



Designated Emphasis in Development Engineering Fall 2016 Course Offering

Development Engineering Core Courses – Fall 2016

1. Development Engineering C200: Design, Evaluate and Scale Development Technologies

CCN: 27383

Time: M 6-9:30pm, Haas Innovation Lab

Instructor: A. Gadgil, J. Walske

This required course for the Designated Emphasis in Development Engineering (Dev Eng) will include projects and case studies, many related to projects at UC Berkeley. Student teams will use the case studies or their own projects to develop a plan for scaling and evaluating development technologies.

Designated Emphasis in Development Engineering Electives – Fall 2016

Module 1

2. Development Practice C232: Foundations of Public Health

CCN: 24947

Time: T 9-11AM, 311 Wellman

Instructor: REINGOLD, Arthur L

The seminar will introduce core disciplines and concepts in public health, using a case-based, integrated approach. Examples of cases discussed include: respiratory disease and air pollution; tobacco control and prevention of smoking-related conditions; disease elimination or eradication via childhood immunization; environmental control and prevention of schistosomiasis; behavior change and prevention of HIV/AIDS; and novel economic approaches to improving healthcare delivery to impoverished groups. Also listed as Public Health C253.

3. Information 213: User Interface Design and Development

CCN: 29292

Time: F 1-4PM, 202 South Hall

Instructor: Youmans, Robert

User interface design and human-computer interaction. Examination of alternative design. Tools and methods for design and development. Human computer interaction. Methods for measuring and evaluating interface quality.

4. Information C283: Information and Communications Technologies for Development

CCN: 29327

Time: M 2-5PM, 205 South Hall

Instructor: BURRELL, Jenna ; IBRAHIM, Mahad



This seminar reviews current literature and debates regarding Information and Communication Technologies and Development (ICTD). This is an interdisciplinary and practice-oriented field that draws on insights from economics, sociology, engineering, computer science, management, public health, etc. Also listed as Energy and Resources Group C283.

5. Mechanical Engineering 290P: New Product Development – Design Theory and Methods

CCN: 28244

Time: TR 3:30-5PM, 251 LeConte

Instructor: AGOGINO, Alice M

This course is aimed at developing the interdisciplinary skills required for successful product development in today's competitive marketplace. We expect students to be disciplinary experts in their own field (e.g., engineering, business). By bringing together multiple perspectives, we will learn how product development teams can focus their efforts to quickly create cost-effective products that exceed customers' expectations.

Module 2

6. Development Practice 228: Strategic Planning and Project Management

CCN: 24946

Time: R 1-3PM, 311 Wellman

Instructor: TBA

A pragmatic, interdisciplinary introduction to strategic planning and project management, introducing students to a portfolio of models, tools, and techniques drawn from the private, nonprofit, and public sectors. It will offer an opportunity through case studies, simulations and class projects to apply those approaches in settings relevant to the development field.

7. Economics 240A: Econometrics

CCN: 14442

Time: MW 10-12PM, 3107 Etcheverry

Instructor: GRAHAM, Bryan S

This is the first semester of the core sequence in econometrics (a.k.a. quantitative methods), which develops the procedures used for empirical implementation and validation of economic relationships.

8. Economics C270A: Development Economics

CCN: 14455

Time: TR 3:30-5PM, 201 Giannini 201

Instructor: MAGRUDER, Jeremy R

This course covers leading research issues in Development Economics, with a particular focus on macroeconomic growth empirics, political economy, and human capital topics. It is taught at a level appropriate for Ph.D. students in Economics and related fields.



9. Energy and Resources 273: Social Science Research Methods

CCN: 24961

Time: TR 12:30-2PM, 238 Kroeber

Instructor: RAY, Isha

This course aims to introduce graduate students to the rich diversity of research methods that social scientists have developed for the empirical aspects of their work. Its primary goal is to encourage critical thinking about the research process: how we "know," how we match research methods to research questions, how we design and conduct our information/data collection, what we assume explicitly and implicitly, and the ethical dilemmas raised by fieldwork-oriented studies.

10. Public Health 235: Impact Evaluation for Health Professionals

CCN: 30001

Time: F 2-5PM, 370 Dwinelle

Instructor: COLFORD, John M

This course will review the methods for the design and analysis of impact evaluations relevant to health professionals, especially those working in low and middle-income countries. The class will emphasize the challenges involved in identifying the causal relationship between a program or project and its outcomes while providing students with some experience in drafting a proposal that might be submitted to a funding agency for support of an impact evaluation. For doctoral students the course may help concretely to identify potential dissertation projects; for masters students the course will provide skills useful in obtaining a future job in the field.

11. Public Health 252C: Intervention Trial Design

CCN: 29703

Time: F 2-5PM, 106 Mulford

Instructor: COLFORD, John M

Students learn (through lectures and graded student presentations and projects) to design clinical and population-level field trials. Topics: formulation of a testable hypothesis; identification of appropriate populations; blinding (including indices for assessment); randomization (including traditional and adaptive randomization algorithms); sample-size estimation; recruitment strategies; data collection systems; quality control and human subjects responsibilities; adverse effects monitoring; improving participant adherence; use of surrogate outcomes.

12. Public Policy C253: International Economic Development Policy

CCN: 29143

Time: W 10-12PM, 88 Dwinelle

Instructor: DEJANVRY, Alain

This course emphasizes the development and application of policy solutions to developing-world problems related to poverty, macroeconomic policy, and environmental sustainability. Methods of



statistical, economic, and policy analysis are applied to a series of case studies. The course is designed to develop practical professional skills for application in the international arena. Also listed as Agricultural and Resource Economics C253.

Module 3

13. Civil and Environmental Engineering 271: Sensors and Signal Interpretation

CCN: 26640

Time: TR 3:30-5PM, 544 Davis

Instructor: GLASER, Steven D

An introduction to the fundamentals of sensor usage and signal processing, and their application to civil systems. In particular, the course focuses on how basic classes of sensors work, and how to go about choosing the best of the new MEMS-based devices for an application. The interpretation of the data focuses on analysis of transient signals, an area typically ignored in traditional signal processing courses. Goals include development of a critical understanding of the assumptions used in common sensing and analysis methods and their implications, strengths, and limitations.

14. Computer Science 289A: Introduction to Machine Learning

CCN: 27205

Time: TR 12:30-2PM, Location TBA

Instructor: EFROS, Alexei

This course provides an introduction to theoretical foundations, algorithms, and methodologies for machine learning, emphasizing the role of probability and optimization and exploring a variety of real-world applications. Students are expected to have a solid foundation in calculus and linear algebra as well as exposure to the basic tools of logic and probability, and should be familiar with at least one modern, high-level programming language.

15. Computer Science 294: Special Topics: Behavioral Data Mining

CCN: 31947

Time: MW 2:30-4PM, 310 Soda

Instructor: CANNY, John F

16. Engineering 298B: Behavior Measurement and Change

CCN: 27985

Time: TBA, Location TBA

Instructor: SENGUPTA, Raja

Advanced group studies or seminars in subjects which are interdisciplinary in the various fields or engineering or other sciences associated with engineering problems. Topics which form the basis of seminars will be announced at the beginning of each semester.

17. Energy and Resources C200: Energy and Society

CCN: 25022



Time: TR 2-4PM, 105 Stanley
Instructor: KAMMEN, Daniel M

Energy sources, uses, and impacts; an introduction to the technology, politics, economics, and environmental effects of energy in contemporary society. Energy and well-being; energy international perspective, origins, and character of energy crisis. Also listed as Public Policy C284.

18. Energy and Resources C221: Energy, Climate, and Development

CCN: 25033

Time: M 9-12PM

Instructor: KAMMEN, Daniel M

Graduate seminar examining the role of energy science, technology, and policy international development. The course will look at how changes in the theory and practice of energy systems and of international development have co-evolved over the past half-century, and what opportunities exist going forward. A focus will be on rural and decentralized energy use, and the issues of technology, culture, and politics that are raised by both current trajectories, and potential alternative energy choices. We will explore the frequently divergent ideas about energy and development that have emerged from civil society, academia, multinational development agencies, and the private and industrial sector. Also listed as Development Practice C221 and Public Policy C221.