



UM | Faculty of Agricultural
and Food Sciences

Syllabus

FOOD 4150 Food Microbiology

(Fall 2022)



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COURSE DETAILS

Course Title & Number:	Food Microbiology 4150
Number of Credit Hours:	3
Class Times & Days of Week:	MWF 9:30 am – 10:20 am
Location for classes/labs/tutorials:	172 Agriculture: Lectures Ellis Building – room Laboratory B01: Monday 2:30 - 3:55 pm B02: Monday 4:00 - 5:25 pm B03: Tuesday 2:30 - 3:55 pm B04: Tuesday 4:00 – 5:25 pm B05: Tuesday: 10- 11:25 am
Pre-Requisites:	No course pre-requisite is necessary. However, an introductory course in microbiology is strongly recommended since several topics to be covered will assume prior knowledge of specific microbiological terms and concepts. Some independent reviews of microbiology may be needed by some students to bring them to the average initial awareness level of students in the class.

Instructor Contact Information

Instructor(s) Name & Preferred Form of Address:	Claudia Narvaez-Bravo, please address me by Dr. Narvaez or Professor Narvaez
Office Location:	238 Ellis building
Office Hours or Availability:	By appointment. I am generally in my office, 238 Ellis Building, from 8:30 a.m. - 4:30 p.m. daily, and I'm readily available with a prior arrangement. To make an appointment, please use the UML email system.
Office Phone No.	204-474-6658
Email:	Claudia.narvaezbravo@ad.umanitoba.ca <i>Note:</i> All email communication must conform to the Communicating with Students university policy.
Contact:	By email

Teaching Assistant (TA) and Markers

Daniel Mayboca (TA & Marker)

Office: Ellis building room # 262

Kavitha Koti (TA)

Office Ellis building room 260

Haque, Md Mahamudul (Marker)

Email

maybocad@myumanitoba.ca

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Contact

By email, previous appointment

Course Description**U of M Course Calendar Description**

Relationships of microorganisms to processing and spoilage of food.

General Course Description

FOOD4150 focuses on the significance of the presence and/or growth of microorganisms in foods and their importance in the production and safety of foods. Contents include the microbial ecology of food, beneficial microorganisms in food systems, pathogenic and spoilage microorganisms, toxins, characteristics of foodborne infection, food intoxication and the influence within the food system of the growth and survival of microorganisms and contaminants that may occur in a food-processing environment. Food preservation and food processing related to food microbiology are also discussed.

This course has a laboratory section that deals with conventional and rapid methods for testing food products, including microbial indicators and foodborne pathogens. Good manufacture practices (GMP), Standard Operating Procedures (SOP), and HACCP basics will be introduced. Food microbiology addresses the safety and quality of foods. Food microbiology is an essential discipline that connects with fields related to food production and processing (pre and post-harvest level). Microbes play a crucial role in food preservation, food safety, human health, and food biotechnology, and all of them are essential aspects of food production. You will have the opportunity to learn and have hands-on experience in different techniques (conventional and rapid) to enumerate and identify bacteria related to food in the laboratory. To support experiential learning FOOD4150 is also working with Riipen. Riipen helps to bring real industry and real-world industry projects into the classroom.

Course Goals

Food microbiology is an exciting field, technologically dynamic and fundamental for food development, food production, and public health; it assists us in answering questions arising from food production and food technology disciplines supporting a multibillion-dollar food industry. Food Microbiology not only assures the quality and shelf life of different food products but also ensures that food products are safe for the consumer. The production of food under food safety parameters and regulations is beyond the simple memorization of knowledge. It requires critical thinking, integration of knowledge, and innovative

approaches to problem-solving. It will help students to foster these skills throughout, using a variety of teaching methods, including lecturing, group discussion, and other activities in the classroom. This course will combine classroom lectures with a laboratory environment on the fundamentals of food microbiology and food safety. Additionally, the student's written skills will be improved through multiple writing assignments, including laboratory reports.

General Course Learning Objectives

- Define microbial food spoilage, food quality, food safety and the factors affecting the growth and control of microorganisms in food
- Identify relevant beneficial, pathogenic and spoilage microorganisms in foods and the conditions under which they grow
- Articulate the use of hurdle technology and food preservation in the control of foodborne pathogens in food systems.
- Describe the conditions under which relevant pathogens are commonly destroyed or controlled in foods
- Discuss the principles of food preservations and to describe the different food preservation methods.
- Describe the role of beneficial microorganisms in food processing, preservation and safety, and their potential health benefits
- Explain the causes of foodborne microbial diseases and predict the pathogens that can grow in any given food during different stages of the food production system
- Explain the different factors that take place during food processing and how food can be contaminated in the food continuum (pre and post-harvest level)
- Identify potential hazards and food safety issues in specific foods
- Describe routes of physical, chemical, and biological contamination of foods
- Recognize and articulate the importance of SSOP, GMP and HACCP in the food industry
- Discuss methods for controlling physical, chemical, and biological hazards
- Apply laboratory techniques to identify microorganism in foods
- Apply rapid microbiology techniques to assess food safety and quality
- Demonstrate the use of appropriate lab techniques commonly used in the food microbiology laboratory
- Work effectively as a team in designing and using food microbiology laboratories and in-class activities

Note: specific learning outcomes will be delivered in each lecture

Foundational Knowledge Content Areas for Dietetic Education

This dietetic education program is an accredited program by the Partnership for Dietetic Education and Practice (PDEP) and prepares students for eligibility for registration with a provincial dietetics regulatory body.

Highest level achieved: 1= demonstrate broad knowledge; 2= demonstrate comprehensions; 3= analyze, interpret and apply knowledge.

Content Area	Foundational Knowledge	Cognitive Complexity Level
Communication	Strategies for effective written communication	3
	Strategies for effective interpersonal communication	3
Food	Physical properties and chemical composition of food	2
	Food preservation, storage, and packaging	1
	Foodborne illness	2
Food Service Systems	Quantity food production and distribution	2
	Hazard Analysis and Critical Control Points (HACCP)	2
Interprofessional Collaboration	Interprofessional communication	2
	Team functioning	1
	Collaborative leadership	1
Management	Organizational behaviour and development	1
Microbiology	Classification of microbes	1
	Microbes in food safety	2
	Host-vector spread of infection and risk management	2
	Microbes in food production including prebiotic and probiotics	1
Professional Practice in Dietetics	Ethical conduct	3
	Reflective practice	2
	Professional development	1
	Decision making	2

Textbook, Readings, and Course Materials

Recommended textbook: Food Microbiology. An Introduction. Edited by Thomas J. Montville and Karl R. Mathews (2017). 2nd Ed. ASM Press.

Note: the textbook is available online, You can also use older editions that can be found at the university library. You can also revise the material in other microbiology books:

- Modern Food Microbiology, edited by Jay J.M., Loessner, M.J. and Golden, D.A. (2005), 7th ed. Springer, New York, NY.
- Food Microbiology: Fundamentals and Frontiers, edited by Doyle, M. P., and Beuchat,

R. L. (2007) 3rd ed. ASM Press, Washington, DC

[University of Manitoba Libraries](#)

FOOD4150 Laboratory Manual: Available at UML under the content tab.

Supplementary readings

- A Guide to Writing in the Sciences. Gilpin, A.A., Patchet-Golubev, P. University of Toronto Press 2000.
- Lab Math: A Handbook of Measurements, Calculations, and Other Quantitative Skills for Use at the Bench By Dany Spencer Adams. <http://www.amazon.ca/Lab-Math-Measurements-Calculations-Quantitative/dp/0879696346>
- Compendium of Methods for the Microbial Examination of Foods. Edited by Downes, F.P. and Ito, K. (2001) 4th ed. American Public Health Assoc.

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 (videos, power point slides, etc), 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, unless an exception to the *Copyright Act* applies or written permission has been confirmed. For more information, see the University's Copyright Office website at <http://umanitoba.ca/copyright/> or contact um_copyright@umanitoba.ca.

Course Technology

I will be using the iclicker student response system in class this Fall 2020 term. Please make sure you install iclicker reff in your smart/iphone phone. iClicker helps me to understand what you know and gives everyone a chance to participate in class. I will check for attendance using iclicker. You will also get bonus marks for your class participation using iClicker.

For the course management, I will be using UM Learn.

In addition, the use of other technology (i.e., tablets, cellphones, laptops, etc.) is allowed in the classroom. It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner.

Expectations: I Expect You To

The student is expected to participate actively in the course. Active participation means: actively listening and responding to questions in class (I do not expect perfection!); staying on top of lecture material and assignments, and seeking help on course material that is not clear.

PowerPoint presentations summarise only a portion of the knowledge content that needs to be covered in class. For the rest of the contents, you are expected to read the required textbook.

Videos will be provided for the lab component, and please read your lab manual before you check the videos; that will facilitate learning.

I expect students to connect on time and to be prepared to learn.

If you experience connection issues and arrive late, I expect you to make sure that you mute yourself, that way you won't disrupt the class. I expect that you will appreciate the diversity of our campus and respect the rights of each member of the class.

Attendance and participation are essential elements to the student's success in this course. Attendance is not mandatory; however, you will not get credit for an in-class assignment if you are absent on the day it is given.

I will be connected for class at least 10 minutes before starting with the lecture content if you need to ask a quick question or talk to me about any issue related to the class. I will treat you with respect and will appreciate the same courtesy in return. For more information regarding a respectful work and learning environment, please visit the following link:

Please See [Respectful Work and Learning Environment Policy](#).

I expect you to follow these policies around Class Communication, Academic Integrity, and Recording Class Lectures.

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.

Academic Integrity:

Each student in this course is expected to abide by the University of Manitoba [Academic Integrity principles](#). Always remember to reference the work of others that you have used. Also be advised that you are required to complete your assignments independently unless otherwise specified. If you are encouraged to work in a team, ensure that your project complies with the academic integrity regulations. You must do your own work during exams. Inappropriate collaborative behavior and violation of other Academic Integrity principles, will lead to the serious [disciplinary action](#). Visit the [Academic Calendar](#), [Student Advocacy](#), and [Academic Integrity](#) web pages for more information and support.

Refer to specific course requirements for academic integrity for individual and group work such as:

- I. Group projects are subject to the rules of academic dishonesty;
- II. Group members must ensure that a group project adheres to the principles of academic integrity;
- III. Students should also be made aware of any specific instructions concerning study groups and individual assignments;
- IV. The limits of collaboration on assignments should be defined as explicitly as possible; and
- V. All work should be completed independently unless otherwise specified.

Recording Class Lectures:

Videos covering the laboratory sessions will be provided by the instructor. The instructor will also record the lectures. Course materials (both paper and digital) are for the participant's private study and research.

Student Accessibility Services:

The University of Manitoba is committed to providing an accessible academic community. [Students Accessibility Services \(SAS\)](#) 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.

Student Accessibility Services
520 University Centre
Phone: (204) 474-7423
Email: Student_accessibility@umanitoba.ca

Expectations: You Can Expect Me To

You can expect me to be on time and prepared for class.

You can expect me to be available for consultation regularly.

Email is my preferred method of communication; you can expect to receive a response to any email within 24 hours on **weekdays**.

If you have a question that cannot wait, you may send an email. I will be happy to answer it, however, make sure you are asking a relevant question (i.e. you could not find the answer or get an understanding of the material after reviewing the class notes, videos or textbook). I will be glad to offer brief advice about the class material or an assignment.

All assignments handed in on time will be graded and returned within two weeks of the due date; late assignments will be graded as my time permits.

You can expect me to treat all of your questions and comments with respect and to take your concerns seriously. If you are having a problem, don't hesitate to talk to me about it. Don't wait until the last moment to realize that you need some marks to pass the course! I won't be able to help you at this point.

CLASS SCHEDULE AND COURSE EVALUATION

Note: The lecture or laboratory schedule is subject to change, students will be notified in advance.

[Course Schedule](#) sept 7 Dec 12

Date	Topics, Readings, Assignments
Sept 7	Introduction
Sept 9	Microbiology: basic review.

	Mandatory reading: Montville, Section 2. Pages 15, 18, 19, 20, 21, 22, 23
Sept 12	Microbiology: Sample Reception and preparation for microbiological analysis, enumeration. Mandatory reading: Montville, Chapter 4: Detection and enumeration of microbes in food.
Sept 14	Indicator microorganism. Standards, guideline and specifications
Sept 16	Methods to Detect Coliforms, faecal coliforms and <i>E. coli</i> . Mandatory reading: Compendium of Methods for Microbial examination of foods. 4th Ed. 6.4. Most Probable Number Techniques
Sept 19	ContinuationMethods to Detect Coliforms, faecal coliforms and <i>E. coli</i> . Mandatory reading: Compendium of Methods for Microbial examination of foods. 4th Ed. 6.4. Most Probable Number Techniques
Sept 21	Yeast and molds
Sept 23	Hurdle Technology
Sept 26	Group activity 1: Hurdle Technology. Introduction/teamwork and critical thinking. Mandatory reading: Montville, Chapter 2. Microbial Growth, survival and death in foods.
Sept 28	Spoilage introduction, Meat, poultry and seafood. Book reading Montville: Chapter 21 Chapter 21. Page 299-306.
Sep 30	National Truth and Reconciliation Day
Oct 3	Meat, poultry and seafood/ Cross contamination demo
Oct 5	Milk and Dairy Products/fruits and vegetables Book reading Montville: Chapter 21. Pages 309-322.
Oct 7	Control of microorganisms in foods: Chemical preservation/ Modified Atmosphere Package. Book reading Montville: Chapter 25. Pages 403-418
Oct 10	Thanksgiving
Oct 12	Control of microorganisms in foods: Food Preservation: High-temperature processing, Low-temperature preservation. Book reading Montville: Chapter 27. Pages 432-445
Oct 14	Bio-preservation Book reading Montville: Chapter 26. Pages 419-431.
Oct 17	Midterm 1

Oct 21	Foodborne Intoxications and Toxico-Infections: <i>S. aureus</i> and <i>B. cereus</i>
Oct 24	Foodborne Intoxications and Toxico-Infections: <i>C. botulinum</i> and <i>C. perfringens</i>
Oct 26	Foodborne infections - <i>Salmonella</i> - <i>Listeria</i>
Oct 28	- <i>Campylobacter</i>
Oct 31	Foodborne infections: <i>E. coli</i>
Nov 2	Foodborne infections: - <i>Shigella</i> , <i>Yersinia</i> - <i>Vibrio paraheamolyticus</i> - Norovirus, Hepatitis A
Nov 4	Molecular methods for foodborne pathogens detection: Introduction to PCR
Nov 7-10	Fall term break
Nov 11	Remembrance day
Nov 14	Biofilms in the Food Industry
Nov 16	Cleaning and sanitation. Book reading Montville. Chapter 9. Page 471
Nov 18	Sanitation and Standard Operating Procedures (SSOP). Book reading. Chapter 29. Page 474
Nov 21	Sanitation and Standard Operating Procedures (SSOP). Book reading. Chapter 29. Page 474. Continues...
Nov 23	Good Manufacture Practices. Book reading. Chapter 29. Page 466 Mandatory reading: Chapter 1 Prerequisites to HACCP (Posted UML)
Nov 25	Good Manufacture Practices. Book reading. Chapter 29. Page 466 Mandatory reading: Chapter 1 Prerequisites to HACCP (Posted UML)...continues
Nov 28	Lecture: Food hygiene Monitoring
Nov 30	HACCP: Introduction, Hazard analysis and critical control points Book reading. Chapter 29. Page 474 Mandatory reading: Chapter 2. Hazard Analysis and Critical Control Points Principles and Application Guidelines (Posted UML)

Dec 2	HACCP: Biological, chemical and physical hazards, Critical limits, Monitoring procedures, corrective actions
Dec 5	HACCP: Verification, record keeping and documentation procedures
Dec 7	HACCP Presentations
Dec 9	HACCP Presentations
Dec 12	Invited lecturer: "Foodborne Disease Surveillance and Outbreak Response in Canada" Celine Nadon, PhD. Chief, Enteric Diseases National Microbiology Laboratory Public Health Agency of Canada Note: Waiting for confirmation
Final Exam	Venue and Time to be determined

Food Microbiology in-person Lab Schedule

Laboratory	Date	Lab Report Due Date
Lab# 1 Serial dilution	Monday Sept. 19 Tuesday Sept. 20	No report
Lab #2 Petrifilm <ul style="list-style-type: none"> Standard Plate Count Method Yeast and Mold Coliform & <i>E.coli</i> 	Monday Sept. 26 Tuesday Sept. 27	Oct. 11
Lab #4 Enterococci & <i>S. aureus</i>	Monday Oct.3 Tuesday Oct.4	Oct. 18
No Labs (Thanksgiving)	Monday Oct. 10 Tuesday Oct. 11	
Lab #3 Most Probable Method (MPN)	Monday Oct. 17 Tuesday Oct. 18	
Lab #3 Most Probable Method (MPN) continued	Monday Oct. 24 Tuesday Oct. 25	Nov. 8
Lab #5 Bacillus cereus	Monday Oct. 31 Tuesday Nov. 1	Nov. 15

No Labs (Fall break)	Monday Nov. 7 Tuesday Nov. 8	
Lab #6 <i>Salmonella</i>	Monday Nov. 14 Tuesday Nov. 15	Nov. 29
Lab #7 Molecular Rapid Detection Methods	Monday Nov. 21 Tuesday Nov. 22	Dec. 6
Lab #8 ATP	Monday Nov. 28 Tuesday Nov. 29	Dec. 13

Normal lab procedures: All students must wear a lab coat or smock and closed-toed shoes at all times when working in the food microbiology laboratory.

Evaluation		
Type of Assessment	Due Date	Value of Final Grade
Mid-Term 1	9:30-10:20 am, Monday Oct 17, 2022	25%
Lab Reports	For due dates, please check the Food Microbiology lab schedule below (page 12)	20%
Group Assignments		
Assignment 1	Hurdle Technology (Group)	5%
Assignment 2	HACCP (Group)	15%
Practicum lab exam	Dec 5 & 6 (regular lab session hours)	15%
Final examination	TBD	20%
Total marks		100%

Lab Expectations

Before coming to the lab, please read the 4150 lab manual. Lab videos are also available and will be delivered in asynchronous design. Asynchronous learning happens on your schedule; you can access and satisfy these requirements within a flexible time frame; therefore, you are expected to be responsible for checking the lab-videos to fulfill the course requirements.

Once you are in the lab, all students are expected to follow safety procedures and work observing aseptic techniques in the lab. All the students are required to wear lab coats or a smock and closed-toed shoes all times when working in the micro food lab.

Grading Scale

Note: Grades will not be curved. To assign the letter grade, grades that end with a decimal point of 0.5 or above will be rounded to the next higher whole number, and grades that end with a decimal point below 0.5 will be rounded to the next lower whole number. For example, if a final percentage grade is 89.5 – 89.9, the grade should be rounded to 90, this is an A. If a final percentage grade is 70.4, the grade should be rounded to 70, and the letter grade is C+.

This rule applies to all students, no exceptions.

Letter Grade	Percentage out of 100	Grade Point Range	Final Grade Point
A+	95-100	4.25-4.5	4.5
A	86-94	3.75-4.24	4.0
B+	80-85	3.25-3.74	3.5
B	72-79	2.75-3.24	3.0
C+	65-71	2.25-2.74	2.5
C	60-64	2.0-2.24	2.0
D	50-59	Less than 2.0	1.0
F	Less than 50		0

Voluntary Withdrawal

Last date to drop without penalty, **there will be no refunds for courses dropped after this date: September 20, 2022**

Voluntary Withdrawal (VW) deadline Fall term classes: **November 22, 2022**

Please refer to Ask the [Registrar's Office](#) web page for more information.

Assignment Extension and Late Submission Policy

Laboratory Reports:

You will have a total of eight lab periods, in which you must hand in a total of seven laboratory reports. Lab reports 2-8 are mandatory, and must be handed in by ALL students:

- Lab.2. Petrifilm for indicator microorganisms (standard plate count, yeast and moulds and coliforms and *E. coli*)
 - Lab.3 Most Probable Number (MPN)
 - Lab 4 Enterococci & *Staphylococcus aureus*
 - Lab 5 *Bacillus cereus*
 - Lab.6 *Salmonella*
 - Lab 7. Molecular rapid detection methods
 - Lab 8. Hygiene monitoring: ATP testing system
- A portion of the laboratory will be evaluated in the midterm exams and a final examination. A practicum exam (15%) will take place at the end of the laboratory sessions.
 - Each student will write their report (not a group activity).

- Each student must hand in their report using UML. Reports sent by email will not be graded. You are responsible to upload your report in the right folder.
- Only typed reports will be accepted.

Note: A detailed rubric for laboratory reports assessment is available at UML.

Groups Activities

Group activity 1. Hurdle technology: Intrinsic-Extrinsic factors.

Assessment: Group activities, instructor evaluation and peer evaluation sheets.

Main topic: Intrinsic-Extrinsic factors affecting microbial growth/Hurdle technology. Content: Intrinsic-Extrinsic factors affecting microbial growth. Hurdle technology.

Purpose: to facilitate the understanding of hurdle technology and its importance in food preservation and food safety using active learning tools such as:

- The application of hurdle technologies to different types of food products.
- Knowledge sharing by students within their groups and among classmates regarding hurdle technology.
- Promote and learn how to work on teams and exercise critical thinking skills.

Procedure:

- a. This activity will be conducted during lecture time (see class scheduled)
- b. The class will be organized into different groups; this will be done through UM Learn at random. To find out who are your team members, please go to UM Learn, communications, and click on groups. A food product will be assigned by the instructor to each group, the information will be uploaded into the files in your UM Learn group. This will be done after the third week of classes.
- c. The instructor will provide a short introduction, including the activity explanation and expectations.
- d. Using lecture time, students will review the intrinsic and extrinsic factor definitions and outline the components in each category: review hurdle technology definition and its importance. A textbook reading will be assigned, and students must read at home before the activity takes place. Students will describe the specific type of food product and its characteristics, for example ingredients, shelf-life, type of food processing technology (canned, pasteurized, etc.), preservatives, packaging type, storage type, and what groups of microorganisms, including pathogens, beneficial and spoilage are more likely to be present in that particular food.
- e. To gather relevant information, students are allowed to use iPhones, iPads, computers, peer-review papers, textbooks and class notes.
- f. Sharing the information: Students will explain if a hurdle approach was applied

to that specific food and what particular intrinsic/extrinsic factors were targeted and why. Some groups will present their findings to the class (time 5-8 min.). The instructor will provide feedback, so students will have the opportunity to add/modified/correct their assignments before submission.

g. Conclusion: At the end of this activity, the instructor will briefly summarize the main points of the lecture and how it was linked to the group activity on PowerPoint.

h. Assessment: All groups have to prepare a written summary – one per group- (Length 5,000 characters including 1.0 line spacing - about a 1 1/2 page) for the activity. Activity 1 summary will be submitted using the assignments function on UM Learn within seven days after in-classroom activity. The due date will be 5 days after the in-class activity. All submissions will be through UM Learn assignments. Only one student member per group must submit the assignment.

i. All students must fill the peer's evaluation sheets.

Group Activity 2. HACCP program:

Assessment will consist of two portions: the group activity instructor evaluation and the peers' evaluation sheets.

- a. This activity will commence during student's arrangement time
- b. The groups were already designated for the previous group activity: hurdle technology. The same product assigned to the groups for the hurdle technology activity will be used to develop the HACCP program. Each group must develop Hazard Analysis and Critical Control Point program for the provided food item.
- c. The instructor will provide a short introduction, including the activity explanation and expectations as well as a rubric for the activity assessment.
- d. Groups will present their HACCP plan. Presentations time: 7 min. Please see class scheduled.
- e. If you have questions during the development of this activity, please make an appointment with the course instructor, the appointment can be remove or in-person.
- f. Activity Assessment: Students must prepare a written HACCP plan, maximum 15 pages 1.0-line spacing. Only one student per team should submit the assignment. Please use tables or flow diagrams when deemed appropriate.

All students must fill the peer's evaluation sheets

This assignment will be worth eight marks.

Important sites that might be useful to you:

HACCP guidelines:

<https://inspection.canada.ca/preventive-controls/preventive-control-plans/the-food-safety-enhancement-program/eng/1525869691902/1525869759693#a65>

<https://inspection.canada.ca/food-safety-for-industry/archived-food-guidance/safe-food->

[production-systems/haccp-generic-models-and-guidance-documents/generic-model-fresh-cut-vegetables/eng/1371034721098/1371034722410](https://inspection.canada.ca/production-systems/haccp-generic-models-and-guidance-documents/generic-model-fresh-cut-vegetables/eng/1371034721098/1371034722410)

Models: [Model HACCP Plans | Center for Meat Process Validation \(wisc.edu\)](#)

Cleaning and Sanitation

<https://inspection.canada.ca/preventive-controls/cleaning-and-sanitation-program/eng/1511374381399/1528206247934>

<https://www.fsis.usda.gov/guidelines/2020-0009>

<https://extension.psu.edu/best-practices-for-fresh-produce-food-safety>

Current Good Manufacturing Practice (CGMP) Regulations

<https://inspection.canada.ca/food-safety-for-industry/archived-food-guidance/non-federally-registered/safe-food-production/guide/eng/1352824546303/1352824822033>

<https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/current-good-manufacturing-practices-cgmps-food-and-dietary-supplements>

Code of Federal Regulations Title 21 (CFR 21) (US Department of Health and Human Services:

<https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm>

Note: The rubrics for assessments are available at UML.

Referencing Style

All written assignments (group activities summary) and lab reports in this course shall include an in-text citation. Reference Style: International Journal Food Microbiology:

<https://www.elsevier.com/journals/international-journal-of-food-microbiology/0168-1605/guide-for-authors>

All publications cited in the text should be presented in a list of references following the text of the manuscript.

All citations in the text should refer to:

1. Single author: the author's name (without initials, unless there is ambiguity) and the year of publication;
2. Two authors: both authors' names and the year of publication;
3. Three or more authors: first author's name followed by 'et al.' and the year of publication.

Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically.

Examples: "as demonstrated (Allan, 1996a, 1996b, 1999; Allan and Jones, 1995). Kramer et al. (2000) have recently shown "

List: References should be arranged alphabetically by authors' names and should be as full as possible, listing all authors, the full title of articles and journals, publisher and year. Note that journal names are to be abbreviated. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are the same in the text as in the reference list.

Examples:

Reference to a journal publication:

Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. <http://dx.doi.org/10.17632/xwj98nb39r.1>

Ono, K., Yamamoto, K., 1999. Contamination of meat with *Campylobacter jejuni* in Saitama, Japan. Int. J. Food Microbiol. 47, 211-219.

Reference to a book:

Strunk Jr, W., White, E. B., 1979. The Elements of Style, third ed. Macmillan, New York. Reference to a chapter in an edited book:

Kramer, J.M., Gilbert, R.J., 1989. *Bacillus cereus*. In: Doyle, M.P. (Ed.), Foodborne Bacterial Pathogens. Marcel Dekker, New York, pp. 22-70.

Caddick, M.X., 1994. Nitrogen metabolite repression. In: Martinelli, S.D., Kinghorn, J.R. (Eds.), *Aspergillus: 50 Years on*, Progress in Industrial Microbiology, vol. 29. Elsevier Science, Amsterdam, pp. 323-353.

Assignment Feedback

Feedback on student's performance will be provided to students: formative (i.e., comments) and summative (i.e., grade) will be delivered electronically through UML.

Note: Be aware that you have two graders, they will be grading lab reports mainly, if you have questions regarding their marking, please contact the graders, if you are still no satisfy, please contact me, Dr. Narvaez, so I can look at it.

Assignment Extension and Late Submission Policy

1. Late Assignments:

Assignments (electronic papers and hard copies) are considered late if they are not submitted by the day they are due. For each day, the assignment is late (excluding weekends) a 10% deduction to the grade will be applied.

2. Makeup exams or absence:

Attendance is essential to student success in this course. Class roll will be taken each class

and lab period. Makeup exams, assignments, or absence on required days will be given only with the professor's permission.

Group Work Policies: You are expected to complete group work in a professional fashion. You will be given an opportunity to provide a peer evaluation of group members at the end of each activity. Marks may be adjusted based on your classmates' feedback. Completion of the peer evaluation request should be done in a respectful, fair and reasonable fashion. It is unlikely that all group members warrant a perfect peer rating. However, if more than one member is failing another member (for example, in a group of 4 members, 3 members are failing (F) one member), the adjustment will be made on that member final mark accordingly (i.e. marks deduction 50 to 0 %).

Group activities in the remote classroom (WebEx), they are scheduled from the beginning of the semester, you will be asked to prepare ahead of time; therefore, students missing the activities will have deducted marks (50% out of the total), unless they have major reasons justifying their absence, such as health issues or compassionate reasons, in which cases written justification must be provided.

We will use some lecture time in the remote classroom for group discussions. Therefore, students must be there to add their contributions at that time and to excessive and acquire teamwork skills, and also to discuss strategies for further discussions, therefore attendance is mandatory.

Important Note on submissions: Be aware of the folders assigned for each assignment in UML; if you use a different folder by mistake that will be your responsibility to load the assignment in the right folder and it will be marked as late. **Please notice that I won't accept assignments through email.**

In the case of final exams, be advised that only the Dean's Office, not individual instructors or Departments, are in a position to grant deferred examinations.

Continued masking

COVID-19 continues to circulate in Manitoba, and we are beginning to see discussions in a number of provinces about preparations for possible additional surges in fall. As a result, we have decided that the **existing masking mandate will continue in September** - KN95 masks are highly recommended, but 3-ply medical masks (minimum ASTM Grade 2) will also be acceptable. Regardless of mask type, please [ensure your mask is fitted properly](#) to maintain maximum effectiveness.

Both types of masks are available at UM. Mask distribution sites will once again be available on campus, with locations to be shared closer to the start of Fall Term. Masks are not required outdoors.

We have made two adjustments to the masking protocol beginning in Fall Term. First, instructors may choose to remove their mask when actively teaching, provided a 2m distance can be maintained from students. Second, staff may remove their mask when seated at a cubicle-type workspace, provided there is a physical barrier to adjacent workers (e.g., cubicle partition) or a minimum of 2m separation from others.

We will continue to monitor the COVID-19 situation, and adjust our protocols as required.

Contingency plan for lecturing in case of illness

If your professor tests positive for covid during the term, and she feels okay, the lecture will be temporarily delivered remotely to avoid spreading covid. If your professor is not feeling well, a lecture video will be posted.

UNIVERSITY SUPPORT OFFICES & POLICIES

Instructors shall provide to every student the information on university support offices and policies in [Schedule "A"](#) within the first week of classes, either through a paper copy and/or via the university's student information system (i.e., Aurora, UM Learn, or such other university information system as may be approved by the university from time to time).

Schedule "A"

Section (a) sample re: A list of academic supports available to Students, such as the Academic Learning Centre, Libraries, and other supports as may be appropriate:

Writing and Learning Support

The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

You can also meet one-to-one with a writing tutor who can give you feedback at any stage of the writing process, whether you are just beginning to work on a written assignment or already have a draft. If you are interested in meeting with a writing tutor, reserve your appointment two to three days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor's feedback.

These Academic Learning Centre services are free for U of M students. For more information, please visit the Academic Learning Centre website at: <http://umanitoba.ca/student/academiclearning/>

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 205 Tier Building.

University of Manitoba Libraries (UML)

As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: <http://bit.ly/WcEbA1> or name: <http://bit.ly/1tJ0bB4>. In addition, general library assistance is provided in person at 19 University

Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: <http://bit.ly/1sXe6RA>. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries' homepage: www.umanitoba.ca/libraries.

UM Policies

As a student at the University of Manitoba you have rights and responsibilities. It is important for you to know what you can expect from the University as a student and to understand what the University expects from you. Become familiar with the policies and procedures of the University and the regulations that are specific to your faculty, college or school.

The University of Manitoba (UM) website's [Governing Documents](https://umanitoba.ca/governance/governing-documents) (<https://umanitoba.ca/governance/governing-documents>) is one important source of information, in particular the Academic and Students sections. The Student Advocacy office can also help you understand policies and procedures; find their information in the UM Learner Supports section below.

Academic Calendar

The [Academic Calendar](https://umanitoba.ca/registrar/academic-calendar) (<https://umanitoba.ca/registrar/academic-calendar>) is the University's official publication containing course descriptions, program and graduation requirements, as well as UM and faculty/school-specific rules, regulations and policies. In particular, familiarize yourself with the sections *University Policies and Procedures* and *General Academic Regulations*.

Academic Integrity

In addition to reviewing your instructor's academic integrity policy listed in their syllabus, you are expected to view the *General Academic Regulation* section within the [Academic Calendar](https://umanitoba.ca/registrar/academic-calendar) (<https://umanitoba.ca/registrar/academic-calendar>) and specifically read the regulation pertaining to Academic Integrity. Ask your instructor for additional information about demonstrating academic integrity in your academic work, and consult the following UM resources for more information and support:

- [Academic Integrity](https://umanitoba.ca/student-supports/academic-supports/academic-integrity) (<https://umanitoba.ca/student-supports/academic-supports/academic-integrity>)
 - [Student Resources](https://umanitoba.ca/student-supports/academic-supports/academic-integrity#resources-to-conduct-academic-work-with-integrity) (<https://umanitoba.ca/student-supports/academic-supports/academic-integrity#resources-to-conduct-academic-work-with-integrity>)
 - [Academic Misconduct and How to Avoid It](https://umanitoba.ca/student-supports/academic-supports/academic-integrity#academic-misconduct-and-how-to-avoid-it) (<https://umanitoba.ca/student-supports/academic-supports/academic-integrity#academic-misconduct-and-how-to-avoid-it>)
- [Student Advocacy Office](https://umanitoba.ca/student-supports/academic-supports/student-advocacy) (<https://umanitoba.ca/student-supports/academic-supports/student-advocacy>)

Copyright

All students are required to respect copyright as per Canada's *Copyright Act*. Staff and students play a key role in the University's copyright compliance as we balance user rights for educational purposes with the rights of content creators from around the world. The [Copyright Office](https://umanitoba.ca/copyright/) (https://umanitoba.ca/copyright/) provides copyright resources and support for all members of the University of Manitoba community.

Grade Appeals

If you have questions about your grades, talk to your instructor. There is a process for term work and final grade appeals. Note that you have the right to access your final examination scripts. See the [Registrar's Office](https://umanitoba.ca/registrar/grades/appeal-grade) (https://umanitoba.ca/registrar/grades/appeal-grade) for more information including appeal deadline dates and the appeal form.

Intellectual Property

For information about rights and responsibilities regarding intellectual property view the [Intellectual Property Policy](https://umanitoba.ca/governance/governing-documents/governing-documents-university-community#intellectual-property) (https://umanitoba.ca/governance/governing-documents/governing-documents-university-community#intellectual-property)

Program-Specific Regulations

For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective [faculty/college/school](https://umanitoba.ca/academics) website (https://umanitoba.ca/academics).

Respectful Work and Learning Environment

The University is committed to a respectful work and learning environment. You have the right to be treated with respect and you are expected to conduct yourself in an appropriate and respectful manner. Policies governing UM community behaviour include:

- [Respectful Work and Learning Environment](https://umanitoba.ca/about-um/respectful-work-and-learning-environment-policy) (https://umanitoba.ca/about-um/respectful-work-and-learning-environment-policy)
- [Student Discipline](https://umanitoba.ca/governance/governing-documents-students#student-discipline) (https://umanitoba.ca/governance/governing-documents-students#student-discipline)
- [Violent or Threatening Behaviour](https://umanitoba.ca/governance/governing-documents-students#violent-or-threatening-behaviour) (https://umanitoba.ca/governance/governing-documents-students#violent-or-threatening-behaviour)

The UM website, [Engaging in Respectful Conduct](https://umanitoba.ca/student-supports/respectful-conduct) (https://umanitoba.ca/student-supports/respectful-conduct), includes more details about expectations for behaviours related to university activities.

Sexual Violence Policies

The UM has several policies and procedures that deal with the rights and responsibilities of the University community with regards to all forms of sexual violence. For a comprehensive list of policies and associated resources, visit the [Sexual Violence Resource Centre's information page](https://umanitoba.ca/student-supports/sexual-violence-support-and-education/sexual-violence-get-informed) (<https://umanitoba.ca/student-supports/sexual-violence-support-and-education/sexual-violence-get-informed>). Please note that there are many supports available in addition to these policy documents (see UM Learner Supports).

Voluntary Withdrawal

Voluntary withdrawal (VW) is a way for students to leave a class without academic penalty once the Registration Revision Period has ended. If you opt to voluntarily withdraw from a course, you will not be eligible for a refund and, if applicable, will still be required to pay any outstanding tuition fees for the course. On your transcript, the course you have withdrawn from will be listed; however, "VW" will appear in lieu of a grade. If you do not drop a course before the VW deadline, you will receive a final grade in the course on your transcript.

Please note that there are separate deadlines for dropping a course early in a term during the Registration Revision Period. Dropping a course means you are removing that course from your schedule, will not be charged tuition fees for that course, and the course will not appear on your transcript.

The Registrar's Office website, [Withdraw from a Course](https://umanitoba.ca/registrar/withdraw-course) (<https://umanitoba.ca/registrar/withdraw-course>), includes more information on the different ways in which you can withdraw from a course and important dates and deadlines to do so.

UM Learner Supports

Below you will find a select list of important supports for learners at the UM, both academic supports and otherwise. For a complete listing of all learner supports at the University of Manitoba, visit the [Student Supports website](https://umanitoba.ca/student-supports) (<https://umanitoba.ca/student-supports>).

Academic Advising

Contact an [Academic Advisor](https://umanitoba.ca/student-supports/academic-supports/academic-advising) (<https://umanitoba.ca/student-supports/academic-supports/academic-advising>) for support with degree planning and questions about your academic program and regulations.

Academic Learning Centre (ALC)

The [Academic Learning Centre](https://umanitoba.ca/student-supports/academic-supports/academic-learning) (<https://umanitoba.ca/student-supports/academic-supports/academic-learning>) offers one-to-one tutoring, groups study sessions and workshops, as well as video and tip-sheet resources to help you throughout your academic program. All Academic Learning Centre programming, supports, and services are free for UM students.

Make an appointment for [free one-to-one tutoring](https://umanitoba.ca/student-supports/academic-supports/academic-learning/tutoring-group-study#individual-tutoring) (https://umanitoba.ca/student-supports/academic-supports/academic-learning/tutoring-group-study#individual-tutoring). **Content tutors** (over 90 UM courses) can help you understand concepts and learn problem-solving strategies. **Study skills tutors** can help you improve your skills such as time management and goal setting, reading and note-taking, as well as learning and test-taking strategies. **Writing tutors** can give you feedback on your academic writing, whether you are just getting started on a written assignment or already have a draft. **English as an Additional Language** specialist, Antoanela Denchuk, is available for one-to-one tutoring to help you improve your English-language academic writing skills. Use the drop-down menu, read the tutor biographies, and make an appointment for tutoring on the [Academic Learning Centre schedule](https://manitoba.mywconline.com/) (https://manitoba.mywconline.com/).

Attend [Supplemental Instruction \(SI\)](https://umanitoba.ca/student-supports/academic-supports/academic-learning/tutoring-group-study) (https://umanitoba.ca/student-supports/academic-supports/academic-learning/tutoring-group-study) sessions in historically difficult courses (including Chemistry, Engineering, and Computer Science). These free weekly review sessions are facilitated by a peer mentor who has previously taken the course and provide an opportunity to discuss course content, ask questions, compare notes, solve practice problems, and develop study strategies. See online for a list of SI courses and meeting times.

Register for an [Academic Success Workshop](https://umanitoba.ca/student-supports/academic-supports/academic-learning/academic-success-workshops) (https://umanitoba.ca/student-supports/academic-supports/academic-learning/academic-success-workshops), where you can learn strategies to improve your writing and studying. More information on topics, dates, and registration, are found online.

Register for [Faculty of Graduate Studies Grad Steps Workshops](https://umanitoba.ca/graduate-studies/student-experience/graduate-student-workshops) (https://umanitoba.ca/graduate-studies/student-experience/graduate-student-workshops). These workshops are specifically designed for students working towards **Master's degrees or PhDs**. More information on topics, dates, and registration can be found online.

Access the Academic Learning Centre's collection of [videos and tip sheets](https://umanitoba.ca/student-supports/academic-supports/academic-learning#tip-sheets-for-writing-and-study-skills) (https://umanitoba.ca/student-supports/academic-supports/academic-learning#tip-sheets-for-writing-and-study-skills) to help you with many of the academic tasks you'll encounter in university.

Contact the Academic Learning Centre by calling 204-480-1481 or emailing academic_learning@umanitoba.ca. Bannatyne students can contact the Bannatyne Student Services office at 204-272-3190.

Basic Needs

It can be difficult to learn and succeed in courses when you are struggling to meet your or your family's basic needs. Several UM and community resources are listed below if you would benefit from support with regards to housing, food, finances, and/or childcare:

- *Housing*
 - [UM Housing](https://umanitoba.ca/housing) (https://umanitoba.ca/housing)

- [Winnipeg Rental Network](https://www.winnipegrentnet.ca/) (https://www.winnipegrentnet.ca/)
- [Manitoba Residential Tenancies Branch](https://www.gov.mb.ca/cca/rtb/) (https://www.gov.mb.ca/cca/rtb/)
- [HOPE End Homelessness Winnipeg Services & Supports](https://umanitoba.ca/housing) (https://umanitoba.ca/housing)
- *Food*
 - [U of M Food Bank](https://umanitoba.ca/financial-aid-and-awards/u-m-food-bank) (https://umanitoba.ca/financial-aid-and-awards/u-m-food-bank)
 - [Food Matters Manitoba](https://foodmattersmanitoba.ca/find-emergency-food-in-winnipeg/) (https://foodmattersmanitoba.ca/find-emergency-food-in-winnipeg/)
- *Finances*
 - [UM Financial Aid and Awards](https://umanitoba.ca/financial-aid-and-awards) (https://umanitoba.ca/financial-aid-and-awards)
 - [Manitoba Student Aid](https://www.edu.gov.mb.ca/msa/) (https://www.edu.gov.mb.ca/msa/)
- *Child Care*
 - [UM Child Care](https://umanitoba.ca/about-um/child-care) (https://umanitoba.ca/about-um/child-care)
 - [Manitoba Child Care Subsidy](https://bit.ly/3yG3ijy) (https://bit.ly/3yG3ijy)
 - [Manitoba Child Care Association](https://mccahouse.org/looking-for-child-care/) (https://mccahouse.org/looking-for-child-care/)

English Language Centre

The [English Language Centre \(ELC\)](https://umanitoba.ca/english-language-centre) (https://umanitoba.ca/english-language-centre) provides courses, tests, accommodations and individual support to students whose first language is not English in order to support academic success and participation in the University of Manitoba community.

Health and Wellness

Physical, mental, emotional, and spiritual health and wellness play a critical role in student success. See all of UM's resource on their [Health and Wellness](https://umanitoba.ca/student-supports/student-health-and-wellness) (https://umanitoba.ca/student-supports/student-health-and-wellness) website, and make note of several specific UM and community supports listed below.

Winnipeg Urgent Physical and Mental Health Care

If you are an adult experiencing a mental health or psychosocial crisis, contact the [Klinik Community Health](https://klinik.mb.ca/crisis-support/) (https://klinik.mb.ca/crisis-support/) 24/7 crisis line at 204-786-8686, visit the [Crisis Response Centre](https://sharedhealthmb.ca/services/mental-health/crisis-response-centre/) (https://sharedhealthmb.ca/services/mental-health/crisis-response-centre/) located at 817 Bannatyne Avenue, or contact the Mobile Crisis Service at 204-940-1781.

To speak with a nurse for guidance on what health-care path to take for the issue you are facing or for general information about health resources available in Manitoba, contact [Health Links](https://misericordia.mb.ca/programs/phcc/health-links-info-sante/) (https://misericordia.mb.ca/programs/phcc/health-links-info-sante/) at 1-888-315-9257 (toll free).

If you need urgent medical care, visit the Winnipeg Regional Health Authority's [Emergency Department & Urgent Care Wait Times](https://wrha.mb.ca/wait-times/) webpage (https://wrha.mb.ca/wait-times/) for a list of locations and current wait times.

Student Counselling Centre (SCC)

The [Student Counselling Centre](https://umanitoba.ca/student-supports/student-health-and-wellness/student-counselling-centre-scc) (https://umanitoba.ca/student-supports/student-health-and-wellness/student-counselling-centre-scc) provides free counselling and mental health support to UM, English Language Centre, and International College of Manitoba (ICM) students. We are open year-round, Monday through Friday from 8:30 am to 4:30 pm. Our commitment is to offer a support service to every student who contacts us.

Visit the SCC's [For Urgent Help](https://umanitoba.ca/student-supports/student-health-and-wellness/student-counselling-centre-scc#for-urgent-help) (https://umanitoba.ca/student-supports/student-health-and-wellness/student-counselling-centre-scc#for-urgent-help) webpage or the urgent care resources listed above if you require immediate support.

Visit the SCC's [Our Services](https://umanitoba.ca/student-supports/student-health-and-wellness/student-counselling-centre-scc#for-urgent-help) (https://umanitoba.ca/student-supports/student-health-and-wellness/student-counselling-centre-scc#for-urgent-help) webpage for more information on accessing a variety of services including individual counselling, counselling workshops and groups, support resources, and learning disability assessment services.

The SCC is located is located at 474 UMSU University Centre (Fort Garry Campus).

Health and Wellness Office

Students often juggle multiple demands, and we recognize that it can be difficult to find balance. For any changes you want to make to your health and wellness, the Health and Wellness Office at the University of Manitoba would like to support you in your journey. We are here to help you take control of your own health and make your own decisions. We are a judgment-free space and we avoid labels whenever possible. For more information, please visit the [Health and Wellness Office](https://umanitoba.ca/student-supports/health-wellness) (https://umanitoba.ca/student-supports/health-wellness) website.

Spiritual Care and Multifaith Centre

Spiritual care services are available to all, whether you identify as spiritual, atheist, religious or agnostic. [Spiritual Services](https://umanitoba.ca/student-supports/spiritual-services) (https://umanitoba.ca/student-supports/spiritual-services) also offer specific denominational support for certain religious groups and by Indigenous Elders-in-Residence.

Student Support Case Management (SSCM)

Contact the [Student Support Case Management team](https://umanitoba.ca/student-supports/academic-supports/student-advocacy/case-management) (https://umanitoba.ca/student-supports/academic-supports/student-advocacy/case-management) if you are concerned about yourself or another student and don't know where to turn. SSCM helps connect students with

on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team.

University Health Service (UHS)

The [University Health Service](https://umanitoba.ca/student-supports/health-wellness/university-health-service) (https://umanitoba.ca/student-supports/health-wellness/university-health-service) offers a full range of medical services to students, including psychiatric consultation, via two health clinics:

- Fort Garry Campus: (204) 474-8411, ACW-Lot temporary trailer (behind the Isbister building)
- Bannatyne Campus: (204) 474-8411, P309 – Pathology Building

Student Services at Bannatyne Campus

Student Services at Bannatyne Campus (SSBC) offers a full range of mental health supports to students and residents in the Rady Faculty of Health Sciences, along with other academic and personal supports. Visit the [SSBC website](https://umanitoba.ca/student-supports/student-services-bannatyne-campus) (https://umanitoba.ca/student-supports/student-services-bannatyne-campus) for a list of services available.

Indigenous Students

Staff, faculty and Elders are well-equipped to ensure your university experience is as beneficial, accessible, and successful as possible. Visit the Indigenous [Student Experience](https://umanitoba.ca/indigenous/student-experience) (https://umanitoba.ca/indigenous/student-experience) website for more information on the supports and services available.

International Students

The transition to a new country and a new academic system can be both exciting and overwhelming. The International Centre (IC) is here to help you settle into life at University of Manitoba. Visit the [International Students](https://umanitoba.ca/current-students/international) website (https://umanitoba.ca/current-students/international) for more information.

Sexual Violence Support and Education

Sexual violence affects people of all ages, sexual orientations, genders, gender identities, abilities and relationship statuses. At the U of M, we are committed to ensuring a respectful work and learning environment for all. We want to build a safe and inclusive campus community where survivors of sexual violence know they can receive the supports they need to succeed, both academically and personally.

The [Sexual Violence Resource Centre](https://umanitoba.ca/sexual-violence) (https://umanitoba.ca/sexual-violence), located at 537 UMSU University Centre (Fort Garry campus) provides support, resources, information and referral services for any student, faculty or staff member who has been affected by sexual violence.

Student Accessibility Services (SAS)

The University of Manitoba is committed to providing an accessible academic community. [Student Accessibility Services](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 health, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation. SAS is located at 520 University Centre (Fort Garry Campus).

Student Advocacy

[Student Advocacy](https://umanitoba.ca/student-supports/academic-supports/student-advocacy) (<https://umanitoba.ca/student-supports/academic-supports/student-advocacy>) is a safe place for students. We help you navigate university processes and advocate for your rights as a student at UM. If anything in your personal or academic life is affecting your studies, contact our confidential intake assistant by phone (204-474-7423) or email (stadv@umanitoba.ca).

University of Manitoba Libraries (UML)

As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A [complete list of liaison librarians](http://bit.ly/WcEbA1) (<http://bit.ly/WcEbA1>) can be found by subject.

In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the [UM Libraries and Departments](https://libguides.lib.umanitoba.ca/c.php?g=298526) (<https://libguides.lib.umanitoba.ca/c.php?g=298526>) webpage. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the [University of Manitoba Libraries' homepage](https://umanitoba.ca/libraries/) (<https://umanitoba.ca/libraries/>)