ENCE 55400 – Globalization and Engineering  
(3 credits, Spring 2019, CRN TBD) 
Synchronous class meetings: Thursdays, 7-8:50 PM, ARMS 1021 or WebEx

INSTRUCTOR  
Prof. Brent K. Jesiek (ARMS 1313 or WANG 3565, 765-496-1531, bjesiek@purdue.edu)  
Office Hours: By appointment

COURSE DESCRIPTION  
The focus of this course is on the multifaceted economic, social, cultural, and technological dynamics of globalization, including associated impacts on engineering education and practice. The course emphasizes engineering, globalization, cultural identity, and society primarily from the perspectives of the emerging Asian economies and Europe, as well as the United States. The course includes a number of historical and contemporary case studies, offering opportunities for exploration of topics and themes such as global knowledge economies and migration, international and transnational institutions, and international development. It is taught within a student-centric, highly interactive, collaborative learning environment in which students are expected to learn from one another, as well as from the instructor and other course resources. The course places particular emphasis on oral and written communication skills, intercultural development, web-based research, and information literacy. Globalization and Engineering is designed for engineering students, educators, and practicing professionals who have engaged, or expect to engage, with global or multicultural projects.

LEARNING OBJECTIVES (as formally approved)  
1. Increased global awareness.  
2. Knowledge of the dynamics of globalization as an economic and social process including contrasting theories and interpretations of events.  
3. Knowledge of how globalization is studied and characterized by economists, political scientists, and sociologists.  
4. Ability to interpret studies and research on globalization.  
5. Increased understanding of the nature and roles of engineering education and life-long learning within the globalization dynamic.  
6. Advanced understanding of the innovation process within a global enterprise including contrasting theories and the ability to analyze specific cases.  
7. Increased ability to lead and innovate within a rapidly globalizing profession.  
8. 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.
**READING LIST/TEXTBOOK**
There is one required textbook for this class:


All other assigned readings will be distributed in class, posted to the Blackboard course website, and/or available via Purdue Libraries. The typical weekly reading load for this course is expected to be 75-100 pages, on average.

**COURSE TASKS AND GRADING GUIDELINES**
There are three central course tasks:

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Approx. weight</th>
<th>Process and grading guidelines</th>
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</thead>
<tbody>
<tr>
<td>Engagement - Synchronous class discussions</td>
<td>25%</td>
<td><em>Due weekly</em>&lt;br&gt;Engagement includes attendance, evidence of preparation for class (i.e., has done the readings), and active participation during class sessions. Graded based on the following guide:&lt;br&gt;plus (+) = satisfactory&lt;br&gt;minus (-) = unprepared and/or partial absence&lt;br&gt;0 = absent</td>
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<tr>
<td>Engagement - Asynchronous learning activities</td>
<td>25%</td>
<td><em>Due weekly when another assignment is NOT due</em>&lt;br&gt;Graded based on the following guide:&lt;br&gt;plus (+) = satisfactory (quality 300+ words)&lt;br&gt;minus (-) = underdeveloped and/or late&lt;br&gt;0 = not turned in</td>
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<td>3 formal writing activities</td>
<td>50% total (15%, 15%, 20%)</td>
<td><em>Due weeks 6, 10, and Finals week</em>&lt;br&gt;The feedback criterion addresses levels of “completeness”, “groundedness”, “well-written”, and “engaging.” The final grade is based on incorporating feedback related to the criterion.</td>
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*Engagement - Synchronous class discussions*<br>The majority of our class times together will be organized around different kinds of conversations and discussions, both in small groups and large groups. To participate in these conversations, you must be present in class. **If you must miss class, please alert the instructors in advance (even the day of class).** We expect you to come to class on time, and we expect you to be focused on our class material during class.

Please realize that your absence affects not only your participation, but also that of your peers who miss out on your participation. **To make up your absence**, you will be expected to contribute additional work for everyone’s benefit (such as a reflective discussion post on
a supplementary article, or a summary of a relevant event you attended – let us know your ideas). Make-up work must be completed by the last week of class.

Absences where you did not let the instructors know in advance, and/or for which you do not do make-up work, will result in deductions to your overall course grade.

**Engagement – Asynchronous learning activities**

During weeks when another major assignment (i.e., formal writing assignment) is not due, you will be expected to complete learning activities that challenge you to critically reflect on the readings, identify and share other materials relevant to a given week’s topic, and/or work in groups on other types of tasks. These activities may require you to write up and share/post individual work (e.g., a written reflection document) or a group response (e.g., a case study analysis). You may also be asked to read and respond to the work of others. A detailed schedule and deadlines for these learning activities will be posted and reviewed at the start of the semester. The goal of these activities is to help you prepare for class discussion, develop your reflective thinking and writing skills, explore new insights, and inform other writing tasks. These materials also help the instructor prepare for class. We would like to help you feel comfortable actively participating in future communication forums, and hope that providing you with a more protected forum for your initial forays through the course discussion site in Blackboard will aid you in this endeavor.

**Formal writing assignments**

There will be 3 major writing assignments where you will be asked to explore themes from assigned readings and class discussions. As such, they are opportunities to: (1) synthesize and relate key issues and their importance, (2) practice producing different types or styles of written work, and (3) practice and further develop your academic writing skills.

The first essay is on the topic “What is Globalization?” and should be between 5 and 7 pages in length. The objective of this assignment is to help you articulate your own understanding or definition of globalization based on published literature and your own experiences.

The second and third essays should be tailored to your professional goals and the professional development you seek from this class. The second essay constitutes a **POSITION**, while the third essay constitutes a **PROPOSAL**. Together with additional reflection related to your first essay on “What is Globalization?”, these three pieces will constitute a portfolio of work that can guide your engagement in the globalized engineering workplace and/or higher education sector.

The second POSITION essay will ask you to choose from the following formats:

- **Policy brief** – a well-argued synthesis of a policy on an engineering issue in a globalized context
- **Academic blog post** – a persuasive, public-facing position piece for a specific audience (e.g., academic, industry, policy, etc.) audience
- **Industry case study memo** – a thorough analysis of an industry or NGO program or product
The third PROPOSAL essay will ask you to choose from the following formats:
- Research prospectus – project summary to an NSF-type organization (can be in a different national context) laying out a proposed study on an engineering issue in a globalized context
- Industry proposal – a presentation to a potential industry or NGO partner re: a program that addresses an engineering issue in a globalized context

A week before each writing activity is due there will be an opportunity to get peer feedback on your initial draft or outline. IMPORTANT: You are required to document the feedback you receive on your draft and submit these notes with your final draft.

All written work should be formatted with a 12 point font, double line spacing, pages numbered, and submitted as a PDF file to the appropriate Blackboard dropbox.

The formal writing assignments will be evaluated based on the following feedback criteria:
- Completeness (i.e., suitable scope; substantively addresses guiding questions);
- Grounded (i.e., connected with literature from class, effective use of evidence)
- Well-written (i.e., connected with literature from class, effective use of evidence)
- Engaging (i.e., connected with literature from class, effective use of evidence)

We will use the following grading scale for the formal writing assignments:
- x not turned in
- 1 sound ideas, but not fully persuasive (improvements needed in multiple categories)
- 2 excellent (complete, grounded, clearly written and organized, engaging)

The instructors will also use +/- versions of these grading levels (i.e., 3+/3/3-/2+/etc.) to provide students with a more fine-grained evaluation of the work submitted.

Course grading and expectations
The instructors view grading as a tool to give formative feedback to students rather than an evaluative power that instructors hold over students to engender good behavior. We presume you are in this class because you are interested in the material, and will use grades to give you feedback on how we feel you are achieving the course objectives.

The essence of an “A” grade (A-/A/A+) is satisfactory or outstanding participation in class and on assignments. Achieving this level of performance requires active and thoughtful participation in all class meetings, incorporating feedback from instructors and peers into revisions of papers, completing all reflections at a satisfactory level, and receiving a mix of 2s and 3s on all major assignments.

The essence of a “B” grade (B-/B/B+) is adequate participation in class and work on assignments. Achieving this level of performance attending most classes (and/or making up absences as appropriate), turning in and receiving satisfactory evaluations on most of
the weekly reflections, and achieving a mix of 1s and 2s on all major assignments. We consider this to be the **minimum** in participation.

A “C” grade represents **unsatisfactory** performance, likely due to multiple missed classes and/or weekly reflections, 1s on major writing assignments, and an overall lack of engagement. Note that “C” grades typically cannot be counted on a graduate student’s plan of study, and therefore represent unsuccessful course completion.

If you have concerns with your participation, or with anything else in this course, **contact one of the instructors AS SOON AS POSSIBLE**. We have worked with students with special needs and circumstances, but can only do so if you let us know in a timely manner!

**ACADEMIC INTEGRITY**
Please review the university’s **academic integrity** policy, paying particular attention to issues related to paper writing. As this policy states:

> Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty" (Part 5, Section III-B-2-a, Student Regulations). Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest" (University Senate Document 72-18, December 15, 1972).

We take these issues very seriously, and will discuss more specific considerations before the first essay is due. The university's complete academic integrity policy can be found at: [http://www.purdue.edu/odos/osrr/resources/documents/academic_integrity.html](http://www.purdue.edu/odos/osrr/resources/documents/academic_integrity.html)

**EQUITY AND RESPECT**
Every voice in the classroom has something of value to contribute to class discussions. Please respect the diverse experiences, beliefs and values expressed by your fellow students and instructor, and refrain from derogatory comments about other individuals, cultures, groups, or viewpoints. The School of Engineering Education supports Purdue University’s commitment to diversity, and welcomes individuals of all ages, backgrounds, citizenships, disabilities, education, ethnicities, family statuses, genders, gender identities, geographical locations, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences.

**REASONABLE ACCOMMODATION POLICY**
If you are a person with special circumstances that may affect your class performance (e.g., visual, hearing or learning disabilities, language differences, etc.) please let us know so that we can discuss and make appropriate accommodations. Also note that Purdue's Disability Resource Center web site is located at: [http://www.purdue.edu/odos/drc/](http://www.purdue.edu/odos/drc/)
EMERGENCY PREPAREDNESS
In preparation the unlikely event of fires, tornadoes, or other hazards, please review the safety information posted in Armstrong Hall and on Purdue’s emergency preparedness web site: http://www.purdue.edu/emergency_preparedness/

EMERGENCY PROVISIONS
In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Here are ways to get information about changes in this course: Blackboard course web page, instructors’ e-mail, and instructors’ office phone.

COURSE SCHEDULE (Topical Overview)
NOTE: A detailed course schedule will be developed and released prior to the start of the semester. Some topical adjustments may also be made based on student input and interest.

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<tr>
<th>Week</th>
<th>Topic</th>
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<td><strong>Part 1: Globalization</strong></td>
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<tr>
<td>1</td>
<td>What is Globalization - Introduction</td>
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<td>2</td>
<td>What is Globalization - Definitions and framing</td>
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<td>3</td>
<td>Critical Perspectives on Globalism and Globalization</td>
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<td>4</td>
<td>Governance: Local, National, Regional, Global</td>
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<td><strong>Part 2: Global Engineering</strong></td>
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<td>5</td>
<td>What is Global Engineering? What is Culture?</td>
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<td>6</td>
<td>Global Engineering Case Studies</td>
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<td>7</td>
<td>International Development and Humanitarian Engineering</td>
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<td>8</td>
<td>What is Global Engineering Education? History, Competencies, Interventions</td>
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<td>9</td>
<td>Intercultural Development Workshop</td>
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<td>10</td>
<td><strong>NO CLASS – Spring Break</strong></td>
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<td><strong>Part 3: Engineering Cultures</strong></td>
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<tr>
<td>11</td>
<td>Introduction to Engineering Cultures: Cross-National Perspectives</td>
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<td>12</td>
<td>Engineering Cultures: European Case Studies</td>
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<td>13</td>
<td>Engineering Cultures China: Rise of the Red Engineers</td>
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<td>14</td>
<td>Engineering Cultures India</td>
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<td><strong>Part 4: Course Synthesis</strong></td>
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<tr>
<td>15</td>
<td>TBD: Other Case Study or Topical Explorations</td>
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<tr>
<td>16</td>
<td>Course Synthesis and Wrap-up</td>
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