

PLNT 3520 Principles of Plant Improvement

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Class location - Agriculture 343

Lab/tutorial times & days - Thursday at 2:30 – 5:25

Lab/tutorial location - Agriculture 172

Instructor Contact Information

Name

Dr. Robert Duncan

Email

rob.duncan@umanitoba.ca

All email communication must conform to the Communicating with Students University Policy. I will normally respond to an email with in 24 hours. The best way to discuss the course and course material is by email and by making an appointment to meet. Contact your Teaching Assistant, Jared Bento (bentoj@myumanitoba.ca) for lab related questions.

Office location
305 Plant Science

Student Meetings

I am eager to meet with PLNT 3520 students individually or in small groups. Please email and we can setup a time and date that works best for you and me. I will also stay after class each day to discuss course information and discuss plant breeding.

Traditional Territory or Land Acknowledgment

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota and Dene peoples, and on the homeland of the Métis Nation. We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

Equity and Inclusion Commitment

I will ensure that the class, lab and entire learning environment related all my courses and student training is equal and fair for each and every student. Absolutely no oppression in or out of the classroom will be tolerated. Please work with me to guarantee that we have a safe, inclusive and respectful learning environment.

Course Description

U of M Course Calendar Description

Objectives, principles, and methods of plant genetic improvement will be covered. This includes traditional and modern plant breeding, genetic resources, selection, and applications of tissue culture, genetic engineering and molecular markers to plant improvement. Prerequisite: PLNT 2520 (or 039.252) or BIOL 2500 or the former BOTN 2460 (or 001.246).

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 Learning Outcomes

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

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.

Course Materials

Reading Material

Priyadarshan, P.M. 2019. **Plant Breeding: Classical to Modern**. Springer Nature Singapore Pte Ltd., Singapore. pp. 570. This book is available through the University of Manitoba library as an e-book download, can be purchased as an e-book or hardcover book through <https://www.springer.com/gp/book/9789811370946>, or can be purchased as a hardcover book through Amazon.ca.

Sleper, David A. and Poehlman, John M. 2006. **Breeding Field Crops**. Fifth Ed. Blackwell Publishing. pp. 424. This book is available through the University of Manitoba library. A limited number of copies may be available in the University bookstore or through Amazon.ca.

Acquaah, George. 2012. **Principles of Plant Genetics and Breeding**. Second Ed. Wiley-Blackell. pp. 740. This book is available through the University of Manitoba library or through Amazon.ca.

Note: Chapters listed in the course outline refer to chapters from Priyadarshan (2019). Materials from the other listed texts will be used as appropriate. The texts are used as supplemental reading materials to support learning and provide more detailed information. Other sources may be used and will be acknowledged.

Additional reading materials or links will be posted in UMLearn.

Using Copyrighted Material

Please respect copyright. Copyrighted works, including those created by the instructor or teaching assistant, 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.

Technology

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 technology during classes and labs 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 the scheduled class/lab times. If a student is on call (emergency) the student should switch his/her cell phone and/or notifications off. (©S [Kondrashov](#). Used with permission).

It is a requirement that you have all hardware, software and connection ability necessary to successfully operate UM Learn. Course material, grades and communication will occur using UM Learn. We will also be using iClicker Cloud for participation and practice. Thus, you will need to setup an iClicker Cloud account.

UM Learn

Electronic files of the course syllabus, lectures and laboratory/tutorial assignments will be added to the course content on UMLearn. Go to the University of Manitoba website 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. Information will be posted on the A01 section.

Course Schedule

This schedule is subject to change at the discretion of the instructor and/or based on the learning needs of the students but such changes are subject to [section 2.8 of the ROASS procedure](#)).

Lectures will be held in person on MWF from 9:30-10:20 a.m. Laboratory sessions will be in person on Thursdays from 2:30-5:30.

Important Dates:

September 6, 2023	Class begins
September 14, 2023	First lab/tutorial session
Sept 20, Oct. 11, Oct 27, Nov. 22, and Dec. 11, 2023	In-class tests. Five in total, each worth 10%.
September 22, 2023	No Class
September 28, 2023	No Lab
October 2, 2023	National Day for Truth and Reconciliation - no class
October 9, 2029	Thanksgiving - no class
October 19, 2023	Data analysis assignment due
November 13-17, 2023	Fall break, no classes or laboratory
November 21, 2023	Last day for voluntary withdrawal
December 11, 2023	Last day of class (Test 5)

Note: Due dates for laboratory assignments will be indicated on the assignment and are typically due one week after the laboratory/tutorial. See the laboratory schedule for more information.

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 Priyadarshan (2019) textbook 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 textbook and other suggested texts provide a good resource for traditional plant breeding methods, as well as molecular and genetic engineering techniques.

COURSE OUTLINE

1. Introduction to Plant Breeding (Chapter 1)
2. Plant Domestication and Genetic Resources (Chapters 2 and 3)
 - a. Centres of diversity
 - b. Patterns of evolution and domestication of cultivated plant species
 - c. Genetic resources
 - d. Germplasm conservation
3. Plant Reproduction (Chapters 4, 5, 6 and 9)
 - a. Types of reproduction
 - i. Sexual
 - ii. Asexual
 - iii. Apomixis
 - b. Fertility regulating mechanisms
 - i. Self-incompatibility
 - ii. Male sterility
 - iii. Artificial hybridization
4. Basic statistical methods and experimental design (Chapter 7)
 - a. Measures of central tendency
 - b. Measures of variation
 - c. Measures of association
 - d. Basic experimental design
 - e. Measures of fit (e.g. chi-square test)
5. Inheritance of Genetic Variability (Chapters 14 and 20)
 - a. Qualitative traits
 - i. Allelic interactions
 - ii. Genic interactions
 - b. Quantitative traits
 - i. Additive vs. dominance genetic variation
 - ii. Genotype by environment interactions
 - iii. Heritability
 - iv. Genetic gain
6. Genetic Improvement of Self-pollinating Species (Chapters 8, 10,11 and 13)
 - a. Basic selection methods
 - b. Pedigree selection

- c. Bulk population
 - d. Single-seed descent
 - e. Double haploid
 - f. Backcrossing
7. Genetic Improvement of Cross-pollinating Species (Chapters 8, 12 and 15)
 - a. Genetic theory related to cross-pollinated plants
 - b. Basic selection methods
 - c. Selection methods using progeny testing
 - d. Hybrid breeding
 - e. Synthetics
 8. Application of Tissue Culture the Plant Breeding (Chapter 21)
 - a. General principles of plant cell and tissue culture
 - b. Elimination of disease and role in germplasm conservation
 - c. Clonal propagation
 - d. Embryo culture
 - e. Pollen and anther culture
 - f. Doubled haploid production
 - g. Somatic cell hybridization
 9. Genetic Engineering (Chapter 22)
 - a. General process of genetic transformation
 - b. Gene editing technology
 - c. Applications to plant improvement
 - d. Advantages and disadvantages of use of genetic transformation for plant improvement
 - e. Regulation of genetic engineering
 10. Molecular Breeding (Chapters 23 and 24)
 - a. Types of genetic markers
 - b. Marker assisted breeding
 - c. Quantitative trait loci
 - d. Genetic mapping
 - e. Genomics assisted breeding
 11. Cultivar Release, Maintenance and Distribution
 - a. Government regulations
 - b. Maintenance of genetic purity
 - c. Plant breeder's rights and gene patenting

Course Evaluation and Assessments

Summary

Students will be evaluated through a number of lab assignments, in-class participation iClicker questions, in-lab iClicker questions and five in-class tests.

Grade Assignment:

In-Class iClicker*	10%
In-Class Quizzes (Sept 20, Oct. 11, Oct 27, Nov. 22, and Dec. 11, 2023)	50%

Laboratory/Tutorials

In-Lab iClicker (at the start of each lab)	5%
Data Analysis Assignment (Due October 19, 2023)	5%
Combined Laboratory/Tutorial Assignments (Due dates are listed on the Lab schedule of this syllabus – excludes Data Analysis Assignment)	30%

Assessment Descriptions

iClicker

This class will use iClicker (throughout lecture and at the beginning of each lab), a student response system for you to answer questions about the course content, opinions, or general knowledge. For questions that have no correct answer (e.g. opinions) students will receive one point. For questions that have a correct answer, students will receive one point for answering the question and one point for the correct answer. Students will be assigned an iclicker grade based on the total proportion of iclicker points earned. Students that earned at least 80% of the iclicker points will receive 10/10 marks, those the earned 70-79.9% of the iclicker grade will receive 8/10 marks, those with 60-69.9% of the iclicker points will receive 7/10 marks, those with 50-59.9% will receive 6/10 marks and those with less than 50% iclicker points will receive 0/15 marks.

In-Class Tests

There will be 5 in-class tests throughout the term. They will cover the material on the previous 5-7 lectures. These will include calculations, problem solving, short answer and long answer questions. If you miss a test for any reason, the weight of that test will be applied to the next test. If you miss the 5th and final test, you will have the opportunity to write a cumulative final exam during the exam week period.

Lab Tutorials and Assignments

Submission and assessment details will be provided for each lab assignment/tutorial.

Assignment Feedback

Students can expect to get grades for assignments and or examinations no later than two weeks from the time of submission. Summative feedback will be provided when the assignment is graded. Feedback will usually be provided in hardcopy within two weeks of the due date.

Labs and Tutorials

Expectations

Students are expected to attend and participate in all labs. The teaching assistant will provide an overview of the materials for the lab where appropriate. Some sessions will include group discussions followed by assignments. Assignments should be in either Word, Excel or Pdf formats. The laboratories/tutorials 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 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 laboratory/tutorial should be directed to the teaching assistant.

Lab Schedule

Assignments for each laboratory/tutorial will be posted on UMLearn prior to the scheduled lab/tutorial. Students are expected to have read the assignment before joining the laboratory/tutorial session. Come prepared to the lab. iClicker questions will be asked at the beginning of each lab. The following represents the tentative laboratory/tutorial schedule. Any changes to this schedule will be announced during the lab and on UMLearn.

- September 14: Lab 1 - Plant Reproductive Anatomy and Manipulation
 - Assignment 1 due: September 21
- September 21: Lab 2 - Fertility Regulation: Self-incompatibility and Male Sterility, Doubled Haploid Production, Reproductive Isolation
 - Assignment 2 due: September 28
- September 28: NO LAB
- October 5: Lab 3 – Genetic Recombination
 - Assignment 3 due: October 12
- October 13: Data Analysis
 - Data analysis assignment due: October 19
- October 19: Lab 4 – Breeding Methods for Self Pollinated Species
 - Assignment 4 due: October 26
- October 26: Lab 5 – Population Genetics, Response to Selection in Cross Pollinated Crop Species
 - Assignment 5 due: November 2
- November 2: Lab 6 – Breeding Methods for Cross Pollinated Crop Species
 - Assignment 6 due: November 9
- November 9: Lab 7 – Issues Relating to Genetically Engineered Crops
 - Assignment 7 due: November 23 (reading week November 13-17)
- November 23: Lab 8 – Development of linkage maps and QTL analysis
 - Assignment 8 due: December 7
- November 30: Practice/question session for assignment 8, review time of first half of course

Grading

Letter Grade	Percentage out of 100	Grade Point Range	Final Grade Point
A+	90-100	4.25-4.5	4.5
A	80-89	3.75-4.24	4.0
B+	75-79	3.25-3.74	3.5
B	70-74	2.75-3.24	3.0
C+	65-69	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

Final grades will be rounded to the closest whole number.

No extra credit opportunities are available.

Expectations

Students are expected to attend and participate in all classes and laboratory/tutorial 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. If students require further clarification of course material, it is their responsibility to contact the professor or teaching assistant and set an appointment to discuss the problem. Students, the professor, and the teaching assistant are expected to comply with the University of Manitoba's Respectful Work and Learning Environment Policy:

http://umanitoba.ca/admin/governance/governing_documents/community/230.html

Course Policies

Academic Integrity

Academic dishonesty is a serious offence. Please refer to the General Academic Regulations section in the 2021/22 General Calendar for information on 'Plagiarism and Cheating' in the "Academic Integrity" section and 'Examinations: Personations' in the "Final Examinations Regulations" section.

Each student in this course is expected to complete their coursework and programs of study with integrity by making a commitment to the six fundamental values of honesty, trust, fairness, respect, responsibility, and courage. <http://umanitoba.ca/student-supports/academic-supports/academic-integrity>.

Students are encouraged to discuss problems, interact with each other and ask questions during laboratory or tutorial 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.) Plagiarism, duplicate submission, cheating on quizzes, tests, and exams, inappropriate collaboration, academic fraud, and personation are in violation of the Student Discipline Bylaw and will lead to the serious [disciplinary action](#). Visit the [Academic Calendar](#), [Student Advocacy](#), and [Academic Integrity](#) web pages for more information and support.

Accessibility

The University of Manitoba is committed to providing an accessible academic community. [Students Accessibility Services \(SAS\)](https://umanitoba.ca/student-supports/accessibility) (<https://umanitoba.ca/student-supports/accessibility>) offers academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g., mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

520 University Centre
(204) 474-7423

Student_accessibility@umanitoba.ca

Attendance

Attendance for the lectures and labs is highly recommended and necessary to do well in the course. iClicker questions will be **asked each class and lab** and material from each class will be on each test. If you miss a test for any reason, the weight of that test will be applied to the next test. If you miss the 5th and final test, you will have the opportunity to write a cumulative final exam during the exam week period. Each lab has iClicker questions at the beginning of the class and assignments associated with the specific lab, so it is essential that you attend each lab.

Assignment Extension and Late Submission

- All assignments should be submitted by the due date listed in the course schedule. If an extension is required the student must inform the instructor in writing.
- Students who fail to submit work on time and do not ask for an extension are subject to the late assignment penalty. The penalty is an 10% per day reduction in the value of the student's grade for up to five days. After that point, the work is worth zero percent. Students who are not able to submit assignments on time due to health or other compassionate reasons must submit a written explanation. If an extension is granted, the penalty will be 4% for each working day of the extension to a maximum 50%. Only in extreme circumstances will an extension be granted with no late deductions.
- Students are expected to make every effort possible to submit required work by the due date.

The following factors are considered not to be contributing to or constituting extenuating circumstances:

- Computer failure will not be considered a valid reason for the late submission of assignments, and extensions of more than “two life happens days” (see course outline for more details) will not be granted as a result of computer failure. Software crashes, disk failures and printing difficulties are an unavoidable aspect of using a computer and should be anticipated and planned for.
- Assessment tasks in other subjects: Students are given fair notice of assessment due dates and are expected to manage their time in order to meet the set deadlines. This specifically includes assessment resulting from an approved overload.
- Employment responsibilities and routine financial support needs: Only in very exceptional circumstances would students be eligible for extensions for work commitments (for example, an unplanned, urgent and unavoidable overseas work task for a professional full-time worker studying part-time).
- Social activities and commitments: Social activities (for example, recreational travel (domestic or international), planned events such as weddings, or participation in a University play) are expected to be undertaken and managed by students without interfering with their ability to fulfil assessment tasks.
- Stress or “normal” anxiety: the stress or anxiety normally associated with the completion of required assessment tasks or any aspect of course work is not considered. A medically diagnosed anxiety disorder, however, may be grounds for an extension or other accommodation under the policy for students experiencing academic disadvantage.

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.

Recording Class Lectures

No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission from Robert Duncan. Course materials (both paper and digital) are for the participant’s private study and research.

Referencing Style

All references cited in your report should be in alphabetical order according to the senior (first) author's surname. The following is the standard method for citing references to the appropriate journal or book referred to in the body of your Discussion.

Example 1 - citation of a multi-authored book in which each chapter is written by a different author but the complete publication is edited by one or two persons. The author(s) and page numbers of the specific chapter are cited.

Baker, L.M. and E. Green. 1984. The inheritance of eye colour. p. 187-241, In: Human genetics. A. Brown (ed.), Plenum Press, New York.

Example 2 - citation of a book as in Example 1 except that only one person has authored and edited the entire book (e.g. a textbook).

Russell, P.J. 1986. Translation of the genetic message. p. 437-466, In: Genetics. Little, Brown and Co., Boston.

Example 3 - citation of a paper from a scientific journal.

Kerby, K. and J. Kuspira. 1987. The phylogeny of the polyploid wheats. Genome, 29:722-737.

Technology Use

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 technology during classes and labs 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 the scheduled class/lab times. If a student is on call (emergency) the student should switch his/her cell phone and/or notifications off. (©S Kondrashov. Used with permission).

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Using Copyrighted Material

Please respect copyright. We will use copyrighted content in this course. I have ensured that the content I use is appropriately acknowledged and is copied in accordance with copyright laws and university guidelines. Copyrighted works, including those created by me, are made available for private study and research and must not be distributed in any format without permission. Do not upload copyrighted works to a learning management system (such as UM Learn) or any website (e.g., Course Hero, Chegg, etc.), unless an exception to the Copyright Act applies or written permission has been confirmed. For more information, see the University's Copyright Office website (<http://umanitoba.ca/copyright/>) or contact um_copyright@umanitoba.ca.

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/>) 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 [Everything You Need to Thrive](https://umanitoba.ca/student-supports) (<https://umanitoba.ca/student-supports>) website.

2SLGBTQIA+ Community

Find your queer community on campus! UM is committed to being an inclusive and welcoming space for all 2SLGBTQ+ students, staff and faculty. Visit the [2SLGBTQ+ Community](https://umanitoba.ca/2slgbtq-community) (<https://umanitoba.ca/2slgbtq-community>) website to access services, find resources, and connect with like-minded people and allies.

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)
 - [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#our-services) (https://umanitoba.ca/student-supports/student-health-and-wellness/student-counselling-centre-scc#our-services) 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 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 key 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 have about the research process. Liaisons can be contacted by email or phone, and are also available to meet with you online or in-person. A [complete list of liaison librarians can be found by subject](http://bit.ly/WcEbA1) (http://bit.ly/WcEbA1).

General library assistance is also available at both the Bannatyne and Fort Garry campuses by [visiting any library location](https://www.umanitoba.ca/libraries/locations-and-facilities) (https://www.umanitoba.ca/libraries/locations-and-facilities). When working online, students can receive help via the Ask Us chat button found on the right-hand side of the [Libraries' homepage](http://www.umanitoba.ca/libraries) (http://www.umanitoba.ca/libraries).