED <input type="checkbox"/> Calumet <input type="checkbox"/> N. Central <input type="checkbox"/> Cont Ed <input type="checkbox"/> Tech Statewide <input type="checkbox"/> Ft. Wayne <input checked="" type="checkbox"/> W. Lafayette <input type="checkbox"/> Indianapolis
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Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Cross-Listed Courses
Lecture					
Recitation					
Presentation					
Laboratory					
Lab Prep					
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Experiential					
Research					
Ind. Study					
Pract/Observ					

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):

Remove Pass/Not Pass only. (Course should be graded - this was an error in the earlier document)

Calumet Department Head _____ Date _____ Calumet School Dean _____ Date _____ Calumet Undergrad Curriculum Committee _____ Date _____

Fort Wayne Department Head _____ Date _____ Fort Wayne School Dean _____ Date _____ Fort Wayne Chancellor _____ Date _____

Indianapolis Department Head _____ Date _____ Indianapolis School Dean _____ Date _____ *R. J. Cipra* 4/27/10 Undergrad Curriculum Committee _____ Date _____

North Central Faculty Senate Chair _____ Date _____ Vice Chancellor for Academic Affairs _____ Date _____ Date Approved by Graduate Council _____

[Signature] 3/29/10 West Lafayette Department Head _____ Date _____ *[Signature]* 5/10/10 West Lafayette College/School Dean _____ Date _____ Graduate Council Secretary _____ Date _____

Graduate Area Committee Convener _____ Date _____ Graduate Dean _____ Date _____ West Lafayette Registrar _____ Date _____

OFFICE OF THE REGISTRAR

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

EFD 31-05
Revised
by Grad School

DEPARTMENT Engineering Education EFFECTIVE SESSION 200910

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

<input checked="" type="checkbox"/> 1. New course with supporting documents (complete proposal form)	<input type="checkbox"/> 7. Change in course attributes
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<input type="checkbox"/> 6. Change in course credit/type	<input type="checkbox"/> 12. Transfer from one department to another

PROPOSED:	EXISTING:	TERMS OFFERED Check All That Apply:
Subject Abbreviation <u>ENE</u>	Subject Abbreviation _____	<input type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring
Course Number <u>501</u>	Course Number _____	CAMPUS(ES) INVOLVED
Long Title <u>SEMINAR IN Introduction to Engineering Education</u>		<input type="checkbox"/> Calumet <input type="checkbox"/> N. Central <input type="checkbox"/> Cont Ed <input type="checkbox"/> Tech Statewide <input type="checkbox"/> Ft. Wayne <input checked="" type="checkbox"/> W. Lafayette <input type="checkbox"/> Indianapolis
Short Title <u>Intro-ENED SEMINAR IN ENE</u>		

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

CREDIT TYPE	COURSE ATTRIBUTES: Check All That Apply
1. Fixed Credit: Cr. Hrs. <u>1</u>	1. Pass/Not Pass Only <input checked="" type="checkbox"/>
2. Variable Credit Range: Minimum Cr. Hrs. _____ (Check One) To <input type="checkbox"/> Or <input type="checkbox"/> Maximum Cr. Hrs. _____	2. Satisfactory/Unsatisfactory Only <input type="checkbox"/>
3. Equivalent Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>	3. Repeatable <input type="checkbox"/>
4. Thesis Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>	4. Credit by Examination <input type="checkbox"/>
	5. Special Fees <input type="checkbox"/>
	6. Registration Approval Type Department <input type="checkbox"/> Instructor <input checked="" type="checkbox"/>
	7. Variable Title <input type="checkbox"/>
	8. Honors <input type="checkbox"/>
	9. Full Time Privilege <input type="checkbox"/>
	10. Off Campus Experience <input type="checkbox"/>

Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Cross-Listed Courses
Lecture	50	1			
Recitation					
Presentation					
Laboratory					
Lab Prep					
Studio					
Distance					
Clinic					
Experiential					
Research					
Ind. Study					
Pract/Observ					

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
Provides beginning engineering education graduate students opportunities to define themselves with the engineering education department and within the field of engineering education. Students, faculty and outside speakers present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

_____	Date	Calumet School Dean	Date	Calumet Undergrad Curriculum Committee	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date	Fort Wayne Chancellor	Date
Indianapolis Department Head	Date	Indianapolis School Dean	Date	<i>RACipra</i> Undergrad Curriculum Committee	<i>10/15/08</i> Date
North Central Department Head	Date	North Central Chancellor	Date	Date Approved by Graduate Council	
<i>K. H. Zick</i> West Lafayette Department Head	<i>8/25/08</i> Date	<i>Michael A. ...</i> West Lafayette College/School Dean	<i>10/29/2008</i> Date	Graduate Council Secretary	Date
Graduate Area Committee Convener	Date	Graduate Dean	Date	West Lafayette Registrar	Date

OFFICE OF THE REGISTRAR

To: The Engineering Faculty
From: The Department of Engineering Education
Re: New Graduate Level Course – ENE 501, Introduction to Engineering Education

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

SEMINAR IN

ENE 501 – ~~Introduction to Engineering Education~~
Sem. 1. Cr. 1
Prerequisite: Admission by consent of instructor

This course provides beginning engineering education graduate students opportunities to define themselves within the engineering education department and within the field of engineering education. Students, faculty, and outside speakers present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

Reason: This is a required course for the graduate programs in the Department of Engineering Education (ENE). The intent of the course is to introduce beginning ENE students to the field of engineering education through interactions with members of the engineering education community at local and national levels and to help students identify resources that will help them transition into the professional engineering education community.

This course was offered in Fall 2005 as ENE 695A – Seminar in Engineering Education; eleven ENE students were enrolled.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE ENGINEERING
CURRICULUM COMMITTEE

ECC Minutes #25

Date 5/9/08

Chairman ECC Michael J. Altowski

Kamyar Haghghi, Head
Engineering Education

Supporting Document for a New Graduate Course

To: Purdue University Graduate Council

From: Faculty Member: Monica F. Cox
Department: School of Engineering Education
Campus: Purdue University, West Lafayette

Date: _____

Subject: Proposal for New Graduate Course-Documentation
Required by the Graduate Council to Accompany
Registrar's Form 40G

For Reviewer's comments only (Select One)
Reviewer:
Comments:

Contact for information if questions arise: Name: Cindey Hays (Temporary)
Phone Number: 43884
E-mail: isenberg@purdue.edu
Campus Address: ARMS 1321

Course Subject Abbreviation and Number: ENE 501

Course Title: Seminar in Engineering Education

A. Justification for the Course:

- Provide a complete and detailed explanation of the need for the course (e. g., in the preparation of students, in providing new knowledge/training in one or more topics, in meeting degree requirements, etc.), how the course contributes to existing fields of study and/or areas of specialization, and how the course relates to other graduate courses offered by the department, other departments, or interdisciplinary programs.
- Justify the level of the proposed graduate course (50000- or 60000-level) including statements on, but not limited to: (1) the target audience, including the anticipated number of undergraduate and graduate students who will enroll in the course; and (2) the rigor of the course.

B. Learning Outcomes and Method of Evaluation or Assessment:

- Describe the course objectives and student learning outcomes that address the objectives (i.e., knowledge, communication, critical thinking, ethical research, etc.).
- Describe the methods of evaluation or assessment of student learning outcomes. (Include evidence for both direct and indirect methods.)
- Grading criteria (select from dropdown box); include a statement describing the criteria that will be used to assess students and how the final grade will be determined.

Criteria | Papers and Projects

ENE 501 – Seminar in Engineering Education

A. Justification for the Course:

- This course is needed to give new engineering education graduate students opportunities to define their roles within the School and within the field of engineering education. To help students learn about diverse research conducted in the field, students, faculty, and outside speakers present research topics, academic opportunities, and other information. Students within the course also engage in class discussions about engineering education and directions that they would like to take during their graduate experiences. This introductory course, unlike other courses in the School, is semi-structured and provides a forum for students to reflect upon all of the activities in which they will engage in engineering education.
- The proposed course will be a 50000-level course, since it is the introductory course for engineering education doctoral students. Approximately ten students will enroll in the course each year. This number may vary depending upon the number of students who enroll in the school each year. The rigor of the course is moderate, since students will be asked to read common literature and will complete portfolio assignments that reflect students' personal interests and goals in the discipline.

B. Learning Outcomes and Method of Evaluation or Assessment:

Course Objectives and Student Learning Outcomes

1. Develop a plan for completing a professional engineering education portfolio. (Students will demonstrate an ability to reflect critically upon their learning goals and articulate learning plan.)
2. Identify and interact with members of the engineering education community at local and national levels. (Students will develop and enhance their communication skills and other professional development skills.)
3. Identify and utilize resources that will help students to complete their doctoral program and to transition into the professional engineering education community. (Students will obtain knowledge of academic and professional resources in engineering education.)

Methods of Evaluation or Assessment of Student Learning Outcomes

The methods of evaluation or assessment of student learning outcomes are described below. The learning outcomes are incorporated in multiple course assignments. The percentage of the overall grade for each assessment is shown in parentheses.

1. Participation/ Attendance (10%)
2. Pre/ Post Letter Home (25%): To help students to reflect upon their current and future roles within the engineering education community, they are asked to write a letter to a friend or family member about their experiences as a doctoral student in the School of Engineering Education. The letter may describe what they hope to accomplish, identify any resources that they would like to tap into during your tenure at Purdue, list potential research topics of interest, outline activities that they plan to become involved in within the school or the engineering education community, their anticipated timeline, or anything else that relates to their desired experiences as a doctoral student. They are encouraged to include any other thoughts that they have about engineering education. There is no page limit for this assignment, but clarity is highly rewarded. They will write a second letter at the end of the semester, and critically compare the two.
3. Midterm Portfolio Reflection (30%): To help them to become engaged with their prospective ENE graduate portfolio, they are asked to develop and to think about their personal learning objectives within the overall

context of the program. Students will present a multiple-page document that maps their learning objectives to ENE deliverables (e.g., a plan of study).

4. Final Portfolio Reflection and Presentations (35%): At the end of the semester, they are asked to use a disciplined approach to reflect upon their current and future ENE learning experiences. In addition to thinking about the development of their portfolio, you will be asked to think about how they will achieve their learning objectives via the development of a reflexive plan that may be achieved over their time at Purdue. They will be asked to present their reflection to their peers at the end of the semester.

Criteria and Grading for the Midterm Portfolio Reflection

Additional information about the midterm portfolio reflection is provided below.

Criteria: (pick one)

- Exams and Quizzes
- Papers and Projects**
- Homework
- Laboratory Exercises
- Attendance and Class Participation
- Extra Credit Policies

The rubric below displays the criteria used to assess students for the Midterm Portfolio Assessment. The course instructor will grade each student using the criteria.

a. Personal Learning Goals- List your most important personal learning goals for your PhD time at Purdue. Map these to the Ten Competencies of the ENE graduate program. For each goal, briefly indicate what actions you plan to take to accomplish it, how you intend to measure success / quality, and what sorts of evidence you will use to demonstrate to self and others that you have obtained the goal. For each goal indicate when this will be accomplished and your current status (not begun, planning, launching, achieving). You should present this personal goals summary in the form of a table.

- Marginal (1 point)- Learning goals not realistic or not well articulated; goals not mapped to competencies; analysis is incomplete or difficult to follow (could have used a table)
- Adequate (2 points)- Learning goals are basic; mapped to competencies but actions, measures, suggested evidence and status is very basic or incomplete
- Superior (3 points)- Learning goals are clear and achievable. Goals map to competencies and actions, measures, suggested evidence and status are complete and well thought out.

b. Specific Plan for this Semester- Pick one goal from the list that will be accomplished, at least in part, by the end of this semester. For this goal, provide more detail on what is to be done, how it will accomplish the goal, how success / quality will be measured, what evidence will be gathered and how this will be analyzed.

- Marginal (1 point)- A detailed plan is not fully articulated or not thought through in terms of how realistic or achievable it is. Plan may not actually lead to achievement of the specified learning goal or related.
- Adequate (2 points)- The plan is achievable and in sufficient detail to allow others to follow the logic. Plan will likely lead to achievement of the specified learning goal and related competencies.
- Superior (3 points)- The plan is simple and clear and easy to execute. Plan is insightful or an elegant way to achieve the specified learning goal and related competencies.

In addition, feedback on improving the reflection for future use is provided.

Method of Instruction for the Course

- Lecture
- Recitation**
- Presentation
- Laboratory
- Lab Prep
- Studio
- Distance

A recitation promotes the likely success of desired student outcomes since this the format is conversational and allows graduate students to ask questions about engineering education throughout the semester.

C. Prerequisite(s):

No prerequisites are required for this class, since it is the introductory course for students entering the engineering education doctoral program.

D. Course Instructor(s):

Teri Reed-Rhoads, Associate Professor, School of Engineering Education, is the course instructor for fall 2009. Monica F. Cox, Assistant Professor, School of Engineering Education, has been a course instructor for three previous semesters. Dr. Reed-Rhoads and Dr. Cox are members of the Graduate Faculty.

E. Course Outline:

Below is a tentative outline of topics covered in the course.

Week	Dates	Topic	Assignments
1	Aug. 26	Introductions and Announcements	
2	Sept. 2	Tools for Planning and Reflecting	
3	Sept. 9	ENE Graduate Roadmap & Portfolio	Letter Home (Pre)
4	Sept. 16	Expectations of graduate school	
5	Sept. 23	Research communities – a panel discussion	
6	Sept. 30	Some research areas in engineering education	
7	Oct. 7	Portfolio Review Session	
8	Oct. 14	October Break	
9	Oct. 21	No Class	Midterm Portfolio Reflection
10	Oct. 28	Class discussion	
11	Nov. 4	Class discussion	
12	Nov. 11	Class discussion	
13	Nov. 18	Class discussion	
14	Nov. 25	No Class- Thanksgiving Break	Letter Home (Post)
15	Dec. 2	Student Presentations	
16	Dec. 9	Student Presentations/ Final Thoughts about Portfolios and Program	Final Portfolio Reflection

F. Required Readings

The Elements of Style, Fourth Edition (Paperback) by William Strunk, Jr. (Author), E. B. White (Author), Roger Angell (Foreword), ISBN 0-205-30902-X (paperback) .

Changing the Conversation: Messages for Improving Public Understanding of Engineering (Paperback) by Committee on Public Understanding of Engineering Messages (Author), National Academy of Engineering (Author), ISBN 978-0-309-11934-4 (paperback) and ISBN 978-0-309-11935-1 (pdf).

Additional readings related to particular presenters in a given year.

G. Library resources:

Students will have access to the Purdue University engineering education library page for this course. This page lists the primary journals in the fields along with suggested engineering education readings for scholars of engineering education. The site is located at <http://www.lib.purdue.edu/engr/Subjectpages/engred.html>.

Seminar in Engineering Education

ENE 69500-001 Seminar in Engineering Education
(1 Credit Hour)
FALL 2008
ARMS 3115
TUESDAY, 3:30 - 4:20 P.M.

INSTRUCTOR

Monica F. Cox ARMS 1329 496-3461 mfc@purdue.edu
Office Hours by Appointment

COURSE DESCRIPTION

This course gives engineering education graduate students opportunities to define their roles within the department and within the field of engineering education. Students, faculty, and outside speakers will present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

COURSE LEARNING OBJECTIVES

- Demonstrate an ability to critically reflect upon your learning goals and to articulate learning plan
- Identify and interact with members of the engineering education community at local and national levels
- Identify and utilize resources that will help you successfully complete your doctoral program and transition into the professional engineering education community

GRADING POLICY

- | | |
|---|-----|
| • Participation/Attendance | 10% |
| • Pre/Post Letter | 25% |
| • Midterm Portfolio Reflection | 30% |
| • Final Portfolio Reflection/ Presentations | 35% |

Posting: Grades will be posted to the ENE 69500 site on Blackboard. Access your personal account at <http://www.itap.purdue.edu/tlt/blackboard>.

ASSIGNMENTS

Pre/ Post Letter Home: To help you to reflect upon your current and future role within the engineering education community, you will be asked to write a letter to a friend or family member about your experiences as a doctoral student in the School of Engineering Education. The letter may describe what you hope to accomplish, identify any resources that you would like to tap into during your tenure at Purdue, list potential research topics of interest, outline activities that you plan to become involved in within the school or the engineering education community, your anticipated timeline, or anything else that relates to your desired experiences as a doctoral student. You are welcome to include any other thoughts that you have about engineering education. There is no page limit for this assignment, but clarity will be highly rewarded. You will write a second letter at the end of the semester, and critically compare the two.

Midterm Portfolio Reflection

To help you to become engaged with your prospective ENE graduate portfolio, you will be asked to develop and to think about your personal learning objectives within the overall context of the program.

Seminar in Engineering Education

These objectives will be mapped to ENE deliverables such as the plan of study. Additional details about this reflection will be presented later in the semester.

Final Portfolio Reflection and Presentations

At the end of the semester, you will be asked to use a disciplined approach to reflect upon your current and future ENE learning experiences. In addition to thinking about the development of your portfolio, you will be asked to think about how you will achieve your learning objectives via the development of a reflexive plan that may be achieved over your time at Purdue. You will be asked to present your reflection to your peers at the end of the semester. Additional details about the content of the reflection and the presentations will be presented later in the semester.

LATE POLICY & MAKE-UP ASSIGNMENTS

Please note that all assignments must be submitted via Blackboard by 3:30 P.M. on the day that they are due. One letter grade will be deducted for each day that the assignment is late. Make-up assignments may be given *only* with special permission from the instructor.

ATTENDANCE

You are expected to attend all scheduled seminars unless you have contacted the instructor prior to the seminar. Excessive unexcused absences may result in deductions from your participation/attendance grade.

ADDITIONAL INFORMATION

Students with disabilities must be registered with Adaptive Programs in the Office of the Dean of Students before classroom accommodations can be provided. If you are eligible for academic accommodations because you have a documented disability that will impact your work in this class, please schedule an appointment with me as soon as possible to discuss your needs.

Week	Dates	Topic	Assignments
1	Aug. 26	Introductions and Announcements	
2	Sept. 2	Tools for Planning and Reflecting	
3	Sept. 9	ENE Graduate Roadmap & Portfolio	Letter Home (Pre)
4	Sept. 16	Expectations of graduate school	
5	Sept. 23	Research communities – a panel discussion	
6	Sept. 30	Some research areas in engineering education	
7	Oct. 7	Portfolio Review Session	
8	Oct. 14	October Break	
9	Oct. 21	No Class	Midterm Portfolio Reflection
10	Oct. 28	Class discussion	
11	Nov. 4	Class discussion	
12	Nov. 11	Class discussion	
13	Nov. 18	Class discussion	
14	Nov. 25	No Class- Thanksgiving Break	Letter Home (Post)
15	Dec. 2	Student Presentations	
16	Dec. 9	Student Presentations/ Final Thoughts about Portfolios and Program	Final Portfolio Reflection

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

*Sent to grad
(Candg# 9/14)
EFD 31-05*

DEPARTMENT Engineering Education EFFECTIVE SESSION 200910

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

<input checked="" type="checkbox"/> 1. New course with supporting documents (complete proposal form)	<input type="checkbox"/> 7. Change in course attributes
<input type="checkbox"/> 2. Add existing course offered at another campus	<input type="checkbox"/> 8. Change in instructional hours
<input type="checkbox"/> 3. Expiration of a course	<input type="checkbox"/> 9. Change in course description
<input type="checkbox"/> 4. Change in course number	<input type="checkbox"/> 10. Change in course requisites
<input type="checkbox"/> 5. Change in course title	<input type="checkbox"/> 11. Change in semesters offered
<input type="checkbox"/> 6. Change in course credit/type	<input type="checkbox"/> 12. Transfer from one department to another

<p>PROPOSED: Subject Abbreviation <u>ENE</u></p> <p>Course Number <u>501</u></p> <p>Long Title <u>Introduction to Engineering Education</u></p> <p>Short Title <u>Intro ENED</u></p> <p><small>Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)</small></p>	<p>EXISTING: Subject Abbreviation _____</p> <p>Course Number _____</p>	<p>TERMS OFFERED Check All That Apply:</p> <p><input type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring</p> <p>CAMPUS(ES) INVOLVED</p> <p><input type="checkbox"/> Calumet <input type="checkbox"/> N. Central <input type="checkbox"/> Cont Ed <input type="checkbox"/> Tech Statewide <input type="checkbox"/> Ft. Wayne <input checked="" type="checkbox"/> W. Lafayette <input type="checkbox"/> Indianapolis</p>
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<p>CREDIT TYPE</p> <p>1. Fixed Credit: Cr. Hrs. <u>1</u></p> <p>2. Variable Credit Range: Minimum Cr. Hrs _____ (Check One) To <input type="checkbox"/> Or <input type="checkbox"/> Maximum Cr. Hrs _____</p> <p>3. Equivalent Credit: Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>4. Thesis Credit: Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>COURSE ATTRIBUTES: Check All That Apply</p> <p>1. Pass/Not Pass Only <input checked="" type="checkbox"/></p> <p>2. Satisfactory/Unsatisfactory Only <input type="checkbox"/></p> <p>3. Repeatable <input type="checkbox"/> Maximum Repeatable Credit: <input type="checkbox"/></p> <p>4. Credit by Examination <input type="checkbox"/></p> <p>5. Special Fees <input type="checkbox"/></p> <p>6. Registration Approval Type Department <input type="checkbox"/> Instructor <input checked="" type="checkbox"/></p> <p>7. Variable Title <input checked="" type="checkbox"/></p> <p>8. Honors <input type="checkbox"/></p> <p>9. Full Time Privilege <input type="checkbox"/></p> <p>10. Off Campus Experience <input type="checkbox"/></p>
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Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Cross-Listed Courses
Lecture	50	1			
Recitation					
Presentation					
Laboratory					
Lab Prep					
Studio					
Distance					
Clinic					
Experiential					
Research					
Ind. Study					
Pract/Observ					

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
Provides beginning engineering education graduate students opportunities to define themselves with the engineering education department and within the field of engineering education. Students, faculty and outside speakers present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

Date _____	Calumet School Dean _____	Date _____	Calumet Undergrad Curriculum Committee _____	Date _____	
Fort Wayne Department Head _____	Date _____	Fort Wayne School Dean _____	Date _____	Fort Wayne Chancellor _____	Date _____
Indianapolis Department Head _____	Date _____	Indianapolis School Dean _____	Date _____	<i>RJ Cipra</i> Undergrad Curriculum Committee _____	Date <u>10/15/08</u>
North Central Department Head _____	Date _____	North Central Chancellor _____	Date _____	Date Approved by Graduate Council _____	
<i>K. G. ...</i> West Lafayette Department Head _____	Date <u>8/25/08</u>	<i>Michael ...</i> West Lafayette College/School Dean _____	Date <u>10/15/08</u>	Graduate Council Secretary _____	Date _____
Graduate Area Committee Convener _____	Date _____	Graduate Dean _____	Date _____	West Lafayette Registrar _____	Date _____

OFFICE OF THE REGISTRAR

(Grad Form 40G [Excel format] - Does not include the Graduate Council's required supporting document. See pdf version of Form 40G)

To: The Engineering Faculty
From: The Department of Engineering Education
Re: New Graduate Level Course – ENE 501, Introduction to Engineering Education

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

ENE 501 Introduction to Engineering Education
Sem. 1. Cr. 1
Prerequisite: Admission by consent of instructor

This course provides beginning engineering education graduate students opportunities to define themselves within the engineering education department and within the field of engineering education. Students, faculty, and outside speakers present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

Reason: This is a required course for the graduate programs in the Department of Engineering Education (ENE). The intent of the course is to introduce beginning ENE students to the field of engineering education through interactions with members of the engineering education community at local and national levels and to help students identify resources that will help them transition into the professional engineering education community.

This course was offered in Fall 2005 as ENE 695A – Seminar in Engineering Education; eleven ENE students were enrolled.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE ENGINEERING
CURRICULUM COMMITTEE

ECC Minutes #25

Date 5/9/08

Chairman ECC Michael Altowski

Kamyar Haghighi, Head
Engineering Education

Supporting Document for a New Graduate Course

To: Purdue University Graduate Council

From: Faculty Member: Teri Reed-Rhoads
Department: School of Engineering Education
Campus: Purdue University, West Lafayette

Date: _____

Subject: Proposal for New Graduate Course-Documentation
Required by the Graduate Council to Accompany
Registrar's Form 40G

For Reviewer's comments only
(Select One)

Reviewer:

Comments:

**Contact for information if
questions arise:**

Name: Cindey Hays (Temporary)
Phone Number: 43884
E-mail: isenberg@purdue.edu
Campus Address: ARMS 1321

Course Subject Abbreviation and Number: ENE 501

Course Title: Introduction to Engineering Education

A. Justification for the Course:

- Provide a complete and detailed explanation of the need for the course (e. g., in the preparation of students, in providing new knowledge/training in one or more topics, in meeting degree requirements, etc.), how the course contributes to existing fields of study and/or areas of specialization, and how the course relates to other graduate courses offered by the department, other departments, or interdisciplinary programs.
- Justify the level of the proposed graduate course (50000- or 60000-level) including statements on, but not limited to: (1) the target audience, including the anticipated number of undergraduate and graduate students who will enroll in the course; and (2) the rigor of the course.

B. Learning Outcomes and Method of Evaluation or Assessment:

- Describe the course objectives and student learning outcomes that address the objectives (i.e., knowledge, communication, critical thinking, ethical research, etc.).
- Describe the methods of evaluation or assessment of student learning outcomes. (Include evidence for both direct and indirect methods.)
- Grading criteria (select from dropdown box); include a statement describing the criteria that will be used to assess students and how the final grade will be determined.

Criteria | Papers and Projects

- Identify the method(s) of instruction (select from dropdown box) and describe how the methods promote the likely success of the desired student learning outcomes.

Method of Instruction | Recitation

C. Prerequisite(s):

- List prerequisite courses by subject abbreviation, number, and title.
- List other prerequisites and/or experiences/background required. If no prerequisites are indicated, provide an explanation for their absence.

D. Course Instructor(s):

- Provide the name, rank, and department/program affiliation of the instructor(s).
- Is the instructor currently a member of the Graduate Faculty? Yes No
(If the answer is no, indicate when it is expected that a request will be submitted.)

E. Course Outline:

- Provide an outline of topics to be covered and indicate the relative amount of time or emphasis devoted to each topic. If laboratory or field experiences are used to supplement a lecture course, explain the value of the experience(s) to enhance the quality of the course and student learning. For special topics courses, include a sample outline of a course that would be offered under the proposed course.

F. Reading List (including course text):

- A primary reading list or bibliography should be limited to material the students will be required to read in order to successfully complete the course. It should not be a compilation of general reference material.
- A secondary reading list or bibliography should include material students may use as background information.

G. Library Resources

- Describe the library resources that are currently available or the resources needed to support this proposed course.

H. Example of a Course Syllabus (While not a necessary component of this supporting document, an example of a course syllabus is available, for information, by clicking on the link below, which goes to the *Graduate School's Policies and Procedures Manual for Administering Graduate Student Programs*. See Appendix K.)

http://www.gradschool.purdue.edu/downloads/Graduate_School_Policies_and_Procedures_Manual.pdf

ENGR 501 Introduction to Engineering Education Syllabus

COURSE DESCRIPTION

This course provides engineering education graduate students an opportunity to define their roles within the department and within the field of engineering education. Students, faculty, and outside speakers will present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

COURSE LEARNING OBJECTIVES

- Define your role in the engineering education community
- Identify and interact with members of the engineering education community at local and national levels
- Identify and utilize resources that will help you successfully complete your doctoral program and transition into the professional engineering education community

GRADING POLICY

- | | |
|-------------------------------------|-----|
| • Peer Interview | 20% |
| • Professional (Internal) Interview | 20% |
| • Professional (External) Interview | 20% |
| • Reflection Paper | 30% |
| • Participation/Attendance | 10% |

ASSIGNMENTS

Peer Interview Synopsis: To foster a sense of community and to learn more about the students in your cohort, you will ask a fellow engineering education graduate student four interview questions and will submit a two-page, double-spaced synopsis of this interview. Open-ended questions should help the interviewee reflect upon his/her educational objectives. To avoid duplicate interviews, every student in the class will be interviewed once. Some sample questions include, but are not limited to, the following:

- Professionally, where do you see yourself in five years? In twenty years?
- Why did you choose to pursue an advanced degree in engineering education versus some other discipline?
- What are the biggest challenges facing engineering education today? What are some possible solutions to these challenges?

Professional (Internal) Interview Synopsis: You will interview a Purdue faculty member or researcher who is affiliated with the Engineering Education department or who has designed and/or conducted engineering education research projects and will write a two-page, double-spaced synopsis of this interview. Since the person is housed on campus, you must conduct your interview face-to-face. The four questions that you ask should be of interest to you and should help to answer any questions that you might have about the structure of the ENE department, faculty's expectations of you as a student, professional ENE opportunities, ongoing or future research engineering education projects, etc. The interview should last approximately ten to twenty minutes depending upon the length of the questions that you ask. To avoid duplicate interviews, every student is *required* to interview a different faculty member and/or researcher. Please contact me once you have set up your interview, and I will let others know that your interviewee is no longer available.

Professional (External) Interview: You will interview a non-Purdue faculty member or researcher within the engineering education community and will write a two-page, double-spaced synopsis of this interview. The interview may be conducted in-person, via e-mail, or via telephone. You might find this person via web searches for NSF-funded engineering education research centers and/or projects, at national engineering education conferences, etc. Please make sure that you thoroughly explain your purpose for the interview. The four questions that you ask should be of interest to you and should address national engineering education issues such as engineering education research challenges at different types of universities, companies, etc., the national job market for engineering education graduates, the future of engineering education, etc. A face-to-face interview should last approximately ten to twenty minutes depending upon the length of the questions that you ask. To avoid duplicate interviews, every student is *required* to interview a different person. Please contact me once you have set up your interview, and I will let others know that your interviewee is no longer available.

Reflection Paper: The purpose of this paper is for you to reflect upon everything that you have learned this semester. The paper should identify any resources that you would like to tap into during your tenure at Purdue, should list your engineering education timeline (i.e., the activities that you plan to become involved in within the department or the engineering education community, research projects that you would like to start, etc.), and the professional goals that you hope to achieve as an engineering educator. You are welcome to include any other thoughts that you have about engineering education as a result of the in-class presentations or presentations from other engineering education-related classes. There is no page limit for this assignment.

ATTENDANCE

You are expected to attend all scheduled seminars unless you have contacted the instructor prior to the seminar.

Schedule of Topics and Assignments (Sample Fall 2005)

Week	Dates	Topic	Assignments Due
1	Aug. 23	Departmental Introductions & Announcements	
2	Aug. 30	"Curriculum Vita Workshop" Presented by Ms. Susan Hychka from Purdue's Center for Career Opportunities	
3	Sept. 6	Research Presentation Dr. Sean Brophy, Asst. Professor of Engineering Education	
4	Sept. 13	Research Presentation Dr. PK Imbrie, Asst. Professor of Engineering Education	Peer Interview Synopsis
5	Sept. 20	Graduate Student Expectations Discussion, Dr. Heidi Diefus-Dux	
6	Sept. 27	ENE Student Recruitment/ Focus Group Discussion, Korina Wilbert	
7	Oct. 4	Research Presentation Dr. Cordelia Brown, Asst. Professor of Engineering Education	
8	Oct. 11	October Break	
9	Oct. 18	No Class	
10	Oct. 25	Engineering Education Resources	Professional (Internal) Interview Synopsis
11	Nov. 1	Student Presentation- Tamara Moore "Fishbowl" Continuation	
12	Nov. 8	"Finding Research Funding" Presented by H. Christine King, Director of Research Development Services	
13	Nov. 15	Provost Sally Mason/ Prof. David Radcliffe Presentations	Professional (External) Interview Synopsis
14	Nov. 22	Student Presentations of External Professional Interviews	
15	Nov. 29	TBA	
16	Dec. 6	Research Presentation Dr. Robin Adams, Asst. Professor of Engineering Education	Reflection Paper

ENE 501 – Introduction to Engineering Education

A. Justification for the Course:

- This course is needed to give new engineering education graduate students opportunities to define their roles within the School and within the field of engineering education. To help students learn about diverse research conducted in the field, students, faculty, and outside speakers present research topics, academic opportunities, and other information. Students within the course also engage in class discussions about engineering education and directions that they would like to take during their graduate experiences. This introductory course, unlike other courses in the School, is semi-structured and provides a forum for students to reflect upon all of the activities in which they will engage in engineering education.
- The proposed course will be a 50000-level course, since it is the introductory course for engineering education doctoral students. Approximately ten students will enroll in the course each year. This number may vary depending upon the number of students who enroll in the school each year. The rigor of the course is moderate, since students will be asked to read common literature and will complete portfolio assignments that reflect students' personal interests and goals in the discipline.

B. Learning Outcomes and Method of Evaluation or Assessment:

Course Objectives and Student Learning Outcomes

1. Develop a plan for completing a professional engineering education portfolio. (Students will demonstrate an ability to reflect critically upon their learning goals and articulate learning plan.)
2. Identify and interact with members of the engineering education community at local and national levels. (Students will develop and enhance their communication skills and other professional development skills.)
3. Identify and utilize resources that will help students to complete their doctoral program and to transition into the professional engineering education community. (Students will obtain knowledge of academic and professional resources in engineering education.)

Methods of Evaluation or Assessment of Student Learning Outcomes

The methods of evaluation or assessment of student learning outcomes are described below. The learning outcomes are incorporated in multiple course assignments. The percentage of the overall grade for each assessment is shown in parentheses.

1. Participation/ Attendance (10%)
2. Pre/ Post Letter Home (25%): To help students to reflect upon their current and future roles within the engineering education community, they are asked to write a letter to a friend or family member about their experiences as a doctoral student in the School of Engineering Education. The letter may describe what they hope to accomplish, identify any resources that they would like to tap into during your tenure at Purdue, list potential research topics of interest, outline activities that they plan to become involved in within the school or the engineering education community, their anticipated timeline, or anything else that relates to their desired experiences as a doctoral student. They are encouraged to include any other thoughts that they have about engineering education. There is no page limit for this assignment, but clarity is highly rewarded. They will write a second letter at the end of the semester, and critically compare the two.
3. Midterm Portfolio Reflection (30%): To help them to become engaged with their prospective ENE graduate portfolio, they are asked to develop and to think about their personal learning objectives within the overall

context of the program. Students will present a multiple-page document that maps their learning objectives to ENE deliverables (e.g., a plan of study).

4. Final Portfolio Reflection and Presentations (35%): At the end of the semester, they are asked to use a disciplined approach to reflect upon their current and future ENE learning experiences. In addition to thinking about the development of their portfolio, you will be asked to think about how they will achieve their learning objectives via the development of a reflexive plan that may be achieved over their time at Purdue. They will be asked to present their reflection to their peers at the end of the semester.

Criteria and Grading for the Midterm Portfolio Reflection

Additional information about the midterm portfolio reflection is provided below.

Criteria: (pick one)

- Exams and Quizzes
- Papers and Projects**
- Homework
- Laboratory Exercises
- Attendance and Class Participation
- Extra Credit Policies

The rubric below displays the criteria used to assess students for the Midterm Portfolio Assessment. The course instructor will grade each student using the criteria.

a. Personal Learning Goals- List your most important personal learning goals for your PhD time at Purdue. Map these to the Ten Competencies of the ENE graduate program. For each goal, briefly indicate what actions you plan to take to accomplish it, how you intend to measure success / quality, and what sorts of evidence you will use to demonstrate to self and others that you have obtained the goal. For each goal indicate when this will be accomplished and your current status (not begun, planning, launching, achieving). You should present this personal goals summary in the form of a table.

- Marginal (1 point)- Learning goals not realistic or not well articulated; goals not mapped to competencies; analysis is incomplete or difficult to follow (could have used a table)
- Adequate (2 points)- Learning goals are basic; mapped to competencies but actions, measures, suggested evidence and status is very basic or incomplete
- Superior (3 points)- Learning goals are clear and achievable. Goals map to competencies and actions, measures, suggested evidence and status are complete and well thought out.

b. Specific Plan for this Semester- Pick one goal from the list that will be accomplished, at least in part, by the end of this semester. For this goal, provide more detail on what is to be done, how it will accomplish the goal, how success / quality will be measured, what evidence will be gathered and how this will be analyzed.

- Marginal (1 point)- A detailed plan is not fully articulated or not thought through in terms of how realistic or achievable it is. Plan may not actually lead to achievement of the specified learning goal or related.
- Adequate (2 points)- The plan is achievable and in sufficient detail to allow others to follow the logic. Plan will likely lead to achievement of the specified learning goal and related competencies.
- Superior (3 points)- The plan is simple and clear and easy to execute. Plan is insightful or an elegant way to achieve the specified learning goal and related competencies.

In addition, feedback on improving the reflection for future use is provided.

Method of Instruction for the Course

- Lecture
- Recitation**
- Presentation
- Laboratory
- Lab Prep
- Studio
- Distance

A recitation promotes the likely success of desired student outcomes since this the format is conversational and allows graduate students to ask questions about engineering education throughout the semester.

C. Prerequisite(s):

No prerequisites are required for this class, since it is the introductory course for students entering the engineering education doctoral program.

D. Course Instructor(s):

Teri Reed-Rhoads, Associate Professor, School of Engineering Education, is the course instructor for fall 2009. Monica F. Cox, Assistant Professor, School of Engineering Education, has been a course instructor for three previous semesters. Dr. Reed-Rhoads and Dr. Cox are members of the Graduate Faculty.

E. Course Outline:

Below is a tentative outline of topics covered in the course.

Week	Dates	Topic	Assignments
1	Aug. 26	Introductions and Announcements	
2	Sept. 2	Tools for Planning and Reflecting	
3	Sept. 9	ENE Graduate Roadmap & Portfolio	Letter Home (Pre)
4	Sept. 16	Expectations of graduate school	
5	Sept. 23	Research communities – a panel discussion	
6	Sept. 30	Some research areas in engineering education	
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12	Nov. 11	Class discussion	
13	Nov. 18	Class discussion	
14	Nov. 25	No Class- Thanksgiving Break	Letter Home (Post)
15	Dec. 2	Student Presentations	
16	Dec. 9	Student Presentations/ Final Thoughts about Portfolios and Program	Final Portfolio Reflection

F. Required Readings

The Elements of Style, Fourth Edition (Paperback) by William Strunk, Jr. (Author), E. B. White (Author), Roger Angell (Foreword), ISBN 0-205-30902-X (paperback) .

Changing the Conversation: Messages for Improving Public Understanding of Engineering (Paperback) by Committee on Public Understanding of Engineering Messages (Author), National Academy of Engineering (Author), ISBN 978-0-309-11934-4 (paperback) and ISBN 978-0-309-11935-1 (pdf).

G. Library resources:

Students will have access to the Purdue University engineering education library page for this course. This page lists the primary journals in the fields along with suggested engineering education readings for scholars of engineering education. The site is located at <http://www.lib.purdue.edu/engr/Subjectpages/engred.html>.

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

FD 91-03

DEPARTMENT Engineering Education EFFECTIVE SESSION 200910

- INSTRUCTIONS: Please check the items below which describe the purpose of this request.
- | | |
|--|--|
| <input checked="" type="checkbox"/> 1. New course with supporting documents (complete proposal form) | <input type="checkbox"/> 7. Change in course attributes |
| <input type="checkbox"/> 2. Add existing course offered at another campus | <input type="checkbox"/> 8. Change in instructional hours |
| <input type="checkbox"/> 3. Expiration of a course | <input type="checkbox"/> 9. Change in course description |
| <input type="checkbox"/> 4. Change in course number | <input type="checkbox"/> 10. Change in course requisites |
| <input type="checkbox"/> 5. Change in course title | <input type="checkbox"/> 11. Change in semesters offered |
| <input type="checkbox"/> 6. Change in course credit/type | <input type="checkbox"/> 12. Transfer from one department to another |

PROPOSED: Subject Abbreviation <u>ENE</u> Course Number <u>501</u> Long Title <u>Introduction to Engineering Education</u> Short Title <u>Intro ENED</u> <small>Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)</small>	EXISTING: Subject Abbreviation _____ Course Number _____	TERMS OFFERED Check All That Apply: <input type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring CAMPUS(ES) INVOLVED <input type="checkbox"/> Calumet <input type="checkbox"/> N. Central <input type="checkbox"/> Cont Ed <input type="checkbox"/> Tech Statewide <input type="checkbox"/> Ft. Wayne <input checked="" type="checkbox"/> W. Lafayette <input type="checkbox"/> Indianapolis
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CREDIT TYPE 1. Fixed Credit: Cr. Hrs. <u>1</u> 2. Variable Credit Range: Minimum Cr. Hrs. _____ (Check One) To <input type="checkbox"/> Or <input type="checkbox"/> Maximum Cr. Hrs. _____ 3. Equivalent Credit: Yes <input type="checkbox"/> No <input type="checkbox"/> 4. Thesis Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>	1. Pass/Not Pass Only <input checked="" type="checkbox"/> 2. Satisfactory/Unsatisfactory Only <input type="checkbox"/> 3. Repeatable <input type="checkbox"/> Maximum Repeatable Credit: _____ 4. Credit by Examination <input type="checkbox"/> 5. Special Fees <input type="checkbox"/>	COURSE ATTRIBUTES: Check All That Apply 6. Registration Approval Type Department <input type="checkbox"/> Instructor <input checked="" type="checkbox"/> 7. Variable Title <input checked="" type="checkbox"/> 8. Honors <input type="checkbox"/> 9. Full Time Privilege <input type="checkbox"/> 10. Off Campus Experience <input type="checkbox"/>
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Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Cross-Listed Courses
Lecture	50	1			
Recitation					
Presentation					
Laboratory					
Lab Prep					
Studio					
Distance					
Clinic					
Experiential					
Research					
Ind. Study					
Pract/Observ					

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
 Provides beginning engineering education graduate students opportunities to define themselves with the engineering education department and within the field of engineering education. Students, faculty and outside speakers present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

Date _____	Calumet School Dean _____	Date _____	Calumet Undergrad Curriculum Committee _____	Date _____
Fort Wayne Department Head _____	Date _____	Fort Wayne School Dean _____	Date _____	Fort Wayne Chancellor _____
Indianapolis Department Head _____	Date _____	Indianapolis School Dean _____	Date _____	Undergrad Curriculum Committee _____
North Central Department Head _____	Date _____	North Central Chancellor _____	Date _____	Date Approved by Graduate Council _____
<i>[Signature]</i>	<u>8/25/08</u>	<i>[Signature]</i>	<u>10/15/08</u>	Graduate Council Secretary _____
West Lafayette Department Head _____	Date _____	West Lafayette College/School Dean _____	Date _____	Graduate Council Secretary _____
Graduate Area Committee Convener _____	Date _____	Graduate Dean _____	Date _____	West Lafayette Registrar _____

OFFICE OF THE REGISTRAR

To: The Engineering Faculty
From: The Department of Engineering Education
Re: New Graduate Level Course – ENE 501, Introduction to Engineering Education

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

ENE 501 Introduction to Engineering Education
Sem. 1. Cr. 1
Prerequisite: Admission by consent of instructor

This course provides beginning engineering education graduate students opportunities to define themselves within the engineering education department and within the field of engineering education. Students, faculty, and outside speakers present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

Reason: This is a required course for the graduate programs in the Department of Engineering Education (ENE). The intent of the course is to introduce beginning ENE students to the field of engineering education through interactions with members of the engineering education community at local and national levels and to help students identify resources that will help them transition into the professional engineering education community.

This course was offered in Fall 2005 as ENE 695A – Seminar in Engineering Education; eleven ENE students were enrolled.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE ENGINEERING
CURRICULUM COMMITTEE

ECC Minutes #25

Date 5/9/08

Chairman ECC Michael Altowski

Kamyar Haghighi, Head
Engineering Education

ENGR 501 Introduction to Engineering Education Syllabus

COURSE DESCRIPTION

This course provides engineering education graduate students an opportunity to define their roles within the department and within the field of engineering education. Students, faculty, and outside speakers will present research topics, academic opportunities, and other information that will enhance students' graduate experiences.

COURSE LEARNING OBJECTIVES

- Define your role in the engineering education community
- Identify and interact with members of the engineering education community at local and national levels
- Identify and utilize resources that will help you successfully complete your doctoral program and transition into the professional engineering education community

GRADING POLICY

- | | |
|-------------------------------------|-----|
| • Peer Interview | 20% |
| • Professional (Internal) Interview | 20% |
| • Professional (External) Interview | 20% |
| • Reflection Paper | 30% |
| • Participation/Attendance | 10% |

ASSIGNMENTS

Peer Interview Synopsis: To foster a sense of community and to learn more about the students in your cohort, you will ask a fellow engineering education graduate student four interview questions and will submit a two-page, double-spaced synopsis of this interview. Open-ended questions should help the interviewee reflect upon his/her educational objectives. To avoid duplicate interviews, every student in the class will be interviewed once. Some sample questions include, but are not limited to, the following:

- Professionally, where do you see yourself in five years? In twenty years?
- Why did you choose to pursue an advanced degree in engineering education versus some other discipline?
- What are the biggest challenges facing engineering education today? What are some possible solutions to these challenges?

Professional (Internal) Interview Synopsis: You will interview a Purdue faculty member or researcher who is affiliated with the Engineering Education department or who has designed and/or conducted engineering education research projects and will write a two-page, double-spaced synopsis of this interview. Since the person is housed on campus, you must conduct your interview face-to-face. The four questions that you ask should be of interest to you and should help to answer any questions that you might have about the structure of the ENE department, faculty's expectations of you as a student, professional ENE opportunities, ongoing or future research engineering education projects, etc. The interview should last approximately ten to twenty minutes depending upon the length of the questions that you ask. To avoid duplicate interviews, every student is *required* to interview a different faculty member and/or researcher. Please contact me once you have set up your interview, and I will let others know that your interviewee is no longer available.

Professional (External) Interview: You will interview a non-Purdue faculty member or researcher within the engineering education community and will write a two-page, double-spaced synopsis of this interview. The interview may be conducted in-person, via e-mail, or via telephone. You might find this person via web searches for NSF-funded engineering education research centers and/or projects, at national engineering education conferences, etc. Please make sure that you thoroughly explain your purpose for the interview. The four questions that you ask should be of interest to you and should address national engineering education issues such as engineering education research challenges at different types of universities, companies, etc., the national job market for engineering education graduates, the future of engineering education, etc. A face-to-face interview should last approximately ten to twenty minutes depending upon the length of the questions that you ask. To avoid duplicate interviews, every student is *required* to interview a different person. Please contact me once you have set up your interview, and I will let others know that your interviewee is no longer available.

Reflection Paper: The purpose of this paper is for you to reflect upon everything that you have learned this semester. The paper should identify any resources that you would like to tap into during your tenure at Purdue, should list your engineering education timeline (i.e., the activities that you plan to become involved in within the department or the engineering education community, research projects that you would like to start, etc.), and the professional goals that you hope to achieve as an engineering educator. You are welcome to include any other thoughts that you have about engineering education as a result of the in-class presentations or presentations from other engineering education-related classes. There is no page limit for this assignment.

ATTENDANCE

You are expected to attend all scheduled seminars unless you have contacted the instructor prior to the seminar.

Schedule of Topics and Assignments (Sample Fall 2005)

Week	Dates	Topic	Assignments Due
1	Aug. 23	Departmental Introductions & Announcements	
2	Aug. 30	“Curriculum Vita Workshop” Presented by Ms. Susan Hychka from Purdue’s Center for Career Opportunities	
3	Sept. 6	Research Presentation Dr. Sean Brophy, Asst. Professor of Engineering Education	
4	Sept. 13	Research Presentation Dr. PK Imbrie, Asst. Professor of Engineering Education	Peer Interview Synopsis
5	Sept. 20	Graduate Student Expectations Discussion, Dr. Heidi Diefus-Dux	
6	Sept. 27	ENE Student Recruitment/ Focus Group Discussion, Korina Wilbert	
7	Oct. 4	Research Presentation Dr. Cordelia Brown, Asst. Professor of Engineering Education	
8	Oct. 11	October Break	
9	Oct. 18	No Class	
10	Oct. 25	Engineering Education Resources	Professional (Internal) Interview Synopsis
11	Nov. 1	Student Presentation- Tamara Moore “Fishbowl” Continuation	
12	Nov. 8	“Finding Research Funding” Presented by H. Christine King, Director of Research Development Services	
13	Nov. 15	Provost Sally Mason/ Prof. David Radcliffe Presentations	Professional (External) Interview Synopsis
14	Nov. 22	Student Presentations of External Professional Interviews	
15	Nov. 29	TBA	
16	Dec. 6	Research Presentation Dr. Robin Adams, Asst. Professor of Engineering Education	Reflection Paper

Supporting Document for a New Graduate Course

To: Purdue University Graduate Council

From: Faculty Member: Kamyar Haghighi
Department: Engineering Education
Campus: Purdue University West Lafayette

Date: _____

Subject: Proposal for New Graduate Course-Documentation
Required by the Graduate Council to Accompany
Registrar's Form 40G

For Reviewer's comments only (Select One)
<input type="text"/>
Reviewer:
Comments:

Contact for information if questions arise: Name: Suzie Schilling
Phone Number: 45755
E-mail: suzie@purdue.edu
Campus Address: 1300 ARMS

Course Subject Abbreviation and Number: ENE 501

Course Title: Introduction to Engineering Education

A. Justification for the Course:

- Provide a complete and detailed explanation of the need for the course (e. g., in the preparation of students, in providing new knowledge/training in one or more topics, in meeting degree requirements, etc.), how the course contributes to existing fields of study and/or areas of specialization, and how the course relates to other graduate courses offered by the department, other departments, or interdisciplinary programs.
- Justify the level of the proposed graduate course (50000- or 60000-level) including statements on, but not limited to: (1) the target audience, including the anticipated number of undergraduate and graduate students who will enroll in the course; and (2) the rigor of the course.

B. Learning Outcomes and Method of Evaluation or Assessment:

- Describe the course objectives and student learning outcomes that address the objectives (i.e., knowledge, communication, critical thinking, ethical research, etc.).
- Describe the methods of evaluation or assessment of student learning outcomes. (Include evidence for both direct and indirect methods.)
- Grading criteria (select from dropdown box); include a statement describing the criteria that will be used to assess students and how the final grade will be determined.

Criteria

- Identify the method(s) of instruction (select from dropdown box) and describe how the methods promote the likely success of the desired student learning outcomes.

Method of Instruction

C. Prerequisite(s):

- List prerequisite courses by subject abbreviation, number, and title.
- List other prerequisites and/or experiences/background required. If no prerequisites are indicated, provide an explanation for their absence.

D. Course Instructor(s):

- Provide the name, rank, and department/program affiliation of the instructor(s).
- Is the instructor currently a member of the Graduate Faculty? Yes No
(If the answer is no, indicate when it is expected that a request will be submitted.)

E. Course Outline:

- Provide an outline of topics to be covered and indicate the relative amount of time or emphasis devoted to each topic. If laboratory or field experiences are used to supplement a lecture course, explain the value of the experience(s) to enhance the quality of the course and student learning. For special topics courses, include a sample outline of a course that would be offered under the proposed course.

F. Reading List (including course text):

- A primary reading list or bibliography should be limited to material the students will be required to read in order to successfully complete the course. It should not be a compilation of general reference material.
- A secondary reading list or bibliography should include material students may use as background information.

G. Library Resources

- Describe the library resources that are currently available or the resources needed to support this proposed course.

H. Example of a Course Syllabus (While not a necessary component of this supporting document, an example of a course syllabus is available, for information, by clicking on the link below, which goes to the *Graduate School's Policies and Procedures Manual for Administering Graduate Student Programs*. See Appendix K.)

http://www.gradschool.purdue.edu/downloads/Graduate_School_Policies_and_Procedures_Manual.pdf

