

Course Details

Course Title: Food Processing 2

Course Number: FOOD 4010

Term: Fall 2022

Credit Hours: 3

Pre-requisites: FOOD 3010: Food Processing 1 or Equivalent

Class times & days: Tuesdays and Thursdays: 1:00 – 2:15 pm

Class location: Agriculture building, room 134

Lab/tour days & times: Wednesdays: 2:30 – 5:25 pm

Lab location: Ellis building, pilot plant (room 216)

Tour location: Meeting point: Ellis building, pilot plant (room 216)

Instructor Contact Information

Name: Dr. Filiz Koksel (she/her)

How you can address me: Dr. Koksel, Dr. Filiz or Filiz

Email: Filiz.Koksel@umanitoba.ca (preferred method of communication).

I will respond to your emails within 48 hours, excluding holidays and weekends.

For email etiquette, please see the file: [E-mail etiquette - FOOD-4010-K01 - Food Process 2 \(desire2learn.com\)](#).



Office location: (1) Ellis Building, room 205. (2) Richardson Centre for Food Technology and Research (RCFTR), room 112.

Office Phone: 204 474 6486

Office hours: Arrangement of a mutually convenient time. To book an appointment, please send me an email.

Traditional Territory/Land Acknowledgment

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.

Equity And Inclusion Commitment

There are multiple ways to engage in this course to accommodate your personal circumstances and preferences. Where possible, you will be given the opportunity to make decisions about what and how you learn.

I honor your identities (e.g., race, gender, sexual orientation, class, size, ability, etc.) and commit to interrupting any form of oppression based on these categories and amplifying under-represented voices.

Course Description

U of M Course Calendar Description

The processing of specific food groups is covered. The functions and changes in the primary chemical components (carbohydrates, proteins and lipids) of the commodities receive special consideration. New technologies including thermal/nonthermal processing, radiation, extrusion, minimal processing and other advanced processing methods are studied.

General Course Description and Course Goals

This course is a foundational course for the Food Science discipline. However, it fits into the broader program of studies such as Nutritional Sciences, Biosystems Engineering, Agriculture Engineering, Animal Science, Plant Science, Agronomy and most of agricultural disciplines, in particular agri-food programs.

Throughout the term, you will have several hands-on and experiential learning opportunities (on and off-site) to practice the processing of specific food groups. In addition, you will get to interact with several food processing experts from the industry, provincial and/or federal government and guest lecturers.

The goal of this course is to facilitate an understanding of food chemistry principles in order to assess how the properties of various food components limit the shelf life of foods, analyze the mechanisms by which a range of physical processes are employed in various advanced food processing operations to optimize food quality and extend shelf life of foods, and apply basic physical and chemical principles to food science issues

Course Learning Outcomes

By the end of this course, you should be able to:

1. Assess how processing tools can be employed to limit the dynamics of food deterioration.
2. Explain the effect of various physical processes employed in food processing on the chemistry of various food components.
3. Distinguish the source and variability of raw food material and how it affects various food processing operations.
4. Compare the role of transport processes and unit operations in food processing and show how various unit operations are linked to produce a given food product.
5. Construct process flow diagrams from visits to food processing facilities, and critique the flow for critical control points related to product safety and quality.
6. Quantify the extent to which certain process operations in the food industry affect the survival of pathogenic and spoilage microorganisms.

Course Materials

Required Materials

There is no required textbook for this course.

Readings

I follow the textbook below throughout the term:

Food Processing Technology – Principles and Practice (2016). P. J. Fellows. Third edition. CRC Press, Woodhead Publishing Limited. Full text available in electronic format through [University of Manitoba Libraries](https://umanitoba.ca/libraries/) (<https://umanitoba.ca/libraries/>)

Before coming to labs and tours, you need to read the lab and tour handouts and watch the respective videos posted on UM Learn.

Supplies

You need to bring your own lab coat to the lab sessions. You will not be allowed to perform the lab session without a lab coat (safety concern). The FHNS Department does not rent lab coats. You can purchase one from the [UM Bookstore](#).

Technology

You need a smartphone (or a tablet, or a laptop) onto which you need to install iClicker Student. Using your smartphone (or tablet, or laptop), visit the appropriate app store and search for iClicker Student (formerly iClicker Reef). Follow the prompts to install the application.

All course related materials (including, syllabus, notes, tour handouts, lab handouts, tour and lab rubrics) are available in UM Learn.

Course Schedule

This schedule is subject to change at the discretion of Dr. Koksel 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) (<https://umanitoba.ca/governance/governing-documents-academic#responsibilities-of-academic-staff-with-regard-to-students>).

Week	Date	Class Content & Teaching Strategies	Required Readings or any Pre-Class Preparation	Evaluation
Week 1	Sep 8 (Thu)	Introduction & History of food processing	Syllabus & installation of iClicker Student	iClicker
Week 2	Sep 13 (Tue)	Size reduction of solid foods, Milling	Lecture notes on UM Learn	iClicker
	Sep 15 (Thu)	Mixing and forming	Lecture notes on UM Learn	iClicker
Week 3	Sep 20 (Tue)	Separation and concentration of food components	Lecture notes on UM Learn	iClicker
	Sep 22 (Thu)			
Week 4	Sep 27 (Tue)	Fermentation	Lecture notes on UM Learn	iClicker
	Sep 29 (Thu)	High pressure processing	Lecture notes on UM Learn	Quiz
Week 5	Oct 4 (Tue)	Minimal processing methods under development	Lecture notes on UM Learn	iClicker
	Oct 6 (Thu)			
Week 6	Oct 11 (Tue)	Guest lecturer: Water sustainability and wastewater management	Lecture notes on UM Learn	Muddiest point
	Oct 13 (Thu)			
Week 7	Oct 18 (Tue)	MIDTERM		
	Oct 20 (Thu)	Extrusion	Lecture notes on UM Learn	iClicker

Week 8	Oct 25 (Tue)	Extrusion	Lecture notes on UM Learn	iClicker
	Oct 27 (Thu)	Dehydration	Lecture notes on UM Learn	iClicker
Week 9	Nov 1 (Tue) Nov 3 (Thu)	Guest lecturer: Blanching, pasteurization, heat sterilization	Lecture notes on UM Learn	Muddiest point
Week 10	Nov 8 (Tue) Nov 10 (Thu)	FALL TERM BREAK		
Week 11	Nov 15 (Tue)	Baking	Lecture notes on UM Learn	iClicker
	Nov 17 (Thu)	Evaporation	Lecture notes on UM Learn	Quiz
Week 12	Nov 22 (Tue)	Distillation	Lecture notes on UM Learn	iClicker
	Nov 24 (Thu)	Infrared and dielectric heating	Lecture notes on UM Learn	iClicker
Week 13	Nov 29 (Tue)	Ohmic heating	Lecture notes on UM Learn	iClicker
	Dec 1 (Thu)	Chilling, freezing	Lecture notes on UM Learn	iClicker
Week 14	Dec 6 (Tue)	Freeze concentration	Lecture notes on UM Learn	iClicker
	Dec 8 (Thu)	Practice for final exam	Example questions on UM Learn	iClicker

Course Evaluation/Assessments

Assessment Descriptions

Class participation: 10% of your overall grade

- **Procedure:** Recorded through answering questions (multiple choice, short answer, etc.) using iClicker.
- **Submission Guidelines:** Submission during the class time through iClicker Student account.
- **Evaluation Criteria:** Answers reviewed in class. Grades available in iClicker Student at the end of the class.

Lab attendance and reports: 20% of your overall grade

- **Procedure:** Attendance will be taken at the beginning of each lab session. You will lose 1% of your mark for each minute you are late. Any communication related to the labs should first be directed to your teaching assistant (TA).
- **Submission Guidelines:** Lab reports need to be uploaded to UM Learn. Reports are due 2 weeks after a lab, not later than 5 pm of the day 14. You are not allowed to hand over lab reports without attending the lab sessions. You will submit your own report and be marked individually, despite performing the labs in groups. Any evidence of plagiarism in reports (e.g., whether from another lab partner, or group, or lab reports from previous courses or years) will result in "0" mark, and the matter will be subject to disciplinary action in accordance with university policy on academic misconduct.
- **Evaluation Criteria:** Lab report guidelines are specific to individual lab sessions and more information (and rubric) is provided on UM Learn. Late reports will lose 10% of credit for submission after the due date, and 10% for each additional day late.

Tour attendance and reports: 10% of your overall grade

- **Procedure:** Attendance will be taken at the beginning of each tour session. You will lose 3% of your mark for each minute you are late. Any communication related to the tours should first be directed to your teaching assistant (TA).
- **Submission Guidelines:** Tour reports need to be uploaded to UM Learn. Reports are due 2 weeks after a tour, not later than 5 pm of the day 14. You are not allowed to hand over tour reports without attending the tour sessions. You will submit your own report and be marked individually, despite performing the tours in groups. Any evidence of plagiarism in reports (e.g., whether from another group or tour reports from previous courses or years) will result in "0" mark, and the matter will be subject to disciplinary action in accordance with university policy on academic misconduct.
- **Evaluation Criteria:** Tour report guidelines are specific to individual tour sessions and more information (and rubric) is provided on UM Learn. Late reports will lose 10% of credit for submission after the due date, and 10% for each additional day late.

Quizzes: 5 + 5 = 10% of your overall grade

- **Procedure:** Written in class and include multiple choice, short answer, etc. type questions.
- **Submission Guidelines:** Submission during the class time to Dr. Koksel.
- **Evaluation Criteria:** Answers reviewed in class. Grades will be available in UM Learn within 2 weeks of a quiz.

Midterm exam: 20% of your overall grade

- **Procedure:** Written in class and include multiple choice, short answer, long answer (i.e., essays) etc. type questions.
- **Submission Guidelines:** Submission, during class time, at the end of the exam to Dr. Koksel (or the exam invigilator).

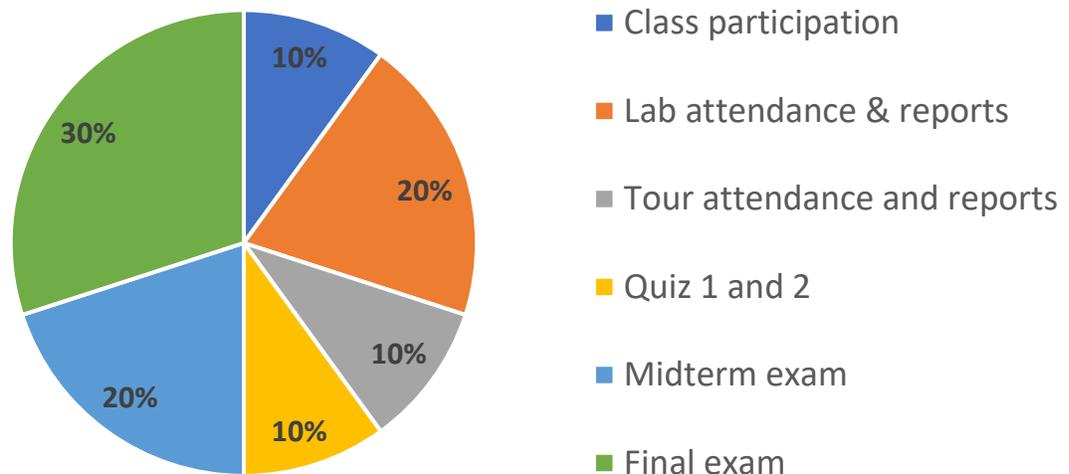
- **Evaluation Criteria:** Answers reviewed in class. Grades will be available in UM Learn within 2 weeks of the midterm.

Final exam: 30% of your overall grade

- **Procedure:** Will include multiple choice, short answer, etc. type questions. Date will be set later by the UM.
- **Submission Guidelines:** Submission at the end of the exam time to Dr. Koksel (or the exam invigilator).
- **Evaluation Criteria:** Grades will be available in UM Learn within 2 weeks of the final exam.

Summary

Breakdown of course assessments:



Assignment Feedback

I will provide you feedback in formative form (i.e., feedback while learning is still in progress; not typically graded) quarterly during the term. I will also provide you summative feedback (i.e., feedback when something is complete; typically graded) after each quiz (through UM Learn) and after the midterm. My feedback on the midterm will be in-person. In addition, you will receive summative feedback on your tour and lab reports (through UM Learn) as well as your in-class participation activities (i.e., through your iClicker account).

My feedback will be delivered through UM Learn

You can expect to receive your feedback within 2 weeks of tour and lab report submission. Within two weeks of the quizzes, the midterm and the final.

Labs/Tours

Expectations

You will be trained by Dr. Koksel and/or your teaching assistant (TA) on how to handle equipment during the lab sessions.

Lab/tour handouts, videos and instructions for certain labs/tours as well as the rubrics for the lab/tour reports are available on UM Learn.

Please book an appointment directly with your TA for questions or concerns about the labs/tours and reports. If you need further clarifications on the labs/tours or reports, you can reach Dr. Koksel via email. The preferred method of communication with your TA is email (Neeraj.Ghanghas@umanitoba.ca).

Lab/Tour Schedule

A suggested table format is below.

Week	Date	Lab/Tour Content & Teaching Strategies	Required Readings or any Pre-Class Preparation	Evaluation
Week 3	Sep 21 (Wed)	Tour to Cereals Canada	Arrive 5 min early for bus transportation to Cereals Canada. Read the report rubric.	Tour report, due Oct 5. 5% of your overall grade.
Week 6	Oct 12 (Wed)	Tour to Half Pints Brewery	Arrive 5 min early for bus transportation to Half Pints Brewery. Read the report rubric.	Tour report, due Oct 26. 5% of your overall grade.
Week 7	Oct 19 (Wed) & Oct 26 (Wed)	Water sustainability and wastewater management lab	Read the lab handout	Lab report, due Nov 16. 5% of your overall grade.
Week 9	Nov 2 (Wed)	Extrusion lab	Read the lab handout	Lab report, due Nov 16. 5% of your overall grade.

Week 11	Nov 16 (Wed)	Baking lab - <i>This is a take home lab!</i>	Read the lab handout and instructions. Watch the recipe video.	Lab report, due Nov 30. 5% of your overall grade.
Week 13	Nov 30 (Wed)	Infrared heating lab	Read the lab handout	Lab report, due Dec 14. 5% of your overall grade.

Grading

Extra credit opportunities will not be available. The grading scale table is given below.

Letter Grade	Percentage out of 100	Grade Point Range	Final Grade Point
A+	93-100	4.25-4.5	4.5
A	86-92	3.75-4.24	4.0
B+	79-85	3.25-3.74	3.5
B	71-78	2.75-3.24	3.0
C+	64-70	2.25-2.74	2.5
C	58-63	2.0-2.24	2.0
D	50-57	Less than 2.0	1.0
F	Less than 50		0

Expectations

To be successful in this class, you need to review the course materials, complete the pre-class (pre-lab and pre-tour) work and ask for help when you need it.

Please refer to the [Respectful Work and Learning Environment Policy \(https://bit.ly/3aMI7nE\)](https://bit.ly/3aMI7nE) for activities in class, lab sessions and tours.

Course Policies

Academic Integrity

Each student in this course is expected to complete their coursework and programs of study with integrity by making a commitment to the six fundamental values of honesty, trust, fairness, respect, responsibility, and courage.

In this course, academic integrity looks like referencing the work of others that you have used and completing your assignments independently unless otherwise specified. For assignments/projects where you are encouraged to work in a group or team, ensure that your assignment/project is completed with integrity. You must also do your own work during exams.

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

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) (<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

Your class attendance is not mandatory for passing this course. But, remember that class participation (recorded through iClicker) is worth 10% of your overall grade. If your participation is impacted by observing religious holidays, any disabilities, facing food and housing insecurity, parenting, etc. please contact Dr. Koxsel as soon as possible at the beginning of the term.

If you miss a tour/lab you are not allowed to hand in a report.

Assignment Extension and Late Submission Policy

Labs: You will lose 1% of your mark for each minute you are late for a lab session. Late reports will lose 10% of credit for submission after the due date, and 10% for each additional day late.

Tours: You will lose 3% of your mark for each minute you are late for a tour. Late reports will lose 10% of credit for submission after the due date, and 10% for each additional day late.

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.

For email etiquette, please see the file: [E-mail etiquette - FOOD-4010-K01 - Food Process 2 \(desire2learn.com\)](#).

Recording Class Lectures

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 Dr. Koxsel. Course materials (both paper and digital) are for the participant's private study and research.

Referencing Style

In all reports, use the referencing style of the journal [Food Research International](#).

Technology Use

[Respectful Work and Learning Environment policy \(RWLE\)](#) (<https://bit.ly/3OxGtnd>) is applicable in all University-related activities, even ones happening in online environments such as social media platforms. It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical, and legal manner.

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.