Syllabus

FOOD 4200, Quality Control in Foods

(A01, Fall 2023)

Department of Food and Human Nutritional Sc,
Faculty of Agriculture and Food Sc,

University of Manitoba

Syllabus Contents

Course Details

Course Title
Quality Control in Foods

Course Number
FOOD 4200

Term
Fall 2023

Credit Hours
3.0

Pre-requisites:
Undergraduate level FOOD 3010 Minimum Grade of D or Undergraduate level 078 301 Minimum Grade of D

Class Times & days:
10-11:15 am, Tuesdays and Thursdays

Class location
Agriculture Building, Room 343

Instructor Contact Information

Name
Snehil Dua, PhD.
Please address me as Snehil or Dr. Dua or anything polite.
Pronouns: She/her

Email
Snehil.Dua@Umanitoba.ca (the best way to get in touch with me).

In today's time, it is becoming difficult to maintain a balance between work and personal life. To create this balance, I will promise to respond to your emails between 8:30 am and 5 pm on weekdays. I may respond at other times, but I do not promise to do so.

Office location
408 Human Ecology Building, Open office hours: 12:30-1:30 PM, Mondays
Office Phone
204.474.6505 (Not the best was to get in touch with me. Do not leave a message at this number. I will not get the message. Email me instead)

Department of Food and Human Nutritional Sc,
Faculty of Agriculture and Food Sc,

University of Manitoba

Office/Student/Learner Hours

Drop-in office hours on Mondays between 12:30-1:30 PM.

Traditional Territory/Land Acknowledgment

I share the University of Manitoba's acknowledgement,

> *The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota and Dene peoples, and on the homeland of the Métis Nation. We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.*

I am an immigrant to Canada and am mindful of the fact that the land I have chosen to be my new home is the land of the Indigenous people of Canada. As a naturalized citizen of this beautiful country, I believe that it is my duty to respect the Treaties that were made on these territories.

I am aware of and will continue to learn of the injustices and traumas experienced by the Indigenous peoples, but also the richness and diversity of Indigenous cultures and knowledge, and their resilience. Too much destruction has been brought to this land, and I am committed to doing everything in my power to restore our connection to this land. Personally, I enjoy my meals the most when I have grown some of the ingredients in my garden. I truly believe that if we grow and cook our food, we are more appreciative of the food, enjoy it more, and tend to waste less. My mantra is, "Grow your own food; if you can't grow, at least cook your own food; and if not that, then at least look at your food". We need to build a connection with everything we consume, for our own health and wellbeing.

I am thankful for the clean water supply I often took for granted. Only recently I have learned that the water that I drink and use in Winnipeg that is sourced from Shoal Lake 40 First Nation has caused forced relocation and destress to the original inhabitants of this beautiful land.

In my classroom, I will remain open minded to all ideas and thoughts because such open-mindedness will benefit us all as a society.

Equity And Inclusion Commitment

Fairness and respectfulness are my most important values that I would never compromise on. I assure you that if you feel that I have treated any student unfairly in any way, I would like to know it so that I can reflect on and correct. Being a cis-gender female, I will encourage you to bring to my attention anything I do or say that is perceived as my insensitivity to

your identity. I honor your identity and will do my best to remove any hurdles in my class that prevent you from expressing yourself freely.
I recognize that we all have travelled on different journeys which have shaped our personalities. Some of us have had more privileges than others. Some of us had to endure more hardships than others. Recognizing this, I have designed this course with care.
You will notice that your ideas will carry more weight than how you express those ideas, in my course. Though I want you to develop professional communication skills, I recognize that we may express ourselves differently owing to our journey thus far. Some of us have had more experience with expressing ourselves succinctly in the English language while other might have more proficiency in other languages. Thus, I have designed grading rubrics that encourage you to write professionally with clarity but give more weight to your ideas and hard work.
Recognizing that you may have different responsibilities in your personal lives, whenever possible, I will give you some flexibility when you complete the assessments for this course.

Course Description

U of M Course Calendar Description

Fundamentals of quality control and their industrial application through physical, chemical, microbiological, statistical, and sensory methods will be studied. Statistical process control (SPC) will be mainly covered; required background knowledge of statistics will be reviewed briefly. Prerequisite: FOOD 3010.

General Course Description

Instructional Methods: Instructional methods include a combination of lectures, class discussions and work-integrated learning project. The course will be evaluated based on WIL project presentations, tests and a final exam. Effective communication skills are necessary for successful completion of this course.

Course Learning Outcomes

Food requires inspection at all stages from primary production to final retail distribution in order to ensure that required standards of quality and safety are met. This course will cover various quality control principles as well as sampling and inspection regimes that will prepare students to meet the varying requirements of food manufacturers and retailers.

Intended Learning Outcomes

I. Describe the background and current requirement for quality control and quality management systems.
   Explain what has led to the current quality management systems
   Outline the main requirements of a quality control system
II. Recognize the requirements necessary to ensure safe, quality food.

Identify conditions for inactivation of important pathogens commonly found in foods
Apply appropriate evaluation tools needed to produce a safe food.
Evaluate sanitary practices and environmental factors (i.e., Aw, pH, temperature) that control growth and response of microorganisms.
Describe techniques, including sensory evaluation, for determination of product quality.

III. Identify food quality specifications
Recognize the source and variability of raw food material and impact on food quality

IV. Prioritize attributes/problems specification in raw and processed material based on production data
Illustrate how processing techniques can affect product quality.
Predict quality of selected products.
Ensure government regulations are reflected in the specifications provided

V. Apply appropriate sampling plans for a given attribute and product.
Use statistical methods to select appropriate sample plan
Develop sampling plan for a given data set

VI. Construct and interpret an operating characteristics curve to effectively evaluate consumer and producer risks

VII. *Construct an operating characteristic curve based on statistical probabilities for a given data set.*

VIII. *Interpret the significance of a given point on the operating characteristic curve.*
Compare different operating characteristic curves.
Create control charts for attributes, a vital segment of statistical process control (SPC), to record and report QC data.

Course Materials

Required Materials

Markovska, Aleksandra & Atanasova-Pancevska, Natalija. (2022). COMPARATIVE ANALYSIS OF DIFFERENT FOOD SAFETY SYSTEMS. 37. 33-37. (Available on UMLearn)

Pun, Kit Fai & Bhairo-Beekhoo, Patricia. (2008). A 14-Step Strategy of HACCP System Implementation in Snack Food Manufacturing. The Journal of The Associations of Professional Engineers of Trinidad and Tobago (ISSN 1000-7924). 37. 48-59. (Available on UMLearn)

Suggested Material

Following resources are available at the University of Manitoba Libraries and may be helpful during this course:

Alli, I. 2004. Food Quality Assurance: Principles and Practices. CRC Press, Washington DC
Besterfield, DH. 1998 (2001). Quality Control, 5th Ed. (6th Ed) Prentice Hall, Inc., Upper Saddle River, NJ.
Clute, M. (2016). Food industry quality control systems. Syrawood Pub House. Hubbard, MR. 2003. Statistical Quality Control for the Food Industry, 3rd Ed. Kluwer Academic/Plenum Publishers, New York, NY

Montgomery, DC. 1996. Introduction to Statistical Quality Control, 3rd Ed. John Wiley & Sons, Inc., NY.
Omachonu, VK., Ross, JE. and Swift, JA. 2004. Principles of Total Quality, CRC Press, Boca Raton FL
Siebels, D. 2004. The Quality Improvement Glossary. ASQ Quality Press. Milwaukee, WI.
Vasconcellos, JA.. 2004. Quality Control for the Food Industry. CRC Press LLC., Boca Raton, FL
WA Gould. 2001. Total Quality Assurance for the Food Industries. CTI Publication Inc., Timonium, MD.

Technology

- You must bring a computer and have access to UMLearn to be able to attempt the midterm test and the final exam
- An access to UMLearn will be required to access course material and to complete course assessments.

UM Learn

I will demonstrate in the class how you would need to use UMLearn

Course Schedule

This schedule is subject to change at the discretion of the instructor and/or based on the learning needs of the students but such changes are subject to Section 2.8 of ROASS (https://umanitoba.ca/governance/governing-documents-academic#responsibilities-of-academic-staff-with-regard-to-students).

Date	Class Content & Teaching Strategies	Required Readings or any Pre-class Preparation	Evaluation		
			Type of Assessment	Due Date	Value of Final Grade
Th Sep 7	Orientation and an introduction to the course.	None	None	NA	NA
T Sep 12	Lecture 1: An introduction to quality				
Th Sep 14	Lecture 2 TQM philosophy and tools		None	NA	NA
T Sep 19	Lecture 3 TQM tools				

Th Sep 21	Lecture 3 TQM tools + Activity 1 (20 minutes)		Class participation: Activity 1	In class	*
T Sep 26	Lecture 3 Six sigma quality	Review the Normal distribution. A video lecture is available on umlearn.			
Th Sep 28	Six-sigma activity (30 minutes) + Lecture 4: Audit		Class participation: Activity 2	In class	*
T Oct 3	Lecture 5: Food safety in quality	Read food safety system comparison (Available on umlearn)			
Th Oct 5	Lecture 6 Preventive control plan, and Lecture 7 Recalls	Read HACCP (available on umlearn)			
T Oct 10	Lecture 8: Control charts				
Th Oct 12	Lecture 8 continued: Control charts		Assignment 1 on Control charts, Open book	Due Oct 22 by 11:55 PM	**7.5%**
T Oct 17	Lecture 9 Inspection, and Acceptance sampling review + activity 3	Watch the "Acceptance sampling" video lecture available on UMLearn	Class participation: Activity 3	In class	*
Th Oct 19	Midterm test	Lectures 1-8	In-person paperless closed book test. Please bring your own device. If you must write a paper exam, please inform your instructor by Oct 15 via email. In-class	Oct 19, 10 AM 70 minutes	**20%**

T Oct 24	Lecture 10 Operating characteristic curves, and balancing risk				
Th Oct 26	Lecture 11 Operating characteristic curves, and balancing risk				
T Oct 31	Lecture 12: Writing specifications		Assignment 2 on OC curve and balancing risk, Open book assignment	Nov 5 by 11:55 Pm	**7.5%**
Th Nov 2	Work on your project		The instructor will be available to guide you during the class time		
T Nov 7	Work on your project		The instructor will be available to guide you during the class time		
Th Nov 9	Work on your project		The instructor will be available to guide you during the class time		
Break					
T Nov 21	Project update (15 min/team)	All team members must attend.	10 am: Team 1 10:15 am: Team 2 10:30 am: team 3 10:45 am: Team 4 11:00 am: Team 5		
Th Nov 23	Project update (15 min/team)	All team members must attend.	10:00 am: Team 6 10:15 am: Team 7 10:30 am: Team 8 10:45-11:15 Drop-ins		
T Nov 28	Work on your project		The instructor will be available to guide you during the class time.		
Th Nov 30	Presentations	All students must attend all the presentations	Team 4: 10 am Team 2: 10:25 am Team 7: 10:50 am		**Project + presentations 20% (Must pass to pass the course) ***
T Dec 5	Presentations	All students must attend all the presentations	Team 1: 10 am Team 8: 10:25 am Team 3: 10:50 am		**Project + presentations 20% (Must pass to pass the course)**

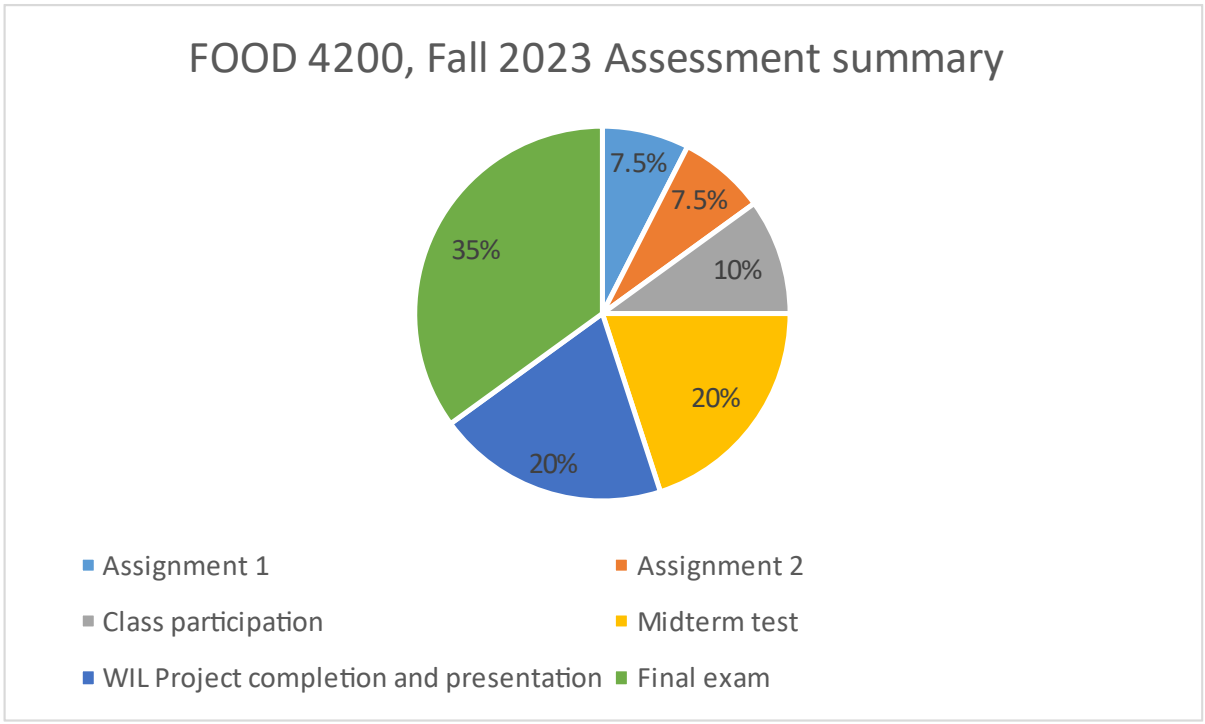
					*
Th Dec 7	Presentations	All students must attend all the presentations	Team 5: 10 am Team 6: 10:25 am Course evaluations and feedback.		**Project + presentations 20% (Must pass to pass the course)** *
Dec 12-22		In-person paperless closed book exam. Bring your own device. If you must write a paper exam, please inform your instructor via email, no later than Dec 8.	FINAL EXAM PERIOD (Comprehensive)	TBA	**35%**
	*Class participation			See above	**10%**

Course Evaluation/Assessments

Evaluation	Due Dates	Weight	Details
Assignment 1 on Control charts, Open book	Due Oct 22 by 11:55 PM	**7.5%**	Please submit on UMLearn
Assignment 2 on OC curve and balancing risk, Open book assignment	Nov 5 by 11:55 PM	**7.5%**	Please submit on UMLearn
Project	Final presentations (Nov 30- Dec 7)	**20%**	Mid point and final checks will be done prior to final group presentations. The group presentation slides must also be submitted on UMLearn prior to the presentation time.

			Each student must work at least 25 hours individually on the project work in addition to the presentation preparation.
Class participation		**10%**	Must complete activities 1, 2 and 3. Must attend all the presentations.
Midterm test Online test (closed book) In-class Lectures 1-8	Oct 19, 10 AM 70 minutes	**20%**	MCQs, short answers, graphs etc. In-person paperless closed book test. Bring your own device or inform the instructor no later than Oct 15 if you need a paper-based copy.
Final exam	Please refer to the final exam schedule on Aurora, available in November	35%	The exam will consist of multiple choice, short answer, and long answer questions. In-person paperless closed book Exam. Bring your own device. Cell phone not permitted. If you must write a paper-based exam, inform your instructor no later than Dec 8.

Summary



Assessment Descriptions

The dates are provided above in the schedule for each assessment. Please refer to the Course Walk-through link available on provided below to learn how to access and submit each assessment on UMLearn.

Assignment 1 and 2 (7.5% each): Must be typed. Submit on UMLearn under the appropriate assignment submission folder. Only one file per assignment should be submitted. If you submit multiple submissions, the most recent file will be evaluated.
Paperless midterm test (20%): The test must be completed on UMLern in the classroom. You must bring a laptop to complete the test in the class. If you do not have access to a laptop, you must inform me, your instructor, by Oct 15, 4:30 PM so that I can accommodate you.
Attendance will be recorded. If you attempt an exam but are not present in the class, your exam will be disregarded, and a letter of allegation will be submitted to the department.
Class participation (10%): Complete activities 1, 2 and 3 in the class, as per the schedule (see above), and you must attend all the presentations.
Project (20%): You will work in groups of 2-4 with a local food business to complete a quality or safety related project assigned to you by the company. The project assignment will be done by the end of September via UMLearn. This is a mandatory project to pass his course. As a group, you must give a presentation to apprise the class of the tasks accomplished by you. Your business supervisors will be in attendance for these presentations.
Learning outcomes:

- You will be able to apply some of the knowledge of the course in a real-world environment. (Topics may include but are not limited to quality control methods, problem-solving, food safety related issues, document creation for PCPs, Recall, and Specification procedures).
- You will be able to demonstrate professionalism, leadership, and good communication skills.
- You will be able to make a connection with a local food business.
- You will be able to effectively present your project after completion.

Final exam (35%): The final exam will be paperless. You must be present in the examination room to attempt the test. If you attempt the test but were absent in the examination room, it will be reported as an incident of academic dishonesty. If you are unable to bring a computer to the exam room, you must inform me (your instructor) by Dec 8 so that I can make alternative arrangements for you. The syllabus and format are given in the course schedule above.
Final exam will be scheduled by the Registrar's office. They will release the schedule on Aurora later in the term. Please do not make requests to me asking to schedule your exam at a different date/time. I do not have authority to do so.

Assignment Feedback

The midterm test will be graded within 7 days of the test. If you wish to review your exam, please drop in during my office hours no later than 15 after you receive your marks for the test. Online feedback will not be available.
The assignments will be graded by the TAs. You should expect the feedback on UMLearn in about one week after the deadline.

Grading

Please do not request me to give you opportunities for extra credits. Such requests will be denied.
I will follow the following grade scheme. For example, it you score 79.96, your score will be rounded up to 80. If you score 79.6, your score will not be rounded up to 80.

Letter Grade	Percentage out of 100	Final Grade Point
A+	90-100	4.5
A	80-89.9	4.0
B+	76-79.9	3.5
B	70-74.9	3.0
C+	65-69.9	2.5
C	60-64.9	2.0
D	50-59.9	1.0
F	Less than 50	0

Expectations

Please refer to the Respectful Work and Learning Environment Policy (https://bit.ly/3aMl7nE) of our university.

- I expect you to take notes in the class. The slides provide only the main points for each lecture. Additional information will be provided during the lecture. Please add such information to your slides.
- In the class, please pay attention to the lecture and ask me to repeat/clarify anything that is not clear. Please avoid asking your classmates to clarify during a lecture.
- If you have questions during the class, please ensure that those questions are directly related to what is being discussed at that time.
- Please ask questions related to assignments/tests/labs etc. either at the start of the class or at the end. Refrain from asking about these during a lecture.
- I expect that you join the class in time and not leave until the class is over. If you must arrive late or leave early, please do so without disturbing others.
- Where group work is assigned, I expect that you work as a team, with each member contributing equitably. Being able to work collaboratively is an important skill. In this course you will get opportunities to develop this skill.
- Please be respectful to one another. It is acceptable to disagree with one another, but it is unacceptable to be disrespectful.
- In the group project, all members of a group must participate fully.
- Please be safe. When in doubt, ask your TA.

Course Policies

Academic Integrity

- The University of Manitoba's policy for academic integrity is located within the Student Discipline Bylaw and Student Academic Misconduct Procedure. Please refer to the policy and procedures as listed in the UM Policies section below.
- You are expected to compete your coursework and programs of study with integrity by making a commitment to the six fundamental values of honesty, trust, fairness, respect, responsibility, and courage.
- If a test/assignment is individually assigned, you must not work collaboratively.
- Academic integrity looks like referencing the work of others that you have used and completing your assignments independently unless otherwise specified. **Copying and pasting from other sources will be considered plagiarism.** Please paraphrase and provide references. Be very judicious in the use of quotations. Quotations are used only when something has been written very artistically or technically such that paraphrasing it may lead to the loss of its meaning. Another reason to use quotations would be when you are stating something an author has said but you don't quite agree with the statement. Or when you want your point of view to be validated by an authority, you may use quotations. In all other cases, paraphrase.
- Group members must ensure that a group project adheres to the principles of academic integrity. This means that all students are required to check that all sourced material has been cited and referenced.
- Do not share course materials (e.g., notes, exam questions, assignment instructions, article) that have been created by the instructor or were authored by another person. Unpermitted sharing of such materials with your peers or with note-sharing companies, such as One Class, Course Hero, or Chegg (or other similar websites), is a violation of Copyright Law.
- Do not submit lab reports or other types of assignments already graded in another course.
- Plagiarism, duplicate submission, cheating on quizzes, tests, and exams, inappropriate collaboration, academic fraud, and personation are violations of the Student Discipline Bylaw and will lead to the serious disciplinary action. Visit the Academic Calendar, Student Advocacy, and Academic Integrity web pages for more information and support.

Accessibility

The University of Manitoba is committed to providing an accessible academic community. Students Accessibility Services (SAS) (https://umanitoba.ca/student-supports/accessibility) offers academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a

disability (e.g., mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.
520 University Centre
(204) 474-7423
Student_accessibility@umanitoba.ca

Attendance

I will strongly advise that you attend all classes, but I do recognize that circumstances may arise due to which you may have to miss a class. When you attend a class, you will have the opportunity to take notes, and get clarifications. If you must miss a class, please request your classmates to help you complete your notes. After studying the notes of a missed lecture, if something is unclear, please visit me during my office hours to seek clarifications. Please do not expect me to repeat the entire lecture for you. You must first study the notes yourself before you seek clarifications.

Assignment Extension and Late Submission Policy

Should you need an extension for an assignment/test/quiz, you must complete the Self-declaration form for brief and temporary absence. The form is available to you on UMLearn.
If you miss the final exam due to illness or compassionate reasons, please contact your own faculty to request a deferral. Your instructor, I, do not have any authority to change the schedule of your final exam.

Class Communication

You are required to obtain and use your University of Manitoba email account for all communication between yourself and the university. All communication must comply with the Electronic Communication with Student Policy:
http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html.
When you email me, please indicate the course number in your email. I teach multiple courses and will not be able to respond to your email if you do not mention the course number.
Please check the syllabus and UMLearn announcements to see if your question has been answered there. If not, please email me. I will try my best to respond within 24h on weekdays.

Recording Class Lectures

My notes and lectures are my copyright material. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission from me (Snehil Du). Course materials (both paper and digital) are for the your private study and research.

Referencing Style

Please use APA format wherever applicable.

Technology Use

Please read Respectful Work and Learning Environment policy (RWLE) (https://bit.ly/3OxGtnd)
It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical, and legal manner.
In my class, you may use computers, tablets etc. for note taking. Please use technology only for course related activities during the class.
You must bring a computer a tablet to attempt your tests and exams. You will not be allowed to attempt tests on cellphones.

Using Copyrighted Material

Please respect copyright. We will use copyrighted content in this course. I have ensured that the content I use is appropriately acknowledged and is copied in accordance with copyright laws and university guidelines. Copyrighted works, including those created by me, are made available for private study and research and must not be distributed in any format without permission. Do not upload copyrighted works to a learning management system (such as UM Learn) or any website (e.g., Course Hero, Chegg, etc.), unless an exception to the Copyright Act applies or written permission has been confirmed. For more information, see the University's Copyright Office website (http://umanitoba.ca/copyright/) or contact um_copyright@umanitoba.ca.

UM Policies

- Schedule A (PDF) (https://bit.ly/3NVSToL)

UM Learner Supports

- Schedule A (PDF) (https://bit.ly/3NVSToL)