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## **AL-542 Advanced Food Safety**

### **CLASS MEETING TIMES**

Course Days/Times: Tuesday & Thursday 2:00 AM – 3:20 PM

Classroom: ALS Building, Room 104 (Tuesday) and Room 125A (Thursday)

Course Delivery Mode: Face-to-Face

### **INSTRUCTOR**

Jian Yang, Ph.D., Professor of Food Science

Office: Agriculture & Life Science Bldg, Room 113B

Phone: (671) 735-2027

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Office Hours: Tuesday & Thursday 3:20 – 4:00 PM

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### **CATALOG DESCRIPTION**

This course covers biological, chemical, and physical agents of foodborne diseases and provides a farm-to-fork perspective overview of food safety, including the fundamental principles, laboratory and analytical methods, risk assessment and hazard analysis, safe operations and technology, and food safety topics, issues, and regulations.

### **COURSE CONTENT**

This course is designed for an advanced understanding of causes and prevention of foodborne illness, learning food safety fundamentals, applying principles to prevent foodborne illness from farm to fork, discussing various food safety topics and controversies, and grasping the contemporary world food safety issues and regulations. The content of the course cover food safety history and foodborne illness, biological hazards, chemical and physical hazards, methods of detection and characterization, prevention and food safety operation, risk assessment and hazard analysis of foods, food safety, diet, and health, food safety controversies and solution, world-wide food safety issues, and food safety regulation.

### **REQUIRED TEXTBOOK AND/OR READINGS**

Paul L. Knechtges, Food Safety: Theory and Practice, Jones & Bartlett Learning, 2012 (ISBN: 978-0763785567).

**STUDENT LEARNING OUTCOMES ALIGNMENT MATRIX**

<b>Course Student Learning Outcomes (SLO)</b>	<b>Program Learning Outcomes (PLO)*</b>	<b>Institutional Learning Outcomes (ILO)*</b>	<b>Activities/Assessments</b>
Define food safety and foodborne illness	1, 4, 7	3, 5	Questions, assignments, quizzes, and exams
Comprehend the prevalence of foodborne pathogens	1, 2, 4, 7	1, 3, 5, 7	Questions, assignments, quizzes, and exams
Characterize biological, chemical, and physical hazards	1, 2, 4, 7	2, 5, 7	Questions, assignments, quizzes, and exams
Comprehend controls and technology for food safety in the modern food technology	1, 4, 7	1, 2, 3, 5	Questions, assignment, quizzes, and exam
Conduct risk assessment and hazard analysis including the HACCP system and the Risk-based Preventive Controls for Human Food.	1, 2, 4, 6	1, 3, 4, 5	Questions, assignments, quizzes, and exams
Understand various laboratory pathogen detection and analytical methods	2, 3, 7	2, 6, 7	Questions, assignments, quizzes, exams,
Discuss topics and issues into a farm-to-fork perspective regarding safety management of the food supply	4, 7	3, 5, 6, 7	Discussions, term paper, presentations
Discuss the controversies and solutions of emerging food safety topics	4, 7	3, 5, 6, 7	Discussions, term paper, presentations
Comprehend food safety regulations	1, 4, 5, 6, 7	5, 6, 7	Questions, assignments, quizzes, and exams,

\*Refer to POL's and ILO's described below

**ALS Program Learning Outcomes (PLOs)**

*PLO1 - Disciplinary Knowledge and Skills:* Graduates will demonstrate integrated knowledge in their chosen fields of study and related sciences.

*PLO2 - Research Skills:* Graduates possess critical thinking and analytical skills. Graduates are competent in basic procedures and safety protocols in conducting research. Graduates can use their knowledge and understanding of scientific concepts to explain and solve problems in their field.

*PLO3 - Analytical Skills:* Graduates can apply quantitative and/or qualitative analytical methods in agriculture and the life sciences.

*PLO4 - Communication Skills:* Graduates can gather and assess information and use it to create effective research and outreach communication media and oral presentations.

*PLO5 - Ethics and Professionalism:* Graduates understand the ethical principles underlying research, publication, and professional behavior. Graduates can demonstrate teamwork and networking skills, and understand the importance of providing correct credit for others' work.

*PLO6 - Multicultural Competence:* Graduates will develop cross-cultural respect and a foundation for lifelong multicultural competence.

*PLO7 - Lifelong Learning and Integration of Knowledge from the Sciences and the Arts:* Graduates can empower themselves through life-long learning to enhance their knowledge base, and demonstrate an ability to integrate knowledge from the sciences and the arts.

### **UOG Institutional Student Learning Outcomes (ILOs)**

[www.uog.edu/adminstration/academic-and-student-affairs/accreditation/assessment-and-program-review](http://www.uog.edu/adminstration/academic-and-student-affairs/accreditation/assessment-and-program-review).

*ILO-1.* Mastery of critical thinking and problem solving

*ILO-2.* Mastery of quantitative analysis

*ILO-3.* Effective oral and written communication

*ILO-4.* Understanding and appreciation of culturally diverse people, ideas and values a democratic context

*ILO-5.* Responsible use of knowledge, natural resources, and technology

*ILO-6.* An appreciation of the arts and sciences

*ILO-7.* An interest in personal development and lifelong learning

### **COURSE FORMAT**

Lecture is the mainly instruction method to deliver the scientific knowledge and information of the course. The instruction will also involve in class discussions, group case studies, term paper and presentation, and other forms of active participation whenever possible.

### **COURSE POLICIES**

You are responsible for your learning. Take advantage of the available resources provided for this course, such as books, literatures, activities, and office hours. You are required to attend every lecture period, finish assignments, take quizzes and exams, and complete a term paper. Chronic absences and tardiness will result in a loss of the discretionary points. If something prevents you from attending class, you are still responsible to keep up with your study. Please contact the instructor or a classmate for copies of new handouts.

As a courtesy and avoiding disruption to the instructor and to your classmates, please come to class on time and not leave early. Please don't talk to each other when the instructor is addressing the class or a student is speaking or answering questions. Please turn off all cell phone, MP3 players, or other devices, which may interrupt the class. For an emergency situation, please contact instructor to make a special arrangement before class begins.

### **CONTACT INFORMATION FOR CLASSMATES**

Write the names and contact information for two or three classmates you can contact if you miss a class or want a study partner. Study groups are encouraged!

### **STUDENT WORKLOAD**

For every hour of a lecture class, a student needs to spend an average of 2 hours for studying. For a 3-credit hour course, you need to spend 6 hours for studying. I suggest you to structure your 6 hours: 1 hour of pre-reading the textbook before class, 3 hours of re-reading the textbooks or other reference

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### **GRADING**

<b>Course Requirements</b>	<b>Points</b>	<b>Percent (%)</b>
3 exams	300 pts	50%
Assignments and quizzes	100 pts	17%
Term paper	100 pts	17%
Term paper presentation	50 pts	8%
Discretionary	50 pts	8%
Total	600 pts	100%

### **COURSE FINAL GRADES**

A+	98-100% (4.00)
A	93-97% (4.00)
A-	90-92% (3.67)
B+	87-89% (3.33)
B	83-86% (3.00)
B-	80-82% (2.67)
C+	75-79% (2.33)
C	70-74% (2.0)
D	60-69%
F	Below 59%

### **ASSIGNMENT DESCRIPTIONS**

All assignments must be submitted on the scheduled dates. Later submission of assignments will not be accepted. No plagiarism and any form of cheating will be allowed in doing assignments, taking quizzes and exams, and writing a term paper. Any evidence of cheating and plagiarism will result in a score of zero for that assigned task or possible a score of "F" for the entire course. Three exams will be given on scheduled dates in this course; no make-up exam will be given. If you miss an exam, the score of the missing exam

will be either zero or an average of your score—the determination is based on a valid reason and the instructor’s discretion. If you are unable to take the exam, you should notify the instructor in advance.

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### **Course, Program, and University Policies and Other Information**

#### ***FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)***

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights for students, parents and school officials can be viewed at: <http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html>

#### ***UOG Disabilities Policy***

In accordance with the Americans with Disabilities Act (ADA) of 1990 and the Rehabilitation Act of 1973, the University of Guam does not discriminate against students and applicants on the basis of disability in the administration of its educational and other programs. The University offers reasonable accommodations for a student or applicant who is otherwise qualified, if the accommodation is reasonable, effective and will not alter a fundamental aspect of the University's program nor will otherwise impose an undue hardship on the University, and/or there are not equivalent alternatives. Students are expected to make timely requests for accommodation, using the procedure below.

#### ***ADA Accommodation Services***

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact the Student Counseling and Advising Service Accommodations office to discuss your specific accommodation needs confidentially. You will need to provide Ms. Sallie Sablan with an accommodation letter from the Student Counseling and Advising Service Accommodations counselor. If you are not registered, you should do so immediately at the Student Center, Rotunda office #4, Ph/TTY.: 735-2460, to coordinate your accommodation request.

#### ***ACADEMIC DISHONESTY***

Professional and ethical conduct is expected at all times. Unethical conduct includes any form of cheating, including plagiarism. The term “**cheating**” includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students’ answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with me in advance. All

assignments and tests must be your own work. Answers you write on the tests must come only from in your head or the information supplied in the test papers; anything else is cheating. Any evidence of cheating will result in a “0” for that assignments and/or exam or possibly an “F” for the entire course – final decision to be determined by me, the course instructor.

***TOBACCO-FREE/SMOKE-FREE CAMPUS***

UOG is a tobacco-free campus. Thank you for not using tobacco products on campus, and for helping make UOG a healthy learning and living environment. For more information visit: <http://www.uog.edu/smoke-free-uog>

**SPECIAL NEEDS (EEO/ADA)**

If you are a student with a special need who will require an accommodation(s) to participate in this course, please contact the instructor privately to discuss your specific needs. You will need to provide me with documentation concerning your needs for accommodation(s) from the EEO/ADA office. If you have not registered with the EEO/ADA office, you should do so immediately at 735-2243/2244/2971 (TTY) to coordinate your accommodation request.

**COVID STATEMENT**

The University of Guam is experiencing continued disruption to delivery of instruction during the global coronavirus pandemic. The University will follow executive orders and may be forced to close again, causing more modifications as the semester progresses. All changes will be posted on the UOG website, [www.uog.edu](http://www.uog.edu).

- a. Contact OIT for technical support at 735-2630 or [oit@triton.uog.edu](mailto:oit@triton.uog.edu)
- b. Contact the Triton Advising Center at 735 – 2271 or [tac@triton.uog.edu](mailto:tac@triton.uog.edu)
- c. Contact Isa Psychological Services center at 735-2883 or [isa@triton.uog.edu](mailto:isa@triton.uog.edu)

In face-to-face courses, wearing masks and social distancing is required. Anyone who has a fever, or any other symptom, should stay home. If you do not comply with these directions, you will be asked to leave, and if you do not, class will be cancelled.

Patience, respect, and cooperation are needed from all of us to persist through these uncomfortable times.

<b>Week</b>	<b>Topic</b>	<b>Chapter</b>
08/15	Introduction	
08/20	History and Overview of Food Safety.....	1
08/22	History and Overview of Food Safety.....	1
08/27	Foodborne Infectious and Microbial Agents.....	2
08/29	Foodborne Infectious and Microbial Agents.....	2
09/03	Foodborne Infectious and Microbial Agents.....	2
09/05	Foodborne Toxic and Physical Agents.....	3
09/10	Foodborne Toxic and Physical Agents.....	3
09/12	<b>Exam #1</b>	
09/17	Principles of Prevention.....	4
09/19	Principles of Prevention.....	4
09/24	Principles of Prevention.....	4
09/26	Term paper and presentation	
10/01	Engineering Controls and Technology.....	5
10/03	Engineering Controls and Technology.....	5
10/08,10	Fall break (no classes)	
10/15	Engineering Controls and Technology.....	5
10/17	<b>Exam #2</b>	
10/22	Risk Assessment and Hazard Analysis of Foods.....	6
10/24	Risk Assessment and Hazard Analysis of Foods.....	6
10/29	Laboratory Methods for Food Safety.....	7
10/31	Laboratory Methods for Food Safety.....	7
11/05	Laboratory Methods for Food Safety.....	7
11/07	Safety Management of the Food Supply.....	8
11/12	Safety Management of the Food Supply.....	8
11/14	Food Safety issues and topics	
11/19	Food Safety issues and topics	
11/21	Term paper preparation	
11/26	Term paper preparation	
11/28	Thanksgiving (Holiday)	
12/03	Term paper presentation	
12/05	Term paper presentation	
12/10	<b>Exam #3</b>	

*This schedule is tentative, and subject to change. Any changes will be announced in class*

\*During Final Exam Week, the class meets according to the Approved Exam Schedule. All UOG classes are required to meet during Final Exam Week.