I. Course Description

*Salmonella*, Shiga toxin-producing *Escherichia coli* (STEC), and *Listeria monocytogenes* are the pathogens that have had the most profound impact on food safety policy and regulation in the United States. Large multi-state outbreaks of foodborne disease due to widely distributed food items, often caused by one of these pathogens, are being identified more and more frequently. These outbreaks have had large public health and economic impacts, have garnered much media attention, and have been a major impetus behind food safety policy changes such as the recent adoption of the federal Food Safety Modernization Act. The epidemiology of these pathogens is very complex; sources can include a wide variety of food products. Furthermore, food production and distribution are very complex. These factors create marked challenges not only for outbreak investigation and control, but also for elucidation of the relative importance of different food sources of these pathogens. In turn, this creates challenges in developing and targeting prevention efforts aimed at reducing the incidence of illness caused by these pathogens.
This course is designed to familiarize students with the importance of *Salmonella*, STEC, and *L. monocytogenes* as foodborne pathogens in the United States, and how they have affected food safety policy, regulation, and prevention programs in this country. Topics will include, for each pathogen: clinical disease manifestations and disease burden in humans; surveillance considerations; reservoirs, food vehicles, and risk factors; incidence changes over time, high profile (and other) outbreaks in the last 20 years; the evolution of food safety regulatory programs and other prevention approaches; and, food safety policy considerations, including a review of the Food Safety Modernization Act and other federal initiatives in the context of how they might reduce the incidence of infections with the pathogens covered in this course.

**Competencies**

The core competencies in Public Health Preparedness and Response identified in the CDC planning model that apply to this course include:

**Domain 1: Model Leadership**
1.3 Facilitate collaboration with internal and external partners

**Domain 2: Communicate and Manage Information**
2.4 Collect data according to protocol
2.5 Manage the recording of data according to protocol

The core competencies identified in the HRSA Council of Linkages model that apply to this course include:

1. **Analytical/Assessment Skills**
   4. Uses information technology in accessing, collecting, analyzing, using, maintaining, and disseminating data and information.

2. **Policy Development/Program Planning Skills**
   7. Examines the feasibility (e.g., fiscal, social, political, legal, geographic) and implications of policies, programs, and services
   11. Explains the importance of evaluations for improving policies, programs, and services

5. **Community Dimensions of Practice Skills**
   1. Distinguishes the roles and responsibilities of governmental and non-governmental organizations in providing programs and services to improve the health of a community

6. **Public Health Sciences Skills**
   5. Retrieves evidence (e.g., research findings, case reports, community surveys) from print and electronic sources (e.g., PubMed, Journal of Public Health Management and Practice, Morbidity and Mortality Weekly Report, The World Health Report) to support decision making
   6. Determines limitations of evidence (e.g., validity, reliability, sample size, bias, generalizability)

8. **Leadership and Systems Thinking Skills**
   2. Describes public health as part of a larger inter-related system of organizations that influence the health of populations at local, national, and global levels

**II. Course Prerequisites**

None

**III. Course Goals and Objectives**

After completing the course, participants will be able to:
- Describe disease manifestations of *Salmonella*, STEC, and *Listeria monocytogenes* (SSL), including typical clinical features;
- Discuss the importance of SSL as causes of foodborne disease in the United States;
- Describe how surveillance for SSL is conducted in the United States;
- Describe changes in incidence of SSL infections in the United States since the 1990’s;
- Name important reservoirs for SSL, common vehicles for foodborne disease outbreaks, and risk factors for sporadic infection;
Discuss high profile foodborne SSL outbreaks that have occurred in the United States in the last 2 decades, and how they have affected food safety regulation and policy; Describe the food safety regulatory systems and initiatives in the United States aimed at minimizing foodborne transmission of SSL; and Discuss the Food Safety Modernization Act, including the reasons for its passage, how it relates to prevention of SSL infections, and challenges to its implementation.

IV. Methods of Instruction and Work Expectations

Methods of Instruction include:

- Lectures are used to present relevant material. Speakers will include Dr. Smith and representatives from the United States Food and Drug Administration (approximately 1 hour) and the United States Department of Agriculture (approximately 1 hour).
- Classroom discussions of scientific papers, case-studies, and relevant concepts will support lectures.
- Students will be expected to spend about 5 hours reading materials prior to the course.
- Students will be assigned a topic on the first day of class and will develop a 10-15 minute power point presentation to be given during the final class period. Students will be assigned to groups randomly by the instructor using the course roster.
- Course grading will be determined on the basis of class participation, a multiple-choice examination and the group power point presentation. Students will be able to obtain full credit for classroom participation by asking questions and participating in discussions and group exercises. The examination will be a short, open-book, take home test due on June 19 (one week after the last day of class).

V. Course Text and Readings

The required and optional readings are available through the UMN Library, which can be accessed through the course Moodle site.

Access Course Moodle Site

- go to www.umn.edu click on the “myU” button
- login with your University ID and password
- scroll to your course and click on the Moodle site link

Required Readings (prior to class):


Please spend 10-15 minutes on each of the following websites becoming familiar with the information, and bookmark them:

- **FoodNet** [http://www.cdc.gov/foodnet/](http://www.cdc.gov/foodnet/)
- **Outbreaks** [http://www.cdc.gov/foodsafety/outbreaks/multistate-outbreaks/outbreaks-list.html](http://www.cdc.gov/foodsafety/outbreaks/multistate-outbreaks/outbreaks-list.html)
- **FSMA** [http://www.fda.gov/Food/GuidanceRegulation/FSMA/](http://www.fda.gov/Food/GuidanceRegulation/FSMA/)

The following readings comprise a library of articles that might also be useful as references for class or at a later date (no need to print out or read before class):


---

**VI. Course Outline/Weekly Schedule**

<table>
<thead>
<tr>
<th>Pre-Course</th>
<th>Complete required readings prior to the first day of class</th>
</tr>
</thead>
</table>

---

6
| Day 1 – June 8 | Introduction and course overview  
|               | Taxonomy  
|               | Clinical disease manifestations in humans, burden of disease  
|               | Surveillance for SSL in humans  
|               | Incidence trends  
|               | Reservoirs  
|               | Assign topics for Day 4 presentations  
|               | Work on Day 4 presentations  
| Day 2 – June 9 | Food vehicles of SSL  
|               | Outbreaks  
|               | Work on Day 4 presentations  
| Day 3 – June 10| Outbreaks (continued)  
|               | Risk factors for sporadic infections  
|               | Food Safety Regulatory Systems  
|               | Food Safety Modernization Act  
|               | Work on Day 4 presentations  
| Day 4 – June 12| Group presentations  
|               | Summary  
|               | Hand out exam (Due June 19)  

VII. Evaluation and Grading

Outline of Grading

| Class Participation | 35 points (35% of grade)  
| Examination | 30 points (30% of grade) Due one week after the last day of class on June 19  
| Group Presentation | 35 points (35% of grade) Due on final day of class  

This course is offered A/F or S/N

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.000</td>
<td>Represents achievement that is outstanding relative to the level necessary to meet course requirements. 94-100%</td>
</tr>
<tr>
<td>A-</td>
<td>3.667</td>
<td>90-93%</td>
</tr>
<tr>
<td>B+</td>
<td>3.333</td>
<td>87-89%</td>
</tr>
<tr>
<td>B</td>
<td>3.000</td>
<td>Represents achievement that is significantly above the level necessary to meet course requirements. 83-86%</td>
</tr>
<tr>
<td>B-</td>
<td>2.667</td>
<td>80-82%</td>
</tr>
<tr>
<td>C+</td>
<td>2.333</td>
<td>77-79%</td>
</tr>
<tr>
<td>C</td>
<td>2.000</td>
<td>Represents achievement that meets the course requirements in every respect. 73-76%</td>
</tr>
<tr>
<td>C-</td>
<td>1.667</td>
<td>70-72%</td>
</tr>
<tr>
<td>D+</td>
<td>1.333</td>
<td>67-69%</td>
</tr>
<tr>
<td>D</td>
<td>1.000</td>
<td>Represents achievement that is worthy of credit even though it fails to meet fully the course requirements. 63-68%</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>Represents failure (or no credit) and signifies that the work was either (1) completed but...</td>
</tr>
</tbody>
</table>
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. **below 60%**

- **S** Represents achievement that is satisfactory, which is equivalent to a C- or better.

For additional information, please refer to:
http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html.

**Course Evaluation**
The SPH will collect student course evaluations electronically using a software system called CoursEval: www.sph.umn.edu/courseval. The system will send email notifications to students when they can access and complete their course evaluations. Students who complete their course evaluations promptly will be able to access their final grades just as soon as the faculty member renders the grade in SPHGrades: www.sph.umn.edu/grades. All students will have access to their final grades through OneStop two weeks after the last day of the semester regardless of whether they completed their course evaluation or not. Student feedback on course content and faculty teaching skills are an important means for improving our work. Please take the time to complete a course evaluation for each of the courses for which you are registered.

**Incomplete Contracts**
A grade of incomplete “I” shall be assigned at the discretion of the instructor when, due to extraordinary circumstances (e.g., documented illness or hospitalization, death in family, etc.), the student was prevented from completing the work of the course on time. The assignment of an "I" requires that a contract be initiated and completed by the student before the last official day of class, and signed by both the student and instructor. If an incomplete is deemed appropriate by the instructor, the student in consultation with the instructor, will specify the time and manner in which the student will complete course requirements. Extension for completion of the work will not exceed one year (or earlier if designated by the student’s college). For more information and to initiate an incomplete contract, students should go to SPHGrades at: www.sph.umn.edu/grades.

University of Minnesota Uniform Grading and Transcript Policy - A link to the policy can be found at onestop.umn.edu.

**VIII. Other Course Information and Policies**

**Grade Option Change** (if applicable)
For full-semester courses, students may change their grade option, if applicable, through the second week of the semester. Grade option change deadlines for other terms (i.e. summer and half-semester courses) can be found at onestop.umn.edu. The grading option for Public Health Institute courses may not be changed after the second day of class for 4-day courses. Grading options for 2 day courses may not be changed after the first day class.

**Course Withdrawal**
Students should refer to the Refund and Drop/Add Deadlines for the particular term at onestop.umn.edu for information and deadlines for withdrawing from a course. As a courtesy, students should notify their instructor and, if applicable, advisor of their intent to withdraw.

Students wishing to withdraw from a course after the noted final deadline for a particular term must contact the School of Public Health Office of Admissions and Student Resources at sph-ssc@umn.edu for further information.
School of Public Health students may withdraw from a 4-day course through the second day of class without permission and no “W” will appear on the transcript. Students enrolled in 2-day courses may withdraw only through the first day of class. After these withdrawal deadlines pass 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 e-mail to the SPH Student Services Center (SSC) at sph-ssc@umn.edu. 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.

Student Conduct Code
The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see:

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Use of Personal Electronic Devices in the Classroom
Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference:

Scholastic Dishonesty
You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see:
http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: http://www1.umn.edu/oscai/integrity/student/index.html. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular
class—e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Makeup Work for Legitimate Absences
Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html.

Appropriate Student Use of Class Notes and Course Materials
Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html.

Sexual Harassment
“Sexual harassment” means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf.

Equity, Diversity, Equal Opportunity, and Affirmative Action
The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf.

Disability Accommodations
The University of Minnesota is committed to providing equitable access to learning opportunities for all students. Disability Services (DS) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DS at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, https://diversity.umn.edu/disability/.

Mental Health and Stress Management
As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: http://www.mentalhealth.umn.edu.

The Office of Student Affairs at the University of Minnesota
The Office for Student Affairs provides services, programs, and facilities that advance student success, inspire students to make life-long positive contributions to society, promote an inclusive environment, and enrich the University of Minnesota community.

Units within the Office for Student Affairs include, the Aurora Center for Advocacy & Education, Boynton Health Service, Central Career Initiatives (CCE, CDes, CFANS), Leadership Education and Development—Undergraduate Programs (LEAD-UP), the Office for Fraternity and Sorority Life, the Office for Student Conduct and Academic Integrity, the Office for Student Engagement, the Parent Program, Recreational Sports, Student and Community Relations, the Student Conflict Resolution Center, the Student Parent HELP Center, Student Unions & Activities, University Counseling & Consulting Services, and University Student Legal Service.

For more information, please see the Office of Student Affairs at http://www.osa.umn.edu/index.html.

**Academic Freedom and Responsibility: for courses that do not involve students in research**

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

**OR:**

**Academic Freedom and Responsibility, for courses that involve students in research**

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom and conduct relevant research. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

When conducting research, pertinent institutional approvals must be obtained and the research must be consistent with University policies.

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

* Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".

Template update 9/2014