Graduate Certificate in Food Systems Elective Courses

Updated November 2018

Note that class descriptions below are obtained from the general Berkeley Course Catalogue, guide.berkeley.edu. Courses have rotating topics related to food systems that might not appear in the general description. Students can petition for graduate courses beyond the standard elective list to count toward the certificate. Particularly 290 Special Topics and 299 Independent Study courses will be considered on a case by case basis, as topics pertain to food systems. Students must submit the Elective Petition Form at least **one month prior** to enrolling in the proposed course. Electives proposed by petition must be approved before taking class.

1. **A,RESEC 241 Economics and Policy of Production, Technology, and Risk in Agricultural and Natural Resources, 3 Units (Fall). David Zilberman.**
   This course covers alternative models of production, resource and environmental risk management; family production function; adoption and diffusion; innovation and intellectual property rights; agricultural and environmental policies and their impact on production and the environment; water resources; pest control; biotechnology; and optimal control over space and time. **Permission from professor required; prerequisite is Econ 201.*

2. **CY PLAN C256 Healthy Cities, 3 Units (Fall). PJason Corburn.**
   Exploration of common origins of urban planning and public health, from why and how the fields separated and strategies to reconnect them, to addressing urban health inequities in the 21st century. Inquiry to influences of urban population health, analysis of determinants, and roles that city planning and public health agencies - at local and international level - have in research, and action aimed at improving urban health. Measures, analysis, and design of policy strategies are explored.

3. **ENE RES 275 Water and Development, 4 Units (Spring). 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."

4. **ESPM 226 Interdisciplinary Food and Agriculture Studies, 3 Units (Spring, every other year). Alastair Iles.**
   A graduate seminar exploring the ecological, social, and economic risks inherent in different forms of agriculture, from highly diversified, agroecological farming systems to industrialized agriculture. We will examine how different farm management techniques, government policies, supply chains, R&D, technology, and science may influence various risks and uncertainties, including climate change, agrobiodiversity, farmer livelihoods, food safety, public health, and nutrition.

5. **ESPM 230 Sociology of Agriculture, 4 Units (Fall). Kathryn de Master.**
   This graduate seminar explores the sociology of agriculture and food systems, addressing key theories and topics in the field. We begin with the antecedents of the sociology of agriculture, including foundation classical agrarian theories and an overview of the field, followed by topics ranging from pesticide drift to agricultural labor injustice to food sovereignty movements and more. This course is most appropriate for students with some background in agri-food and social systems.

6. **ESPM 261 Sustainability and Society, 3 Units (Fall). Alastair Iles.**
   Science-based technologies that are central to the search for sustainability in contemporary societies and their environmental impacts. Theoretical approaches to investigating how science, technology, and environment intersect. How societies move closer to sustainable technological systems. Redesign of existing technologies and the introduction of new technologies. How adverse impacts can be prevented through policy. Case studies of contemporary developments.

7. **ESPM 279 Seminar on Pastoralism, 3 Units (Fall and/or Spring). Lynn Huntsinger.**
   A survey of pastoral animal management and production systems, as they influence and are influenced by the rangeland environment. Review of the evolution of animal management practices; contemporary management systems in California, the West, and worldwide; and production systems with both traditional and nontraditional goals. Examination of agroforestry and nomadic and transhumant grazing systems, sheep and cattle production, game ranching, and organic meat production will be included.

8. **ESPM 280 Seminar in Range Ecosystem Planning and Policy, 3 Units (Fall). James Bartolome.**
   A seminar course dealing with selected current topics in range ecosystem planning and policy.

9. **LAW 220F, Food Law and Policy, 3 Units (Spring). Steve Sugarman.**
   This seminar will explore a wide range of issues related to food law and policy. Topics will likely include issues such as food safety, food labeling and marketing, regulation and patenting of genetically-modified organisms, farm subsidies, treatment of livestock, farm and restaurant labor, organic farming standards, hunger and obesity, school lunch, and promotion of local and sustainable agriculture. Students will read a variety of materials in preparation for weekly discussions and will each write a 30+-page research paper.

10. **MBA 292 Food Venture Lab, 2 Units (Fall). Will Rosenzweig.**
    Food Innovation Studio is a two-unit course designed to enable graduate business school students (and related graduate students and professionals in diverse disciplines including food science, engineering, public health, environmental studies, law, and computer science) to identify, define and solve novel and pressing challenges and unmet needs in the broader food-system. Learners develop insights into the systemic interdepencies that impact personal health and planetary sustainability and work to conceive, test and launch high impact, market-based solutions. The course emphasizes mission-driven business designs that not only create competitive financial outcomes, but positive social and environmental impact as well. The course supports teams of learners to develop an innovation or new venture using a rapid, lean entrepreneurial process. The disciplines of human-centered design, lean-launch, rapid prototyping, business model development, venture formation and venture pitch-presentation are blended into an accelerated experiential learning program over 11 weeks. The course also attracts leading food industry leaders and entrepreneurs as guest speakers and mentors. The actual course topics and projects are originated and chosen by the student teams.

11. **NUSCTX 260 Metabolic Bases of Human Health and Diseases, 4 Units (Spring). Andreas Stahl.**
    The physiological bases of human nutrient homeostasis and common disorders resulting from over and under nutrition will be discussed with a specific focus on macronutrients. Topics related to nutrient deficiency and excess will include adaptation to starvation and the effects of caloric restriction on life-span, obesity and its complications, lipoprotein metabolism and cardiovascular disease, as well as a detailed discussion of the causes, disease mechanisms, and treatment of diabetes mellitus. **Permission from professor required; prerequisite is NST103 or MCB102.*

12. **PB HLTH 206B Food and Nutrition Policies and Programs, 3 Units (Spring). Wendi Gosliner or Lia Fernald.**
    This course examines the historical origins of food and nutrition improvement programs in the United States, including the political and administrative conditions that led to the development of these programs. It also examines the goals, design, operations, and effectiveness of some of these programs: Food Stamp Program, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the National School Lunch Program, the School Breakfast Program, Head Start, the Child Care Food Program, and the Elderly Nutrition Program.

13. **PB HLTH 206D Food and Nutrition Programs and Policies in Developing Countries, 3 Units (Fall). Lia Fernald.**
    This course will use a case-based approach to examine the ways in which governments in developing countries design and implement policies and programs that affect food production and access to safe, affordable, and nutritionally adequate diets. In the course we will analyze, assess and evaluate ways to take action to ameliorate the major nutritional problems facing vulnerable populations in developing countries.

14. **PB HLTH 214 Eat.Think.Design, 3 Units (Spring). Kris Madsen and Jaspal Sandu.**
    This course is a team-oriented, project-based course designed around the case-based and learning-by-doing models. The critical elements of the human-centered design process – discovering, ideating, and prototyping – are learned through didactic sessions and an 8-week project students work on in teams. Working with community partners on a public health issue related to food, the student teams apply human-centered design skills to the problem, and design and pilot (when possible) a solution with and for their community partner.

15. **PB HLTH 266A Foodborne Diseases, 2 Units (Spring, every other year). Sangwei Lu.**
    This course will cover public health, microbiological, social, and economical issues related to foodborne diseases. Three areas will be explored: 1) categories, clinical manifestations, and disease processes of foodborne illnesses; 2) etiological agents causing foodborne illnesses; 3) investigation and prevention of foodborne illness. The course will discuss different types of foodborne diseases, clinical manifestations, and the interactions between etiological agents (pathogens and non-pathogens) and human hosts. We will cover pathogens that are the most frequently associated with foodborne illness including bacterial and viral pathogens such as Salmonella, E coli, hepatitis viruses and Norwalk-like gastroenteritus viruses. We will also study non-pathogen agents such as heavy metal, pesticide, and toxic chemicals. Futhermore, the course will discuss how to identify the etiological agents in outbreaks and possible measures that can be taken to minimize the risk to the public including vaccines and education. Finally, we will explore the social and economic issues involved in the food production, distribution, and consumption that contribute to foodborne diseases.

16. **PB HLTH 271G Health Implications of Climate Change, 3 Units (Spring). Rachel Morello-Frosch.**
This course explores the Public Health effects of global climate change: physical basis of climate change, including causes & projections; burden of disease stemming from global climate change, emphasis on impacts in the developing world, global & local equity issues, interaction between climate change mitigation/adaptation activities & existing global health initiatives; direct exposures (extreme heat, drought, precipitation, sea-level rise), indirect exposures (vector-borne & zoonotic diseases, ecosystem disruption, water quantity & quality, land arability & food production, population displacement). After taking this course, students will be well positioned for further work on global environmental change and health.

17. **PP 290 The Social Safety Net, Poverty, and Income Inequality, 3 Units (Spring). Hilary Hoynes.**
This course will examine the nature and extent of poverty and inequality in the U.S., its causes and consequences, and the effects of government programs and policies. The first unit will cover the measurement of poverty and inequality and review the evidence for the trends in the U.S. and other developed countries. The next unit will cover the causes of poverty and inequality, with a distinction between the influences of the labor market and government policy. The course will then survey the main government policies and programs that affect poverty an inequality including taxes, government transfers, employment policies, and education and training programs. Throughout the course we will cover the policy context, in terms of reviewing prior reforms and what we have learned from them, as well as potential prospective changes. This will be layered with a more theoretical discussion of key issues in the design of programs such as the tradeoff of universal versus targeted programs, the tradeoff of distortion versus protection, the effects of in-kind versus cash assistance, pre-market versus post-market interventions, and the effects of intervening at different points in the life cycle. The course will be focused primarily on U.S. policies but will bring in experiences from other countries where valuable.

18. **PP 290 The Fight for Food Justice: Mass Movement or Consumer Culture? 3-4 Units (Fall, every other year). Saru Jayaraman.**
This course will discuss a wide range of current social justice campaigns and policy debates relating to the food system, including: corporate consolidation of farmland and meat, poultry, and dairy processing; labor conditions in the food system; food insecurity and access to healthy food in low-income communities; and transparency with regard to food labeling. The course will in particular examine: corporate consolidation throughout the food system has impacted each of these issues and many more; activists' varied responses to these trends; and how policy instruments and regulatory levers can be used to change the way the U.S. food system operates. Students will be exposed to current local, state, and federal policy campaigns and to real-world activists, organizers, and policy experts engaged in these campaigns. In every class, we will examine not only the issues involved but current efforts to address the issues.

BY TOPIC	
Agroecology, Sustainable Agriculture, Climate Change	ESPM 226 Interdisciplinary Food and Agriculture Studies ESPM 230 Sociology of Agriculture (also Labor) ESPM 260 Governance of Global Production ESPM 261 Sustainability and Society ESPM 280 Seminar in Range Ecosystem Planning and Policy (also Range Management) PB HLTH 271G Health Implications of Climate Change
Food Supply Chain	A,RESEC 241 Economics and Policy of Production, Technology, and Risk in Agricultural and Natural Resources ENE RES 275 Water and Development MBA 292 Food Venture Lab
Labor	ESPM 230 Sociology of Agriculture (also Agroecology) PP 290 The Fight for Food Justice: Mass Movement or Consumer Culture?
Health, Nutrition, Food Access	CY PLAN C256 Healthy Cities ENE RES 275 Water and Development NUSCTX 260 Metabolic Bases of Human Health and Diseases PB HLTH 206B Food and Nutrition Policies and Programs PB HLTH 206D Food and Nutrition in Developing Countries PB HLTH 214 Eat.Think.Design PB HLTH 266A Foodborne Diseases PP 290 The Social Safety Net, Poverty, and Income Inequality
Range Management	ESPM 279 Seminar on Pastoralism ESPM 280 Seminar in Range Ecosystem Planning and Policy
BY STRATEGY	
Business	MBA 292 Food Venture Lab
City Planning	CY PLAN C256 Healthy Cities
Economics	A,RESEC 241 Economics and Policy of Production, Technology, and Risk in Agricultural and Natural Resources
Legal	LAW 220F, Food Law and Policy PP 290 The Fight for Food Justice: Mass Movement or Consumer Culture?
Policy	A,RESEC 241 Economics and Policy of Production, Technology and Risk in Agricultural and Natural Resources ESPM 260 Governance of Global Production ESPM 280 Seminar in Range Ecosystem Planning and Policy PB HLTH 206B Food and Nutrition Policies and Programs PB HLTH 206D Food and Nutrition in Developing Countries PP 290 The Social Safety Net, Poverty, and Income Inequality PP 290 The Fight for Food Justice: Mass Movement or Consumer Culture?
Systems Thinking	ENE RES 275 Water and Development ESPM 226 Interdisciplinary Food and Agriculture Studies ESPM 230 Sociology of Agriculture PB HLTH 214 Eat.Think.Design