

Food Quality Control

Food 4001, Winter 2024

Course Instructor: Dr. Yaxi Hu (yaxihu@cunet.carleton.ca), Assistant Professor, Food Science

Lecture Sections: Tuesday, 11:35 am – 2:25 pm (Steacie 115)

Office Hours: Tuesday, 3:30-4:30 pm, Steacie Building Room 229

Notes: Feel free to send me an email for anything you want to tell and/or ask me and I will try my best to respond within 48 h. If you would like to talk to me in person outside the office hours, please email to make an appointment.

Course Description

This course will provide a comprehensive overview of the core principles and practices in food quality control. Participants will acquire essential knowledge and skills needed to ensure the safety, integrity, and excellence of food products. Through a blend of theoretical insights and practical applications, participants will gain a deep understanding of and be able to perform the key elements involved in maintaining high-quality standards within the food industry.

Course Learning Outcomes (LOs)

Upon successful completion of this course (lecture and lab), you will be able to

Learning Outcomes	This includes the ability to:
LO1. Describe global and Canadian standards for food quality control	<ul style="list-style-type: none">• Identify different global and Canadian standards (e.g., Codex Alimentarius, GFSI, HACCP, Safe Food for Canadians Regulations, CFIA Food Safety Enhancement Program)• Explain the scope and purpose for major standards• Compare and contrast major standards, especially regarding to their application scenarios
LO2. Develop a food safety plan following HACCP principles	<ul style="list-style-type: none">• Differentiate prerequisite programs and HACCP• Describe and explain the 7 principles of HACCP• Recognize hazards and perform hazard analysis for specific food industry• Determine critical control points (CCP) and develop monitor and correction plans for each CCP• Validate and document HACCP plan details
LO3. Apply other tools for food quality control and management	<ul style="list-style-type: none">• Design tests for quality control• Apply statistical tools and the 7 quality control tools to design, monitor and continually improve manufacturing processes and quality control programs• Compare HACCP, VACCP and TACCP• Design plans for traceability and recall• Enhance decision-making skills and develop an ability to apply analytical tools in true-to-life situations

Resources

Useful websites on food quality control:

- CFIA Food Safety for Industry: <https://inspection.canada.ca/food-safety-for-industry/eng/1299092387033/1299093490225>
- CFIA Preventive Control: <https://inspection.canada.ca/eng/1297964599443/1297965645317>
- FDA Guidance & Regulation (Food and Dietary Supplements): <https://inspection.canada.ca/eng/1297964599443/1297965645317>
- FDA Current Good Manufacturing Practices for Food and Dietary Supplements: <https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/current-good-manufacturing-practices-cgmps-food-and-dietary-supplements>
- FDA Hazard Analysis Critical Control Point: <https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/hazard-analysis-critical-control-point-haccp>

Additional resources will be provided in class

Assessment Activities

- In-class activities: 10%
- Assignments 1-6: 90%

Details of Assessment Activities

In-class activities (10%):

In-class activities will be included in lectures to practice concepts that are taught and to obtain feedback. Participation for in-class tasks will also serve as attendance. Each lecture, in-class tasks will be graded as SAT/UNSAT. Active involvement in 9 out of 11 in-class tasks is required for full grades.

Assignments 1-6 (90% total):

There will be 6 assignments (each for 15%) to allow you to practice the approaches and tools used for food quality and safety control. Detailed plan can be found in the schedule table below.

You will have **two weeks** to finish each assignment once the assignment is posted online. The deadline will be specified on Brightspace for each assignment.

The assignments will involve mock case studies to get you prepared for real world scenarios that could happen in the food industry; and scientific articles introducing novel trends in the field of food quality control measures.

DO NOT USE AI tools to help you finish the assignments. Answers generated from AI tools are easily identifiable and will result in reduced mark.

Tentative Schedule of Lectures

Date		Lecture Content
Jan 9	Lecture 1	Introduction
Jan 16	Lecture 2	Hazards
Jan 23	Lecture 3	Prerequisite Programs
Jan 30	Lecture 4	SOP and Control Sheet (Records) & Assignment 1
Feb 6	Lecture 5	HACCP Forms 1-4 & Assignment 2
Feb 13	Lecture 6	HACCP Forms 9-11 & Assignment 3
Feb 20		Reading Break
Feb 27	Lecture 7	Validation and reassess & Assignment 4
Mar 5	Lecture 8	GFSI, SQF and Gap
Mar 12	Lecture 9	QC testing

Mar 19	Lecture 10	SPC and 7 Quality Tools & Assignment 5
Mar 26	Lecture 11	VACCP & TACCP
Apr 2	Lecture 12	Guest speakers (Rebecca 1 pm)
Apr 9	Lecture 13	Traceability and Recall & Assignment 6

***Late submission Policy:**

- Late submission of each assignment will result in **losing 5% a day out of the 15%** for each assignment.

University Policies

In accordance with the Carleton University Undergraduate Calendar Regulations, the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A- = 80-84	B- = 70-72	C- = 60-62	D- = 50-52
F = <50			

WDN = Withdrawn from the course

ABS = Student absent from final exam

DEF = Deferred

FND = (Failed, no Deferred) = student could not pass even with 100% on final exam

Equal, Diverse and Inclusive Class Environment

Inclusive teaching statement

All students in the class, the instructor, and any guests should be treated with respect during all interactions. I will continually strive to create inclusive learning environments and would therefore appreciate your support and feedback.

Land Acknowledgement

Here at Carleton University, it is important that we acknowledge that the land on which we gather is the traditional and unceded territory of the Algonquin nation.

Community Guidelines

The following values are fundamental to academic integrity and are adapted from the International Center for Academic Integrity*. In our course, we will seek to behave with these values in mind:

	As students, we will...	As a teaching team, we will...
Honesty	<ul style="list-style-type: none">• Honestly demonstrate our knowledge and abilities on assignments and exams• Communicate openly without using deception, including citing appropriate sources	<ul style="list-style-type: none">• Give you honest feedback on your demonstration of knowledge and abilities on assignments and exams• Communicate openly and honestly about the expectations and standards of the course through the syllabus, and with respect to assignments and exams
Responsibility	<ul style="list-style-type: none">• Complete assignments on time and in full preparation for class• Show up to class on time, and be mentally/physically present• Participate fully and contribute to team learning and activities	<ul style="list-style-type: none">• Give you timely feedback on your assignments and exams• Show up to class on time, and be mentally & physically present• Create relevant assessments and class activities
Respect	<ul style="list-style-type: none">• Speak openly with one another, while respecting diverse viewpoints and perspectives• Provide sufficient space for others to voice their ideas	<ul style="list-style-type: none">• Respect your perspectives even while we challenge you to think more deeply and critically• Help facilitate respectful exchange of ideas
Fairness	<ul style="list-style-type: none">• Contribute fully and equally to collaborative work, so that we are not freeloading off of others• Not seek unfair advantage over fellow students in the course	<ul style="list-style-type: none">• Create fair assignments and exams, and grade them in a fair, and timely manner• Treat all students equitably

Trust	<ul style="list-style-type: none"> • Not engage in personal affairs while on class time • Be open and transparent about what we are doing in class • Not distribute course materials to others without authorization 	<ul style="list-style-type: none"> • Be available to all students when we say we will be • Follow through on our promises • Not modify the expectations or standards without communicating with everyone in the course
Courage	<ul style="list-style-type: none"> • Say or do something when we see actions that undermine any of the above values • Accept a lower or failing grade or other consequences of upholding and protecting the above values 	<ul style="list-style-type: none"> • Say or do something when we see actions that undermine any of the above values • Accept the consequences (e.g., lower teaching evaluations) of upholding and protecting the above values

* This class statement of values is adapted from Tricia Bertram Gallant, Ph.D.

Special Information Regarding COVID-19

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are [a number of actions you can take](#) to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

Please review the latest covid-19 guidance here: <https://carleton.ca/covid19/>.

Note About COVID-19 & Mental Health

The global pandemic has led to extra stress and uncertainty for everyone, and while we may all be experiencing the same storm, this does not mean that we are all in the same boat! If you are struggling, please do not hesitate to reach out. I am happy to listen, and/or direct you to resources that might help. In terms of class, if you need extra help or missed a lesson, don't stress! Email me and we will set a time to meet. I'll work with you, I promise. Remember that Carleton also offers an array of mental health and well-being resources, which can be found [here](#).

Academic Accommodations, Regulations, Plagiarism, Etc.

Carleton University is committed to providing access to the educational experience in order to promote academic accessibility for all individuals.

Academic accommodation refers to educational practices, systems and support mechanisms designed to accommodate diversity and difference. The purpose of accommodation is to enable students to perform the essential requirements of their academic programs. At no time does academic accommodation undermine or compromise the learning objectives that are established by the academic authorities of the University. More information can be found at: <https://students.carleton.ca/course-outline/>

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<https://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the [Paul Menton Centre website](#).

Addressing Human Rights Concerns

The University and all members of the University community share responsibility for ensuring that the University's educational, work and living environments are free from discrimination and harassment. Should you have concerns about harassment or discrimination relating to your age, ancestry, citizenship, colour, creed (religion), disability, ethnic origin, family status, gender expression, gender identity, marital status, place of origin, race, sex (including pregnancy), or sexual orientation, please contact the [Department of Equity and Inclusive Communities](#) at equity@carleton.ca.

Religious Obligations

Please contact me with requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, please review the [Student Guide to Academic Accommodation \(PDF, 2.1 MB\)](#).

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <https://carleton.ca/sexual-violence-support/>

Accommodations for Missed Work

Carleton recognizes that students may be experiencing greater stress and other life factors that are not in their control. As a result, Carleton has put into place a protocol for students to apply for accommodations using a self-declaration form in the event of missed work. The form can be found at: <https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf>

**Note that these forms should be used for short-term concerns related to missed work; if you are experiencing chronic, ongoing challenges which necessitate a broader solution, I recommend reaching out to the Paul Menton Centre and/or the Care Support team.*

For Pregnancy

Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, please review the [Student Guide to Academic Accommodation \(PDF, 2.1 MB\)](#).

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see the [Senate Policy on Accommodation for Student Activities \(PDF, 25KB\)](#).

Academic Integrity

Academic Integrity is upholding the values of honesty, trust, respect, fairness, responsibility, and courage that are fundamental to the educational experience. Carleton University provides supports such as academic integrity workshops to ensure, as far as possible, that all students understand the norms and standards of academic integrity that we expect you to uphold. Your teaching team has a responsibility to ensure that their application of the Academic Integrity Policy upholds the university's collective commitments to fairness, equity, and integrity.

(Adapted from [Carleton University's Academic Integrity Policy](#), 2021).

Examples of actions that do not adhere to Carleton's Academic Integrity Policy include:

- Plagiarism
- Accessing unauthorized sites for assignments or tests
- Unauthorized collaboration on assignment and exams

Please review the checklist [linked here](#) to ensure you understand your responsibilities as a student with respect to academic integrity and this course.

Sanctions for Not Abiding by Carleton's Academic Integrity Policy

A student who has not upheld their responsibilities under Carleton's Academic Integrity Policy may be subject to one of several sanctions. A list of standard sanctions in science can be found [here](#).

Additional details about this process can be found on [the Faculty of Science Academic Integrity website](#). Students are expected to familiarize themselves with and follow the Carleton University [Student Academic Integrity Policy](#). The Policy is strictly enforced and is binding on all students.

Student Rights & Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the [7 Rights and Responsibilities Policy](#) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Student Concerns

If a concern arises regarding this course, **your first point of contact is me**: Email or drop in during office hours and I will do my best to address your concern. If I am unable to address your concern, the next points of contact are (in this order):



Note: You can also bring your concerns to [Ombuds services](#).

Assistance for Students

Academic and Career Development Services: <http://carleton.ca/sacds/>

Writing Services: <http://www.carleton.ca/csas/writing-services/>

Peer Assisted Study Sessions (PASS): <https://carleton.ca/csas/group-support/pass/>

Math Tutorial Centre: <https://carleton.ca/math/math-tutorial-centre/>

Science Student Success Centre: <https://sssc.carleton.ca/>