INTERDISCIPLINARY COURSES (ENGINEERING) (INTEREGR)

INTEREGR 101 — CONTEMPORARY ISSUES IN THE ENGINEERING PROFESSION
2 credits.

A survey of the engineering profession’s contemporary role in society. Emphasis on the engineer’s responsibility to society, including concerns for business principles, safety, ethics, and the environment; the role of engineers in achieving economic stability, growth, and improving the human condition. Enroll Info: Open to Fr So only
Requisites: None
Course Designation: Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2012

INTEREGR 102 — INTRODUCTION TO SOCIETY’S ENGINEERING GRAND CHALLENGES
2 credits.

Description and discussion of how engineering disciplines address specific engineering grand challenges in society. Focus on societal and multicultural issues encountered in engineering, as well as economic, ethical and political constraints on engineering solutions. Development of students’ professional skills. Enroll Info: Fr or So st, or cons inst. Open to Fr
Requisites: None
Repeatable for Credit: No
Last Taught: Spring 2016

INTEREGR 103 — CORE COMPETENCIES FOR ENGINEERING LEADERS
2 credits.

Leadership is a core aspect of successful engineers, but it is rarely part of a formal curriculum. The course provides a solid foundation of leadership theory and practice to help future engineering professionals to be more effective in their technical work. Enroll Info: None
Requisites: None
Repeatable for Credit: No
Last Taught: Fall 2013

INTEREGR 110 — INTRODUCTION TO ENGINEERING
1 credit.

For first-year students in the College of Engineering. Introduction to engineering disciplines and professional fields; engineering design process; grand challenges; sustainability, societal, multicultural and global issues encountered in engineering; economic and ethical constraints on engineering solutions; and employment and educational opportunities in engineering. Enroll Info: None
Requisites: None
Repeatable for Credit: No
Last Taught: Spring 2018

INTEREGR 111 — INTRODUCTION TO THE ENGINEERING DESIGN PROCESS AND PROFESSION
2 credits.

Introduction to the engineering design process and profession through applied problem-solving. Emphasis on the engineering design process in industry, teamwork and communication skills; the engineer’s responsibilities to customers and society; and the role of engineers in improving the human condition. Enroll Info: None
Requisites: None
Repeatable for Credit: No
Last Taught: Fall 2015

INTEREGR 150 — DIRECTED STUDIES IN ENGINEERING FOUNDATION COURSES
0 credits.

Directed study through College of Engineering Supplementary Instruction program. Group discussion and problem-solving coaching to enhance understanding of physics and its applications to engineering. Open only to students with engineering classification. Enroll Info: Enrollment in College of Engineering
Requisites: None
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2019

INTEREGR 160 — INTRODUCTION TO ENGINEERING DESIGN
3 credits.

This course provides the incoming freshman with an overview of engineering based on a “hands-on” experience with a client-centered engineering design project, which includes: 1) a team-based design project, 2) a survey of engineering disciplines, and 3) an introduction to computer tools and lab techniques. Enroll Info: HS physics or chem with con reg in calculus, or cons inst.Restricted to Fr only
Requisites: None
Repeatable for Credit: No
Last Taught: Spring 2016

INTEREGR 170 — DESIGN PRACTICUM
3 credits.

For first-year students in the College of Engineering. Introduction to design via the invention, fabrication and testing of a device that solves a problem proposed by a real world client. Lectures address information retrieval techniques, specification writing, methods for enhancing creativity, analysis techniques, scheduling, selection methodologies, cost estimating, sustainability in design, shop safety, engineering ethics, opportunities for engineering students (ie, study abroad, internships, co-ops), major exploration, fabrication equipment and techniques, and oral and written communication. Enroll Info: None
Requisites: None
Repeatable for Credit: No
Last Taught: Spring 2019
INTEREGR 200 — CAREER ORIENTATION
1 credit.
Career planning; consideration of types of work in engineering; interviewing procedures and effective use of placement services; opportunities, division of work, and requirement for engineers in many fields. Enroll Info: None
Requisites: Junior standing
Repeatable for Credit: No
Last Taught: Spring 2014

INTEREGR 301 — ENGINEERING AND BIOLOGY: TECHNOLOGICAL SYMBIOSIS
1-4 credits.
Combining engineering with biology can result in fascinating new technologies. This course explores 3 topics at the very forefront of bio-engineering innovation as well as the social, political, and ethical issues that can affect realization. Enroll Info: ME 306 or ECE 230 or CBE/BME 320 or MSE 330 or CIV ENGR 320 or EMA 303 or BSE 249
Requisites: None
Repeatable for Credit: No
Last Taught: Fall 2014

INTEREGR 400 — DEAN’S LEADERSHIP CLASS
1 credit.
The focus of this course is to help leaders of student organizations learn about and practice essential leadership skills, and develop constructive viewpoints on leadership. Enroll Info: None
Requisites: None
Repeatable for Credit: No
Last Taught: Fall 2010

INTEREGR 413 — CURRENT ISSUES IN INTERNATIONAL ENGINEERING
1 credit.
Provides a comparative examination and analysis of global trends and regional variations for engineering concepts, standards and practices. Using organizational case studies, the course will describe and analyze multi-national engineering operations and summarize best practices and caveats. Enroll Info: Admission to Intl Engr Cert Progm or cons inst
Requisites: None
Repeatable for Credit: No
Last Taught: Fall 2018

INTEREGR 477 — TOOLS FOR PROTOTYPING AND MANUFACTURING
1-3 credits.
Tools for prototyping and manufacturing physical objects along with some of the underlying theory for how the tools work. Tools include 3D printers, 3D scanners, thermoformers, CNC routers, welders, wood saws, mills, lathes, laser cutters, waterjets, machine tools, general electronics, microcontrollers and Virtual Reality. Enroll Info: None
Requisites: None
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions

INTEREGR 601 — TOPICS IN INTERDISCIPLINARY ENGINEERING
1-3 credits.
Interdisciplinary topics of special interest to undergrad and grad students in engineering. Enroll Info: None
Requisites: None
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2019

INTEREGR/MEDICINE 650 — WOMEN AND LEADERSHIP IN MEDICINE, SCIENCE AND ENGINEERING
1-3 credits.
Review and discussion of research on effective leadership; gender differences in leadership; unconscious assumptions about behaviors and traits of leaders; and approaches to counteracting biases. Required assignments vary with credits from reflective journal to literature review to research project. Enroll Info: Graduate students, Professional students: Upper-level undergrads with consent of instructor
Requisites: None
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

INTEREGR 941 — COLLABORATIVE CAPSTONE II
3 credits.
Continuation of design thinking projects from INTER-HE 940. Explore chosen opportunity area through prototyping, user testing, and iteration. Creation of final, high resolution design, with communication and launch plan for startup, product or service. Practice behaviors of design thinking - ethics, critique, and storytelling. Enroll Info: None
Requisites: INTER-HE 940
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No