

Designated Emphasis in Development Engineering Spring 2018 Course Offering

Development Engineering Core Courses – Spring 2018

Development Engineering 210 – Development Engineering Research and Practice Seminar

CCN: 35880

Time, Location: Mondays 1-3pm, B100 A/B Blum Hall

Instructor: Alice Agogino

Development Engineering represents a new interdisciplinary field that integrates engineering, economics, business, natural resource development and social sciences to develop, implement, and evaluate new technological interventions that address the needs of people living in poverty in developing regions and low-income areas of the United States. This seminar, offered each spring term, will focus on work-in-progress presentations by the students

Designated Emphasis in Development Engineering Electives – Spring 2018

Module 1: Problem Identification and Project Design

- **Development Practice 225– Innovation, Product Development, and Marketing**

CCN: 33465

Time, Location: Wed 1:00 – 4:00 PM, TBA

Instructor: Staff

This course will introduce the basic concepts of innovation, product development, and marketing in developing countries. Students will analyze alternative knowledge and innovation systems, and the role of public and private sector interactions. The course will also introduce models of technology transfers, adoption, and diffusion of technology, as well as introduce students to basic principles of marketing, assessment of consumer choices, and the challenge of bringing to market efficient solutions to meet customer needs.

- **Energy and Resources 275 – Water and Development**

CCN: 39670

Time, Location: Tu/Th 11:00 AM – 12:30 PM, Barrows 140

Instructor: Isha Ray

This class is an interdisciplinary graduate seminar for students of water policy in developing countries. It is not a seminar on theories and practices of development through the "lens" of water. Rather, it is a seminar motivated by the fact that over 1 billion people in developing countries have no access to safe drinking water, 3 billion don't have sanitation facilities and many millions of small farmers do not have reliable water supplies to ensure a healthy crop.

Readings and discussions will cover: the problems of water access and use in developing countries; the potential for technological, social, and economic solutions to these problems; the role of institutions in access to water and sanitation; and the pitfalls of and assumptions behind some of today's popular "solutions."

- **Energy and Resources 298 – Energy and Environmental Justice**

CCN: 42319

Time, Location: Mon 5:00 – 6:30 PM, 105 Dwinelle Hall

Instructor: Dan Kammen

EEJ is a variable unit (1 – 4 units) research-focused course to develop and apply methods to the study of energy and environmental injustice and racism. The course is intended as a structured but flexible opportunity to build tools and skills in identifying, cataloging and/or quantifying racial, gender, and socioeconomic disparities and injustices in society, and to examine opportunities to address these issues in local, regional, national, international or global contexts. Course sessions will be tailored to supporting individual and team-based student research efforts.

- **Information 214 – Needs and Usability Assessment**

CCN: 37954

Time, Location: Thu 12:30 – 3:30 PM, South Hall 210

Instructor: Staff

Concepts and methods of needs and usability assessment. Understanding users' needs and practices and translating them into design decisions. Topics include methods of identifying and describing user needs and requirements; user-centered design; user and task analysis; contextual design; heuristic evaluation; surveys, interviews, and focus groups; usability testing; naturalistic/ethnographic methods; managing usability in organizations; and universal usability.

- **Public Health 214 – Eat.Think.Design**

CCN: 38369

Time, Location: W 4-7, Jacobs 310

Instructor: Kristine Ann Madsen & Jaspal Sandhu

Seven years after it launched, Eat.Think.Design. is still the only course in the country that teaches systematic innovation and human-centered design in a public health context. Student teams work on design projects with real clients – and on new ventures – at the intersection of food, innovation, and health. Each year, 25 students from a dozen different graduate programs come together to learn about the innovation process through these projects. This year the course will expand its focus to design solutions that [use food to positively and substantially](#)

[impact climate change](#) Students with and without a professional focus on food, food systems, or climate change are strongly encouraged to apply.

Module 2: Evaluation Techniques and Methods for Measuring Social Impact

- **ECON 219B* – Foundations of Psychology and Economics**

CCN: 32828

Time, Location: Wed 12:00-3:00 PM, Evans 639

Instructor: Stefano Dellavigna

219B expands on 219A. It will expand on the psychological and experimental economic research presented there, but will emphasize a range of economic applications and especially empirical research.

*Econ 219A or 240A-B are prerequisite.

- **Economics 240B* – Econometrics**

CCN: 23691

Time, Location: Mon, Wed 10:00 – 11:59 AM, Evans 648

Instructor: James Powell, Demian Pouzo

Basic preparation for the Ph.D. program including generalized least squares; instrumental variables estimation; generalized method of moments; time series analysis; and nonlinear models.

- **ECON 270B – Development Economics**

CCN: 23697

Time, Location: Mon 2:00 – 4:00 PM, Evans 597

Instructor: Edward Miguel, Supreet Anand

Problems of underdevelopment and poverty, policy issues and development strategies.

- **ENERES 275 – Water and Development**

CCN: 39670

Time, Location: Tu, Thur 11:00 – 12:30 PM, Barrows 155

Instructor: Isha Ray

This class is an interdisciplinary graduate seminar for students of water policy in developing countries. It is not a seminar on theories and practices of development through the "lens" of water. Rather, it is a seminar motivated by the fact that over 1 billion people in developing countries have no access to safe drinking water, 3 billion don't have sanitation facilities and many millions of small farmers do not have reliable water supplies to ensure a healthy crop. Readings and discussions will cover: the problems of water access and use in developing

countries; the potential for technological, social, and economic solutions to these problems; the role of institutions in access to water and sanitation; and the pitfalls of and assumptions behind some of today's popular "solutions."

Module 3: Development Technologies

- **CIV ENG 210 – Control of Water-Related Pathogens**

CCN: 39452

Time, Location: Tu,Th 11-12:30 PM, Davis 534

Instructor: Kara Nelson

Comprehensive strategies for the assessment and control of water-related human pathogens (disease-causing microorganisms). Transmission routes and life cycles of common and emerging organisms, conventional and new detection methods (based on molecular techniques), human and animal sources, fate and transport in the environment, treatment and disinfection, appropriate technology, regulatory approaches, water reuse.

- **CIV ENG 290 / CIV ENG 206 – Water Resources Management**

CCN: 35336

Time, Location: Fri 8:00 – 11:00 PM, O'Brien 212

Instructor: Roger Bales

This course covers current topics of interest in civil and environmental engineering. The course content may vary from semester to semester depending upon instructor. .