FNH 403 001 - Food Laws, Regulations and Quality Assurance Syllabus (3 credits)

2025-2026 Winter Term 1

Monday, Wednesday and Friday 11:00am – 12:00pm

Brock Commons South (BRCS) | Floor: 1 | Room: 1030

Land Acknowledgement

The University of British Columbia's Point Grey campus is located on the ancestral, traditional, and unceded territory of the xwməθkwəy̓əm (Musqueam) people. For thousands of years, this land has been a place of learning, teaching, and knowledge-sharing for the Musqueam community, who have passed down their culture, laws, and traditions across generations.

In a course on food laws and regulations, it is important to recognize that Indigenous Peoples have their own long-standing systems of governance, knowledge, and stewardship of food and land systems that pre-date, and continue alongside, Western regulatory frameworks. A land acknowledgement is an opportunity to reflect on whose knowledge is valued, how policies are created, and the responsibilities we share in working towards more equitable and respectful food systems.

Course Information

Course Code/Section	Course Delivery	Learning Location
FNH_V 403-001	Mon Wed Fri 11:00 am - 12:00 pm	Brock Commons South (BRCS) Floor: 1 | Room: 1030
FNH_V 403-D01	Fridays 9:00 am - 10:00 am	Hebb Building (HEBB) Floor: -1 | Room: B112
FNH_V 403-D02	Wednesdays 12:00 pm - 1:00 pm	Food, Nutrition and Health Building (FNH) Floor: -1 | Room: 50

Prerequisites and Corequisites: One of LFS_V 252, STAT_V 200, FRST_V 231, BIOL_V 300, EPSE_V 482, or equivalent background in statistics.

Course Description

Calendar Description

Canadian and international laws governing food composition, grading, quality and safety; hazard analysis critical control points; statistical quality assurance.

Extended Course Description

This course introduces Canadian and international laws, regulations, and systems that shape food composition, grading, quality, and safety. It is designed for upper-level Food, Nutrition, and Health students preparing for careers in food science, dietetics, food technology, or related fields. Building on courses such as food microbiology, chemistry, and processing, it offers a regulatory and management perspective that applies scientific and technical knowledge to real-world contexts. Students will be encouraged to think critically about how quality management systems are created, implemented, and monitored, and how global standards interact with Canadian food laws and regulations.

By the end of the course, students will understand the theory behind food quality management and regulatory systems, but will also build practical skills in data collection, decision-making, and safety plan design which are skills directly transferable to careers in industry, government, or research.

Instructor: **Nancy Ross**

Contact Details	Office	Office Hours
Nancy Ross Nancy.Ross@ubc.ca (Please contact me via Canvas)	Food, Nutrition and Health Building (FNH) Floor: 3 | Room: 322	Friday 9:30 am – 10:45 am (PDT). Virtual hours available as needed.

Other Instructional Staff

Teaching Assistant	Contact Details
Kaitlyn Lumby 2nd Year Dietetics Student	Via Canvas (preferred) or email to Kaitlyn.lumby@ubc.ca.
Alina Charissa 1st Year Master of Food Science	Via Canvas (preferred) or email to alina.charissa@ubc.ca.

Course Learning Outcomes/Objectives

This course introduces students to a range of quality management systems used in the food industry. It begins with an overview of the philosophy of Total Quality Management (TQM), followed by an examination of quality control techniques using Statistical Quality Control (SQC). Students will then explore Canadian food laws and regulations as a foundation for understanding Good Manufacturing Practices (GMPs), the Codex Alimentarius, and Hazard Analysis Critical Control Point (HACCP) systems.

Tutorial sessions, held on Wednesdays or Fridays, will be used for both lectures and group work to support learning throughout the course.

Upon the successful completion of this course, students will be able to:

1. Explain and apply quality management theories by demonstrating their effectiveness in food manufacturing, such as through the implementation of a HACCP program.
2. Describe the role of quality management theory and statistical process control (SPC) in supporting continuous improvement of manufacturing processes.
3. Collect and analyze production data from a food processing plant by constructing check sheets and control charts tailored to specific production processes.
4. Identify Canadian and international regulatory agencies that establish food regulations and standards, and explain how these organizations interact and influence one another.
5. Strengthen decision-making skills by applying analytical tools to realistic case studies and developing practical solutions to complex food industry challenges.
6. Develop a comprehensive food safety plan based on HACCP principles and their application in real-world settings.

Selected Course Bibliography

- Kramer, A., and Twigg, B (1970). Fundamentals of Quality Control for the Food Industry, 3rd Edition. (Westport, Connecticut, AVI Publishing, 1970)
- Besterfield, D. Quality Control (Upper Saddle River, New Jersey, Pearson, Prentice Hall, 2004)
- Tague, N. The Quality Toolbox, 2nd Edition. (Milwaukee, Wisconsin; ASQ Quality Press, 2005)
- Mortimore S. and Wallace C. 2013. “HACCP: A Practical Approach,” 3rd ed. Springer, New York.

- Mortimore S. and Wallace C. 2015. “HACCP: A Food Industry Briefing,” 2nd ed. Wiley Blackwell, UK.
- Surak, J and Wilson, S The certified HACCP auditor. (Milwaukee, Wisconsin; ASQ Quality Press, 2007) Consider the use of Open Educational Resources for accessibility and affordability.

Course Structure and Learning Activities

This course combines lectures and tutorials to introduce key concepts and apply them through case studies and group activities. Classes are hybrid, with recordings posted on Canvas. Tutorials focus on discussions, polling, and case analysis. **Attendance is mandatory, and it will be taken.** Please complete readings and assignments before tutorials to participate effectively.

These activities will help you develop problem-solving skills, work with differing perspectives, and apply course concepts to real-world situations. Instructors and TAs are available for additional support as needed.

Course Schedule

Section 1: Quality

- Define quality and discuss consumer expectations
- Describe Quality Control (QC), Quality Assurance (QA), and Total Quality Management (TQM), including history, principles, and Deming’s contributions (14 Points, PDCA cycle)
- Identify internal and external customers and TQM’s role in modern practices

Section 2a: Regulations

- Review Canadian food regulations, CFIA purpose, history, mission, and organizational structure
- Outline federal and provincial regulatory responsibilities and differences between Acts and Regulations
- Recognize documents incorporated by reference and definitions (licensed establishment, standardized product)

Section 2b: Labelling

- Explain purpose and requirements of food labels
- Identify principal display panel, available display surface, core nutrients, and serving sizes

- Use online tools to prepare compliant food labels
- Differentiate between regulatory terms, nutrition and health claims, and identify inappropriate claims

Section 3: HACCP (Final Exam Coverage)

- Apply Codex HACCP documents and 7 Prerequisite Programs to control hazards
- Define hazards, conduct hazard analysis, justify CCPs, and develop critical limits
- Establish monitoring, verification, deviation procedures, and record-keeping
- Prepare SOPs and understand recall procedures, including CFIA role and mock recalls

Section 4: 7 Quality Tools & Statistical Process Control (SPC) (Final Exam Coverage)

- Identify and apply quality tools to solve problems
- Evaluate scenarios to select appropriate tools
- Understand and construct control charts (X-bar, R-charts), interpret data, and detect special causes

Week	Date	Topic / Section	Tutorial / Activities	Assignments / Due Dates
1	Sep 3	Introduction and Quality Terms and Definitions	No tutorial this week	—
2	Sep 8	Section 1: Quality – Guru Guide + Video	Wednesday: TQM and Describe Product Exercise	Tue Sep 10 – Quiz: Quality Guru (11:00 AM) Thu Sep 12 – Assignment: TQM Internal & External Customer (11:00 AM) Fri Sep 13 – Quiz: Quality Terms Matching Game (11:00 AM)
3	Sep 15	Section 2: Regulations and Labeling – Food Regulations	Wednesday: Safe Food for Canadians Act and Regulations (*work independently on Regulation Quiz*)	—
4	Sep 22	Section 2: Regulations and Labeling – Labelling Tool for Industry	Wednesday: Label Review and Labelling Exercise	Sat Sep 28 – Assignment: Labelling Tutorial (11:00 AM) Sun Sep 29 – Assignment: Calculating Available Display Surface (11:00 AM)
5	Sep 29	Section 2: Regulations and Labeling	Wednesday: Work on Individual Labelling Assignment	—

6	Oct 6	Section 3: HACCP – HACCP Forms 1-4	Wednesday: Basic Product Information	—
7	Oct 15	Section 3: HACCP – HACCP Principles	Monday: No Class Tutorial: Group Work on HACCP Documents	Monday: No Class Sat Oct 26 – Quiz: Hazard Analysis and Controls (11:00 AM)
8	Oct 20	Section 3: HACCP – Writing Standard Operating Procedures (SOPs)	Tutorial: CFIA Information and Recall; Group Work on HACCP Documents	—
9	Oct 27	Section 3: HACCP & Introduction to SPC – Histograms, Check Sheets, Pareto Charts	Tutorial: Last tutorial for HACCP assignment; Start SPC	—
10	Nov 3	Section 4: SPC & 7 Quality Tools – Scatter Diagrams	Tutorial: Cause and Effect Diagrams; Quality Tools Overview	—
11	Nov 10	Section 4: SPC – Cause and Effect Diagrams	Midterm Break Monday/Wednesday	Monday and Wednesday: No Class
12	Nov 17	Section 4: Control Charts – Introduction and SPC Applications	Wednesday: Preparation of Control Charts; Case of the Bad Butterfat	Wed Nov 19 – Assignment: The Case of the Bad Butterfat Individual Quiz (2:00 PM) Wed Nov 19 – Assignment: Cause and Effect Diagram for Case of the Bad Butterfat Group Assignment (11:59 PM)
13	Nov 24	Section 4: SPC – Attribute Control Charts	Wednesday: Environmental Monitoring; Control Chart Problem Set	Wed Dec 4 – Assignment: Use of Food Allergy Website for Training (11:00 AM)
14	Dec 1	Section 4: SPC – Advanced Topics: OC Curves and Statistical Sampling	Wednesday: Final Review	—
—Final Exam—				

Assessments of Learning

The course uses a single in-person final exam to assess achievement of learning outcomes. Detailed instructions, criteria, and grading rubrics are available in the rubrics document on Canvas.

Final Exam

- **Coverage**: Section #3 (HACCP) and Section #4 (7 Quality Tools and Statistical Process Control).
- **Format**:
    - ~10 multiple-choice questions on prerequisite programs, HACCP principles, and quality tools.
    - 2–3 short-answer questions that test understanding and application of concepts (e.g., defining a CCP and applying it to a scenario).
    - 1 Form 10 CCP Determination Table (case study).
    - 1 Control Chart exercise, including creation and analysis of an out-of-control process.

Students are encouraged to review learning outcomes and approach them as potential exam questions to prepare effectively. The final letter grade will be given following the UBC's Grading Practices.

Policies and Resources to Support Student Success

University Policies and Resources

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual assault. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on **the UBC Senate website.**

Learning Resources and Support

UBC Library has a series of undergraduate user guides to support your learning. For the upcoming terms, their Online Learning video tutorial and UBC's Keep Learning website are helpful resources.

FNH 403 Food Law, Regulations and Quality Assurance Grading Rubric					
Section	Possible Marks	Excellent	Good	Needs Improvement	Unacceptable
Section 1 Introduction to Quality					
Introduction to Group Processing	Group participation activity	First group activity of semester. Groups will receive a food product and work together to complete the Group Processing worksheet (Product description, manufacturing process, quality and safety attributes, labelling).			
History of Quality	6	Quality Guru reading quiz			
Quality Terms	10	Match the quality term and definition			
Total Quality Management (TQM)	Group Participation Activity	Groups use TQM concepts and identify internal and external customers in businesses.			
Section 2 Regulations					
Canvas Quiz 1 Regulations Search	16	Suggested reference demonstrates good use of government websites to find regulation to answer typical food industry questions. Uses correct format to reference a regulation (eg. B.08.008) Submits quiz prior to due date	Answers to questions appear to be a google search. Incorrect format Submits quiz prior to due date	Answers to questions appear to be a google search. Completes quiz and does not submit.	Quiz not submitted by deadline and student requests that the quiz be re-released.
Canvas Quiz 2 Regulations Search	10	Summary questions on labelling rules. Submits quiz prior to due date	Incomplete answers	Answers to questions appear to be a google search. Completes quiz and does not submit.	Quiz not submitted by deadline and student requests that the quiz be re-released.
ADS assignment	9	Calculation done correctly. Shows units	Answer without explanations		Assignment not submitted by deadline
Assignment Prepare Label Information for food product.	32	Determine format of NFt. Select correct serving size for product from regulations. (Table of Reference Amounts) Calculate nutrient content using serving size and laboratory analysis of product (13 components)	Incorrect serving size Nutrient content calculation done correctly but answer is not correct because	Incorrect serving size Incorrect application of nutrient rounding rules Completes quiz and does not submit.	Assignment not submitted by deadline

FNH 403 Food Law, Regulations and Quality Assurance Grading Rubric					
Section	Possible Marks	Excellent	Good	Needs Improvement	Unacceptable
		Apply rounding rules correctly to nutrients Determine eligible claims	incorrect serving size was used Apply rounding rules correctly to nutrients Incorrectly interpret claim regulations	No review of claims	
Section 3 – Hazard Analysis and Critical Control Point (HACCP)					
Basic Product Information					
Forms 1- 3 Food Product with CCP	Preparation of HACCP Forms (25 marks)	**Basic product information** well documented. Demonstrate previously learned food science knowledge during preparation of forms i.e. product quality attributes associated with food safety, labelling, food processing techniques. Forms properly formatted (date of preparation, signature of responsible HACCP personnel). HACCP team adds B, C, and P symbols after completion of hazard analysis in subsequent section of course.	**Basic product information** forms are completed but demonstrate a tendency towards rote behaviour from available HACCP generic models.	Forms incomplete and do not include details of case study. Important product quality attributes missing,	Significant details omitted in forms. Form 2, List of Inputs does not match Form 3, Process Flow diagram. Incomplete process flow: not all steps included.
Form 4 Plant Schematic - plant with allergens		Schematic shows all material and personnel flows with well defined legend for the map. Other food safety details such as hand wash stations, waste containers and sanitation stations identified. Areas of cross contamination (raw/processed, allergens) clearly identified.	Plant schematic matches Form 3, process flow diagram. Some distinction between materials and personnel flow in legend. Incomplete identification of allergen cross contamination risks.	Unclear distinction between materials and personnel flow. No identification of cross contamination risks; no hazard symbols on map.	No legend. Plant schematic flow does not match Form 3, Process Flow diagram

FNH 403 Food Law, Regulations and Quality Assurance Grading Rubric					
Section	Possible Marks	Excellent	Good	Needs Improvement	Unacceptable
Hazard Analysis					
Critical Control Point (CCP) Determination and Control		Demonstrates knowledge of food processing techniques. CCP properly identified using decision tree. HACCP principles 1-7 are applied correctly. Person responsible, task and method frequency for each principle. Record keeping includes related records from applicable preventive control measures associated with CCP.	Principles 1-7 addressed but corrective actions incomplete.	Records (principle 7) incomplete, lacks detail.	Lacking background processing knowledge and experience to prepare a HACCP plan with sufficient detail.
Individual Preventive Controls Quiz	10	Match Prerequisite Program name to criteria of the program.			Do not submit
Individual Hazard Analysis Assignment	15	Complete two part hazard description statements for specific process steps. Use correct format.			Do not submit
Preparation of Standard Operating Procedure (SOP) for Preventive Control Measure.	10	SOP is properly formatted, purpose, task, frequency, corrective actions, records, person responsible. Suitable for use as a training tool in a food processing establishment. Auditable details such as created date, revision date and signature are included.	Corrective actions missing. Poorly formatted.	Standard Operating Procedure not suitable for stated purpose. Does not meet requirements of preventive control measure i.e. sanitation program, allergen control program	Lacking background processing knowledge and experience to prepare a SOP with sufficient detail.
Section 4 – Statistical Process Control and 7 Quality Tools					
Canvas Quiz 2 7 quality tools (use of memory jogger) *Scatter Diagram Pareto Chart Histogram*	15	Completes Memory Jogger reading assignments listed in Canvas Complete quiz	Completes quiz		Quiz not submitted by deadline and student requests that the quiz be re-released.

FNH 403 Food Law, Regulations and Quality Assurance Grading Rubric					
Section	Possible Marks	Excellent	Good	Needs Improvement	Unacceptable
Cause and Effect Diagram ***The case of the bad butterfat.***	10	Problem statement is complete (Effect) Group uses follows brainstorming Use information in case to construct All questions answered. Analysis of cause and effect diagram	Identifies cause of poor-quality product. No hypothesis to test identified	Problem statement does not accurately describe the situation in the case study.	No problem statement. Few causes on cause and effect diagram.
Cause and Effect Diagram ***The case of the bad butterfat.***	8	Individual Quiz to be done before tutorial	Completes quiz		Quiz not submitted by deadline and student requests that the quiz be re- released.
Control Charts	Group participation activity	Prepare control chart and determine assignable cause	Prepare control chart. No analysis of problem.	Calculations correct.	Calculations incorrect or not complete.
Acceptance Sampling	Group participation activity	Complete problem set			Calculations incorrect or not complete.