New Course Request

Indiana University

Undergraduate credit [✓]  Graduate credit [ ]  Professional credit [ ]

1. School/Division: School of Engineering and Technology
2. Academic Subject Code: ME

3. Course Number: 405  (must be cleared with University Enrollment Services)
4. Instructor: Variable

5. Course Title: Seminar & Fundamentals of Engineering Review
   Recommended Abbreviation (Optional): Seminar & FE Review
   (Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): Spring 2009

7. Credit Hours: Fixed at ______ or Variable from ________ to ________

8. Is this course to be graded S-F (only)? Yes [✓]  No [ ]

9. Is variable title approval being requested? Yes [ ]  No [✓]

10. Course description (not to exceed 50 words) for Bulletin publication:
    A seminar series on mechanical engineering career options and guidance, professional development and licensing, and preparation for the Fundamental of Engineering examination.

11. Lecture Contact Hours: Fixed at ____________ or Variable from ____________ to ____________

12. Non-Lecture Contact Hours: Fixed at _______ or Variable from ____________ to ____________

13. Estimated enrollment: _______ of which _______ percent are expected to be graduate students.

14. Frequency of scheduling: annual  Will this course be required for majors? Yes ______

15. Justification for new course: This course prepares students for professional practice, and has material previously presented in the capstone design course.

16. Are the necessary reading materials currently available in the appropriate library? Will be provided.

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:

[Signature]  Date 1/19/09

Department Chairman/Division Director

Dean of Graduate School (when required)

Approved by:

[Signature]  Date 1/20/09

Dean

Chancellor/Vice-President

University Enrollment Services

Dean Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow; Department/Division—Pink; University Enrollment Services Advance—White
### PROPOSED

- **Subject Abbreviation**: ME
- **Course Number**: 405
- **Long Title**: Seminar & Fundamentals of Engineering Review
- **Short Title**: Seminar & FE Review

### EXISTING

- **Subject Abbreviation**: 
- **Course Number**: 
- **Long Title**: 
- **Short Title**: 

Abbreviated title will be entered by the Office of the Registrar if omitted. (20 CHARACTERS ONLY)

### TERMS OFFERED

- **Check All That Apply**:
  - Summer
  - Fall
  - Spring

### CAMPUS(ES) INVOLVED

- Calumet
- Cont Ed
- Ft. Wayne
- Tech Statewide
- Indianapolis
- W. Lafayette

### CREDIT TYPE

- **1. Fixed Credit**: Cr. Hrs. 
- **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

- **1. Pass/Not Pass Only**: 
- **2. Satisfactory/Unsatisfactory Only**: 
- **3. Repeatable**: 
- **4. Credit by Examination**: 
- **5. Designator Required**: 
- **6. Special Fees**: 

### INSTRUCTIONAL TYPE

- **Min. Cr. Hrs.**: 
- **Meeting Per Week**: 
- **Weeks Offered**: 
- **% of Credit Allocated**: 
- **Delivery Method** (Asyn. Or Syn.): 
- **Delivery Medium** (Audio, Internet, Live, Text-Based, Video): 

### COURSE DESCRIPTION (INCLUDE REQUISITES):

A seminar series on mechanical engineering career options and guidance, professional development and licensing, and preparation for the Fundamental of Engineering (FE) examination. Prerequisites: ME 372 or senior standing. Co-requisites: ME 482, ME 344

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**Signatures**

- Calumet Department Head
- Calumet School Dean
- Date

- Fort Wayne Department Head
- Fort Wayne School Dean
- Date

- Indianapolis Department Head
- Indianapolis School Dean
- Date

- North Central Department Head
- North Central Chancellor
- Date

- West Lafayette Department Head
- West Lafayette College/School Dean
- Date

- West Lafayette Registrar
- Date

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**Office of the Registrar**
PURDUE SCHOOL OF ENGINEERING & TECHNOLOGY 
OUTCOMES AND ASSESSMENT DATA SHEET

This is an internal document to identify and record expected outcomes and 
anticipated assessment strategies for all courses taught within the School of Engineering 
and Technology. Submission of this form, as noted below, is required and must 
accompany all new course and course change requests. Copies of this form should also be 
retained within the department and kept on file with the outline or syllabus for each course.

Course Number: ME 405  Course Title: Seminar & Fundamentals of Engineering Review

Procedure:

First, identify all instructional outcomes expected for this course, and then select all ABET 
outcomes which are consistent with those anticipated objectives from TABLE 1 below.

<table>
<thead>
<tr>
<th>TABLE 1 - ABET OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINEERING - EAC Criteria</td>
</tr>
<tr>
<td>An ability to apply knowledge of mathematics, science, and engineering</td>
</tr>
<tr>
<td>An ability to design and construct experiments as well as to analyze and interpret data.</td>
</tr>
<tr>
<td>An ability to design a system, component, or process to meet desired needs.</td>
</tr>
<tr>
<td>An ability to function on multi-disciplinary teams.</td>
</tr>
<tr>
<td>An ability to identify, formulate and solve engineering problems.</td>
</tr>
<tr>
<td>An understanding of professional and ethical responsibility.</td>
</tr>
<tr>
<td>An ability to communicate effectively.</td>
</tr>
<tr>
<td>The broad education necessary to understand the impact of engineering solutions in global societal context.</td>
</tr>
<tr>
<td>A recognition of the need for and ability to engage in life-long learning.</td>
</tr>
<tr>
<td>A knowledge of contemporary issues.</td>
</tr>
<tr>
<td>An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.</td>
</tr>
</tbody>
</table>

Subsets for each of the six IUPUI Principles of Undergraduate Learning (PUL) are given on 
the reverse side in TABLE 2. Using a number corresponding to each ABET outcome 
identified from TABLE 1 above to select a column, place a "X" or "X" mark in the applicable 
TABLE 2 row(s) cell for each PUL. Courses will often address multiple ABET outcomes 
and ABET outcomes frequently will overlap more than one PUL subset. Thus, it is expected 
completed data sheets may contain marks in several cells thereby indicating the 
course simultaneously satisfies multiple Principles of Undergraduate Learning while 
fulfilling its intended ABET objective(s).

After completing TABLE 2, briefly define or explain how the course outcomes or objectives 
will be evaluated within the context of the departmental assessment program in the space 
below:

Course outcomes related to program outcomes a, e, and f will be assessed by a comprehensive 
examination, which is specifically designed to measure program outcomes directly.
Outcomes related to program outcomes a and i will be assessed through surveys.

Submitted By: Kaz Naim Date: 9-25-08
TABLE 2 - MATRIX OF EXPECTED COURSE OUTCOMES

(Suggestion - while completing Table 2, place a copy of the ABET outcomes from Table 1 along side for easy cross referencing.)

<table>
<thead>
<tr>
<th>PRINCIPLES OF UNDERGRADUATE LEARNING - &quot;Require all students to demonstrate an ability to:&quot;</th>
<th>ENGINEERING OUTCOMES - EAC CRITERIA #3: Items (a) to (k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(a) - Express ideas and facts effectively in written formats</td>
<td>a</td>
</tr>
<tr>
<td>1(b) - Comprehend, interpret, and analyze texts</td>
<td></td>
</tr>
<tr>
<td>1(c) - Communicate orally in one-on-one and group settings</td>
<td>x</td>
</tr>
<tr>
<td>1(d) - Solve problems that are quantitative in nature</td>
<td>x</td>
</tr>
<tr>
<td>1(e) - Make efficient use of information resources and technology for personal and professional needs</td>
<td></td>
</tr>
<tr>
<td>2(a) - Analyze complex issues and make informed decisions</td>
<td>x</td>
</tr>
<tr>
<td>2(b) - Synthesize information in order to arrive at reasoned conclusions</td>
<td>x</td>
</tr>
<tr>
<td>2(c) - Evaluate the logic, validity, and relevance of data</td>
<td>x</td>
</tr>
<tr>
<td>2(d) - Solve challenging problems</td>
<td>x</td>
</tr>
<tr>
<td>2(e) - Use knowledge and understanding to generate and explore new questions</td>
<td>x</td>
</tr>
<tr>
<td>3(a) - Apply knowledge to enhance personal lives</td>
<td>x</td>
</tr>
<tr>
<td>3(b) - Apply knowledge to meet professional standards and competencies</td>
<td>x</td>
</tr>
<tr>
<td>3(c) - Apply knowledge to further the goals of society</td>
<td>x</td>
</tr>
<tr>
<td>4(a) - Demonstrate substantial knowledge and understanding of at least one field of study</td>
<td>x</td>
</tr>
<tr>
<td>4(b) - Compare and contrast approaches to knowledge in different disciplines</td>
<td>x</td>
</tr>
<tr>
<td>4(c) - Modify their approach to an issue or problem based on the contexts and requirements of particular situations</td>
<td></td>
</tr>
<tr>
<td>5(a) - Compare and contrast the range of diversity and universality in human history, societies, and ways of life</td>
<td></td>
</tr>
<tr>
<td>5(b) - Analyze and understand the interconnectedness of global and local concerns</td>
<td></td>
</tr>
<tr>
<td>5(c) - Operate with civility in a complex social world</td>
<td></td>
</tr>
<tr>
<td>6(a) - Make informed and principles choices regarding conflicting situations in their personal and public lives and to foresee the consequences of these choices</td>
<td></td>
</tr>
<tr>
<td>6(b) - Recognize the importance of aesthetics in their personal lives and to society</td>
<td>x</td>
</tr>
</tbody>
</table>
DRAFT SYLLABUS

ME 405  Seminar & Fundamentals of Engineering Review

Credits: 1 cr

Offered: Spring

Course Type/Class: Presentation (120 min/wk)

Prerequisites: ME 372 or senior standing

Co-requisites: ME 482, ME 344

Textbooks:
2) FE Supplied-Reference Handbook (free download www.ncees.org)
3) FE Sample Questions & Solutions - General (NCEES)

Description: A seminar series on mechanical engineering career options and guidance, professional development and licensing, and preparation for the Fundamental of Engineering (FE) examination.

Goals:
a) To introduce students to current topics relevant to mechanical engineering. Seminar topics include interviewing, management evaluation of engineers, career options.
b) To prepare students for the FE examination in Indiana.

Outcomes:
Upon successful completion of the course, students should be able to
1. Describe the process of licensing and registration of professional engineers. [f,k3]
2. Pass the practice FE exam. [a1,a2,a4,c1,c2,e,f,h]
3. Describe interviewing and job application skills, and professional goals. [g,f,i]
4. Describe management expectations of engineers. [f,j]
5. Describe technical and business subjects as covered by various speakers [e,f,i,h]
6. Describe a range of career and graduate school opportunities. [i]

Assessment:
1. Condensed sample FE examination (~3 hrs, early April)
2. Essays or quizzes on seminar topics

Topics:
1. Seminar topics TBD (4 weeks) to include: interviewing and job application skills, and professional goal setting, career and graduate school opportunities, management expectations of engineers, technical and business subjects as covered by various speakers.


Draft by Razi Nalim, September 2008