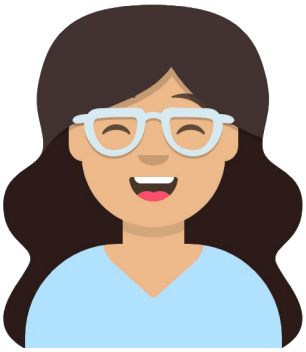
If this syllabus is not accessible to you, please contact me.

Welcome to Exploring Our Foods, FNH 200 942 July/August 2025!

We all eat-often multiple times a day! Have you ever wondered how egg whites turn white when heated, why canned foods last years, or who ensures that all Canadians have access to a safe and healthy food system? In FNH 200, through lots of teamwork, we will explore the science behind the foods we eat and enjoy. By the end of the summer, with my guidance, I hope you will become educated consumers who can make informed decisions about the controversial issues surrounding the foods you enjoy in every day.



judy.chan@ubc.ca
Please add 'FNH 200' in the subject heading

I aim to respond to all email within 24 hours, except on the weekend-when I have a range of family responsibilities. I'm most responsive early in the morning and late at night. Please also note that I pause responding to content-related questions by 6 pm the night before midterms and final exam.

Exploring Our Foods
FNH 200 942
July/August 2025
Faculty of Land and Food Systems, University of BC

Dr. Judy C. K. Chan (she/her)

Have an idea? Question? Drop me a an anonymous line!

Exploring Time:

Tuesday and Thursday:
9 to 11:50 am PDT
Tentative schedule on p. 3
Meetings on Zoom

How is this course structured?

This is an online course with all materials available on Canvas. Online quizzes are designed to guide your learning.
Synchronous lectures are optional and serve three major purposes: (1) highlight key concepts in a narrative format, (2) build a sense of community to support our learning, (3) answer your questions about the course, assignments, and of course foods! When I prepare a plan for each lecture, I also leave space to respond to your questions and interests. This mean some lectures may feel less structured at times, but this flexibility is intentional to support interactions.

Textbook:

No textbook needed; all examinable information can be viewed on Canvas

Open version of course content is also available on:
Wiki.ubc.ca/Course:FNH200

Your local grocery stores contain a wealth of information relevant to FNH 200. Do visit them often.

Please set aside CDN $ 20 to 50 to purchase and sample foods relevant to course materials to enhance your learning. I plan to have a couple food sampling parties/lectures. Please see p. 3 for dates.

Learning Objectives:

By the end of this course, as an engaged learner, you will be able to:

- ✓ Describe colloidal dispersions important to food quality and sensory perception
- ✓ Describe the role of chemical reactions, enzymes and microorganisms in food spoilage, food preservation and food borne disease
- ✓ Describe food processing/ preservation methods and packaging systems, including their application in the conversion of raw materials into food products
- ✓ Develop personal food selection and food handling habits that will minimize risk of contracting foodborne or water borne diseases
- ✓ Articulate a personal set of values related to your decisions pertaining to selection of food products for both your personal and your family's consumption
- ✓ Demonstrate an ability to critically evaluate the validity of information that commonly appears in media

Course Overview:

In FNH 200, there are 13 lessons, in varying lengths.

Foundation

- **Lesson 01** — Food Science and Canadian Food System
- **Lesson 02** — Chemical and Physical Properties of Foods
- **Lesson 03** — Fat and Sugar Substitutes
- **Lesson 04** — Food Standards, Regulations, and Guides

Preservation

Lesson 05

- **Lesson 06** — Thermal
- **Lesson 07** — Low Temperature
- **Lesson 08** — Dehydration
- **Lesson 09** — Biotechnology
- **Lesson 10** — Irradiation

Healthy & Safe Future

- **Lesson 11** — Affects on Nutrient Retention
- **Lesson 12** — Toxicants in Foods and Foodborne Diseases
- **Lesson 13** — Trends in Food for Nutrition and Health

TEAMWORK

- Team Contract
- Teamwork Time
- Peer Evaluation

Working in teams is a major component of this course. I strongly believe that people learn better in a collaborative environment where we **can draw on the strengths of our diverse knowledge and skills.**

I strive to create teams with students from different disciplines. Once the teams are formed, you will work together on a couple of assignments, a final project, as well as the 2-stage midterms and final exam.

You may choose your own teammates to form teams of five to six. Pairs and triads are welcome, and I will add members to your preferred pairs or triads to complete your team, aiming for diversity in academic backgrounds. Due to the online nature of this section, I will set up a discussion thread for students who wish to **form teams based on your geographical locations, summer courses schedules, interests, etc.** If there is anyone in class you would prefer not to work with, please feel free to let me know-no questions asked.

Please email me your team formation by 9 am on Wednesday, July 9, with all members properly cc'ed. I will begin finalizing the teams before our class on Thursday when you can meet your team and begin your collaboration.

THANK YOU!

My Teaching Team:
Chantelle Twynstra
Clover Lee
Priyal Tailor
Xiyuan Shang

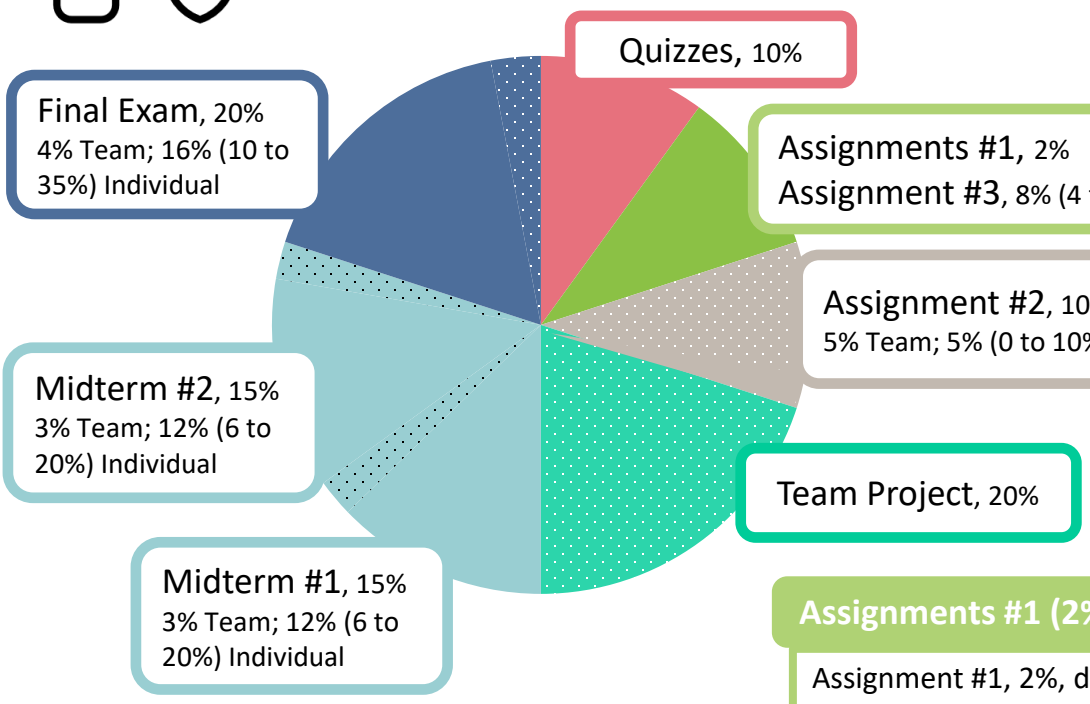
I've been incorporating teamwork into my teaching for over 10 years. I continue to review and analyze your team experience using responses from the pre-course survey and relevant questions on team assignments and projects. This helps me better support teamwork in the future. If you have any concerns about the use of your data and your privacy, please feel free to discuss them with me, and you may certainly opt-out (via Canvas).

	TUESDAY, July 1	THURSDAY, July 3	
8:30 to 9 am		Office/Student Hour	
9 to 9:50 am	Happy Canada Day!	Online (recorded)! Intro and Syllabus	
10 to 10:50 am	No Class Today	Online (recorded)! Lesson 1	
11 to 11:50 am		Group (Random) Activity – Assignment 1	
12 to 12:30 pm		Office/Student Hour	
	TUESDAY, July 8	**THURSDAY, July 10**	
8:30 to 9 am	Office/Student Hour	Office/Student Hour	
9 to 9:50 am	In-person, optional (recorded)! Lesson 2	Online (recorded)! Lesson 2	
10 to 10:50 am	In-person, optional (recorded)! Lesson 2	Online (recorded)! Lesson 3	
11 to 11:50 am	Group (random) Activity – Assignment 1	TEAM Meeting – Team Contract, Assignment 2	
12 to 12:30 pm	Office/Student Hour	Office/Student Hour	
	TUESDAY, July 15	**THURSDAY, July 17**	
8:30 to 9 am	Office/Student Hour	Start b/w 6 and 10 am	**Midterm 1**, Stage 1, Individual
9 to 9:50 am	Online (recorded)! Lesson 4	Finish by 10:30 am	**Midterm 1**, Stage 2, Team
10 to 10:50 am	Online (recorded)! Lesson 4	Till 11 am	TEAM – Assignment 2, Project
11 to 11:50 am	TEAM Meeting – Assignment 2, Project	11 to 11:50 am	Online (recorded)! Lesson 5
12 to 12:30 pm	Office/Student Hour	12 to 12:50 pm	Office/Student Hour
	TUESDAY, July 22	**THURSDAY, July 24**	
8:30 to 9 am	Office/Student Hour	Office/Student Hour	
9 to 9:50 am	Online (recorded)! Lesson 6	Online (recorded)! Lesson 7	
10 to 10:50 am	Online (recorded)! Lesson 7	Online (recorded)! Lesson 8	
11 to 11:50 am	TEAM MEETING – Project Outline	TEAM Meeting – Task Sharing, Peer Eval	
12 to 12:30 pm	Office/Student Hour	Office/Student Hour	
	TUESDAY, July 29	**THURSDAY, July 31**	
8:30 to 9 am	Office/Student Hour	Start b/w 6 and 10 am	**Midterm 2**, Stage 1, Individual
9 to 9:50 am	Online (recorded)! Lesson 9	Finish by 10:30 am	**Midterm 2**, Stage 2, Team
10 to 10:50 am	Online (recorded)! Lesson 9	Till 11 am	TEAM Meeting – Project
11 to 11:50 am	TEAM Meeting – Task Sharing, Peer Eval	11 to 11:50 am	Online (recorded)! Lesson 10
12 to 12:30 pm	Office/Student Hour	12 to 12:30 pm	Office/Student Hour
	TUESDAY, August 5	**THURSDAY, August 7**	
8:30 to 9 am	International TEAM Meeting Hour	International TEAM Meeting Hour	
9 to 9:50 am	Online (recorded)! Lesson 11	Online (recorded)! Lesson 12	
10 to 10:50 am	Online (recorded)! Lesson 12	Online (recorded)! Lesson 13	
11 to 11:50 am	TEAM MEETING – Completing, Reflection	TEAM Meeting – Publishing, Peer Eval	
12 to 12:50 pm	Student Hour	Student Hour	

Assessments, default weighs shown, flexible ranges in brackets when available

To help you learn and let you showcase what you learned

Solid colour: individual effort Dotted colour: team effort



Due to the relative complexity of all assessments, I have turned off the **final** grade feature on Canvas. Please monitor your own grade progress.

Quizzes, 10%

For each lesson from Lessons 01 to 13, there will be an associated quiz on Canvas. You have unlimited attempts and I will keep the highest score.

I like to encourage you to make your first attempt prior to the beginning of each lesson. Quiz questions and distractors are designed to guide you through important concepts in each lesson.

Team Project, 20%

Option A: A research project on a food you like
Option B: An interview with a professional working in the food industry

Due on August 7 at 6 pm. Aside from the final report, grades will also be awarded based on your team contract, proposal, reflection, contribution to our learning, etc.

All members in the team should contribute their unique talents towards the project. Unfortunately, if your team members feel that you contribute less than average (<70% on peer evaluation), your project grade may be affected. In extreme case, a mark of zero may be given.

Assignments #1 (2%) & 3 (8%)

Assignment #1, 2%, due on July 9 at 6 pm, helps you set some informal learning goals.
Assignment #3, 8%, due on August 11 at 12 noon, helps you recognize how much food science you will have gained.

Assignment #2, Team, 10%

Team Component, 5%, due on July 17 at 6 pm: you and your team will show how much you learn about labels and ingredients of foods of your choice.
Individual Component, 5%, due on July 18 at 6 pm: you will justify your food choice based on evidence gathered by your team and your personal experience.

Midterms, 15%, 15%; Final, 20%

Midterm #1, July 17; #2, July 31; Final, TBD

Midterms are all multiple choice questions (mcq). The final is mostly mcq with some longer answer questions. These will be conducted as two-stage exams, where your individual effort will count towards 85% of the midterm/final while the rest will be based on your team effort. The midterms and final will be opened for about 5 hours, you with decide with your teammates the most convenient time to complete them.

A Letter to FNH 200 Students

Dear Students in FNH 200 942 2024,

Thank you again to those of you who filled out a survey in June and shared your online learning preferences with me. I have carefully reviewed your comments, along with feedback from past students. I recognize that my teaching approach may not work with everyone in every situation, but I sincerely hope that you feel comfortable reaching out to me whenever you need support.

I'm here for you and your learning!

Now, let's get into some 'business' of learning in FNH 200 942 ☺

I value peer-to-peer learning and strive to build supportive structures to help you work effectively with a group of strangers for six weeks. I hope you will see your teammates as **your study buddies**, whom you can trust and turn to for clarification on course content and process. Likewise, I encourage you to support each other, both academically and emotionally. If you notice a teammate is falling behind in a way that seems unhealthy way, please let me know. I can reach out and connect them with professional support at UBC. Let's all learn and grow together!

Attendance at our synchronous class meetings is optional. These sessions (see page 3) will be recorded and made available on Canvas. I will do my best to keep lectures and discussions as linear and organized to support your viewing and reviewing. **Attendance at our in-person food sampling day is also optional.**

Your contributions to your team is valued. I strongly encourage you to make use of the group work time, 11 to 11:50 am PDT during the first few classes, to connect with your classmates, and in the second week to connect with your assigned teammates. Once you have established trust and mutual understanding with your team, you (as a team) are welcome to decide how best to collaborate and support each other, especially as you all balance your busy life.

Late assignments and projects (our TAs are super flexible!) **will be accepted** until 12 noon (PDT) on Monday, August 11. All assignments and projects are designed to guide your learning and help you prepare for your midterms and final, so completing them by the published due dates is strongly encouraged. These published due dates also help our TAs and me manage our busy schedules. If you need to submit your work late (or if you simply forget), a mark of ZERO (don't panic!) will be temporarily noted on Canvas as a reminder. Please understand that submitting work after the due date may delay grading and feedback, as if takes extra time for the TAs and me to catch up.

Generative Artificial Intelligence (GAI) tools are transforming how we learn. I have tested FNH 200 assignments using GAI and was genuinely impressed by many of the results. I am also a bit envious of digestible, high-quality scientific knowledge now at your finger tips! If you choose, GAI can also guide you toward primary research and deeper insightful. The sky is the limit when it comes to learning with these tools. That said, while GAI may support your learning, it can also hinder it. Please do not rely solely on GAI to complete your assignments. Since the subject matter, **food**, is such an integral part of your life, I encourage you to take this summer as an opportunity to explore it more critically and personally. More guidance on how to use GAI appropriately will be provided with each assignments.

Above: An image generated by DALL-E, 'Digitized apple in a lab'

All contributing team members will earn the same mark on the team project, which counts for 20% of your course grade. You will have the opportunity to assess each other based on work ethics, listening skills, organization skills, and share of workload. All contributing team member (> 70% on peer evaluation) will earn the same project mark. Members who choose not to contribute or contribute negatively (scoring below 70%) will receive an adjusted project mark adjusted based on the average peer evaluation. In some cases, a mark of ZERO will be assigned.

Please respect your sources of information by acknowledging them in the reference sections of your reports. Your resources should be reliable and official, such as government websites, academic publications, and professional associations. You may want to make references to your favourite Youtubers, vloggers, TikTokers, etc, but please critically evaluate the credibility and accuracy of their content. At the same time, I value anecdotal stories and experience from wise elders. When appropriate, please share.

Prepare a memory aide for your midterms and final. In the past, I have allowed the use of memory aides (aka cheat sheets) in in-person, paper-based exams. Many students found that creating one helped them better understand, digest, and synthesize course content. Althouhg our midterms and final will be open book and open 'internet', I still encourage you to prepare a self-made outline or memory aide. It will save you time valuable time during our tightly timed exams, much more than using 'Ctrl + F' on your device.

I'm a part-time, contract instructor who teaches once a year. I started teaching FNH 200 online in 2020 after many years of face-to-face teaching. Some of you may have taken other courses on line, and this could be the first online course for some. Whatever you need, please let me know using the QR code on p. 1.

I look forward to exploring food sciences with you all. Online learning gives us a unique opportunity to glimpse foods from around the globe. No matter your reason for taking FNH 200 this summer, I hope you will find joy in discovering the magical sciences behind foods, something we all eat everyday!

By the way, learning is important, but so is your wellbeing. If you need to walk away during our synchronous meeting for a cup of tea, please do! If your internet cuts out during a midterm, We will find a time to make it up later. Life happens, let's figure it out together when it does.

I look forward to meeting you all on July 3, as early as 8:30 am PDT for those who would like to chat or ask me questions. Our official class runs from 9:00 to 10:50 am PDT, and they will be recorded. Dedicated group and team meeting time is from 11:00 to 11:50 am.

Warm regards,
Judy, she/her

- A professional during the day, a mom, daughter, wife, sister, and auntie in the evening and on the weekend
- Love foods, love sciences of foods, love eating foods, love prepping simple meals, but not fancy ones!
- Born in Hong Kong, came to Vancouver as an ESL student in high school, and studied at UBC
- All icons on this syllabus are from: https://thenounproject.com/; avatar created with https://getavataaars.com/
- I am teaching from my home in South Vancouver, tradition homeland of people from səl̓ilwətaʔɬ təməxʷ (Tsleil-Waututh), xʷməθkʷəy̓əm, Stz'uminus, and S'ólh Téméxw (Stó:lō) First Nations. As a first generation settler who arrived in the 90s, I didn't know much about Indigenous history in Canada until around 2010. At that time, my daughter was starting daycare. The thought of her being taken away from me, as so many children were during the residential schools era broke my heart. I continue to learn and reflect, and I hope no other child is ever taken from their family again, anywhere in the world.

Institute of Food Technologists (IFT)

UBC's Food Science Program is one of few in Canada that are approved by the Institute of Food Technologists (IFT), an internationally recognized leader in undergraduate education standards for degrees in Food Science. Programs with this approval badge are recognized as delivering a comprehensive Food Science education that covers 55 essential learning outcomes (ELOs) established by the IFT organization. In FNH 200, we begin to introduce some of these learning outcomes, as highlighted, for students interested in further exploration of food sciences.

Institute of Food Technologists Essential Learning Objectives (IFT ELOs)

Food chemistry (FC)

- FC.1. Discuss the major chemical reactions that limit shelf life of foods.
- FC.2. Explain the chemistry underlying the properties and reactions of various food components.
- FC.3. Apply food chemistry principles used to control reactions in foods.
- FC.4. Demonstrate laboratory techniques common to basic and applied food chemistry.
- FC.5. Demonstrate practical proficiency in a food analysis laboratory.
- FC.6. Explain the principles behind analytical techniques associated with food.
- FC.7. Evaluate the appropriate analytical technique when presented with a practical problem.
- FC.8. Design an appropriate analytical approach to solve a practical problem.

Food microbiology (FM)

- FM.1. Identify relevant beneficial, pathogenic, and spoilage microorganisms in foods and the conditions under which they grow.
- FM.2. Describe the conditions under which relevant pathogens are destroyed or controlled in foods.
- FM.3. Apply laboratory techniques to identify microorganisms in foods.
- FM.4. Explain the principles involved in food preservation via fermentation processes.
- FM.5. Discuss the role and significance of adaptation and environmental factors (e.g., water activity, pH, temperature) on growth response and inactivation of microorganisms in various environments.
- FM.6. Choose relevant laboratory techniques to identify microorganisms in foods.

Food safety (FS)

- FS.1. Identify potential hazards and food safety issues in specific foods.
- FS.2. Describe routes of physical, chemical, and biological contamination of foods.
- FS.3. Discuss methods for controlling physical, chemical and biological hazards.
- FS.4. Evaluate the conditions, including sanitation practices, under which relevant pathogenic microorganisms are commonly controlled in foods.
- FS.5. Select appropriate environmental sampling techniques.
- FS.6. Design a food safety plan for the manufacture of a specific food.

Food engineering and processing (FE)

- FE.1. Define principles of food engineering (mass and heat transfer, fluid flow, thermodynamics).
- FE.2. Formulate mass and energy balances for a given food manufacturing process.
- FE.3. Explain the source and variability of raw food materials and their impact on food processing operations.
- FE.4. Design processing methods that make safe, high-quality foods.
- FE.5. Use unit operations to produce a given food product in a laboratory or pilot plant.
- FE.6. Explain the effects of preservation and processing methods on product quality.
- FE.7. List properties and uses of various packaging materials and methods.
- FE.8. Describe principles and practices of cleaning and sanitation in food processing facilities.
- FE.9. Define principles and methods of water and waste management.

Sensory science (SS)

- SS.1. Discuss the physiological and psychological basis for sensory evaluation.
- SS.2. Apply experimental designs and statistical methods to sensory studies.
- SS.3. Select sensory methodologies to solve specific problems in food.

Quality assurance (QA)

- QA.1. Define food quality and food safety terms.
- QA.2. Apply principles of quality assurance and control.
- QA.3. Develop standards and specifications for a given food product.
- QA.4. Evaluate food quality assessment systems (e.g. statistical process control).

Food laws and regulations (FL)

- FL.1. Recall government regulatory frameworks required for the manufacture and sale of food products.
- FL.2. Describe the processes involved in formulating food policy.
- FL.3. Locate sources of food laws and regulations.
- FL.4. Examine issues related to food laws and regulations.

Data and Statistical Analysis (DS)

- DS.1. Use statistical principles in food science applications.
- DS.2. Employ appropriate data collection and analysis technologies.
- DS.3. Construct visual representation of data.

Critical thinking and problem solving (CT)

- CT.1. Locate evidence-based scientific information resources.
- CT.2. Apply critical thinking skills to solve problems.
- CT.3. Apply principles of food science in practical, real-world situations and problems.
- CT.4. Select appropriate analytical techniques when presented with a practical problem.
- CT.5. Evaluate scientific information.

Food Science Communication (CM)

- CM.1. Write relevant technical documents.
- CM.2. Create oral presentations.
- CM.3. Assemble food science information for a variety of audiences.

Professionalism and leadership (PL)

- PL.1. Demonstrate the ability to work independently and in teams.
- PL.2. Discriminate tasks to achieve a given outcome.
- PL.3. Describe social and cultural competence relative to diversity and inclusion.
- PL.4. Discuss examples of ethical issues in food science