

FOS 6218 - Food Safety Systems

Fall 2022

2 Credit Hours

Course Hours & Location:

TR 5th Period (11:45 am to 12:35 pm)

Location: McCarty B G108

Instructor:

Dr. Soohyoun (Soo) Ahn

Food Science and Human Nutrition

Room 104A, Bldg. 120

E-mail: sahn82@ufl.edu (please, allow 24-48 hrs for a reply)

Phone: 352-294-3710

Office hours: M/W 9:30 to 10:30 am (virtual), <https://ufl.zoom.us/j/2231135293>

T/R 9:30 to 10:30 am (in-person)

all other times – by appointment only

Course Description:

This course covers critical aspects of food safety on a global scale. Key topics include 1) current issues in the food supply chain in both domestic and global contexts, 2) various food safety control systems implemented worldwide, and 3) principles of HACCP and FSMA Preventive controls and how they can enhance food safety across borders. The course also provides hands-on practice in developing a food safety plan by using real-world scenarios, assessing risks, and designing effective strategies to ensure the safety of food products.

Course Objectives and Learning Goals:

After completing this course, students should be able to:

1. Recognize the importance of food safety in protecting public health on a global scale.
2. Identify the types of hazards and list the factors promoting those hazards.
3. Describe the significance of food safety in domestic and international food trade, including international standards that govern food safety practices.
4. List and describe 7 principles of the HACCP system as a food protection tool.

5. Discuss the importance of risk analysis in food safety, emphasizing its role in addressing global food safety challenges, and explain how risk analysis methodologies can be adapted to different cultural and regulatory environments.
6. Identify hazards and develop process preventive controls for the FSMA Food Safety Plans with a global perspective, considering the diverse food products, production methods, and distribution networks involved in international food supply chains. List major food allergens identified by the FDA and develop adequate measures to control food allergens.
7. Choose sanitation preventive controls to avoid cross-contamination and ensure a sanitary environment in a food processing facility
8. Describe the role of federal, state, and local jurisdictions in regulating and monitoring food safety and security assurance.

Textbook and Additional Reading Materials:

There is no required textbook for this course. However, following books are recommended as good resources for this course:

- FSMA and Food Safety Systems (Barach), Wiley
- HACCP: A Practical Approach, 3rd Ed. (Molitor and Wallace), Springer
- Food Safety Management (King), Springer

These books can be accessed through library course reserves.

Supplemental reading materials will be posted on Canvas through each module page.

These materials include but are not limited to 1) articles from recent literature; 2) regulations and/or guidance published by government agencies (e.g. USDA FSIS and FDA); and 3) publications from food safety organizations (e.g. GFSI, FSSC).

Samples of these additional reading materials are listed below:

- "Microbiological Criteria: Principles for their establishment and application in food quality and safety" 2020. L Perez-Lavalle, E Carrasco, and A Valero. 2020. Italian Journal of Food Safety, 9:8543. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7154603/>)
- "Writing Sanitation Standard Operating Procedures (SSOPs)" 2018. KE Kaylegian, Penn State Extension. (<https://extension.psu.edu/writing-sanitation-standard-operating-procedures-ssops>)
- "Sanitation Standard Operating Procedures" 2019. USDA Food Safety and Inspection Service (FSIS). (https://www.fsis.usda.gov/wps/wcm/connect/4cafe6fe-e1a3-4fcf-95ab-bd4846d0a968/13a_IM_SSOP.pdf?MOD=AJPERES)

- “Understanding the Basics of Food Safety Regulations” 2018. D Detwiler, Northeastern University. (<https://www.northeastern.edu/graduate/blog/understanding-basics-food-safety-regulations/>)
- “A Historical Look at Food Safety” 2020. IFT Brain Food Blog (<https://www.ift.org/news-and-publications/blog/2019/september/a-historical-look-at-food-safety>)
- “Hazard Analysis and Risk-based Preventive Controls for Human Food: Draft Guidance for Industry” Chapter 1. The Food Safety Plan. 2018. FDA (<https://www.fda.gov/media/99547/download>)
- "FSMA Final Rule on Produce Safety" 2020 FDA. (<https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-produce-safety>)
- "Auditing Food Safety" 2018. IFT. (<https://www.ift.org/news-and-publications/food-technology-magazine/issues/2018/april/columns/food-safety-and-quality-auditing-food-safety>)
- “The Role of Auditing, Food Safety, and Food Quality Standards in the Food Industry: A Review” 2017. KV Kotsanopoulos and IS Arvanitoyannis. Comprehensive Reviews in Food Science and Food Safety, 16(5): 760-775 (<https://onlinelibrary.wiley.com/doi/full/10.1111/1541-4337.12293>)

Course Format:

Students will acquire knowledge of the current food safety issues and various food safety management systems to control these issues through lectures, class discussions, reading, and assignments. In case the instructor has a health issue or out-of-town commitments (e.g. conferences), the class can be offered online synchronously (through Zoom) or asynchronously (as pre-recorded lectures).

Instruction Method:

The course is divided into 10 modules. Each week, a new module page will open on Canvas. Each page consists of presentation slides and handouts, recommended reading materials, and additional supplementary materials (videos and/or readings) relevant to the module.

The best way to study the course materials in each module is to begin with the learning goals. It will help you understand the important learning points for the module. Next, attend class. I recommend printing out the presentation handouts before the lecture and taking notes during the lecture. Presentation slides are a simple summary of what is being explained in the lecture. Many more details are explained in the lecture, and it will be helpful to take notes during the lecture.

Then, read the assigned reading materials or watch the posted supplementary videos (if any). These materials will provide details, support the lecture, and expand your scope of learning. This course does

not have a required textbook but has recommended textbooks, which are electronically available through the course reserves.

Grading:

In-class exams (2)*	40% (20% each)
Final Group Project (in lieu of final exam)	40%
- Process PC	30%
- Sanitation PC	5%
- Food allergen PC	5%
Self-reflection assignment	15%
In-class group activity participation	5%
Total	100%¹

Grading scale^{2,3}:

Passing grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Course Average %	100% to 94.0%	<94.0% to 90.0%	<90.0% to 87.0%	<87.0% to 84.0%	<84.0% to 80.0%	<80.0% to 77.0%	<77.0% to 74.0%	<74.0% to 70.0%	<70.0% to 67.0%	<67.0% to 64.0%	<64.0% to 60.0%	<60.0%

Group Project Details:

Students will be assigned to work in a group of 2-4 (depending on the final enrollment number). Each group will be given a specific food product scenario, and work together to develop a HACCP plan or Food Safety Plan under the FSMA Preventive Controls for Human Food Rule (based on your product). This will be an iterative process that will result in a comprehensive overview of the HACCP/Food Safety Plan development and maintenance, which is a major learning objective for this course.

Each group is encouraged to organize a meeting (either online or in person) or use discussion section on Canvas. If you need any assistance in organizing an online meeting, ask for help to instructors.

¹ The average from extra-credit activities will be added toward the final grade as an **additional** 2%.

² Further information on UF’s grading policy is available at: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies>.

³ Please note I do not round up grades. Requests to do so will not be considered.

Policy regarding Make-up exam / Late work submission:

Each exam will be given as scheduled in the course outline (see page 8). Students must take the exams on the day scheduled. Make-up exams will be allowed only in the case of verifiable emergencies or legitimate reasons (illness, family emergency) under the UF attendance policy. In those excusable circumstances, students should notify the instructor before the scheduled exam and provide proper proof afterward. Instructor will refuse to give a chance to take a make-up exam unless a student provides appropriate proof. All make-up exams **MUST** be taken within two days of the scheduled exam, whenever possible.

The due date for each assignment will be given in advance. Complete work must be submitted by the due date. Late work will be accepted with a **penalty of 10% per day** unless an arrangement is made with the instructor beforehand.

In-Class Recording Policy:

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person, including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Attendance Policy:

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>.

Technology requirements:

Students must use their Gatorlink email account for this course. Students are recommended to check their email account daily for the duration of the course.

For issues with technical difficulties for E-learning in Canvas, please contact the UF Help Desk at:

- learning-support@ufl.edu
- (352) 392-4357 - select option 2
- <https://elearning.ufl.edu/>

Communication Policy:

Students will have multiple channels to communicate with the instructor:

- E-mails (either direct emailing or through Canvas mail)
- Canvas course page - Q&A forum in Discussion
- After the lecture, instructors will be available to take any questions
- And office hours!

You are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats.

Academic Honesty:

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

The use of generative AI tools such as ChatGPT is allowed with limitations. Students **must receive approval** from the instructor for the use of AI tools, and will **receive additional work** that they must

complete. Any students who would like to use an AI tool must make a **written** request to the instructor, explaining 1) which AI tool(s) they plan to use; 2) why they need to use the AI tool(s); and 3) how they will use the AI tool(s) in their assignment. Then, the instructor will either approve and give the additional requirements for the use of AI tool(s) or deny the request within 48 hrs. Unauthorized use of generative AI tools will be considered as cheating under UF Student Honor Code 4.040(3)(a), and thus will result in a failing (0%) grade.

Disability Clause:

The Disability Resource Center provides services to students with physical, learning, sensory or psychological disabilities. These services include registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, and mediating any other disability-related issues. Disability Resource Center can be reached at 352-392-8565 or accessUF@ufsa.ufl.edu, and is located at 0001 Building 0020 (Reid Hall). Detailed information is available at: <https://disability.ufl.edu/>.

Software Policy:

All faculty, staff, and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Course Evaluation:

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at: <https://gatorevals.aa.ufl.edu/public-results/>

Online Security and Privacy Protection:

It is critical to protect your data and privacy. Since we use online tools for this course (Canvas, Zoom), you should be mindful of protecting your own data.

- Do not share your personal information online.

- Do not share the password for Zoom lectures (We don't want any strangers in our virtual classroom!)
- We will not record the Zoom lectures, but if there is any need to record the lecture, you will be notified so you can turn off your camera if you don't want to get recorded.

For information about the privacy policies of the tools used in this course, see the links below:

- Instructure (Canvas)
 - [Privacy Policy](#)
 - [Accessibility](#)
- Zoom
 - [Privacy Policy](#)
 - [Accessibility](#)

Campus Resources for Students:

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

Health and Wellness:

- U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit <https://umatter.ufl.edu/> to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit <https://counseling.ufl.edu/> or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit <https://shcc.ufl.edu/>.
- University Police Department: Visit <https://police.ufl.edu/> or call 352-392-1111 (or 9-1-1 for emergencies).
- UF Health Shands Emergency Room/Trauma Center: For immediate medical care, call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; <https://ufhealth.org/emergency-room-trauma-center>.

Academic Resources

- E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail athelpdesk@ufl.edu.
- Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services; <https://career.ufl.edu/>.
- Library Support: various ways to receive assistance with respect to using the libraries or finding resources; <https://cms.uflib.ufl.edu/ask>
- Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring; <https://teachingcenter.ufl.edu/>
- Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers; <https://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/ On-Line Students Complaints: <https://distance.ufl.edu/student-complaint-process/>

Flexibility Clause: Circumstances may arise during the course that may prevent the instructor from fulfilling each and every component of this syllabus; therefore, syllabus should be viewed as a guide and is subject to change. Students will be notified of any changes.

Tentative Course Outline:

Detailed course schedules are shown below. Please note that this represents current plans. As we go through the semester, these plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

The course is divided into 10 modules:

Module 1 – Course Introduction and Overview of Food Safety Systems (Wk 1-2)

Module 2 – Quality Control (Wk 3)

Module 3 – Pre-requisites (Wk 4)

Module 4 – Food Safety Regulations (Wk 4)

Module 5 – HACCP (Wk 6)

Module 6 – FSMA and Preventive Controls (Wk 7-10)

Module 7– Auditing and Inspection (wk 10)

Module 8 – Food Safety: A Global Perspective (Wk 11-12)

Module 9 – Project work and presentation (Wk 13-14)

Module 10- Reflective Learning (Wk 16)

The detailed course outline for each week is shown below:

Week (Dates)	Module /Topic	Students' required activities, exams, quizzes
Week 1 (Aug 22)	Course Introduction	Extra Credit: Introduce yourself (Due Sep 3)
Week 2 (Aug 27, 29)	1.1 Overview of Food Safety Systems 1.2 Food Safety in Global Perspective	In-class Group Activity I (Aug 29)
Week 3 (Sep 3, 5)	2.1 Quality Control Systems (Guest lecture by Dr. Charlie Sims) 2.2 Tools in Quality Control (Guest lecture by Dr. Charlie Sims)	
Week 4 (Sep 10, 12)	3.1 Pre-requisites: GMPs & SSOPs 3.2 FDA Inspection (Guest lecture by Mr. Stewart Watson from FDA)	
Week 5 (Sep 17, 19)	4. Food Safety Regulation Overview Exam 1 (Sep 19)	Exam 1 (Sep 19)
Week 6 (Sep 24, 26)	5.1. Intro to HACCP (Guest lecture by Dr. Razieh Farzad) 5.2 HACCP Principles (Guest lecture by Dr. Razieh Farzad)	Group organization Posted
Week 7 (Oct 1, 3)	6.1 FSMA and Food Safety Plan Overview & Project Introduction 6.2 FSMA PC – Hazard analysis	Final Project Assignment posted (Flow Diagram Due: Oct 11; First Draft Due: Nov 1; Final Draft Due: Dec 4)
Week 8 (Oct 8, 10)	6.3 FSMA PC – Process Control 6.4. FSMA PC – Allergen & Sanitation Control	
Week 9 (Oct 15, 17)	6.5. FSMA PC – Supply Chain Control & Verification 6.6. FSMA PC – Group Activity	In-class Group Activity II (Oct 17)
Week 10 (Oct 22,24)	6.7. FSMA PC – Recall Plan 6.8. FSMA PC - Food Safety Plan Review	
Week 11 (Oct 29, 31)	7. Auditing and Inspection Exam 2	
Week 12 (Nov 5, 7)	8.1 FDA's Foreign Supplier Verification (Guest lecture by Miss Ilana Korchia) 8.2 Food Safety Regulations in the EU - Zoom (Guest lecture by Dr. Maria Dominguez at Universidad Católica de Valencia, Spain)	Self-reflection assignment (Due: Dec 3)

Week 13 (Nov 12, 14)	8.3 GFSI and Other Food Safety Systems 9.1 Final Project Presentation	
Week 14 (Nov 19, 21)	9.2 Final Project Presentation 9.3 Final Project Presentation	Extra credit quiz (Due Dec 3)
Week 15	Thanksgiving Break (No Class)	
Week 16 (Dec 3)	10. Reflective Learning	