



SYLLABUS

FDSCTE 5310

FOOD QUALITY ASSURANCE (3 credit hours)

The Ohio State University

Autumn Semester 2020

COURSE OVERVIEW

Instructor

Instructor: M. Monica Giusti, Department of Food Science and Technology

Email address: giusti.6@osu.edu (preferred mode of communication)

Phone number: 614-247-8016

Office hours: Open door policy and by appointment.

Meeting hours:

Lectures are online, 2-55min asynchronous sessions (or equivalent) per week.

Zoom Discussion Forums: Synchronous 55 min discussion sessions will take place Tue at 8am (a total of 8 synchronous mandatory sessions throughout the term).

Labs are Thursdays and meet in-person for data collection. Additional online time will be required. Attendance to in-person activities is mandatory. Students will work in assigned shifts (A and B). We will meet in person about 7 times over the term, according to the schedule of classes posted in Carmen and attached to the syllabus.

Lab Sections (Parker 124 / 136):

Thu 10:35 am -12:25 pm, Lab Managers: Ellia La (.18); Shuai Ren (.313); Yucheng Zhou (.1140)

Thu 1:50 - 3:40 pm Lab Managers: Danielle Voss (.129), Sydney Grouge (.1)

Prerequisites

FDSCTE 2400; AND STAT 1450 or ENR 2000 or AEDECON 2005 or ANIMSCIN 2260 or HCS 2260 or COMLDR 3537; OR graduate standing. These requirements should assure students have basic knowledge of food processing, math and statistics.

Course description

Provides students with a knowledge of quality assurance concepts and procedures and tools for establishing quality control programs to produce high quality safe foods.

Course learning outcomes

- To understand and gain experience in the process of food quality assurance
- To become familiar with quality assurance and safety systems
- To become familiar with basic statistical tools for sampling and description
- To become familiar with basic statistical tools for data analyses and sample quality estimation and/or prediction
- To experience the process of careful and detailed record keeping, necessary for quality assurance.
- To become familiar with analytical and sensory techniques for monitoring the quality of foods
- To encourage student critical thinking on quality issues.

HOW THIS COURSE WORKS

Mode of delivery: For Fall 2020 this course will be a hybrid with in-person and online components. There will be required sessions when you must be logged in to Carmen at a scheduled time.

Pace of activities: This course is divided into **weekly modules** that are released online by the end of the prior week. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame. Students are expected to participate in 1 in-person laboratory session every other week throughout the semester. The class will be split into groups according to the new classroom capacity limits at the start of the semester and given an assigned schedule within the already scheduled times for the class.

Credit hours and work expectations: This is a **3-credit-hour course**. According to [Ohio State policy](#), students should expect an average of around 3 hours per week of time spent on direct instruction (instructor content, discussion sessions and Carmen activities) in addition to 6 hours of homework (reading and assignment preparation, laboratory work, team assignments, and others) to receive a passing grade.

Attendance and participation requirements: Because this is a hybrid course, your attendance is based on both, your participation on in-person activities and your online activity and participation. The following is a summary of everyone's expected participation:

- **Participating in synchronous Zoom discussion forums: THE FIRST DAY OF CLASSES, ON QUIZ DAYS, BEFORE AND AFTER EACH PARTIAL EXAMS, AND THE LAST DAY OF CLASSES**
As part of your participation, you are expected to participate in discussion forums during the regularly scheduled class or laboratory times. The first discussion forum will be to introduce the class and discuss the terms of the class. Additional discussion sessions will occur before an after each quiz or exam where students will have a chance to ask questions to clarify concepts. Most

zoom discussion sessions will take place at 8am on Tuesdays (only 8 over the term) with additional meeting during lab times.

- **Participating in *in-person laboratory sessions* and discussions: ABOUT EVERY OTHER WEEK, AS INDICATED IN THE FDSCTE 5310 SCHEDULE**

For the purpose of this class, students will become Quality Control Technicians at our **Fyffe Star Foods company**. You will be assigned to a shift (A or B) and be expected to participate in ~ 7 *in-person* laboratory sessions for data collection. Additional online time will be required. Attendance to in-person activities listed in the schedule of classes posted in Carmen and attached to the syllabus is mandatory. In-person sessions provide a chance for hands-on learning as well as an opportunity to discuss the topics covered in lectures.

- **Participating in *online activities* for attendance: AT LEAST ONCE PER WEEK**
You are expected to log in to the course in Carmen every week. During most weeks you will probably log in many times. I will monitor to make sure you opened the weekly module during the corresponding week, and count that as attendance. If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible*.
- **Office hours: OPTIONAL**
Office hours are set by appointment and are optional.

COURSE MATERIALS AND TECHNOLOGIES

Textbooks

Required: None

Recommended (electronic version available through the library):

Hubbard, Merton R. 2003. Statistical Quality Control for the Food Industry. 3rd edition. Chapman and Hall, New York. (2nd Ed. From 1996 is also acceptable, both sold by Springer.com)

Other recommended reading materials:

Alli, Intez. 2004. Food Quality Assurance, Principles and Practices. CRC Press.

Code of Federal Regulations. 1999. Title 21 - Parts 0-99, 100-169, and 170-199; Title 7 - Parts 53-209; Title 9 - Parts 100- end. U.S. Government Printing Office, Washington, DC.

Gould, W.A. and Gould, R.W. 1993. Total Quality Assurance. Second Edition. CTI Publications. MD.

Kateman, G. and Pijpers, F.W. 1981. Quality control in analytical chemistry. In Chemical Analysis Vol 60. (Ed. P.J. Elving, J.D. Winefordner, I.M. Kolthoff). Wiley and Sons, New York.

Montgomery, D.C. 2001. Introduction to Statistical Quality Control. 4th Ed. Wiley & Sons, NY.

Ryan, T.P. 1989. Statistical methods for quality improvement. Wiley and Sons. New York.

Vasconcellos, J. Andres. 2003. Quality Assurance for the Food Industry: A Practical Approach. CRC Press, California, USA - 448 Pages

Electronic resources:

A vast array of information can be obtained through the internet. Many official organizations have web sites with information about quality control, quality assurance, and quality programs. If you want to use the internet as a source of information, make sure that the page has been posted by a reliable source. Excellent sources include FDA (www.fda.gov), USDA (www.usda.gov/usda.htm), Institute of Food Technologists (www.ift.org/index.shtml), and other government pages such as the code of federal regulation online: CFR (<http://www.access.gpo.gov/nara/cfr/>).

Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

GRADING AND FACULTY RESPONSE

How your grade is calculated

ASSIGNMENT CATEGORY	POINTS
Midterms: 3 partial exams - online	45
Quizzes and Homeworks: 3 quizzes & 3 homeworks - online	5
Laboratory Reports: 6 team reports submitted online	40
Class (&Lab) participation and attendance	10
Final Exam (Optional, see explanation below)	
Total	100

*Please refer to the course calendar in Carmen for assignment due dates. Note that undergraduate and graduate students will be held to the same standards and expectations in this course.

Descriptions of major course assignments

EXAMINATIONS: MIDTERMS AND FINAL EXAM

There will be a total of 4 Examinations: 3 partial exams and 1 comprehensive final exam, each one can contribute 15% of the final grade. Only 3 exam grades will be used towards your final grade, making up a total of 45%. There will be no make-up exams, if you miss one exam, the grade on the other 3 will be used. You can choose to take the 3 partial exams and skip the final. If you take the final, the grade in the final exam will replace the lowest partial exam grade. See the laboratory syllabus for detailed instructions on lab reports expectations, format and grading.

QUIZES AND HOMEWORK

There will be a total of 3 quizzes: quizzes are designed to help students assess their own understanding of the topics, and therefore have low weight on the final grade but are a crucial part of exam preparation. The quizzes will be online, during Zoom Discussions and designed for short answers.

There will be a total of 3 homework assignments: these assignments are to be submitted individually through Carmen's dropbox. They will include practice exercises to reinforce concepts presented and explained during class time. Grading will be based on completion of the assignments. Incomplete assignments (less than 60% completed) will not receive any points. Assignments completed >60% but <100% will receive partial credit.

LABORATORY REPORTS

There will be a total of 6 laboratory reports: Quality Control technicians (students) at *Fyffe Star Foods* will work in teams of 3, to evaluate data collected, prepare and submit 6 team Lab Reports. Reports must be written from the point of view of the Company's goals for quality and written following the FDSCTE 5310 LAB REPORT WRITING GUIDELINES provided in Carmen. Your top 5 lab report grades will be used toward your Lab Report grade. Before submission of the first lab report, your team will be required to submit a draft lab report 1 for instructor feedback. NOTE: Laboratory reports must include citations. Any report that fails to include citations is not giving credit to their sources and therefore will not receive credit either, and will be automatically receive a grade of 0.

Extra credit: Students will be able to submit a short video (no more than 3 minutes) illustrating one of the important concepts covered in this class, for up to 3 extra points in the average lab report grade. Consult the instructor for additional information and approval of the topic.

CLASS (&LAB) PARTICIPATION AND ATTENDANCE:

Attendance: Students are expected to show interest and commitment through class participation. Laboratory attendance and participation in Zoon Discussions are mandatory. Acceptable reasons for missing labs are sickness, family emergencies, or job interviews. If it is necessary for you to miss a laboratory session, contact the instructor in advance. You are expected to make any possible attempt to make up for the missed lab session at one of the other offerings of the lab. You are responsible for learning any materials missed and for submitting the lab report.

Laboratory Notebook: Every student is required to keep record of all laboratory work in a lab-notebook. The notebook should contain the Standard Operating Procedures for each lab, dated, and labeled, and contain all information necessary to replicate the experiment. This lab notebook must be checked by one of the Quality Assurance managers before the end of each lab session, and will be used to monitor attendance and participation in the lab.

Participation in class discussions: Students are expected to play an active role in the learning process and are encouraged to ask questions and provide input, feedback or opinions on topics discussed. Read the class notes and laboratory handouts ahead of time and come prepared to learn and participate in class. Class and laboratory participation will be monitored and graded.

Grading scale

93–100: A	73–76.9: C
90–92.9: A-	70 –72.9: C-
87–89.9: B+	67 –69.9: D+
83–86.9: B	60 –66.9: D
80–82.9: B-	Below 60: E
77–79.9: C+	

LATE ASSIGNMENTS

Due dates: All assignments and term report must be uploaded into Carmen’s dropbox by the specified date and time. Check the FDSCTE 5310 Schedule posted in Carmen for due dates. Assignments received the day after the due date with no prior arrangement for a deadline extension will have a 10% deduction on the grade. Each additional day late will be an additional 20% deduction. An extension to

the deadline can be requested by contacting directly the course instructor before the due date, and it can be granted only due to exceptional circumstances such as health issues, or a family emergency.

COMMUNICATION, FEEDBACK & RESPONSE TIME

Communication: All relevant information for this class (lectures, laboratory activities, schedule and due dates, homework, samples exams and reports) will be posted in Carmen. We will also use Carmen to make announcements and send reminders for assignments and due dates. E-mail communications will also be acceptable. Remember to be respectful on all communications, including emails. I will respond to appropriate emails in a timely manner. However, if you require an immediate response consider visiting with me in person.

Tone and civility: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.

Grading and feedback: You can generally expect feedback on assignments within **10 calendar days**.

E-mail: I will reply to e-mails within **48 hours on school days**. Please, be aware that I may receive over 100 emails per day. If you did not get a reply by day 3, please send a follow up e-mail.

Remember that you can call **614-688-HELP** at any time if you have a technical problem

COURSE OVERVIEW

Refer to the Carmen course for up-to-date course schedule including laboratory activities and assignment due dates.

Week	Topics, Readings, Assignments, Deadlines
1	Introduction <ul style="list-style-type: none"> • Quality Control and Quality Assurance Definitions • Importance of Quality Assurance Programs • SOPs: Standard Operating Procedures
2 & 3	Statistical Tools for Quality Assurance <ul style="list-style-type: none"> • Data Collection and Organization – The normal distribution • Sampling Criteria and Sampling Plans • Descriptive Statistics, Statistical Inference and Prediction
4 & 5	Use of Control Charts in Quality Assurance <ul style="list-style-type: none"> • Variables Control Charts • Attributes Control Charts

Week	Topics, Readings, Assignments, Deadlines
6 & 7	Probability <ul style="list-style-type: none"> • Probability with the Binomial and Poisson Distributions • Operating Characteristics Curve (OC) • Probability with the Normal Distribution
8	Product Specifications and Process Capability <ul style="list-style-type: none"> • Developing Product Specifications • Process Capability, Process Capability Index
9 & 10	Quality Control and Analytical Techniques: Product Performance Testing <ul style="list-style-type: none"> • Analytical Techniques for Product Evaluation • Quality of an Analytical Procedure
11	Sensory Analyses for Evaluation of Food Quality <ul style="list-style-type: none"> • Difference tests and data analyses • Hedonic tests and data analyses • Descriptive tests and data analyses
12	<ul style="list-style-type: none"> • Traceability and recalls
13 & 14	Quality Control / Quality Assurance Systems <ul style="list-style-type: none"> • American National Standards Institute, GMP: Good manufacturing practices, HACCP – Hazard Analysis Critical Control Points, FSMA, Malcolm Baldrige National Quality Awards, TQM: Total Quality Management, Six Sigma, The ISO 9000 Quality System Standards.
15	Final Exam

HEALTH AND SAFETY REQUIREMENTS:

All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>), which includes **wearing a face mask in any indoor space and maintaining a safe physical distance at all times**. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

OTHER COURSE POLICIES

OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's *Code of Student Conduct* (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in

the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- Committee on Academic Misconduct web page (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Copyright for instructional materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Creating an environment free from harassment, discrimination, and sexual misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual

orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

This course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles are located on the Carmen site for this course; and can also be found at <https://go.osu.edu/principlesofcommunity>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/report-a-bias-incident.aspx>.

Your mental health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find

yourself feeling isolated, anxious or overwhelmed, on-demand resources are available at go.osu.edu/ccsondemand. You can reach an on-call counselor when CCS is closed at 614-292-5766, and 24-hour emergency help is also available through the 24/7 National Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org. The Ohio State Wellness app is also a great resource available at go.osu.edu/wellnessapp.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slds@osu.edu; 614-292-3307; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- Canvas accessibility (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- CarmenZoom accessibility (go.osu.edu/zoom-accessibility)
- Collaborative course tools