

The 2004 Public Health Institute

May 24 – June 11, 2004

COURSE SYLLABUS

PubH 7213

Applications of Microbiology to Food Systems Monitoring

Credits: 1.0

Course meeting times:	June 7, 8, 9, 11
Instructor:	Francisco Diez-Gonzales Assistant Professor
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I. Course Description

This course focuses on the application of microbiology to food systems monitoring. The course will explore the logic and application of microbiological testing to determine the prevalence of pathogens in specific foods, to identify the causes of foodborne disease outbreaks and to monitor critical control points. The course will review and demonstrate traditional and rapid laboratory methods used to detect indicator organisms, pathogens and other contaminants of public health concern.

II. Learning Objectives

Upon completion of this course students will be able to:

Describe the rationale for trying to detect indicator organisms rather than pathogens in food products.

Understand statistically valid sampling plans for food and environmental surfaces.

Identify traditional and rapid methods in food microbiology.

Identify strategies for improving the safety of foods through the use of microbiological criteria, specifications and standards, hazard control, and monitoring.

Describe a systems approach for integrating foodborne disease surveillance and food system monitoring to maintain the safety of the food supply.

III. Methods of Instruction and Work Expectations

Presentations and laboratory demonstrations are used to present relevant material and help students understand available laboratory methods and their application to monitoring food systems. Laboratory exercises will help students integrate relevant concepts from the class into real world situations.

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

Class participation 20 points
 Examination 40 points
 Written reports 40 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	
D+ =	
D =	(1.0) Achievement below minimum course expectations but sufficient to be awarded credit.
D- =	
F = below 70%	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 and “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 polices 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

Packet of readings to be available one week prior to the beginning of the course. Readings will include:

Doyle MP, Beuchat LR, Montville TJ. Food Microbiology: Fundamentals and Frontiers; 2001, 2nd edition: chapters 1, 3, 10, 21.

Modern Food Microbiology, 2000, James M. Jay, 6th Edition, Aspen Publishers, inc., Gaithersburg, MD.

Additional reading materials will be provided by the instructors.

VIII. Course Outline/Weekly Schedule

June 7 1:00 – 5:00 p.m.	Occurrence of microorganisms in food Factors influencing growth of microorganisms in food Detection and enumeration of pathogens and indicator organisms
June 8 1:00 – 5:00 p.m.	Food sampling plans and environmental sampling Begin laboratory exercise on quantitative microbiological methods
June 9 1:00 – 5:00 p.m.	Laboratory demonstration of rapid molecular methods for identification and tracking of relevant food-borne microorganisms Continue quantitative microbiology laboratory exercise
June 11 2:00 – 5:00 p.m.	Microbiological criteria, specifications and standards GMPs and HACCP for microbiological control Complete quantitative microbiology laboratory exercise Final exam

IX. Class Project