



# Syllabus

PLNT 3520 Principles of Plant Improvement  
(Fall 2022)

## TABLE OF CONTENTS

<b>COURSE DETAILS.....</b>	<b>3</b>
<b>INSTRUCTOR CONTACT INFORMATION.....</b>	<b>3</b>
<b>COURSE DESCRIPTION .....</b>	<b>4</b>
<b>COURSE GOALS .....</b>	<b>4</b>
<b>COURSE LEARNING OBJECTIVES .....</b>	<b>4</b>
<b>TEXTBOOK, READINGS, AND COURSE MATERIALS .....</b>	<b>4</b>
<b>USING COPYRIGHTED MATERIAL .....</b>	<b>5</b>
<b>COURSE TECHNOLOGY .....</b>	<b>5</b>
<b>EXPECTATIONS: I EXPECT YOU TO .....</b>	<b>5</b>
<b>EXPECTATIONS: YOU CAN EXPECT ME TO .....</b>	<b>6</b>
<b>CLASS SCHEDULE AND COURSE EVALUATION .....</b>	<b>7</b>
<b>LAB EXPECTATIONS.....</b>	<b>10</b>
<b>LAB SCHEDULE .....</b>	<b>10</b>
<b>GRADING .....</b>	<b>11</b>
<b>VOLUNTARY WITHDRAWAL.....</b>	<b>11</b>
<b>ASSIGNMENT DESCRIPTIONS .....</b>	<b>11</b>
<b>REFERENCING STYLE .....</b>	<b>12</b>
<b>ASSIGNMENT FEEDBACK.....</b>	<b>12</b>
<b>ASSIGNMENT EXTENSION AND LATE SUBMISSION POLICY .....</b>	<b>12</b>
<b>UNIVERSITY SUPPORT OFFICES &amp; POLICIES .....</b>	<b>12</b>

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**COURSE DETAILS**

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<b>Course Title &amp; Number:</b>	PLNT 3520 – Principles of Plant Improvement
<b>Number of Credit Hours:</b>	3
<b>Class Times &amp; Days of Week:</b>	Lectures – MWF 9:30-10:20 Labs -R- 2:30-5:20
<b>Location for classes/labs/tutorials:</b>	Rm 343 Agriculture
<b>Pre-Requisites:</b>	PLNT 2520 or BIOL 2500

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**Instructor Contact Information**

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<b>Instructor(s) Name &amp; Preferred Form of Address:</b>	Dr. Duouo Wang Duoduo or Dr. Wang
<b>Office Location:</b>	Agriculture Building
<b>Office Hours or Availability:</b>	By appointment during regular weekday work hours on MWF.
<b>Office Phone No.</b>	
<b>Email:</b>	<a href="mailto:Wangd311@myumanitoba.ca">Wangd311@myumanitoba.ca</a>

All email communication must conform to the Communicating with Students university policy (see details below). Please use your U of M email address. It is expected that your communications be done in a professional manner with proper sentence structure and punctuation. Please include your name and which class you are in. Emails will be answered as time permits on week days.

<b>Lab Instructor Information:</b>	Howie Luu
<b>Contact:</b>	Students are welcome to contact the instructor or lab instructor by email, in person, or by phone during regular work week hours.

## Course Description

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### U of M Course Calendar Description

Basic objectives, principles, and methods of plant genetic improvement. Traditional and modern plant breeding, genetic resources, selection, and applications of tissue culture, genetic engineering and molecular markers to plant improvement.

PR/CR: A minimum grade of C is required unless otherwise indicated.

Prerequisite: PLNT 2520 or BIOL 2500 or the former BOTN 2460.

### General Course Description

Students interested in working in applied genetic research and/or the agricultural industry and in particular, the breeding or seed industry will benefit most from this course. PLNT 3520 is a restricted elective within the BSc. Agriculture degree programs in Plant Biotechnology and Agronomy, and is included in the list of courses accepted for the Plant Biotechnology and Crop Protection minors. Details of the course are provided in this syllabus.

## Course Goals

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Course goals are broad, general statements of what you want your students to learn. The goal specifies the big picture or general direction or purpose of the course (i.e., This course will facilitate the development of scholarly writing skills). Instructors may receive course goals from their department or be required to develop their own. Use the U of M course calendar description as the basis for developing your course goals.

## Course Learning Objectives

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Course Objectives: Upon completion of this course, students should:

- 1) Understand basic principles and concepts of plant improvement, and related topics.
- 2) Be able to develop solutions to simple plant improvement problems through the application of genetic and plant breeding principles.
- 3) Effectively communicate scientific knowledge related to plant breeding.

## Textbook, Readings, and Course Materials

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### Suggested Texts:

Sleper, David A. and Poehlman, John M. 2006. **Breeding Field Crops**. Fifth Ed. Blackwell Publishing. pp. 424. One copy of the 5th edition of this text is on 4 h reserve in the William R. Newman library located on the second floor of the Agriculture Building. It is also available for purchase through the University of Manitoba bookstore or Amazon.ca.

Acquaah, George. 2020. **Principles of Plant Genetics and Breeding**. Third Ed. Wiley-Blackell. pp. 740. One copy of the 2nd edition of this text is on 4 h reserve in the William R. Newman library located on the second floor of the Agriculture Building. It is also available for purchase through Amazon.ca.

**Note: Chapters listed in the course outline refer to chapters from either, or both, of the suggested texts.**

Lists of other references will be provided as required.

## Using Copyrighted Material

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Please respect copyright. Copyrighted works, including those created by Dr. Anita Brûlé-Babel and modified by me, are made available for private study and research and must not be distributed in any format without permission. For more information, see the University's Copyright Office website at <http://umanitoba.ca/copyright/> or contact [um\\_copyright@umanitoba.ca](mailto:um_copyright@umanitoba.ca).

## Course Technology

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It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. The student can use all technology in classroom setting only for educational purposes approved by instructor and/or the University of Manitoba Student Accessibility Services. Students should not participate in personal direct electronic messaging / posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook) online and offline "gaming" during scheduled class time. If a student is on call (emergency) the student should switch his/her cell phone on vibrate mode and leave the classroom before using it. (©S Kondrashov. Used with permission)

Paper copies of the course syllabus and laboratory assignments will be provided in class and electronic files will be posted on the courses UM Learn site. Go to the University of Manitoba website [umanitoba.ca](http://umanitoba.ca). Click on the Current Students tab and then UM Learn in the list of options, then find the course on your course list. I will only post information on the A01 section.

Note that although I use PowerPoint for lectures I will not be posting PowerPoint lectures for this class. Students are expected to attend class and take their own notes based on the lectures presented. Paper copies of images or diagrams will be provided to facilitate note taking.

## Expectations: I Expect You To

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Students are expected to attend and participate in all classes and laboratory sessions as scheduled. It is the student's responsibility to take notes, participate in class discussions, and ask questions if they do not understand a point. Students are expected to arrive to class on time and be ready to take notes when the class starts. Notes for missed classes or laboratories will not be provided to the student by the professor. If further clarification is required, it is the student's responsibility to contact the professor or teaching assistant and set an appointment to discuss the problem. Students can take notes with notebooks, tablets, or laptops, provided they do not interfere with other students in the class. Students, the professor, and the teaching assistant are expected to comply with the University of Manitoba's Respectful Work and Learning Environment Policy:

[https://umanitoba.ca/admin/governance/media/Respectful\\_Work\\_and\\_Learning\\_Environment\\_RWLE\\_Policy\\_-\\_2016\\_09\\_01.pdf](https://umanitoba.ca/admin/governance/media/Respectful_Work_and_Learning_Environment_RWLE_Policy_-_2016_09_01.pdf).

### Class Communication:

The University requires all students to activate an official University email account. Please note that all communication between myself and you as a student must comply with the electronic communication with student policy. For full details of the Electronic Communication with Students, please visit:

[https://umanitoba.ca/admin/governance/media/Electronic\\_Communication\\_with\\_Students\\_Policy\\_-\\_2013\\_09\\_01\\_RF.pdf](https://umanitoba.ca/admin/governance/media/Electronic_Communication_with_Students_Policy_-_2013_09_01_RF.pdf)

Email communications with instructors will only be through your official University email account or UM Learn.

### **Academic Integrity:**

**Academic dishonesty is a serious offence. Please refer to the General Academic Regulations section in the 2022/23 General Calendar for information on 'Plagiarism and Cheating' in the "Academic Integrity" section and 'Examinations: Personations' in the "Final Examinations Regulations" section.**

Students are encouraged to discuss problems, interact with each other and ask questions during laboratory periods. However, materials submitted for grading must be the student's own work and properly credit others through appropriate scientific citation for information that is from other sources. (Note: a variety of citation styles are acceptable, but sufficient information to retrieve the original article must be provided.)

### **Recording Class Lectures:**

Dr. Anita Brûlé-Babel and the University of Manitoba hold copyright over the course materials and lectures which form part of this course. Dr. Duoduo Wang hold copyright over the presentation. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission. 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](mailto:Student_accessibility@umanitoba.ca)

## **Expectations: You Can Expect Me To**

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I believe in active learning and want students to be thinking as we progress through the classes. Plant breeding is an applied science and problem solving is a critical skill to gain in this course.

I use primarily a lecture style format, but will answer questions from students as required to ensure that students understand the material. I may also ask students questions prior to introducing a new subject to determine what their knowledge base is, or to get them thinking about a topic. I will begin most classes with questions to the students regarding key concepts and ideas discussed in the previous lecture. Students are expected to volunteer answers to these questions. If no one volunteers an answer, I may call on a specific student by name to answer the questions. There is no penalty for answering incorrectly. Pay attention to these questions as they often identify important material for examination. This process

provides me with a check to make sure student's understood the previous material and gets students back into the frame of mind for the subject matter.

I believe that we learn best by doing. Everything that is assigned for this class is designed to enhance learning of the subject matter. This includes labs, data analysis, and problem solving.

### **CLASS SCHEDULE AND COURSE EVALUATION**

Lectures will be held on MWF from 9:30-10:20 in Rm 343 Agriculture starting Sept. 7, 2022 and ending Dec. 12, 2022. Laboratory sessions will be on Thursdays from 2:30-5:30 starting on Sept. 22, 2022.

#### **Important Dates:**

September 7, 2022	Lectures begin
September 22, 2022	First lab session
September 30, 2022	National Truth and Reconciliation Day, no classes
October 10, 2022	Thanksgiving, no classes
October 27, 2022	Mid-term exam during lab period (see grading section)
November 3, 2022	Data analysis assignment due (see grading section)
November 7-10, 2022	Fall break, no classes or laboratory
November 11, 2022	Remembrance Day, no classes
November 22, 2022	Last day for voluntary withdrawal
December 12, 2022	Last day of classes
December 13-23, 2022	Final examination period – students are required to be available during this time.

**Note: Due dates for laboratory assignments will be indicated on the laboratory handouts. See the laboratory schedule for more information.**

Students can expect to get grades for assignments and or examinations no later than two weeks from the time of submission.

The topics to be discussed are listed below. Slight deviations to topics may be made due to time constraints or interests of the students. The chapters listed beside each topic refer to chapters in the two suggested course textbooks that correspond to that section. Where no chapters are listed, other information may be provided. The textbook provides students with an alternative source of information other than the lectures. Students are encouraged to read the textbook materials as required to reinforce the lectures. Together, the textbooks provide a good resource for traditional plant breeding methods, as well as molecular and genetic engineering techniques.

## COURSE OUTLINE

1. **INTRODUCTION** (Chapter 1 – Sleper and Poehlman; Chapters 1 and 2 - Acquaah)
  - definitions, objectives and role of plant improvement in agriculture
  
2. **PLANT REPRODUCTION** (Chapters 2 & 7 - Sleper and Poehlman; Chapters 5-8 - Acquaah)
  - types of reproduction
  - fertility regulating mechanisms - morphological, physiological, genetic
  - reproductive manipulation
  
3. **GENETIC RESOURCES** (Chapter 13 - Sleper and Poehlman; Chapters 9-11 - Acquaah)
  - origins of genetic diversity
  - patterns of evolution and domestication of cultivated plant species
  - genetic resources and germplasm conservation
  
4. **INHERITANCE OF GENETIC VARIABILITY** Chapters 3, 4, 5 and 6 - Sleper and Poehlman; Chapters 3-4 - Acquaah)
  - qualitative traits - Mendelian inheritance, gene action, recombination, etc.
  - quantitative traits - gene action, heritability, genotype x environment interactions
  - variation in chromosome number - polyploidy, aneuploidy, and haploidy
  
5. **IMPROVEMENT OF SELF-POLLINATED PLANT SPECIES** (Chapters 9, 12, 14, 15, 16 - Sleper and Poehlman; Chapters 16, 31, 35 - Acquaah)
  - genetic theory related to self-pollinated plants
  - selection strategies
  - methods - pedigree, single seed descent, doubled haploids, backcrossing, etc.
  
6. **IMPROVEMENT OF CROSS-POLLINATED PLANT SPECIES** (Chapters 10, 11, 12, 17, 18 -Sleper and Poehlman; Chapters 17, 18, 32 - Acquaah)
  - genetic theory related to cross-pollinated plants
  - selection methods - recurrent selection, mass selection, full-sib selection, half-sib selection, self-progeny test



- methods specific to cultivar types - open pollinated, hybrids, synthetics
- 7. IMPROVEMENT OF VEGETATIVELY PROPAGATED PLANT SPECIES** (Chapters 10, 21, 22 – Sleper and Poehlman; Chapters 19, 37 - Acquaah)
    - principles specific to clonally propagated plants
  
  - 8. PLANT CELL AND TISSUE CULTURE IN PLANT IMPROVEMENT** (Chapter 8 – Sleper and Poehlman)
    - general principles of plant cell and tissue culture
    - elimination of disease and role in germplasm conservation
    - clonal propagation
    - embryo culture
    - pollen and anther culture
    - doubled haploid production
    - somatic cell hybridization
  
  - 9. GENETIC TRANSFORMATION (i.e. GENETIC ENGINEERING)**
    - general process of genetic transformation
    - gene editing technology
    - applications to plant improvement
    - advantages and disadvantages of use of genetic transformation for plant improvement
    - regulation of genetic engineering
  
  - 10. APPLICATION OF MOLECULAR MARKERS TO PLANT IMPROVEMENT** (Chapters 20, 21, 22, 25 – Acquaah)
    - principles of marker assisted selection
    - types of markers - morphological, product based, DNA
    - monoclonal antibodies, RFLP's, PCR, SNP's
    - generation of linkage maps and applications to plant breeding
  
  - 11. VARIETY RELEASE, MAINTENANCE AND DISTRIBUTION**
    - government regulation

- maintenance of genetic purity
- issues in plant breeders rights and gene patenting

## Course Evaluation Methods

Students will be evaluated through a number of laboratory assignments, participation, and examinations.

### Grade Assignment:

**Mid-term Examination** (Oct. 27, 2022 - During lab period) 15%

### Laboratory

**Data Analysis Assignment** (Due Nov. 3, 2022) 15%

**Combined Laboratory Reports** (Due dates are listed on the Lab schedule of this syllabus) 15%

**Participation in Group Discussions** 10%

**Final Examination** (During regular examination period.) 45%

**Note:** The final examination will be scheduled by the registrar's office. Students are expected to remain available during the examination period.

## Lab Expectations

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The labs are designed such that the bulk of the work can be completed during the scheduled time period and do not require an excessive amount of additional work outside of the lab period to complete the assignments. Students are encouraged to take advantage of this and stay in the lab until they have completed all or most of the work. The advantage of this is that there will be a teaching assistant available to answer questions if problems arise. Questions related to the lab should be directly to the teaching assistant. handling the equipment in the lab, communication with the lab TA, etc. Also indicate if they are required to have completed any safety training before they use the lab (i.e., WHMIS) and where they can obtain the training.

## Lab Schedule

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Handouts for each lab will be given to the students the week prior to the scheduled lab. Students are expected to have read the handout before coming to the lab. The following represents the tentative laboratory schedule. Any changes to this schedule will be announced in class.

Sept. 22	Plant Reproductive Anatomy and Manipulation (Report Due Sept. 29)
Sept. 29	Fertility Regulation: Self-incompatibility and Male Sterility, Doubled Haploid Production, Reproductive Isolation (Report Due Oct. 6)
Oct. 6	Genetic Recombination (Report Due Oct. 13)
Oct. 13	Data Analysis Part 1 (Room to be determined – will be announced in class) (Assignment Due Nov. 3)
Oct. 20	Data Analysis Part 2 (Room to be determined – will be announced in class) (Assignment Due Nov. 3)
Oct. 27	Mid-term examination
Nov. 3	Breeding Methods for Self Pollinated Species
Nov. 17	Population Genetics – Response to Selection in Cross Pollinated Crop Species (Report Due, Nov 24)
Nov. 24	Breeding Methods for Cross Pollinated Crop Species
Dec. 1	Issues Related to Genetically Engineered Crops
Dec. 8	Development of linkage maps and QTL analysis (Room to be determined – will be announced in class)

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### Grading

I do not use a standardized grading scale to assign a final grade. In general the class average is set as a grade of B and student grades are assigned up or down from this relative to groupings of students within the class. The class average, range of grades and grade distribution will be communicated to students for the mid-term and data analysis assignment so that students can gauge their performance relative to their classmates.

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### Voluntary Withdrawal

The last day to drop the class and receive 100% refund is September 20<sup>th</sup>, 2022, and the last day to withdraw with no refund is Nov 22<sup>nd</sup>, 2022. Students who did not drop the course by the deadline would be assigned a final grade. The withdrawal courses will be recorded on official transcript. You can refer to the [Registrar's Office](#) web page for more information.

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### ASSIGNMENT DESCRIPTIONS

The majority of the assignments include some form of observation or problem solving. Instructions for each assignment will be provided on the assignment handout. Follow the instructions and answer questions as directed. Use appropriate scientific terminology. Assignments should be handed in as paper

copies (i.e. no electronic submission). It is not necessary to type assignments, however, they should be neat, legible, and in chronological order. If the grader cannot read what you have written you will not receive credit for an answer.

Examinations will be a combination of short answer and problem solving questions. Information on material to be covered will be provided in class prior to the examinations.

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### Referencing Style

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Any standard scientific referencing style is acceptable provided that sufficient information is provided for the reader to successfully retrieve the resource. Typical reference information should include: Author(s), date, title, journal, volume, page numbers. Refer to the referencing and citation style used by the Canadian Journal of Plant Science or Crop Science for guidance. For websites, the author, title, URL and data accessed are required. The format used should be consistent throughout the document (i.e. do not use different referencing styles for different items on your reference list.)

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### Assignment Feedback

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Students can expect to receive a grade within two weeks of an assignment deadline or examination. Evaluative feedback will be provided for the mid-term examination and three laboratory assignments prior to the VW date.

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### Assignment Extension and Late Submission Policy

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**Late assignments handed in without an acceptable reason (e.g. doctor's certificate) will not be accepted and will receive a grade of zero.**

**Assignments are due by 4:30 pm on the due date. If they are handed in outside of normal class or lab time they can be submitted to Rm 222 Plant Science where a staff member will record the date and time received and place it in the instructor's mailbox.**

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### UNIVERSITY SUPPORT OFFICES & POLICIES

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Academic supports are available to students from a number of services such as the Academic Learning Centre, Libraries, etc. Some of the supports available are listed below.

#### 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](http://www.umanitoba.ca/libraries).

Your mental health is an important of your overall health and your ability to succeed. The following health and mental health services are available to you:

**For 24/7 mental health support, contact the Mobile Crisis Service at 204-940-1781.**

#### **Student Counselling Centre**

Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling. *Student Counselling Centre:* <http://umanitoba.ca/student/counselling/index.html>

474 University Centre or S207 Medical Services  
(204) 474-8592

#### **Student Support Case Management**

Contact the Student Support Case Management team 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.

*Student Support Intake Assistant* <http://umanitoba.ca/student/case-manager/index.html>

520 University Centre  
(204) 474-7423

#### **University Health Service**

Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation.

University Health Service <http://umanitoba.ca/student/health/>

104 University Centre, Fort Garry Campus

(204) 474-8411 (Business hours or after hours/urgent calls)

### **Health and Wellness**

Contact our Health and Wellness Educator if you are interested in [peer support from Healthy U](#) or information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault.

Health and Wellness Educator <https://umanitoba.ca/student/health-wellness/welcome-about.html>

[britt.harvey@umanitoba.ca](mailto:britt.harvey@umanitoba.ca)

### **Live Well @ UofM**

For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site:

<http://umanitoba.ca/student/livewell/index.html>

The University honours Canada's Copyright Act. Questions or concerns with respect to copyright are available as follows:

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 provides copyright resources and support for all members of the University of Manitoba community. Visit <http://umanitoba.ca/copyright> for more information.

It is your responsibility to be familiar with University, Faculty and Departmental policies, procedures, and supplemental information. The following information is available on-line:

#### **Your rights and responsibilities**

As a student of 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 [Academic Calendar](http://umanitoba.ca/student/records/academiccalendar.html) <http://umanitoba.ca/student/records/academiccalendar.html> is one important source of information. View the sections *University Policies and Procedures* and *General Academic Regulations*.

While all of the information contained in these two sections is important, the following information is highlighted.

- 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 website for more information including appeal deadline dates and the appeal form <http://umanitoba.ca/registrar/>
- You are expected to view the General Academic Regulation section within the Academic Calendar and specifically read the **Academic Integrity** regulation. Consult the course syllabus or ask your instructor for additional information about demonstrating academic integrity in your academic work. Visit the Academic Integrity Site for tools and support <http://umanitoba.ca/academicintegrity/> View the **Student Academic Misconduct** procedure for more information.
- 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 respectful manner. Policies governing behavior include the:

#### **Respectful Work and Learning Environment**

[http://umanitoba.ca/admin/governance/governing\\_documents/community/230.html](http://umanitoba.ca/admin/governance/governing_documents/community/230.html)

#### **Student Discipline**

[http://umanitoba.ca/admin/governance/governing\\_documents/students/student\\_discipline.html](http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html) and,

#### **Violent or Threatening Behaviour**

[http://umanitoba.ca/admin/governance/governing\\_documents/community/669.html](http://umanitoba.ca/admin/governance/governing_documents/community/669.html)

- If you experience **Sexual Assault** or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The **Sexual Assault** policy may be found at:  
[http://umanitoba.ca/admin/governance/governing\\_documents/community/230.html](http://umanitoba.ca/admin/governance/governing_documents/community/230.html)  
More information and resources can be found by reviewing the Sexual Assault site <http://umanitoba.ca/student/sexual-assault/>
- For information about rights and responsibilities regarding **Intellectual Property** view the policy [https://umanitoba.ca/governance/sites/governance/files/2021-06/Intellectual\\_Property\\_Policy\\_-\\_2013\\_10\\_01\\_RF.pdf](https://umanitoba.ca/governance/sites/governance/files/2021-06/Intellectual_Property_Policy_-_2013_10_01_RF.pdf)
- 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 web site <http://umanitoba.ca/faculties/>

Contact an **Academic Advisor** within our faculty/college or school for questions about your academic program and regulations <http://umanitoba.ca/academic-advisors/>

#### **Student Advocacy**

Contact Student Advocacy if you want to know more about your rights and responsibilities as a student, have questions about policies and procedures, and/or want support in dealing with academic or discipline concerns.

<http://umanitoba.ca/student/advocacy/>

520 University Centre

204 474 7423

[student\\_advocacy@umanitoba.ca](mailto:student_advocacy@umanitoba.ca)