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<th>Topic</th>
<th>Instructor</th>
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<td>Introduction: Concepts of food safety, establishing the problems and susceptibilities within the food chain.</td>
<td>Rosenfeld</td>
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<td>January 8.</td>
<td>Food borne pathogens and outbreaks</td>
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<td>Food borne pathogens and outbreaks continued: seafood and shell fish, mercury and toxins</td>
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<td>Food safety regulations: the roles of federal, state, and international agencies.</td>
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<td>Restaurant and food service inspections, food safety in the home</td>
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<td>Video: Supersize Me</td>
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<td>March 3</td>
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<td>March 5</td>
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<td>Are we safer now than ever before?</td>
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Course Objectives:

At the conclusion of this course the student will be able to:

- Identify the problem areas and susceptibilities within the food chain.
- Demonstrate an application of basic knowledge and skills regarding food safety, globalization of the food supply, sustainable agriculture, and biotechnology.
- Identify policy issues related to the food supply.
- Identify the major risk factors and health related consequences for food borne illness in the United States.
- Discuss the processes needed for ensuring a safe food supply.
- Identify and discuss recent food borne illness outbreaks.
- Describe the responsibilities, interactions, and limitations of international, federal and local agencies responsible for food safety.
- Discuss the issues of food safety from the perspective of the food industry.
- Discuss the legal consequences of the distribution and sale of unsafe food.
- Identify the chemical contaminants of food.
- Analyze and compare international and national distribution of food and standards for food safety.
- Identify the trends in agricultural trade.
- Describe the influence of globalization on dietary factors in developed and developing countries.
- Analyze the issues surrounding biodiversity and biotechnology.
- Review the scientific foundation of genetically modified organisms in agriculture.
- Describe the political and social factors impacting the implementation of biotechnology in agriculture.
- Identify scientific and social issues impacting consumer perceptions of biotechnology in the US and international markets regarding labeling.
- Analyze issues in the use of locally grown foods.
- Discuss the issues related to over-nutrition, food marketing, and obesity.
- Discuss the perception and analysis of risk of unsafe food.
- Describe preparedness activities related to biosecurity.
• Analyze the current structure of federal agencies involved with Homeland Security and food safety.
• Describe the food safety requirements for restaurants and food services.
• Identify the issues related to optimum food safety in the home.

**Course Grading:**
Grades for undergraduates will be based on 2 assignments (90%) and on participation in class discussions (10%). Each undergraduate student will write a paper (max 20 pages double spaced, due at the end of classes) that researches any current issue related to food safety (50%). For the second assignment, each student will be assigned to a team that will participate in one of two class debates/discussions, one on genetically modified foods and the other on whether we’re safer now than at any time in the past. Teams (consisting of ¼ class) will work together to research all of the issues pertaining to the topic of the debate and will present a 20 minute powerpoint presentation in support of their side of the issue. After each side has presented, there will be a full class discussion of the issues. The entire class will submit within 1 week a summary of the debate/discussion (max 5 pages, 20% each). Grades for graduate students will be based on 3 assignments (90%) and on participation in class discussions (10%). Each graduate student will write a paper (max 20 pages double spaced, due on February 17) that researches the history and details of any food outbreak or life threatening chemical contamination of food that has occurred worldwide in the past (30%). A second paper of the same length (due at the end of classes) should focus on any issue related to food safety other than specific food outbreaks or chemical contaminations (30%). Graduate students will also participate as lead team members in one of the two class debates (30%, 15% for summary paper and 15% for debate presentation).

**Recommended Readings:**

**January 6.**  
*Introduction: Concepts of food safety, establishing the problem(s), susceptibilities within the food chain.*

Institute of Medicine: *Addressing Foodborne Threats to Health*”Web Summary. 2006

Mead PS, et al.; Food-Related Illness and Death in the United States, Emerging Infectious Diseases Vol. 5; CDC, Atlanta, Georgia, USA, 1999


DeWaal, CS and Plunkett, DW. Building a Modern Food Safety System. CSPI White Paper 2009

January 8, 13. Food borne pathogens and outbreaks: seafood and shellfish, mercury and toxins


Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food --- 10 States, 2008. MMWR April 10, 2009 / 58(13);333-337


Germany’s E-Coli Nightmare. Food Quality Aug/Sept 2011

January 17. Food borne pathogens and outbreaks continued: seafood and shell fish: mercury and toxins


Jeffery, B. et al., Amnesic shellfish poison. Food and Chemical Toxicology 42 (2004) 545–557


FDA (1) What You Need to Know About Mercury in Fish and Shellfish 2004
FDA (2) Mercury Levels in Commercial Fish and Shellfish 2006


January 15. Food safety regulations: the roles of federal, state, and international agencies.
http://www.fda.gov/Food/FoodSafety/FSMA/default.htm

S 510 Food Safety Modernization Act 2009 Summary


CDC: Overview of CDC food safety activities and programs

GAO: Federal Food Safety and Security System. Fundamental Restructuring is Needed to Address Fragmentation and Overlap. GAO-04-588T, March 2004

GAO: Federal Oversight of Food Safety High-Risk Designation Can Bring Needed Attention To Fragmented System. GAO-07-449T, Feb 08 2007. - Highlights

GAO: Federal Oversight of Food Safety: High-Risk Designation Can Bring Needed Attention to Limitations in the Government’s Food Recall Programs, GAO-07-785T Apr 24 2007 - Highlights

GAO: Federal Oversight of Food Safety: FDA’s Food Protection Plan Proposes Positive First Steps, but Capacity to Carry them out is Critical. GAO-08-435T, Jan 29 2008. - Highlights

GAO: Federal Oversight of Food Safety: FDA Has Provided Few Details on the Resources and Strategies Needed to Implement its Food Protection Plan. GAO-08-909T, Oct 09 2008. - Highlights

GAO: Food Safety: Improvements Needed in FDA Oversight of Fresh Produce, GAO-08-1047 Sep 26 2008 – Highlights

January 22. Food safety preparedness: Perspective from the food industry, HACCPs


USDA: Guidebook for preparation of a HACCP

Ensuring Safe Food: A HACCP Based Plan. Ohio State University Extension Bulletin
Moss M: Food companies are placing the onus for safety on consumers. NYT May 15, 2009. Food safety regulations: the roles of federal, state, and international agencies.

January 27  Organic food, chemical contamination of food


January 30.  Hormones and antibiotics: antibiotic resistance, contamination of foods


Marilyn C. Roberts. The Evolution of Antibiotic-Resistant Microbes in Foods and Host Ecosystems In: From Food-Borne Microbes: Shaping the Host Ecosystem, Editors: Lee-Ann Jaykus, Hua H. Wang, Larry S. Schlesinger, ASMPress:

David G. White and Patrick F. McDermott. Antimicrobial Resistance in Food-Borne Pathogens In: From Food-Borne Microbes: Shaping the Host Ecosystem, Editors: Lee-Ann Jaykus, Hua H. Wang, Larry S. Schlesinger, ASMPress:

February 3.  Risk perception and analysis
February 5. **Globalization, sustainable agriculture, local food networks, slow foods**

**HEALTHY LAND, HEALTHY PEOPLE: BUILDING A BETTER UNDERSTANDING OF SUSTAINABLE FOOD SYSTEMS FOR FOOD AND NUTRITION-professionals: a primer on sustainable food systems and emerging roles for food and nutrition professionals.** American Dietetic Association Sustainable Food System Task Force. March 16, 2007


Bittman, M. Sustainable Farming, Can We Feed the World? NYT Editorial 2010

De Schutter, O. On the right to food. Report to the UN General Assembly submitted by the Special Rapporteur. Dec. 20, 2010


Organic Agriculture: USDA Economic Research Service Briefing Room

Mayo Clinic: Organic foods: are they safer? more nutritious?

February 10.  Genetically modified foods


FAO Focus: Weighing the GMO Argument: Against

The Hidden Health Hazards of Genetically Engineered Foods
Food Safety Review. THE CENTER FOR FOOD SAFETY

Smithson, S, “Eat, Drink, and Be Wary”: Genetically modified animals could make it to your plate with minimal testing and no public input. Grist Magazine, July 30, 2003


February 19

Restaurant and food service inspections,
food safety in the home

Public Health Seattle & King County (PHSKC) Food Inspection Program:
Restaurant Inspections on Line.

PHSKC Restaurant Inspection Form

http://www.foodsafety.gov/
Safe Minimum Cooking Temperatures
Meat and Poultry Roasting Chart
Storage Times for the Refrigerator and Freezer
Fresh Eggs: Playing It Safe
Egg Storage Chart
The Dangers of Raw Milk
Fresh Produce Safety
Two Simple Steps to Juice Safety
Sprouts: What You Should Know


February 25. Bioterrorism and food safety


FDA: AN OVERVIEW OF THE CARVER PLUS SHOCK METHOD FOR FOOD SECTOR VULNERABILITY ASSESSMENTS


February 27. Over-nutrition: food marketing, supersizing, obesity


Cynthia L. Ogden, Molly M. Lamb, Margaret D. Carroll, and Katherine M. Flegal, Obesity and Socioeconomic Status in Adults: United States, 2005–2008. NCHS Data Brief No. 50 December 2010


Drewnowski, A. The cost of US foods as related to their nutritive value. Am J Clin Nutr 2010; 92(5):1181-8

March 3. Legal consequences of food outbreaks

http://www.marlerclark.com/