

**COURSE SYLLABUS**

Course number: PubH 7215-101 #89047

Course title: Food Safety Risk Assessment

Credits: 1.0

Course meeting times:	Monday, 5/23; 9:00am - 12:00pm Tuesday, 5/24; 8:00am - 12:00pm Wednesday, 5/25; 8:00am - 12:00pm Friday, 5/27; 8:00am - 12:00pm
Instructors:	Craig W. Hedberg, PhD Associate Professor  Donald Schaffner, Ph.D. Extension Specialist, Professor Rutgers University
Address:	Division of Environmental and Occupational Health 1242 Mayo, MMC 807 Mayo 420 Delaware Street, SE Minneapolis, MN 55455
Office phone:	612-626-4757
Fax:	612-626-4837
Email:	hedbe005@umn.edu
Office hours:	By appointment

**I. Course Description**

Foodborne diseases continue to be a major public health problem. USDA and FDA have begun to develop risk assessments to identify important foodborne disease hazards, evaluate potential control strategies, and identify research needs. This course will review risk assessment methods and data needs, using the USDA's risk assessment of the public health impact of Salmonella Enteritidis in eggs, E. coli O157:H7 in ground beef, and Listeria monocytogenes in ready-to-eat foods as models.

**II. Learning Objectives**

Upon completion of this course, students will be able to:

1. Describe the reasons for conducting risk assessments of important food safety hazards.
2. Describe how risk assessments can be used to evaluate potential strategies to prevent, reduce or eliminate food safety hazards.
3. Describe the use of modeling techniques to assess the effects of different mitigation strategies.
4. Identify data needs and sources of data used for specific modules or a risk assessment.
5. Evaluate the strengths and weaknesses of food safety risk assessments.

### III. Methods of Instruction and Work Expectations

Lectures, discussions, and group exercises are used to present relevant material from selected USDA risk assessments: Salmonella Enteritidis in eggs, E. coli O157:H7 in ground beef, and Listeria monocytogenes in ready-to-eat foods to help students understand the design, application and evaluation of risk assessments for food safety.

Outside speakers, discussions and demonstrations of modules from the risk assessments provide insights on data needs, sources of available data, and the design and use of models.

Course grading will be determined on the basis of class participation, a multiple choice examination and a written assignment due within one week of the last day of class.

- Class participation (20 points)
- Group presentation (30 points)
- Multiple choice final exam (30 points)
- Written assessment (20 points)

### IV. Grading

1. **Grading Criteria:** This course is offered A/F or S/N

- A/F letter grade will be determined by total effort as follows:

A = 95-100%	(4.0) Represents achievement that is outstanding relative to the level necessary to meet course requirements.
A- = 90-94%	
B+ = 87-89%	
B = 83-86%	(3.0) Represents achievement that is significantly above the level necessary to meet course requirements.
B- = 80-82%	
C+ = 77-79%	
C = 73-76%	(2.0) Represents achievement that meets the minimum course requirements.
C- = 70-72%	
F =	Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.

- S/N option must complete all assignments to a C- level (70%):

S	Achievement that is satisfactory will be expected to complete all assignments and receive a minimum of 70% to receive a passing score (achievement required for an S is at the discretion of the instructor but may be no lower than a 70%).
F	Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.

2. **Grading Option** - Students may change grading options during the initial registration period or during the first two days of the term. **The grading option may not be changed after the**

second day of class.

3. **Course Incomplete** - An incomplete grade is permitted only in cases of extraordinary circumstances and following consultation with the instructor. In such cases an "I" grade will require a specific written agreement between the instructor and the student specifying the time and manner in which the student will complete the course requirements. Extension for completion of the work will not exceed one year.
4. **Scholastic Dishonesty** - This course follows the University of Minnesota Board of Regents' policy on student conduct and scholastic dishonesty which can be found at:  
<http://www1.umn.edu/regents/policies/academic/StudentConductCode.pdf>

A grade of "F" or "N" for the entire course will be assigned for scholastic dishonesty as defined in the policy and will be reported to the Office of Student Judicial Affairs  
<http://www.sja.umn.edu/>

Plagiarism is an important element of this policy. It is defined as the presentation of another's writing or ideas as your own. Serious, intentional plagiarism will result in an "F" or "N" grade for this course. For more information on this policy and for a helpful discussion of preventing plagiarism, please consult University policies and procedures regarding academic integrity:  
<http://cisw.cla.umn.edu/plagiarism/uofmpolicies.html>

Students are urged to be careful that they properly attribute and cite others' work in their own writing. For guidelines for correctly citing sources, go to <http://tutorial.lib.umn.edu/>. In addition, original work is expected in this course. It is unacceptable to hand in assignments for this course for which you received credit in another course unless by prior agreement with the instructor. Building on a dissertation or final project is acceptable.

If you have any questions, consult the instructor.

## V. Course Withdrawal

School of Public Health Students may withdraw from a course **through the second** day of the course without permission. No "W" will appear on the transcript. After the second day, students are required to do the following:

- The student must contact and notify their advisor and course instructor informing them of the decision to withdraw from the course.
- The student must send an email to the SPH Student Services Center (SSC). The email must provide the student name, ID#, course number, section number, semester, and year with instructions to withdraw the student from the course, and acknowledgement that the instructor and advisor have been contacted.
- The advisor and instructor must email the SSC acknowledging the student is canceling the course. All parties must be notified of the student's intent.
- The SSC will complete the process by withdrawing the student from the course after receiving all emails (student, advisor and instructor). A "W" will be placed and remain on the student transcript for the course.
- After discussion with their advisor and notification to the instructor, students may withdraw until the end of the second day of class. There is no appeal process.

## VI. Disabilities

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the instructor and Disability Services at the beginning of the term. All discussions remain confidential. For further information contact the University of Minnesota Disability Services website at <http://ds.umn.edu/> or call 612-626-1333 (V/TTY).

## VII. Course Text and Readings

There is no text for this course. To facilitate classroom exercises, students are encouraged to bring a laptop to class with @ Risk and Analytica risk assessment software. Access to computers with these packages will be available in the classroom. However, students may find it advantageous to have copies on their own laptops as well. Free trial versions of these programs can be downloaded from the following web-sites:

@ Risk is available for a free 10-day trial and can be downloaded from: <http://www.palisade.com>

Analytica is available for a free 30-day trial and can be downloaded from: <http://www.lumina.com>

Readings include the following published articles available from the listed websites. Students should go to the websites via the link provided to download the materials required for this course.

1. FSIS Backgrounder on Risk Analysis: <http://www.fsis.usda.gov/oa/background/riskanal.htm>
2. Salmonella enteritidis Risk Assessment; Executive Summary: <http://www.fsis.usda.gov/ophs/risk/#es>
3. Interpretative Summary, Draft Risk Assessment of the Public Health Impact of Escherichia coli O156:H7 in Ground Beef: <http://www.fsis.usda.gov/OPPDE/rdad/FRPubs/00-023N/InterpretiveSummary.pdf>
4. Quantitative Assessment of Relative Risk to Public Health from Foodborne *Listeria monocytogenes* Among Selected Categories of Ready-to-Eat Foods <http://www.cfsan.fda.gov/~dms/lmr2-su.html>

## VIII. Course Outline/Weekly Schedule

Monday, May 23	<ul style="list-style-type: none"><li>• Principles of risk assessment and need for risk assessments of food safety hazards.</li><li>• Introduction to the USDA risk assessments.</li><li>• Assignment of groups to review specific modules of individual risk assessments.</li></ul>
Tuesday, May 24	<ul style="list-style-type: none"><li>• USDA risk assessments, compare and contrast RA based on risk management questions being addressed.</li><li>• Group activities: introduction to risk assessment software</li></ul>
Wednesday, May 25	<ul style="list-style-type: none"><li>• Computer lab exercise with risk assessment models</li><li>• Data quality, data needs, modeling and sensitivity analyses</li><li>• Developing risk assessments for other food safety hazards</li></ul>
Friday, May 27	<ul style="list-style-type: none"><li>• Group presentations</li><li>• Applying RA to risk communication and risk management</li><li>• Final exam</li></ul>