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

DEPARTMENT School of Engineering Education

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

1. New course with supporting documents (complete proposal form)
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
8. Change in instructional hours
9. Change in course description
10. Change in course requisites/restrictions
11. Change in semesters offered
12. Transfer from one department to another

PROPOSED:

Subject Abbreviation: ENE
Course Number: 55400
Long Title: Globalization and Engineering
Short Title: Globalization and Engineering

EXISTING:

Subject Abbreviation
Course Number
Long Title: Globalization and Engineering
Short Title: Globalization and Engineering

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

CAMPUS(ES) INVOLVED:

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

TERMS OFFERED:

Check All That Apply:
- Summer
- Fall [X]
- Spring

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):

The focus is on the multifaceted dynamics of globalization, and its impact on engineering practice and the lives and education of engineers. The course emphasizes engineering and globalization from the perspectives of the emerging Asian economies and Europe as well as the United States. This course is designed for practicing engineers and engineering educators. It is taught within a learner-centric, highly interactive, collaborative learning environment within which students are expected to learn from the experiences and thinking of each other, as well as from the instructor and other course resources. The course places emphasis on reading, writing, web-based research, and discussion. Prerequisites: (1) Students must have a BS degree in engineering or computer science. (2) Students are recommended (but not required) to have a minimum of two years work experience as a practicing engineer and strong communication skills (self-assessed).

Professor Harris.

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
Date

West Lafayette College/School Dean
Date

Graduate Area Committee Chair
Date

Graduate Dean
Date

Calumet Undergrad Curriculum Committee
Date

Fort Wayne Chancellor
Date

Undergrad Curriculum Committee
Date

APPROVED 2/17/11

Date Approved by Graduate Council

OFFICE OF THE REGISTRAR

2011 HR 10 AM 28
### Instructions:

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

- [X] 1. New course with supporting documents (complete proposal form)
- [ ] 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/credit type
- [ ] 7. Change in course attributes
- [ ] 8. Change in instructional hours
- [ ] 9. Change in course description
- [ ] 10. Change in course requisites/restrictions
- [ ] 11. Change in semesters offered
- [ ] 12. Transfer from one department to another

### Proposed:

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**Long Title:** Globalization and Engineering

**Short Title:** Globalization and Engineering

### Terms Offered:

Check all that apply:

- [ ] Summer
- [X] Fall
- [ ] Spring

### Campus(es) Involved:

- [X] Calumet
- [ ] N. Central
- [ ] Cont Ed
- [ ] Tech Statewide
- [ ] Ft. Wayne
- [X] Indianapolis
- [X] W. Lafayette

### Credit Type

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| 2. Variable Credit Range: |

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### Course Attributes:

Check all that apply:

- [ ] 1. Pass/Not Pass Only
- [ ] 2. Satisfactory/Unsatisfactory Only
- [ ] 3. Repeatable
- [ ] 4. Credit by Examination
- [ ] 5. Special Fees
- [ ] 6. Registration Approval Type
- [ ] 7. Variable Title
- [ ] 8. Honors
- [ ] 9. Full Time Privilege
- [ ] 10. Off Campus Experience

### Cross-Listed Courses:

- [ ]
- [ ]
- [ ]

### Course Description (Include Requisites/Restrictions):

The focus is on the multifaceted dynamics of globalization, and its impact on engineering practice and the lives and education of engineers. The course emphasizes engineering and globalization from the perspectives of the emerging Asian economies and Europe as well as the United States. This course is designed for practicing engineers and engineering educators. It is taught within a learner-centric, highly interactive, collaborative learning environment within which students are expected to learn from the experiences and thinking of each other, as well as from the instructor and other course resources. The course places emphasis on reading, writing, web-based research, and discussion. Prerequisites: (1) Students must have a BS degree in engineering or computer science, (2) Students are recommended (but not required) to have a minimum of two years work experience as a practicing engineer and strong communication skills (self-assessed).

### Department Heads and Deans:

- **Calumet Department Head:** [Signature] Date
- **Calumet School Dean:** [Signature] Date
- **Fort Wayne Department Head:** [Signature] Date
- **Fort Wayne School Dean:** [Signature] Date
- **Indianapolis Department Head:** [Signature] Date
- **Indianapolis School Dean:** [Signature] Date
- **North Central Faculty Senate Chair:** [Signature] Date
- **Vice Chancellor for Academic Affairs:** [Signature] Date
- **West Lafayette Department Head:** [Signature] Date
- **West Lafayette College/School Dean:** [Signature] Date
- **Graduate Dean:** [Signature] Date
- **Undergraduate Curriculum Committee:** [Signature] Date
- **Fort Wayne Chancellor:** [Signature] Date
- **Graduate Council Secretary:** [Signature] Date
- **West Lafayette Registrar:** [Signature] Date
To: The Faculty of the College of Engineering  
From: School of Engineering Education  
Subject: New Graduate Course, ENE 55400

The faculty of the School 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 55400 Globalization and Engineering  
Sem. 1, Class 3, Cr. 3.

Prerequisite:  
Graduate standing and consent of the instructor. Preference is given to students with an engineering background and professional experience. Students who successfully complete ENE55400 Globalization and Engineering cannot subsequently enroll in ENE 55300.

Course description:  
Focus is on the dynamics of globalization, and its impact on engineering practice and the education of engineers. Includes perspectives from the emerging Asian economies and Europe as well as the United States. Topics include: global migration of highly-skilled people including engineers, flow of capital and the globalization of R&D investment, world trade of commodities and high-tech products, global supply chains and the process of innovation, role of multinational corporations, intellectual property and the global spread of technology, global outsourcing and off-shoring of engineering jobs and services, global convergence of engineering education and training. This course is designed for practicing engineers and engineering educators. It is taught within a learner-centric, highly interactive learning environment within which students are expected to learn from each other as well as from the instructor and other course resources. The course places emphasis on reading, writing, web-based research, and discussion. It includes guest speakers representing industry and academia from all over the world.

Reasons:  
Globalization is the most, or one of the most, influential forces of the first half of the 21st century. All students, regardless of discipline, benefit from an understanding of this force and its impact on their lives and professions. Engineers, in particular, increasingly function in a globalized work environment. To lead and excel, engineers must understand globalization and incorporate that knowledge in their educational and career choices, as well as within their daily professional activities. This course provides a framework on which engineers can expand their global competence. This course is designed for professionally employed engineering graduate students from all disciplines, and at graduate students planning a career in engineering education. The prerequisite is needed due to the interactive, collaborative learning methodologies used in the course; at least two-thirds of the class must have significant experience as a practicing engineer or
engineering educator. In contrast with ENE 55300 (Introduction to Globalization and Engineering), which is a one credit unit seminar course meant to introduce interested students to the topic, ENE 55400 (Globalization and Engineering) is a three unit course in which students pursue the topic in substantial depth. The two courses target different student populations of interest and it is not intended that any student take both courses.

This course was previously offered as ENE 595Q – Globalization and Engineering in Summer 2007 (21 registered students) and Summer 2008 (20 registered students) and ENE 595E – Globalization and Engineering in Fall 2007 (7 registered students). Average evaluation of course = 4.7 and average evaluation of instructor = 4.8.

Kamyar Haghighi, Head
Engineering Education
Supporting Documentation

1. Level: Graduate
2. Course Instructors: Dale Harris
3. Course Outline

**Learning Outcomes:**
- Increased global awareness
- Knowledge of the dynamics of globalization as an economic and social process
- Knowledge of how globalization is studied and characterized by economists, political scientists, and sociologists
- Recognition of engineering and engineers as important social and economic actors
- Understanding the global as the horizon of interest to the engineering profession in the 21st century
- Increased understanding of the nature and roles of engineering education and life-long learning within the globalization dynamic
- Advanced understanding of the innovation process within a global enterprise including contrasting theories and the ability to analyze specific cases
- Knowledge of the engineering tools, processes, and attributes required to lead and innovate within a rapidly globalizing profession
- Knowledge of the engineering profession, engineering education, and globalization from the perspectives of countries beyond the United States, particularly Europe and the emerging economies of Asia
- Increased life-long learning skills

**Textbook:**
The World is Flat by Thomas Friedman (Farrar, Strauss and Giroux, 2007)
From Global to Metanational by Yves Doz, Jose Santos, and Peter Williamson (Harvard Business School Press, 2001)
The Engineer of 2020 by the National Academy of Engineering (The National Academies Press, 2004)

**Syllabus:** This syllabus is modeled after the course as it was taught in Summer 2007. Because of the use of case studies and the participation of guest speakers, the course syllabus would be different in details each time it's taught

**Week 1**
Lecture topic: **Introduction to Globalization** (presented by instructor)
Reading:
pages 1 - 30 of The World is Flat
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 4 discussion sessions throughout the week.

**Week 2**
Lecture topic: **19th Century Globalization** (presented by instructor)
Reading: pages 31 - 59 of The World is Flat
Writing: Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.

**Week 3**
Lecture topic: **20th and 21st Century Globalization** (presented by instructor)
Lecture topic: **Educating the Global Engineer** (presented by Professor Dan Hirelman, Purdue University)
Reading: pages 60 - 120 of The World is Flat
Reading: pages 1 - 40 of From Global to Metanational
Writing: Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures
Writing: Selected students are assigned to write 2 page summaries of discussions held the previous week
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.

**Week 4**
Lecture topic: **Global Value Chains and Attributes of Engineers** (presented by instructor)
Reading: pages 121 - 150 of The World is Flat
Reading: pages 41 - 62 of From Global to Metanational
Reading: pages 1 - 13 of The Engineer of 2020
Writing: Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures
Writing: Selected students are assigned to write 2 page summaries of discussions held the previous week
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week
Research: Students will begin independent research into a subject of their choice, relevant to the course. The research subject must be
approved by the instructor and must involve significant literature review and research on the WWW.

**Week 5**

**Lecture topic:** Globalization of Engineering Practice (presented by instructor)

**Reading:** pages 151 - 179 of The World is Flat

**Reading:** pages 63 - 82 of From Global to Metanational

**Reading:** pages 14 - 25 of The Engineer of 2020

**Writing:** Selected students are assigned to write 2 page summaries of online discussions held the previous week

**Discussion:** Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week

**Research:** Students will begin independent research into a subject of their choice, relevant to the course. The research subject must be approved by the instructor and must involve significant literature review and research on the WWW.

**Week 6**

**Lecture topic:** Asia and the Flat World (presented by instructor)

**Reading:** pages 180 - 239 of The World is Flat

**Reading:** pages 83 - 123 of From Global to Metanational

**Reading:** pages 26 - 51 of The Engineer of 2020

**Writing:** Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures

**Writing:** Selected students are assigned to write 2 page summaries of online discussions held the previous week

**Discussion:** Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week

**Research:** Students continue independent research into a subject of their choice, relevant to the course

**Week 7**

**Lecture topic:** European Engineering Education in the Flat World (presented by Professor Bjorn Pherson, Royal Institute of Technology, Sweden)

**Lecture:** Managing Global Innovation (presented by Gopichand Katragadda, GE India Technology Center)

**Reading:** pages 240 - 270 of The World is Flat

**Reading:** pages 124 - 154 of From Global to Metanational

**Reading:** pages 52 - 64 of The Engineer of 2020
Writing: Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures

Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week

Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.

Research: Students continue independent research into a subject of their choice, relevant to the course

**Week 8**

Lecture topic: **Educating the Global Engineer Through Globally Distributed Student Design Teams** (presented by Dr. Renate Fruchter, Stanford University)

Reading: pages 271 - 299 of the The World is Flat
Reading: pages 155 - 184 of From Global to Metanational
Reading: pages 65 - 76 of The Engineer of 2020
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week

Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.

Research: Students continue independent research into a subject of their choice, relevant to the course

**Week 9**

Lecture topic: **Engineering Perspectives on The Global Economy** (presented by instructor)

Reading: pages 300 - 359 of the The World is Flat
Reading: pages 185 - 225 of From Global to Metanational
Reading: finish the book, The Engineer of 2020
Writing: Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures

Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week

Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.

Research: Students continue independent research into a subject of their choice, relevant to the course

**Week 10**

Lecture topic: **Global Governance** (presented by instructor)
Reading: pages 360 - 390 of the The World is Flat
Writing: Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.
Research: Students continue independent research into a subject of their choice, relevant to the course

Week 11
Lecture topic: The Global Engineering Enterprise: Case Studies (presented by instructor)
Reading: pages 391 - 420 of the The World is Flat
Reading: complete the book, From Global to Metanational
Writing: Each student writes a 3 page essay on a topic inspired by the week's reading assignments or lectures
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.
Research: Students continue independent research into a subject of their choice, relevant to the course

Week 12
Lecture topic: Engineering Innovation Within the Global Enterprise (presented by instructor)
Reading: Complete the book, The World is Flat
Writing: Selected students are assigned to write 2 page summaries of discussions held the previous week
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.
Research: Students complete their independent research project

Week 13
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Writing: Each student completes and submits a 10 page written report on the subject of their independent research. These are posted online.

Presentation: Each student makes a 30 minute oral presentation of their independent research, complete with PowerPoint slides. These are recorded and posted online. Each presentation is followed by a 10 - 15 discussion session.

Week 14
Lecture topic: Case Study: Infosys and the Indian Software Industry (presented by Peter Tannenwald of Infosys Technologies)
Writing: Each student is to read the written reports and listen to the oral presentations of several assigned classmates. They are to write a 2 page response to each. The responses are not to be critiques. Rather, they are to provide additive content based on experience and/or knowledge gained in the course.
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.

Week 15
Lecture topic: Course Summary and Conclusion (presented by instructor)
Writing: Each student is to write a 3 page essay either on Globalization and Engineering, or on their key learnings from the course.

Grading:

- Participation and Quality of Discussion: 30%
- Weekly Writing Assignments: 30%
- Final Report on Research Topic: 20%
- Oral Presentation of Research Topic: 20%

Students will receive a grade as well as feedback from the instructor on each writing assignment. Students will receive weekly comments (either oral or in writing) from the instructor regarding issues raised during the discussion sessions.
Supporting Document for a New Graduate Course

To: Purdue University Graduate Council
From: Faculty Member: Dale Harris
Department: Engineering Education
Campus: West Lafayette

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

Contact for information if questions arise:
Name: Cindey Hays (temporary)
Phone Number: 494-3884
E-mail: isenberg@purdue.edu
Campus Address: ARMS 1321

Course Subject Abbreviation and Number: ENE 55400
Course Title: Globalization and Engineering

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: Attendance and Class Participation
• 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? **X** 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.)


(Revised and Approved by the Graduate Council 2/08)
ENE 55400  Globalization and Engineering (three credits)

Course description:
The focus is on the multifaceted dynamics of globalization, and its impact on engineering practice and the lives and education of engineers. The course emphasizes engineering and globalization from the perspectives of the emerging Asian economies and Europe as well as the United States. Topics include: globalization as studied by economists, sociologists, and political scientists; global migration of highly-skilled people including engineers; free flow of capital and the globalization of R&D investment; world trade of commodities and high-tech products; global value chains and the process of innovation; role of multinational and metanational corporations; role of intellectual property and the global spread of technology; global outsourcing and off-shoring of engineering jobs and services; global convergence of engineering education and life-long learning. This course is designed for practicing engineers and engineering educators. It is taught within a learner-centric, highly interactive, collaborative learning environment within which students are expected to learn from the experiences and thinking of each other, as well as from the instructor and other course resources. The course places emphasis on reading, writing, web-based research, and discussion. It includes guest speakers representing industry and academia from all over the world.

A. Justification for the Course

- Globalization is the most, or one of the most, influential forces of the first half of the 21st century. All students, regardless of discipline, benefit from an understanding of this force and its impact on their lives and professions. Engineers, in particular, will increasingly function in a globalized work environment. To lead and excel, engineers must understand the dynamics of globalization and incorporate that knowledge in their educational and career choices, as well as within their daily professional activities. This course is designed for graduate students, preferably with a minimum of two years full-time work experience as a practicing engineer and exposure to global engineering issues in the workplace. The course builds on practical experience by significantly deepening and broadening the student's knowledge of globalization and its impact on the engineering profession. The course is designed to prepare the student for positions of greater responsibility and leadership.

- The subject matter of this course is presented and discussed at a level that assumes the student already has had exposure to the topics covered obtained academically or more likely through practical work experience. The course is taught in a manner that assumes the student has advanced communication skills (writing, presentation, discussion) and significant experience researching issues and topics using the world wide web. The course is not appropriate for undergraduate students who will not have the portfolio of skills and knowledge required for success in the course. This course was previously offered as ENE 595Q – Globalization and Engineering in Summer 2007 (20 registered students), Summer 2008 (21 registered students) and Summer 2009 (20 registered students). Average
evaluation of course = 4.8 and average evaluation of instructor = 4.8. In the three experimental offerings of the course, enrollments were capped at 20.

B. Learning Outcomes and Methods of Evaluation or Assessment

Learning outcomes:
- Increased global awareness
- Knowledge of the dynamics of globalization as an economic and social process including contrasting theories and interpretations of events
- Knowledge of how globalization is studied and characterized by economists, political scientists, and sociologists
- Ability to interpret studies and research on globalization
- Increased understanding of the nature and roles of engineering education and life-long learning within the globalization dynamic
- Advanced understanding of the innovation process within a global enterprise including contrasting theories and the ability to analyze specific cases
- Increased ability to lead and innovate within a rapidly globalizing profession
- Knowledge of the engineering profession, engineering education, and globalization from the perspectives of countries beyond the United States, particularly perspectives from Europe and the emerging economies of Asia

Methods of evaluation of learning outcomes:
Evaluation of learning outcomes is done by:
- observation of student engagement and discussions - students carry out discussions both live in class and asynchronously online. The discussion questions posed to the students are designed to promote the learning objectives. All discussions are monitored and facilitated by the instructor.
- observations from extensive instructor interaction and discussion with individual students (this student-instructor interaction is extensive and built into the course)
- student written work - students are asked to research multiple globalization issues and events and write reports built around the learning objectives above. Fifteen written reports are required of each student. As a collected work, these reports provide the instructor insight into the progress of each student in reaching the learning objectives
- end of course survey

Grading:
- 25% Discussion - quantifiable participation in discussion is required of each student each week; a set of discussion questions
are presented to the class each week; each question requires an increase in student knowledge gained via independent research done using the world wide web; the student is asked to integrate what they learned with their own personal experience and with what they've learned from the required texts; students are directed to reflect that integration within their discussion comments; the discussion grade reflects the quality of the students participation

- 50% Writing - there are seven writing assignments of three pages each plus eight writing assignments of two pages each
- 25% Oral Presentation - a 30 minute presentation is required on a topic relevant to globalization and engineering, and researched by the student throughout the length of the course

Students will receive a grade as well as feedback from the instructor on each writing assignment. Students will receive weekly comments (either oral or in writing) from the instructor regarding issues raised during the discussion sessions.

C. Prerequisites:
- Students must have a BS degree in engineering or computer science
- Students are recommended (but not required) to have a minimum of two years work experience as a practicing engineer and strong communication skills (self-assessed). Experience during the experimental offerings of this course suggests that students without work experience are at a disadvantage in this course.

D. Course Instructor:
Dale Harris
Professor, Engineering Education
Currently a member of the Graduate Faculty

E. Course Outline:
The syllabus below describes the course topics and indicates the relative amount of time devoted to each. Guest speakers will vary year-to-year. Those listed below participated in the experimental offering of the course in Summer 2009.

Week 1
Lecture Topics: Introduction to the Course; Introduction to Globalization
Reading: pages 1 - 30 of The World is Flat
Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.
Week 2
Lecture topics: History of Globalization
Reading: pages 31 - 59 of The World is Flat
Writing: Selected students are assigned to write 2 page summaries of discussions held the previous week
Writing: Each student writes a 3 page essay on a topic assigned by the instructor
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.

Week 3
Lecture topics: Global Innovation in the Flat World
Guest Instructor: Gopichand Katragadda
General Manager, Engineering Operations
GE Energy - India
Bangalore, India
Reading: pages 60 - 120 of The World is Flat
Reading: pages 1 - 40 of From Global to Metanational
Writing: Selected students are assigned to write 2 page summaries of discussions held the previous week
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.

Week 4
Lecture topics: Global Governance
Case Study
Reading: Globalization at Ingersoll Rand
pages 121 - 150 of The World is Flat
Reading: pages 41 - 62 of From Global to Metanational
Reading: pages 1 - 13 of The Engineer of 2020
Writing: Selected students are assigned to write 2 page summaries of discussions held the previous week
Writing: Each student writes a 3 page essay on a topic assigned by the instructor
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.
Research: Students will begin independent research into a subject of their choice, relevant to the course. The research subject must be approved by the instructor and must involve significant literature review and research on the WWW.

Week 5
Lecture topics: Globalization of R&D Investment
Case Study: Globalization of the Chinese Telecommunications Industry
Reading: pages 151 - 179 of The World is Flat
Reading: pages 63 - 82 of From Global to Metanational
Reading: pages 14 - 25 of The Engineer of 2020
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.
Research: Students continue independent research into a subject of their choice, relevant to the course. The research subject must be approved by the instructor and must involve significant literature review and research on the WWW.
Week 6
Lecture topics: Global Dispersion of Engineering Jobs and Migration of Highly Skilled People
Case Study: Globalization of Agricultural and Biological Sustainability
Reading: pages 180 - 239 of The World Is Flat
Reading: pages 83 - 123 of From Global to Metanational
Reading: pages 26 - 51 of The Engineer of 2020
Writing: Each student writes a 3 page essay on a topic assigned by the instructor
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.
Research: Students continue independent research into a subject of their choice, relevant to the course

Week 7
Lecture topics: Globalization of Engineering and Engineering Education in Europe
Guest Instructor: Bjorn Pehrson
Professor and Previous Chair, Department of Teleinformation
The Royal Institute of Technology
Stockholm, Sweden
Reading: pages 240 - 270 of The World Is Flat
Reading: pages 124 - 154 of From Global to Metanational
Reading: pages 52 - 64 of The Engineer of 2020
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.
Research: Students continue independent research into a subject of their choice, relevant to the course

Week 8
Lecture topics: Impact of Globalization on Organizations and Multinational Corporations
Case Study: Engineering Education in India
Reading: pages 271 - 299 of The World Is Flat
Reading: pages 155 - 184 of From Global to Metanational
Reading: pages 65 - 76 of The Engineer of 2020
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Writing: Each student writes a 3 page essay on a topic assigned by the instructor
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.
Research: Students continue independent research into a subject of their choice, relevant to the course
**Week 9**

**Lecture topics:** Global Engineering Leadership in Companies Large and Small

**Guest Instructor:** Emily Ligget  
CEO, NovaTorque  
Sunnyvale, California

**Reading:**  
pages 300 - 359 of the The World is Flat

**Reading:**  
pages 185 - 225 of From Global to Metanational

**Writing:**  
finish the book, The Engineer of 2020

**Writing:**  
Selected students are assigned to write 2 page summaries of online discussions held the previous week

**Discussion:**  
Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.

**Research:**  
Students continue independent research into a subject of their choice, relevant to the course

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**Week 10**

**Lecture topic:** Globalization and Intellectual Property

**Guest Instructor:** Gene Spafford  
Professor of Computer Science  
Executive Director, Center for Education and Research in Information Assurance and Security  
Purdue University

**Reading:**  
pages 360 - 390 of the The World is Flat

**Writing:**  
Each student writes a 3 page essay on a topic assigned by the instructor

**Writing:**  
Selected students are assigned to write 2 page summaries of online discussions held the previous week

**Discussion:**  
Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.

**Research:**  
Students continue independent research into a subject of their choice, relevant to the course

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**Week 11**

**Lecture topics:** Engineering and Engineering Education in the Asia Pacific Region

**Guest Instructor:** Shyamal Majumdar  
Director General and CEO  
Colombo Plan Staff College for Technical Education  
Manila, Philippines

**Reading:**  
pages 391 - 420 of the The World is Flat

**Reading:**  
complete the book, From Global to Metanational

**Writing:**  
Selected students are assigned to write 2 page summaries of online discussions held the previous week

**Discussion:**  
Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.

**Research:**  
Students continue independent research into a subject of their choice, relevant to the course
Week 12
Lecture topics: Globalization of Technology Transfer and the Problem of Technology Leak
Case Study: Globalization at Kimberly-Clark
Reading: Complete the book, The World is Flat
Writing: Each student writes a 3 page essay on a topic assigned by the instructor
Discussion: Discussion topics are assigned by the instructor. Discussion occurs throughout the week within assigned groups of five students each.
Research: Students continue independent research into a subject of their choice, relevant to the course

Week 13
Lecture Topics: The Future of Globalization
Writing: Selected students are assigned to write 2 page summaries of online discussions held the previous week
Discussion: Students propose discussion topics based on reading and lectures, and discuss them in assigned groups during 3 discussion sessions throughout the week.
Research: Students complete their independent research project

Week 14
Writing: 30 minute Student Presentations on Their Research Topics
Each student writes a 3 page essay on a topic assigned by the instructor
Selected students are assigned to write 2 page summaries of online discussions held the previous week

Week 15
30 minute Student Presentations on Their Research Topics

Students will receive a grade as well as feedback from the instructor on each writing assignment. Students will receive weekly comments (either oral or in writing) from the instructor regarding issues raised during the discussion sessions.

F. Reading List (course text)
The World is Flat by Thomas Friedman; Published by Picador / Farrar, Straus and Giroux (New York, 2007)

From Global to Metanational by Yves Doz, Jose Santos, and Peter Williamson; Published by the Harvard Business School Press (Boston, 2001)

The Engineer of 2020 - Visions of Engineering in the New Century; by The National Academy of Engineering; Published by the National Academic Press (Washington DC, 2004)

G. Library Resources
Students are expected to do significant literature research using the world wide web. Students have access to the Purdue online library. Some resources are placed on the Blackboard Vista webpage for the course. The student is expected to locate other needed online resources on their own.