

Course Syllabus – FDSC 6403

Course Name: Epidemiologic Principles in Food Safety and Public Health

Instructor: Dr. Kristen E. Gibson

Phone: 479-575-6844

Email: keg005@uark.edu

Office Location: Food Science N-220

Office Hours: Please email me to set up an appointment.

Class Time: 11:50am – 12:40pm MWF

Class Location: FDSC D2

Pre-requisites: BIOL 4124 or equivalent

REQUIRED Textbook:

1. Stephen J. Forsythe, The Microbiology of Safe Foods, 2nd Edition, Wiley-Blackwell (ISBN 978-1405140058)
2. Supplemental reading materials distributed by the instructor.

COURSE OVERVIEW: This course will provide an introduction to epidemiologic methods used in foodborne disease outbreak investigations. The importance of surveillance systems in detecting outbreaks and in the development of effective disease prevention and control strategies will also be presented. An emphasis will be placed on understanding the relationships between the host, the etiologic agent, and the environment as they relate to disease causation. In addition, molecular methods utilized for the identification of etiologic agents will be discussed. Selected important foodborne diseases will be discussed in detail to clarify the role of epidemiology in understanding the pathogenesis of infectious processes in individuals and communities.

LEARNING OUTCOMES: Upon successful completion of this course, the student will:

1. Demonstrate a basic understanding of epidemiologic methods and study design for application to foodborne disease outbreak investigations.
2. Understand the epidemiological characteristics of the major causes of foodborne illness.
3. Describe how these epidemiological characteristics can be utilized to develop and evaluate strategies to prevent outbreaks and transmission of the major causes of foodborne illness.
4. Understand how molecular laboratory tools can be applied in outbreak investigations.
5. Demonstrate basic understanding of risk assessment as applied to food safety.
6. Define key components of successful foodborne disease outbreak investigations by the critical review of case studies.

BLACKBOARD Site Information: Announcements, assignments, and lecture notes will be regularly posted in Blackboard. <http://learn.uark.edu>

COURSE INFORMATION

Lecture: 3 hours/week

Class format: The class format will be a mix of lectures combined with active learning techniques and in class discussion

STUDENT RESPONSIBILITIES

Attendance: Attendance in class is critical to receiving a passing grade in this course and will be monitored.

Participation: Your participation in class discussions will be noted and reflected in your grade.

Reading: Assigned reading from the required textbooks and supplemental sources will be posted on Blackboard.

Professionalism: Students are expected to behave in class in a responsible and respectful manner. Disruptions (behavior or language) and sleeping will not be tolerated. If you are being disruptive or are caught sleeping, you will be asked to leave the class. In addition, communication with the instructor via emails should be formal, using complete sentences.

GRADING: Three (3) exams (300 pts)
 Presentations (150 pts)
 Assignments (75 pts)
 Attendance/participation (75 pts)

Total Points: 600 points

Note: The course grade scale is as follows:

90.0 – 100.0% (540-600 pts) = A

80.0 – 89.9% (480-539 pts) = B

70.0 – 79.9% (420-479 pts) = C

60.0 – 69.9% (360-419 pts) = D

59.9% and below (<360 pts) = F

EXAMS: There will be two (2) lecture exams and one (1) cumulative final worth 100 pts each, for a total of three (3) exams worth 300 total points. The format of each exam will include any combination of the following: multiple choice, short answer, essay, labeling diagrams, and fill in the blank. Exam grades will be returned to you as soon as possible. No make up exams will be allowed, except for extenuating circumstances (e.g. personal illness, illness of a child, and death). I reserve the right to ask for proof of the extenuating circumstance. If you have an extenuating circumstance, you **MUST** contact me (479-575-6844, keg005@uark.edu) **BEFORE** missing class or you will not be allowed to take the make up exam. **ALL MAKE UP EXAMS WILL BE ESSAY EXAMS AND WILL BE TAKEN THE DAY OF YOUR RETURN TO CLASS.**

ASSIGNMENTS AND PRESENTATIONS: Various assignments will be given throughout the semester, which may include (but are not limited to) in class/group activities, case studies, presentations, and writing assignments. Assignments will be due at the beginning of class and assignments turned in late after the beginning of class will have 50% of the points deducted. Assignments turned in after the day they are due will receive a '0'.

Current Topics in Food Safety Presentation: During the first half of the semester, each student will be required to bring in a news article from an established news source (and pre-approved by me) related to a food safety issue occurring in the U.S. or outside of the U.S. The student will give a 10-minute presentation on the food safety issue. The assignment will be worth 50 points.

Case Study Presentation: During the second half of the semester, teams of 2 students will present a case study on a foodborne disease outbreak investigation to the class via a PowerPoint presentation. The students will also be responsible for preparing individual written reports. The assignment will be worth 100 points. Additional information will be supplied by the instructor at a later date.

CELL PHONES: Cell phone use of any kind during class will not be permitted.

STUDENTS WITH DISABILITIES: If you need an accommodation due to a disability, please make arrangements to discuss this with me during the first two weeks of the semester.

PLAGIARISM: According to the University of Arkansas Sanction Rubric on the Academic Initiatives and Integrity webpage (<http://provost.uark.edu/academicintegrity/246.php>), plagiarism is “the offering as one’s own work, the words, ideas, or arguments of another person or using the work of another without appropriate attribution by quotation, reference, or footnote. Plagiarism occurs both when the words of another (in print, electronic, or any other medium) are reproduced without acknowledgement and when the ideas or arguments of another are paraphrased in such a way as to lead the reader to believe that they originated with the writer. It is not sufficient to provide a citation if the words of another have been reproduced – this also requires quotation marks. It is the responsibility of all University students to understand the methods of proper attribution and to apply those principles in all materials submitted.”

2016 CLASS TOPICS AND DISCUSSIONS

Date	Topics
August 22	Introduction
August 24	Background: What is public health?
August 26	Basic Principles in Epidemiology
August 29	Basic Principles in Epidemiology
August 31	Basic Principles in Epidemiology
September 2	Basic Principles in Epidemiology
September 5	NO CLASS – LABOR DAY
September 7	Epidemiology in Food Safety
September 9	Overview: Foodborne Hazards of Concern
September 12	Assignment 1: Foodborne Disease Investigation
September 14	Toxins – Seafood and Bacterial
September 16	Pathogens of Concern – Bacteria Part I
September 19	Pathogens of Concern – Bacteria Part II
September 21	Pathogens of Concern – Bacteria Part III
September 23	Pathogens of Concern – Viruses and Protozoa
September 26	Review/Discussion
September 28	<u>EXAM 1</u>
September 30	NO CLASS
October 3	NO CLASS
October 5	NO CLASS
October 7	Emerging Issues in Food Safety Part I
October 10	Emerging Pathogens
October 12	Surveillance Systems
October 14	Basics of Foodborne Outbreak Investigations
October 17	FALL BREAK – NO CLASS
October 19	Case Study Work
October 21	Case Study Work

Date	Topics
October 24	Molecular Epidemiology Part I
October 26	Molecular Epidemiology Part II
October 28	FBDO Case Studies: Role of Molecular Epidemiology
October 31	FBDO Case Studies: Role of Molecular Epidemiology
November 2	Review/Discussion
November 4	<u>EXAM 2</u>
November 7	Basics in Risk Assessment (RA)
November 9	Food Safety and Risk Assessment (RA)
November 11	Quantitative Microbial RA (QMRA) Part I
November 14	QMRA Part II
November 16	QMRA – Case Study (Class Activity)
November 18	Risk Management/Communication
November 21	<i>Flex Day for Extra Material</i>
November 23	NO CLASS
November 25	NO CLASS
November 28	<i>Flex Day for Extra Material</i>
November 30	Case Study: Student Presentations
December 2	Case Study: Student Presentations
December 5	Case Study: Student Presentations
December 7	Review/Discussion
December 14	<u>FINAL EXAM – 10:15am to 12:15pm in FDSC D2</u>