



SAN IGNACIO  
UNIVERSITY

<b>Date</b>		<b>Credits</b>	<b>3 Credits</b>
<b>Course Title</b>	<b>Food Sanitation Management</b>	<b>Course Number</b>	<b>FS 30310</b>
<b>Pre-requisite (s)</b>	<b>None</b>	<b>Co-requisite (s)</b>	<b>None</b>
<b>Hours</b>	<b>45 Hours</b>		

### Place and Time of Class Meeting

**San Ignacio University**  
**3905 NW 107 Avenue, Suite 301**  
**Miami, FL 33178**

### Name and Contact Information of Instructor

### Book required

*(The Institution recognizes the use of the textbook in the classroom as part of the educational methodology and strategy applied in diverse materials. The textbook is part of the curriculum and is used to reach the student in an effective manner in the classroom. Every student is expected to acquire and use the textbook.)*

Food Safety: Theory and Practice, 10,e  
Paul L. Knechtges  
©2012 | Jones & Barrlet Learning | Published: n/a  
ISBN-13:9780763785567 | ISBN-10:0763785563

### Classroom expectations for students

#### Attendance Policy

Students are expected to attend all scheduled university classes for the courses that they are registered for and to achieve the goals set forth by each class instructor. Attendance is taken daily. Enrolled students are permitted no more than **2** “free” absences in one semester. Students missing **3-5** classes over the course of the semester will receive a one-letter grade deduction from their final course grade; missing more than **6** classes will result in failure of the course regardless of grade average. It is the student's responsibility to arrange to make up work missed because of an absence.



## Student Tardiness Policy

A student is considered tardy/late if he/she comes to class 15 minutes late. With three tardies the student accumulates one full absence. If the student misses half of the class period, it is a full absence. When a student has more than 6 tardies, the instructor will contact the San Ignacio University Coordinator of Student Affairs and Academic Department and request an intervention session with the student. The goal of the intervention session is to develop and implement an intervention program to help students learn new ways to save and manage time.

**NOTE:** Plagiarism is defined as the use, without proper acknowledgment, of the ideas, phrases, sentences, or larger units of discourse from another writer or speaker. Plagiarism includes the unauthorized copying of software and the violation of copyright laws. Students who commit plagiarism will obtain a grade of “Failure” on their exam or assignment.

## Course Description

This course seeks to provide the students with the knowledge and understanding of the food sanitation management system which is integrated by different factors and procedures to ensure food does not endanger human's health. The students will be familiarize with the requirements and guidelines established to pass the health inspections and the standards that need to be in compliance to be recognize at a high level of service.

## Learning Objectives

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

- To explain and give a brief history and overview of food safety
- To describe and explain the classification of foodborne diseases and etiologic agents
- To list and name foodborne infectious and microbial agents and discuss emerging versus contemporary foodborne infections
- To evaluate and discuss foodborne toxic and physical agents and discuss basic food toxicology
- To identify and describe food safety principles of prevention and discuss sanitation principles and purposes
- To analyze and describe food safety engineering controls and technology
- To summarize and explain risk assessment and hazard analysis of foods
- To describe hazard analysis and food safety and explain food product testing and performance standards
- To discuss laboratory methods for food safety and evaluate microbiological culture and staining methods



- To identify and describe safety management of the food supply and evaluate food safety management systems at the national level

### Topical Outline and Schedule

<b>DATE</b>		<b>WEEK 1</b>
<b>SPECIFIC OBJECTIVES</b>	Describe the course. <ul style="list-style-type: none"> <li>• Briefly describe and explain the early history of foodborne disease</li> <li>• Recognize the important events and times in history that contributed to food safety</li> <li>• Explain how the canning industry revolutionized food preservation</li> <li>• Describe the new hazards introduced into the food supply during the early days of canning</li> <li>• Describe the history of milk consumption and why milk became a major source of several diseases in the late nineteenth and early twentieth centuries</li> <li>• List the solutions to controlling food hazards in the canning and dairy industries</li> <li>• Explain how these transformed canned food and dairy products into some of the safest foods in the market place today</li> </ul>	
<b>TOPIC (S)</b>	Syllabus Discuss Library Orientation Course, Instructor to verify completion <ul style="list-style-type: none"> <li>• List and describe the major events leading to development of the meat packing industry and its regulation by the federal government</li> <li>• Describe the primary methods used by meat inspectors throughout much of the twentieth century, and explain the limitations of these methods</li> <li>• Explain how most foodborne hazards associated with the consumption of molluscan shellfish are intimately linked to the environment</li> <li>• List the key events and describe the history of regulating chemicals in the U.S. food supply</li> <li>• Describe the events that led to more comprehensive regulation of pesticide exposures, particularly in foods</li> <li>• Provide example of food safety practices implemented throughout the food supply chain that made a difference in the rates of food borne disease</li> </ul>	
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Discussion of Syllabus</li> <li>• Instructor led group discussion</li> <li>• Web Resources</li> </ul>	
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	Review the Syllabus <b>Complete the Library Orientation Course.</b> Instructor to verify completion.	



	<p><b>Homework:</b> Chapter 1 pp. 1-18 Write a two page summary: Historical Aspects of Food Safety</p>
<b>DATE</b>	<b>WEEK 2</b>
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Describe the historical and current roles of epidemiology in the recognition and control of infectious and foodborne disease</li> <li>• Explain how disease surveillance contributes to food safety</li> <li>• Explain why the reported number of foodborne illnesses represents only a fraction of the total number in the population</li> <li>• List and describe the basic steps in investigating a foodborne illness outbreak</li> <li>• List the different categories of foodborne diseases</li> <li>• Recognize the types of etiologic agents responsible for these different foodborne disease</li> </ul>
<b>TOPIC (S)</b>	<p>Discuss Final Class Project &amp; Presentation, List of Topics</p> <ul style="list-style-type: none"> <li>• Recall estimates on the total number of foodborne illnesses in the United States, and explain why precise numbers are difficult to derive</li> <li>• Recall estimates on the burden of foodborne illnesses in terms of economic cost</li> <li>• Explain why the burden of foodborne illnesses is important to estimate in terms of morbidity, mortality, and cost</li> <li>• List and describe current and future trends that will influence the practice of food safety</li> <li>• Put into your own words and Define the term food safety</li> <li>• Describe the roles of various disciplines involved with food safety</li> </ul>
<b>LEARNING ACTIVITIES</b>	<p>Participate in a forum.</p> <ul style="list-style-type: none"> <li>• Instructor led group discussion</li> <li>• Study: Key Terms</li> <li>• Review: Chapter Summary</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p><b>Homework:</b> Chapter 1 pp. 19-36 Write a two page summary: Current and future trends that influence food safety</p>
<b>DATE</b>	<b>WEEK 3</b>
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Put into your own terms and define the tree of life</li> <li>• Explain the differences between prokaryotic (prokaryotic) and eukaryotic (eukaryotic) cell types</li> <li>• Name and describe the main taxonomic categories of microorganisms and the important foodborne pathogens in each category</li> <li>• Briefly describe how microorganisms acquire new traits</li> <li>• Describe and explain how these traits contribute to their survival and</li> </ul>



	<p>pathogenicity</p> <ul style="list-style-type: none"> <li>• Discern the differences between foodborne illnesses, diseases, infections, toxicoinfections, intoxications, and poisonings</li> </ul>
<b>TOPIC (S)</b>	<p>Discussion of student topic selection, library research, tentative bibliography</p> <ul style="list-style-type: none"> <li>• Describe the steps in the cycle of parasitism and infection</li> <li>• Define the key terms used in the processes of the cycle</li> <li>• Describe common signs and symptoms of diseases caused by foodborne pathogens and, in general terms, the mechanisms of pathogenicity involved</li> <li>• Identify factors or circumstances that may increase pathogen virulence or reduce host resistance to a foodborne infections</li> <li>• Explain the importance of stereotyping and other classification schemes for the identification and control of pathogens, particularly for the genera Escherichia and Salmonella</li> <li>• List and describe types of infectious and microbial agents</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Analysis of reading</li> <li>• Group discussion</li> <li>• Participate in a forum</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Investigate concepts and kinds of objectives. Library Research. Develop Tentative Bibliography</p> <p><b>Due: Project Topic</b> <b>Due: Tentative Bibliography</b></p> <p><b>Homework:</b> Chapter 2 pp. 43-78 Write a two page summary: Foodborne infections vs. intoxications</p>
<b>DATE</b>	<b>WEEK 4</b>
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• For each important foodborne pathogen, identify the major food groups most often associated with the disease(s) it causes</li> <li>• Identify their common and unique reservoirs and/or sources of food contamination</li> <li>• Name the viruses that are most frequently transmitted by foods</li> <li>• Explain how foods are most likely contaminated with these viruses</li> <li>• List important protozoans that may be transmitted by foods</li> <li>• Identify and explain the primary reservoirs of protozoans</li> </ul>
<b>TOPIC (S)</b>	<p><b>Due: Project Topic</b> <b>Due: Tentative Bibliography</b></p> <ul style="list-style-type: none"> <li>• Describe the sources of parasitic helminthes in foods and their relationships to humans and animals</li> <li>• Understand the nature of prions and the diseases they cause</li> <li>• Describe and explain how they may enter the human food chain</li> </ul>



	<ul style="list-style-type: none"> <li>• Differentiate between emerging and contemporary food borne diseases</li> <li>• Give examples of how various factors contribute to the emergence of foodborne diseases</li> <li>• List the important bacterial pathogens that cause foodborne illnesses</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Review: Chapter Summary</li> <li>• Study: Key Terms and Concepts</li> <li>• Group discussion</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Continue research and work on final project</p> <p><b>Homework: Homework:</b> Chapter 2 pp. 79-113</p> <p>Write a two page summary: Describe the process of Foodborne infection</p>
<b>DATE</b>	<b>WEEK 5</b>
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Describe and define the major categories and sources of toxicants in foods</li> <li>• Put into your own words and define the terms toxicants, toxins, and poisons</li> <li>• Put into your own words and define the terms poisoning, toxic effects, and intoxication</li> <li>• Explain the dose-response concept of toxicity and why it is important in food toxicology</li> <li>• List the factors that determine the target organs and the type of effects from toxic agent in foods</li> <li>• Compare and contrast the different scenarios of acute and chronic exposures and effects</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• List and describe the major types of bacterial toxins in foods</li> <li>• Distinguish and explain the major differences between the toxins</li> <li>• Recognize the most common mycotoxins and whether their major toxic effects are acute and/or chronic</li> <li>• Explain and describe how algal toxins enter the human food chain</li> <li>• List the major types of syndromes caused by algal toxins and the associated foods</li> <li>• Describe the relevance and significance of plant and animal toxins in terms of the human food chain and health risks</li> </ul>
	<ul style="list-style-type: none"> <li>• A review of literature</li> <li>• Check of the reading</li> <li>• Group discussions</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Continue research and work on final project</p> <p>Chapter 3 pp. 119-140</p> <p>Write a two page summary: Basic Food Toxicology</p>
<b>DATE</b>	<b>WEEK 6</b>
<b>SPECIFIC</b>	<b>EXAM I</b>



<b>OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• List the major sources, types, and pathways of environmental chemicals that contaminate the human food chain</li> <li>• Discuss the sources and explain the risks of pesticides and veterinary drugs in the human food chain</li> <li>• Explain and describe the differences between food additives and adulterants</li> <li>• Give examples of how food additives and adulterants may affect the human health</li> <li>• Identify the types and sources of toxic substances encountered during food processing, packaging, storage, and preparation</li> <li>• Discuss and describe plant toxins and animal toxins and evaluate environmental and agricultural chemicals</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Distinguish the differences between food allergies and food intolerance</li> <li>• Explain and describe food allergies and food intolerance relevance to food safety</li> <li>• Identify the major sources of radionuclides in the environment</li> <li>• Rank the radionuclides importance in terms of likelihood to contaminate the human food chain</li> <li>• Explain the relevance of foreign objects in foods in terms of safety</li> <li>• Evaluate and analyze Agricultural chemicals (Agrochemicals or Agrichemicals)</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Participate in a forum</li> <li>• Instructor led group discussion</li> <li>• Analysis of reading</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Chapter 3 pp. 140-163          Write a two page summary: Plant and animal toxins</p>
<b>DATE</b> <span style="float: right;"><b>WEEK 7</b></span>	
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Explain the difference between primary habitants/reservoirs and secondary sources of microbial contamination</li> <li>• For important pathogenic and toxigenic microorganisms, identify the primary habits/ reservoirs and secondary sources of food contamination</li> <li>• Define the terms intrinsic and extrinsic parameters with respect to microbial growth in foods</li> <li>• List and describe the intrinsic and extrinsic parameters of foods</li> <li>• Describe the importance of each parameter in terms of microbial survival and growth</li> <li>• Recognize the range of values for intrinsic and extrinsic parameters that support the growth of pathogenic and toxigenic microorganisms</li> </ul>



<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Explain why pathogens are of more concern in certain food types compared with others food types</li> <li>• Define the term predictive microbiology with respect to food science and protection</li> <li>• Describe the benefits and limitations of modeling microbial survival and growth in foods</li> <li>• Define the terms potentially hazardous food (PHF) and temperature controlled for safety (TCS)</li> <li>• Given the necessary information, determine whether a food is considered PHF/TCS</li> <li>• Explain how chemicals and toxins can be eliminated or excluded from foods</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Carry out a micro-class</li> <li>• Review: Key Terms and Concepts</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Continue research and work on final project</p> <p><b>Homework:</b> Chapter 4 pp. 169-190</p> <p>Write a two page analysis paper: Reduce microbial contamination and control growth</p>
<b>DATE</b> <span style="float: right;"><b>WEEK 8</b></span>	
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Describe the importance of sanitary principles and practices with respect to food safety</li> <li>• Recognize inadequate practices in cleaning and sanitizing surfaces/equipment, waste disposal, and pest control</li> <li>• Identify and describe the relative importance of risk factors that contribute to foodborne illnesses in retail food facilities</li> <li>• Explain how the source of foods is important in preventing foodborne illnesses</li> <li>• Recognize inadequate cooking temperatures for common food types</li> <li>• Describe the need for and challenges of food worker education and training</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Differentiate between acceptable and unacceptable scenarios in the time/temperature holding requirements of foods</li> <li>• List and describe factors that contribute to inadequate cleaning of food equipment and contact surfaces</li> <li>• Describe and explain several scenarios of how cross-contamination occurs</li> <li>• Describe several scenarios of how cross-contamination occurs</li> <li>• Explain the importance of food worker hygiene in foodborne illnesses prevention</li> <li>• Identify the causes of and solution to proper worker hygiene</li> </ul>



<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Check of the reading</li> <li>• Analysis of reading</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Continue research and work on final project  <b>Homework:</b> Chapter 4 pp. 190-215          Write a two page summary: Sanitation: Principles and Purposes</p>
<b>DATE</b> <span style="float: right;"><b>WEEK 9</b></span>	
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Explain and describe the hurdle concept of food protection and how it affects food safety</li> <li>• List and explain important factors that affect the resistance of microorganism to temperature extremes</li> <li>• Define the D-value, z-value, thermal death time, and F-value</li> <li>• Explain and describe how these values are helpful in thermal treatments</li> <li>• Put into your own words and describe the purpose of pasteurization</li> <li>• Recognize the difference time-temperature combinations of pasteurization</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Distinguish between complete sterilization and commercial sterilization</li> <li>• Describe the process of retorting and contrast it with aseptic packaging</li> <li>• Recognize the purpose and different types of cooking processes</li> <li>• Explain the effects of freezing on pathogens and parasites</li> <li>• Identify the key parameters in controlling the freezing process</li> <li>• Recognize the major chemical methods of food protection</li> <li>• Explain their effectiveness in the control of pathogenic/toxigenic microorganisms</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Analysis of the examples raised in class</li> <li>• Instructor led group discussion</li> <li>• Review: Chapter Summary</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Continue research and work on final project  <b>Homework:</b> Chapter 5 pp. 219-241          Write a two page summary: Thermal Transfer Method</p>
<b>DATE</b> <span style="float: right;"><b>WEEK 10</b></span>	
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Describe the purpose and uses of food contact sanitizers/antimicrobials and fumigation</li> <li>• Define and discuss the methods of reducing water activity and pH in foods</li> <li>• Describe the principles and food safety concerns of vacuum and modified atmosphere packaging</li> <li>• Explain how fermentation is used to preserve foods and protect them from pathogens</li> </ul>



	<ul style="list-style-type: none"> <li>• Discuss the concepts of microbial inference/antagonism and biocontrol using bacteriophages</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Explain the microbicidal effectiveness of ionizing radiation</li> <li>• Identify and describe the legal applications of ionizing radiation</li> <li>• Discuss and address the safety and food quality concerns of food irradiation</li> <li>• Describe and explain the new and emerging physical processes of food protection</li> <li>• Provide and give an overview of the potential food safety issues</li> <li>• Evaluate and explain the technology of creating genetically modified organisms (GMOs)</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Carry out a micro-class</li> <li>• Analysis of assigned reading</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Continue research and work on final project  <b>Homework:</b> Chapter 5 pp. 242-263  Write a two page paper: Biocontrol methods and Biotechnology</p>
<b>DATE</b>	<b>WEEK 11</b>
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Define key terms related to the risk analysis of safe foods</li> <li>• List and define the steps of risk assessment</li> <li>• Identify and explain the different methods of identifying hazards in risk assessments</li> <li>• Explain and discuss the relevance of hazard characterization</li> <li>• Evaluate and describe dose-response assessment to risk assessment</li> <li>• Describe the contrasting differences of conducting risk assessments of microorganisms and toxicants</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Describe the risk management framework and the role of stakeholders</li> <li>• Provide examples of risk management options used to protect the U.S. food supply</li> <li>• Describe the history of the HACCP system and its adoption for food safety management</li> <li>• Explain the differences between the HACCP system and risk analysis processes</li> <li>• List and define the seven principles of the HACCP system</li> <li>• Recognize the prerequisite programs of developing a HACCP plan</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Participate in a forum</li> <li>• Instructor led group discussion</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p><b>Due: First Draft of Final Project</b>  Chapter 6 pp. 267-283  Write a two page summary: Risk Analysis and Food Safety</p>



<b>DATE</b>		<b>WEEK 12</b>
<b>SPECIFIC OBJECTIVES</b>	<b>MIDTERM EXAM II</b> <ul style="list-style-type: none"> <li>• Distinguish a critical control point from other events in a process flow</li> <li>• Explain the relevance of critical limits in the control of food process hazards</li> <li>• Recognize the purpose and types of verification procedures in the HACCP systems</li> <li>• Explain why recordkeeping is a necessary part of the HACCP system</li> <li>• Discuss and describe the benefits and limitations of HACCP</li> <li>• Discuss and evaluate the HACCP and HACCP-like applications for foodservice and retail establishments</li> </ul>	
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Identify and describe the limitation of the HACCP systems</li> <li>• Describe how the HACCP system can be used in foodservice and retail establishments</li> <li>• List and describe the general categories of testing to protect the food supply</li> <li>• Provide examples of food product testing to protect the food supply</li> <li>• Evaluate the relationship between process steps and risk factors in a food preparation process</li> <li>• Evaluate and describe the food product testing and performance standards</li> </ul>	
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Participate in a forum</li> <li>• A review of the literature</li> <li>• Group discussion</li> </ul>	
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	Chapter 6 pp. 283-300 Write a two page analysis: Food Product Testing and Performance Standards	
<b>DATE</b>		<b>WEEK 13</b>
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Explain the safety reasons for conducting food testing</li> <li>• List and describe the basic steps of food sampling and testing</li> <li>• Describe why representative food sampling and sample handling are important</li> <li>• Recognize different methods sample homogenization</li> <li>• Identify the historical contributions of conventional microbial methods to food testing</li> <li>• Describe the different outcomes and possible consequences of microbial injury</li> <li>• Explain why microbial indicators are used with food testing, and recognize the attributes of an ideal indicator of microbial contamination</li> </ul>	



	<ul style="list-style-type: none"> <li>Describe what constitutes coliform bacteria, and explain the advantages and limitations of using coliform bacteria for food testing</li> <li>Recognize noncoliform indicator organisms and biochemical indicators used with food testing</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>Identify common methods of viable cell counts for food safety</li> <li>Distinguish the key differences between standard plate counts and other specific methods of viable cell counts</li> <li>Describe the basic principles of immunological laboratory methods for microbial identification and quantification</li> <li>Distinguish between the major types of immunological laboratory methods for microbial identification and quantification</li> <li>List and describe the enabling tools of modern molecular genetic and nucleic acid methods</li> <li>Explain why nucleic acid probes are important for identifying pathogenic microorganisms</li> <li>Describe important differences between Southern hybridization/blotting and other methods of nucleic acid analysis using probes</li> <li>Explain how subtyping microorganisms can help to control foodborne illnesses</li> <li>Describe what makes most genetic fingerprinting methods different from other nucleic acid methods</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>Instructor led group discussion</li> <li>Analysis of reading</li> <li>Carry out a micro-class</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Editing &amp; Revision of Final Project            Chapter 7 pp. 303-356            Write a two page summary : The Laboratory and Food Safety</p>
<b>DATE</b>	<b>WEEK 14</b>
<b>SPECIFIC OBJECTIVES</b>	<ul style="list-style-type: none"> <li>Explain why a farm-to-fork perspective is necessary with safety management of the food supply</li> <li>Describe animal feeding operations (AFOs and CAFOs) and the potential problems areas related to environmental protection, public health in general, and food safety in particular</li> <li>List and explain the key strategies aimed at reducing the carriage and shredding of pathogens in farm animals</li> <li>Explain why animal feed is important to animal health and food safety, and recognize the types and sources of possible contaminants in animal feed</li> <li>Describe the major issues with manure management, and explain how manure management practices can affect food safety</li> <li>Recognize critical steps to control pathogen contamination levels of</li> </ul>



	<p>raw meats and poultry in the slaughter process</p> <ul style="list-style-type: none"> <li>List the ways that eggs can become contaminated with Salmonella enteric</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>Describe how to reduce or control contamination of eggs with S. enteric and other pathogens</li> </ul> <p>Describe the sources and types of potential hazards with milk and dairy products, and explain why milk is one of the safest food products available today</p> <ul style="list-style-type: none"> <li>Compare and contrast the differences between wild-caught and farm-raised fish in terms of preharvest food safety measures</li> <li>Compared with other types of seafood, explain why the biological and nonbiological factors of consuming molluscan shellfish make them inherently riskier in terms of foodborne hazards</li> <li>Describe specific programs and types of harvest controls used with molluscan shellfish to minimize the risks of infections and intoxications</li> <li>List and describe the different ways preharvest crops can become contaminated with harmful biological and chemical agents</li> <li>Discern the differences between the potential hazards and control options of sewage sludge versus manure when applied to food crops</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>Instructor led group discussion</li> <li>Analysis of reading</li> <li>Review: Chapter summary</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Editing &amp; Revision of Final Project</p> <p>Chapter 8 pp. 361-392</p> <p>Write a two page summary: The Farm-to-Fork Perspective</p>
<b>DATE</b>	<b>WEEK 15</b>
<b>SPECIFIC OBJECTIVES</b>	<p>Final Project</p> <p>Final Presentation</p> <p>Final Exam</p> <ul style="list-style-type: none"> <li>Identify the major food safety risks of pesticide practices for applications on crops, and describe the types of control strategies used to minimize these risks</li> <li>Explain why prevention of mycotoxin productions and the elimination of mycotoxins are difficult in the food supply chain, particularly in lesser developed countries</li> <li>Describe the primary and secondary strategies of mycotoxin control in foods</li> <li>Explain the purpose of food processing, and recognize the major descriptors of processed and fresh foods</li> <li>List and describe the major food safety management tools for processing foods</li> </ul>



	<ul style="list-style-type: none"> <li>• Recognize and explain the major food safety issues with the transport and distribution of foods</li> <li>• Explain the traditional public health rationale for vigilant oversight of retail food establishments</li> <li>• Describe the principal risk management strategies to protect the public health from food-borne hazards at the retail level, and explain how risk management is shared between federal, state, and local levels of government</li> </ul>
<b>TOPIC (S)</b>	<ul style="list-style-type: none"> <li>• Describe how inspections scores are used to measure and convey the risk of foodborne illnesses at retail establishments, and explain the strengths and limitations of scoring systems</li> <li>• Recognize the differences in food safety knowledge and actual practices of consumers at home</li> <li>• From the material provided in the text, provide a strategy for developing food safety messages and educational programs for consumers</li> <li>• Provide an overview of federal agencies, statutes, and regulations designed to protect the U.S. food supply</li> <li>• Explain industry incentives or motivation to implement new or novel food safety practices without government mandate or intervention</li> <li>• Define food terrorism and agroterrorism, and briefly explain why the food supply is vulnerable to acts of terrorism</li> <li>• Explain the purpose of the CARVER + Shock program, and recognize key food defense issues identified by the SPPA initiative</li> <li>• List and describe the roles and relationships of key components in a food safety management system at the national level</li> </ul>
<b>LEARNING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Analysis of reading</li> <li>• Participate in a forum</li> <li>• Group discussion</li> </ul>
<b>HOMEWORK &amp; ASSIGNED READINGS</b>	<p>Chapter 8 pp. 392-424</p> <p>Write a two page analysis: Food Processing and Distribution</p>

## Instructional Methods

In developing methodological strategies, it is best to discuss them between teachers and students in an environment of freedom and mutual agreement in order to ensure that the students make them their own and take responsibility for their execution and for attaining the goals of this course.



The following strategies may be used in this class:

1. A review of the literature.
2. Check of the reading.
3. Analysis of assigned readings.
4. Group discussions.
5. Individual and group discussions.
6. Preparation of reports.
7. Preparation of a didactic plan.
8. Carrying out a micro-class.

### Instructional Materials and References

- Nondestructive Evaluation of Food Quality: Theory and Practice by Shyam N. Jha (Hardcover-December 1, 2010)
- Food Safety Culture: Creating a Behavior-based Food Safety Management System by Frank Yiannas (Paperback-December 1, 2010)
- Food Safety for the 21<sup>st</sup> Century: Managing HACCP and Food Safety throughout the Global Supply Chain by Carol Wallace, William Sperber, Sara E. Mortimore (Hardcover-December 21, 2010)

### Assessment Criteria and Methods of Evaluating Students

96 – 100%	→ A
90 – 95%	→ A-
87 – 89%	→ B+
83 – 86%	→ B
80 – 82%	→ B-
77 – 79%	→ C+
73 – 76%	→ C
70 – 72%	→ C-
67 – 69%	→ D+
63 – 66%	→ D
60 – 62 %	→ D-
< 59%	→ F

**Do not count on a curve!**

Generally, the grades “A” through “C-” are considered passing grades. Grades “W” and “I” indicate that no grades were earned for the course. A “W” grade indicates that the student withdrew from the course. An “I” grade indicates that the student was passing the course, but failed to complete all the required course work. The instructor, in his/her discretion may grant an “I” grade instead of an “F”, pending completion of the course work by the student within a specified time arranged by the instructor and told to the student. It



is the student's responsibility to follow-up with the instructor to complete the course work. If the course work is not completed by the arranged time, the "I" grade becomes an "F".

### Distribution of Grade Elements

Homework:	15%
Exams I, II, III:	30%
Final Presentation:	30%
Final Research Project:	25%
Total:	100 %

Date Syllabus Was Last Reviewed: 01-21-13