PUBP 4140
Foundations of Leadership

This course offers a comprehensive review of contemporary issues and perspectives on leadership, including multi-disciplinary and systems-oriented approaches as well as classic theory, moving to the examination of evolving contemporary beliefs. The emphasis is on application of concepts in actual leadership settings and situations. The students become familiar with different ways of exercising leadership, their own strengths and weaknesses, and how they can best work with others in a leadership context. They learn and apply leadership skills in a hands-on, practical way. Topics include development of leadership theories, personal assessment and development, values and ethics, motivation, power, followership, group dynamics, multiculturalism in leadership, conflict resolution, performance excellence, and the change process.

3 CREDITS
INSTRUCTOR: WES WYNENS

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CEE 4000
Global Engineering Leadership

This course focuses on the basic principles and practice of leadership in engineering environments. This is a modular course taught by practitioner leaders and managers. The modules focus on the principles and practice of leadership and management in private, public and not-for-profit engineering organizations. Topics include leadership, management, organizational behavior, entrepreneurship, ethics, innovation, communication, collaboration and competition, and conflict resolution. The course includes team-based projects in which the students have an opportunity to reflect upon and apply what they are learning.

3 CREDITS
INSTRUCTORS: RUDY BONAPARTE

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CEE 4350
Environmental Technology in the Developing World

This course develops practical skills to evaluate environmental impacts in developing countries. The global burden of disease is known to be dominated by a variety of environmental risk factors that include poor air quality (both indoors and outdoors), waterborne diseases, and issues related to sanitation. The class focuses on evaluating the state of the environment in developing countries, with emphasis on problem-based, hands-on learning and includes an embedded study abroad component to conduct field studies in a developing country.

3 CREDITS
INSTRUCTOR: JOE BROWN

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CEE 4803C  
Construction Management and Megaprojects

Challenges and opportunities related to effective and efficient planning, design, construction, delivery, and operations of megaprojects. Review of unique characteristics that make megaprojects exceptionally difficult to manage – great size, high costs, technical complexity, long timeframe, massive environmental and social impacts, high risk level, diverse stakeholders with often conflicting interests and sometimes varied cultural backgrounds, and possible contractual, legal, and ethical issues. Case study reviews to develop awareness and understanding of leadership skills required in a complex megaproject environment.

3 CREDITS
INSTRUCTOR: BAABAK ASHURI

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CEE 4803D
International Disaster Reconnaissance Studies

Understanding the consequences of major earthquakes in foreign countries; associated studies undertaken to understand contributing factors and efforts aimed at mitigating these factors for similar future events; and leadership in crisis situations. Lectures and group study activities with an international travel experience, including opportunities to visit several sites impacted by the M8 earthquake in Wenchuan, China, and the world's largest "shake table" facility, E-Defense in Tokyo, Japan. Class focuses on evaluating the tectonic setting of the event as well as how manmade infrastructure performed. The manner in which authorities responded to the event from a rescue/recovery perspective is also discussed. Students become familiar with key seismic considerations in the impacted zone as well as the planning and execution of a field reconnaissance study or shake table simulation.

3 CREDITS
INSTRUCTOR: J. DAVID FROST

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CEE 4803E
Sustainable Transportation Abroad

Transportation, with other infrastructure systems, plays a major role in the development of cities, regions and nations worldwide. The purpose of this course is to examine the quality of transportation systems, and the quality of the cities and regions they serve, in selected cities around the world to understand the influence of transportation on sustainable development. It is also to understand the influences of political, institutional and other infrastructures on the quality of transportation systems. The course includes an embedded study abroad component to study a transportation system in a city overseas.

3 CREDITS
INSTRUCTOR: KARI WATKINS

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CEE 4803F
Sustainable Cities
(Under Development)

3 CREDITS
INSTRUCTOR: JOHN E. TAYLOR

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CEE 4803G
Introduction to Structural Engineering for GELM

This course introduces key concepts in structural engineering: the science, art and skill of designing various types of structures such that their behavior is as intended in a safe and resilient manner throughout their lifetime. Through case studies of structures and failures, demonstrations, and lectures, students will understand how structures of all types (i.e. buildings, bridges, domes, dams, etc.) take and transfer loads, to compute the effects of the loads on the structural members, and to determine the material and size of these members such that they are resilient and sustainable.

3 CREDITS
INSTRUCTOR: LAUREN STEWART

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CEE 4803H
Construction Engineering and Management for GELM

This course provides fundamental concepts in the planning, design, and construction of civil engineering projects. It provides an introduction to the fields of engineering economics, risk analysis, scheduling, and construction law, and provides tools and techniques for the management and control of resources (e.g., time, money) on construction engineering projects. The focus of case-studies will be construction projects in the urban environment for resiliency.

3 CREDITS
INSTRUCTOR: LAUREN STEWART

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In GEP I, students will work with their faculty mentor and the course instructor to develop a plan for proposed research or work for a field-based, research-based or service learning international project. The proposed plan will consist of clearly stated objectives, hypotheses, and experimental and other approaches. The plan will also clearly articulate how the student will engage with local communities through the work. Students will work with counterparts based in the country of interest to refine problem definitions, approaches, and to give feedback on potential solutions. The research or work plan developed in the course will serve as the scope of work for the student’s project. Students will also work with staff from the Office of International Education and the Leadership Education and Development (LEAD) office to conduct safety and leadership training, described below. Specific tasks will be: 1) Define the civil or environmental problem of interest; 2) Develop specific hypotheses or research objectives related to the problem; 3) Develop methodologies and protocols to evaluate the hypotheses or conduct research; and 4) Pilot test field experiments and methods or conduct initial data collection. This course will be offered in the spring. It is expected that in the summer following their completion of this course, students will travel and work abroad to complete the proposed research.
In GEP II, under the oversight of the course instructor, students will work with their faculty mentor to analyze and interpret the data collected during their international field-research, or analyze and synthesize the information collected during their international research experience. The goal of the synthesis will be to draw conclusions in regards to the objectives and hypotheses developed or objectives set in GEP I. Specific deliverables will be: 1) A research paper presenting the work completed, results, and discussion of the findings; and 2) A public presentation on the research or work project. *This course will be offered in the fall.*
INTN 3011
Global Engineering Leadership Experience

Each student in the leadership minor program must complete a work-abroad, research-abroad, or study-abroad experience. The purpose is to give the student an opportunity to exercise leadership of self and others in a foreign engineering or technology environment on a real-world problem. The experience will offer students the opportunity to develop and apply cross-cultural skills required in the successful completion of projects.

VARIABLE CREDIT
INSTRUCTORS: ADJO AMEKUDZI-KENNEDY
JOHN KOON

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