

## ENV H 441 FOOD PROTECTION COURSE SYLLABUS

Winter Quarter 2009  
HSB T-473  
3:30 - 4:20 MWF

Instructor: Charles Easterberg, Lecturer  
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**Office Hours:** by appointment or drop-in, but please phone before coming to be sure I am there.

**Please note:** my office is on upper campus. I will do my best to meet with you, but because I am often out of my office, recommend you phone for an appointment.

Students needing disability accommodations to attend class please inform me or call Disability Resources for Students in 448 Schmitz Hall at 206.543.8924. If you have a letter from Disability Resources, please present it to me so that we can discuss the accommodations you might need to attend.

### Course Overview

In ENVH 441, we study food protection: the measures taken to assure that food intended for human consumption will not cause illness or have adverse effects on consumers' wellbeing. A major transition is now taking place in how regulatory agencies and food service operators conduct food protection activities. A large 1993 foodborne disease outbreak involving *E. coli* 0157:H7 produced great interest in and concern about food safety by the media and public, and continues to stimulate changes in food protection programs. Historically, food protection program regulatory activities emphasized looking for potential health hazards associated with the physical environment during routine food establishment inspections. Hazard Analysis/Critical Control Point (**HACCP**) thinking has been replacing this, i.e., process vs. static thinking.

Emphasis during the first half of the course is on the organisms and chemicals associated with foodborne illness, these agents' sources, how they may be introduced into and/or multiply in foods, and characteristics of the illnesses they cause. The second half of the course covers steps taken by government agencies, industry, and professionals to prevent foodborne illnesses associated with **retail** food service establishments (restaurants, cafeterias, etc.) This course does not address food protection measures at the manufacturing or production and wholesale level.

Sanitary practices and regulation of retail food operations are explored using Longree & Armbruster's *Quantity Food Sanitation*, fifth edition, and USPHS / FDA *Food Code 2001* as the major references. Over a decade ago, FDA's *Food Code 1993* replaced and improved the much earlier 1978 recommended food code. Because of the numerous major changes embodied in *Food Code 1993*, subsequent updates are primarily corrections with few significant changes. The *Food Code* was revised every two years to maintain currency, but will now probably be revised at 4-year intervals. The *Food Code 2001* edition has been adopted by most state public health agencies nationwide because it now covers routine inspection processes and addresses HACCP; the 2001 edition (with a few amendments) became Washington State's food code as of May 2, 2005. *Food Code 2001's* website is: <http://vm.cfsan.fda.gov/~dms/fc01-toc.html>

The Course Pack of handouts is available at the HS Copy Center and is also on the web at <http://www.depts.washington.edu/envh441/Readings.html>

During the quarter we will have up to four guest lecturers. **Janet Anderberg**, star DOH food protection specialist, will discuss HACCP--the greatest development in food protection for food processors and now retail food establishments. **John Owens**, Ecolab, Inc. will explain soaps, detergents and sanitizers.

### Course Activities:

1. **Exams.** There will be two exams of equal value (~100 points). Questions will include multiple choice, true-false, fill-in-the-blank, and short-answer based on reading assignments, lecture and class discussion, field trips and the course objectives. Each exam will cover half the quarter's material and be 50 minutes long.
2. **Quizzes.** A short quiz (10 points each) covering the readings for that day's class and the preceding session's readings and class discussion *may* be given on any Wednesday or Friday.
3. **Oral Report.** Each student will present a formal report to the class on a selected topic. This exercise is to give you practice standing in front of a group of your peers and sharing a specific bit of information with them in an understandable and orderly manner. There may be one or more presentations scheduled at the start of a class session, hopefully when the topic is relevant to the class topic for the day. Therefore, some people will give their presentation earlier in the quarter while others will do so later.

You are welcome to meet with me to discuss your presentation before you are scheduled to give it. You must use visual aids (e.g., slides or transparencies; no PowerPoint in this classroom.) I am available to make free transparencies from your master copy and/or duplicate a handout for the class if you provide me the masters at least 1 day before class.

Practice your presentation in advance of the class to be sure you do not exceed the 5-minute time limit. This is to be a formal presentation during which you should state the problem or subject you are addressing, 1 or 2 significant points about it, and your conclusion. There isn't time to provide many descriptive details or explanations; just give a very few facts that you select as significant and that the class should know regarding your topic. You may use notes during your presentation but may not read the presentation. Be prepared to answer questions after your presentation. Enjoy this experience; you are enlightening your colleagues, not defending your Ph.D. thesis!

4. **Field Inspection Paper.** I will give you an EHS (inspector's) name and phone # whom **you** must contact to arrange a day and time to meet for your field trip to some restaurants. **As soon** as you get the inspector's name from me, phone the EHS to schedule a half day or longer visit for sometime **after** your **February 13<sup>th</sup> or 18<sup>th</sup>** trip to a UW food service. You may make this field trip with one other student if it is acceptable to the EHS taking you. Two students with one EHS is the maximum. Before going on your survey with the EHS, be familiar with the general content of the *Washington State Board of Health Rules and Regulations for Food Service WAC 246-215 (Food Code 2001 with Washington amendments).*

One purpose of this assignment is for you to demonstrate and practice your writing skills. After the trip, prepare **your own** detailed and descriptive report presenting your observations and evaluation of the field trip. Put your name in the upper right hand corner of the front page,

center the title *Observations and Evaluation of Food Establishment Inspections* a short distance from the top of the page, and follow this by the text. Staple the upper left corner and do not put it in a cover or jacket. It should be long enough to cover your observations in sufficient detail but not excessively verbose. You may bring this to class when you take the final exam, campus mail it to me at 354400, or email it through the day of the exam (March 19).

**Your report should be organized into these 5 sections and is due at the Final Exam:**

- a. Name the EHS with whom you went out on the survey;
- b. Discuss the EHS's pre-inspection preparations, equipment, etc. Comment on undone things you think might be important too;
- c. Identify each establishment you visit and describe the procedure the EHS followed entering the establishment, conducting the inspection, conferring, and exiting
- d. Discuss the findings and recommendations or actions the EHS wanted taken at each establishment;
- e. Give your evaluation/assessment of how the inspections were performed, how effective you think they were (will they change behavior?), and how this experience agreed with or varied from what was covered in class and your readings.

5. **Class Participation:** You are expected to have read class assignments and reviewed study questions, when provided, **before** each class session, and be prepared to answer questions. You are invited to raise questions in class anytime. Your attendance is important if there is to be reasonable class participation and is **required** on the field trip and when there are guest speakers.

6. **Grading.**

**GRADING IS BASED ON TOTAL POINTS ACCUMULATED**

Points are assigned as follows:

Midterm exam = 100 points

Final exam = 100 points

Field trip report = 30 points

Oral report = 20 points

Quizzes = 10 points each

Points may be deducted for absence from required sessions.

**COURSE OBJECTIVES Upon completion of this course a student should be able to:**

1. Identify major problems associated with food protection and food protection programs. (Session 1, 2)
2. State the major functions, emphasis, and authority of local health departments, state health departments, US Department of Agriculture and the Food and Drug Administration in the area of food protection. (2)
3. Define "spoiled" food, causes of spoilage, and the environmental conditions affecting spoilage. (2, 3)
4. Identify the major food preservation methods, how each is achieved, and discuss how preservation concepts and principles apply to foodborne illness prevention. (3)
5. Describe changes in today's society that make food protection more difficult than formerly. (4)

6. Define "foodborne disease outbreak", distill lessons from historical outbreaks, and be able to list the objectives and methods of a good foodborne disease surveillance program. (5)
7. Discuss major foods involved, contributing factors, and geography of foodborne disease outbreaks according to national surveillance data. (5)
8. Identify the major toxins, chemical and biological agents capable of causing foodborne illness. Provide information on the etiology of the major diseases and appropriate control measures for each agent (e.g. heavy metals, nitrites, sulfites, mushroom toxins, PSP and domoic acid (ASP), parasites found in food, Hepatitis A, Norwalk and Rotaviruses, and *Staphylococcus*, *C. perfringens*, *C. botulinum*, *Salmonella*, *Shigella*, *Yersinia*, *Campylobacter*, *E. coli*, *Listeria*, *Vibrio* and *B. cereus* bacteria. (6 – 11)
9. Define and characterize "potentially hazardous food"; explain changes in early definitions, and list measures required to reduce the potential for such foods to become hazardous. (12)
10. Discuss the relationship of time and temperature to food cooling, holding, storage, and foodborne pathogen growth, how food thermometers function, and food temperature monitoring. (14, 15)
11. Discuss application of food protection principles by inspection of a food service establishment. Understand the fine points of establishment inspection in detail. (16-18)
12. Name the 7 steps of the HACCP concept and how they are implemented. (19, 20)
13. Discuss training course content and certification for food service workers and managers. (21)
14. Identify the criteria used in food service equipment design, construction and placement. (22)
15. Describe the approved procedures and conditions for washing and sanitizing tableware. (23)
16. Describe the use and effectiveness of sanitizers: heat, chlorine, quats, and iodophors. (24)
17. Describe detergents' and sanitizers' major ingredients, methods of operation, and functions. (24)
18. Understand the complexity of retail food processing environments and how a food establishment's general environment, e.g., lighting, ventilation, pest control, etc., may affect food safety. (25)
19. Describe the factors which assure that milk, shellfish and other foods are safe products. (26)
20. Describe parameters for safe retail food storage, preparation and service. (27)
21. Distinguish between Washington State's current food regulations and earlier editions as result of USDA-FDA *Food Code 2001* adoption. (27)