UNIVERSITY OF ARKANSAS
Dale Bumpers College of Agricultural, Food and Life Sciences
FDSC 5503 – Food Industry Sanitation

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Textbook:

- Marriott, N.G. and Gravani, R.B. 2006. Principles of Food Sanitation (5th Edition). Springer Food Science Text Series
- Supplemental Readings as Assigned

Course Description:
This course will provide students with an appreciation of the need for sanitation in food processing and preparation operations and increase the student's knowledge of preventative and sanitary techniques available. Topics covered will include food contamination sources, personal hygiene, plant and equipment design and materials, cleaners and cleaning techniques, sanitizers, monitoring cleanliness, pests and their control, HACCP and food biosecurtiy. Also covered will be considerations in selecting, establishing and maintaining a sanitation program, i.e., the effects the program may have on the plant, the product and the environment.

Course Objectives:

1. To provide information to those working in the food industry about foodborne safety hazards and the role of sanitation in controlling/eliminating these hazards.
2. To delineate the relationship between microbial survival, growth, and destruction and food safety.
3. To provide the student with an understanding of the mechanisms of action of detergents /cleaners and sanitizers.
4. To provide the student with an understanding of sanitation procedures appropriate for use in food processing of various types of food products.
5. To use case history studies of recent foodborne illness outbreaks to illustrate the relationship between sanitation and food safety, foodborne illnesses, and possible control/intervention strategies.
6. To provide the student with the perspectives on the involvement of sanitation in Food Quality Assurance and Management Programs and an overview of food laws and regulations concerning the safe production of food.

Philosophy:

As an advisor or committee member for most people in the AFLS MS program, I read many of the special problem reports and go to the final presentation. As you would probably expect, some of the students do a real good job, some are acceptable and some are quite poor. In general, a Master's degree is not merely an extension of coursework although it often appears that way. It is about your ability to analyze information and learning to express yourself both in writing and verbally. Since the emphasis in graduate school is more on data analysis, synthesis and communication, it stands to reason that just because someone was an excellent undergraduate student does not mean they will do well in graduate school but the test known as the GRE measures verbal and math skills. Instead of you going through 3 years of coursework and then falling down your last semester in the special problem, I would like for students to focus on writing this semester. Most of the coursework should already bee known to most of you. There are no tests or exams so you can learn as much or as little as you want but you will not have to spend endless hours memorizing details for tests. Take that time to learn to write. I do not want someone who spends 3 years in this program not to know what a scientific paper should look like.

There is available information on how to write scientific papers, sample style sheet, an example of a scientific article, the UA Plagerism Policy and the Purdue Online Writing Guide all at your disposal in the tab marked "Writing Assignments".

Class Design:

Weekly Assignments - Each week students are expected to read the **Assigned Chapter**(s) in the textbook and read the **Supplemental Readings**. You may also wish to check the **Useful Resources** At the end of each week, I expect each student to submit a 1 -2 page paper briefly describing what the chapter was about and anything that interested you (e.g. how you can apply the knowledge in your plant, what you thought was of interest etc). Some chapters will have brief PowerPoint slide shows to introduce you to the topic that you may wish to view prior to reading the chapter.

Case Studies – During the semester, there will be times that case study reports will be due. In each of these reports, select an outbreak / case in the CDC's Morbidity and Mortality Weekly

Reports. Morbidity and Mortality Weekly Reports (MMWR). Click Weekly Reports in the Navigation Bar on the left to access previous issues. Be sure to provide the reference (including URL) for the outbreak descriptions you select. Note, not all reports in the MMWR are of biological hazards and it is perfectly acceptable to choose to discuss an outbreak related to a chemical or physical hazard. Although most of you are well aware of the procedures involved in a foodborne disease investigation, you may find the document entitled " Investigating Foodbourne Illness Outbreaks"

useful as a starting point for your considerations of the discussion questions. Please note: Answers / discussions do not have to be lengthy but should show the student has given consideration to the questions.

- URL
- What alerted the officials to the possibility a problem existed?
- Was the factor (organism, contaminant, etc) causing the problem identified? If yes, what methods were used to make this identification? If no, what additional information was needed?
- Which kind of analytical outbreak investigation was used for this study, case control or cohort? Why was this study type selected? Was it useful in identifying the source of the illness?
- Were the control measures implemented appropriate and timed properly? Why or why not?
- Based on the information provided, do you believe there were sanitation steps in the flow of the product (from farm to fork) that could have prevented or lessoned this outbreak?
- Do you believe there were research biases which affected this outbreak investigation? Explain.

Article Review - Three times during the semester you will be asked to review a research or popular press article. I suggest you start by finding a newspaper article of interest to you regarding food or food safety. You may wish to find something in the UA library. Click here to go the UA library. Read the article and find ways to critically evaluate it. Are the statements facts or someone's opinion? How do they research their conclusion etc. A suggested format can be found at the following URL; Click Here.

Grading:

Weekly Write-up (10 pts/week)	120 pts.
Research article reviews - 3 @ 20 pts.	60 pts.

Case study evaluations - 3 @ 20 pts.	60 pts.
Total Possible	240pts.

Grading Scale:
Grades are assigned as a rounded percentage of the possible points.

93% to 100%	A
90% to 92%	A-
87% to 89%	B+
83% to 86%	B
80% to 82%	B-
77% to 79%	C+
73% to 76%	C
70% to 72%	C-
67% to 69%	D+
63% to 66%	D
60% to 62%	D-
Below 60%	F

Important Websites
FDA Bad Bug Book. This is the FDA Bad Bug Book listing important characteristics of pathogens. The Bad Bug Book also has some very useful tables hyperlinked for pH values of many foods and conditions limiting growth of microbes in foods.

Microbiology Laboratory Guidebook Find FSIS food recalls and Guidebook covering methods for microbiological tests of meat and poultry products.

Center For Disease Control Find posted each Thursday-Friday a new Centers for Disease Control and Prevention weekly report titled Morbidity Mortality Weekly Reports. This site covers back issues also. Note at the end of each issue there is a weekly summary of recent reported cases of microbiologically-caused illnesses, only part of them food-or water-borne organized by state , and region of the USA (Notifiable Diseases).

Late Work Policy;
All work is due based on established and announced due-dates unless prior approval is obtained from the instructor. If work is turned in late, 50% of the total assignment value will be deducted prior to assessment of the work, as long as the work is turned in no later than three days following the due date. Work turned in after that will automatically receive a 0. This policy is in effect as an incentive to stay current with the assigned work. Like many courses, the work of one session is based on understanding the work of the previous session(s). Falling behind in the work greatly reduces the chances of success at attempting later work.

Academic Honesty;
I am committed to the principle of academic honesty and I expect each student in my class to maintain a high standard of academic integrity. My commitment to you, the student, is to provide a learning environment that promotes academic honesty in and out of the classroom. I support the University of Arkansas policy concerning academic honesty that is described in the Student Handbook. Consequently, any student involved in an academically dishonest act will be given an F in the class and the action will be reported to the All University Judiciary. Students are expected to work independently on the various projects assigned..

Communications:

- If you have any questions about the course material, email me at seideman@uark.edu. I will try to check my email regularly and will usually respond to course-related questions within 48 hours.
- Graded assignments will be returned to students within a week unless I have some crisis. Be sure to open the returned assignment and review the instructor's comments.
- If you have technical questions or problems with Blackboard, contact Alex Kareev at akareev@uark.edu or 479/575-6504. *ALWAYS INCLUDE "FDSC5503" IN YOUR EMAIL SUBJECT