University of Manitoba
Faculty of Agricultural and Food Sciences
Department of Plant Science

PLNT 3520 Principles of Plant Improvement

Course Syllabus – Fall 2020

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COURSE DETAILS

Course Title & Number:	PLNT 3520 – Principles of Plant Improvement
Number of Credit Hours:	3
Class Times & Days of Week:	Lectures - MWF 9:30-10:20 Labs – R – 2:30-5:30
Location for classes/labs/tutorials:	Lectures and labs will be held synchronously using Cisco Webex that can be accessed through the course in UMLearn.
Pre-Requisites:	PLNT 2520 or BIOL 2500

Instructor Contact Information

Instructor(s) Name:	Dr. Anita L. Brûlé-Babel
Preferred Form of Address:	Anita or Dr. Brûlé-Babel
Office Location:	Due to online learning requirements, there will be no in person meetings.
Office Hours or Availability:	Appointments can be booked in Webex through UMLearn on Wednesdays between 12:30 pm and 1:00 pm. If these times are not suitable, students can contact the instructor via email to set an appointment for a phone or Webex meeting. Emails will be checked during regular work hours Monday to Friday between 8:30 am and 4:30 pm. Please allow sufficient time for response.
Office Phone No.	204-474-6062 (not consistently monitored during COVID-19)
Email:	Anita.Brule-Babel@umanitoba.ca 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 are monitored during regular work hours Monday to Friday between 8:30 am and 4:30 pm and will be answered as time permits on week days (usually within 24 hours).

Lab Instructor Information:	Younyoung Lee Leey3457@myumanitoba.ca 204-474-6060 (due to COVID-19 restrictions, this phone number may not be answered regularly and no messages can be left)
Contact:	The best way to contact the instructor or teaching assistance is via the email addresses listed above.

General Course Information

Calendar Course 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)

Who should take this course?

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 and Learning Outcomes

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.

Using Copyrighted Material

Recording Class Lectures

Dr. Anita Brûlé-Babel and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission from Dr. Anita Brûlé-Babel. Course materials are for the participant's private study and research, and must not be shared. Violation of these and other Academic Integrity principles, will lead to serious disciplinary action.

Classes will be taught synchronously (at the scheduled class time) using Cisco Webex. These classes will be recorded and automatically posted to UMLearn. Recording is being done to circumvent issues for some students that may have technical issues (e.g. unstable internet connection) during class time. Recordings will only be used to facilitate teaching of this class. By participating in these lectures, it is assumed that you give consent to being recorded.

Textbook, Readings, Materials

Suggested Texts:

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.

Course 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.

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. Lectures will be conducted synchronously using Cisco Webex that can be accessed through UMLearn. Lectures will be recorded to support students that may have issues with technology during some lectures. It is expected that students will attend synchronous classes, participate in class discussion, and take their own notes based on the lectures presented. IClicker, a student response technology, will be used during classes. Use of electronic files is restricted as indicated above.

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

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

All communications amongst students for assignments, discussions and breakout sessions are expected to be respectful and compliant with the University of Manitoba's Respectful Work and Learning Environment Policy:
http://umanitoba.ca/admin/governance/governing_documents/community/230.html

Expectations: I Expect You To

Students are expected to attend online and participate in all synchronous classes and laboratory/tutuorial 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. Recorded lectures will be available on UMLearn to facilitate learning for students that have technology issues. This is not a substitute for attending class. The iClicker student response system will be used during synchronous online classes and grades associated with these systems cannot be substituted or excused if students miss an online class. 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

Academic Integrity:

Academic dishonesty is a serious offence. Please refer to the General Academic Regulations section in the 2020/21 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 compete 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.

Students Accessibility Services

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

I believe in active learning and want students to be thinking as we progress through the classes. Plant improvement is an applied science and problem solving is a critical skill to gain in this course. I will use primarily a lecture style format during synchronous lectures, but am willing to answer questions from students as required to ensure that students understand the material. Do not be afraid to ask questions. I will also use iClicker questioning in a number of ways: 1) to test understanding of a topic; 2) to review the previous lecture's material; or 3) to get opinions

on specific topics. . I will begin most classes with questions to the students regarding key concepts and ideas discussed in the previous lecture. I will also ask for input from students during lectures to help engage students in 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 videos (in place of wet labs this year), data analysis, and problem solving.

Class Schedule

Lectures will be held on MWF from 9:30-10:20 using Cisco Webex that can be accessed through UMLearn starting Sept. 9, 2020 and ending Dec. 11, 2020. Laboratory sessions will be on Thursdays from 2:30-5:30 starting on Oct. 1, 2020.

Important Dates:

September 9, 2020	Lectures begin
October 1, 2020	First lab/tutorial session
October 12, 2020	Thanksgiving, no classes
Sept 25, Oct. 9, Oct 23, Nov. 6, Nov. 27 and Dec. 9, 2020	In-class quizzes
November 5, 2020	Data analysis assignment due (see grading section)
November 9-13, 2020	Fall break, no classes or laboratory
November 23, 2020	Last day for voluntary withdrawal
December 11, 2020	Last day of classes

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

Laboratory Expectations

Students are expected to attend and participate in all laboratory/tutorial sessions on line. The teaching assistant will provide an overview of the materials for the laboratory/tutorial where appropriate. Some sessions will include group discussions followed by assignments to be posted to the appropriate assignment folder online. 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 online 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 directly to the teaching assistant.

Tentative Laboratory/Tutorial Schedule

Assignments for each laboratory/tutorial will be posted on UMLearn the week prior to the scheduled lab/tutorial. Students are expected to have read the assignment before joining the online laboratory/tutorial session. The following represents the tentative laboratory/tutorial schedule. Any changes to this schedule will be announced during class and on UMLearn.

Oct. 1	Plant Reproductive Anatomy and Manipulation (Assignment Due Oct. 8)
Oct. 8	Fertility Regulation: Self-incompatibility and Male Sterility, Doubled Haploid Production, Reproductive Isolation (Assignment Due Oct. 15)
Oct. 15	Genetic Recombination (Assignment Due Oct. 22)
Oct. 22	Data Analysis Part 1 (Assignment Due Nov. 5)
Oct. 29	Data Analysis Part 2 (Assignment Due Nov. 5)
Nov. 5	Breeding Methods for Self Pollinated Species (Assignment Due Nov. 19)
Nov. 19	Population Genetics – Response to Selection in Cross Pollinated Crop Species (Assignment Due Nov. 26)
Nov. 26	Breeding Methods for Cross Pollinated Crop Species (Assignment Due Dec. 3)
Dec. 3	Issues Related to Genetically Engineered Crops (Assignment Due Dec. 10)
Dec. 10	Development of linkage maps and QTL analysis

Course Evaluation Methods

Students will be evaluated through a number of laboratory/tutorial assignments, participation, iClicker answers and in-class quizzes.

Grade Assignment:	
iClicker*	15%
Laboratory/Turtorials	
Data Analysis Assignment (Due Nov. 5 2020)	15%
Combined Laboratory/Tutorial Assignments (Due dates are listed on the Lab schedule of this syllabus – excludes Data Analysis Assignment)	35%
Participation in Discussions	5%
In-Class Quizzes (Sept. 25, Oct. 9, Oct. 23, Nov. 6, Nov. 27, Dec. 9, 2020)	30%

***** Iclicker – This class will use iClicker, a student response system for you the answer questions about the course content, opinions, or general knowledge. For questions that have no correct answer 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 15/15 marks, those the earned 70-79.9% of the iclicker grade will receive 12/15 marks, those with 60-69.9% of the iclicker points will receive 9/15 marks, those with 50-59.9% will receive 6/15 marks and those with less than 50% iclicker points will receive 0/15 marks. Instructions for downloading the iClicker REEF app to your mobile device or laptop will be posted on UMLearn. Additional information will also be provided by the instructor in class.

Grading

The following letter grade equivalency will be used in this class:

A+	≥90%
A	80-89.9%
B+	75-79.9%
B	70-75.9%
C+	65-69.9%
C	60-64.9%
D	50-59.9%
F	<50%

Referencing Style

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: Authour(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 authour, 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.)

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 description. Follow the instructions and answer questions as directed. Use appropriate scientific terminology. Assignments should be uploaded to the appropriate assignment folder on UMLearn. It is preferable that assignments be in a pdf format, but Word or Excel formats are acceptable. It is

not necessary to type assignments. Images of handwritten diagrams are acceptable, 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.

Quizzes will be a combination of short answer and problem solving questions.

Assignment Grading Times

Students can expect to receive a grade within two weeks of an assignment deadline or quiz. Evaluative feedback will be provided for four quizzes and four assignments prior to the VW date.

Assignment Extension and Late Submission Policy

Late assignments handed in without an acceptable reason (e.g. illness, death in the family) will not be accepted and will receive a grade of zero. Assignments due dates and times are set on UMLearn and will normally be 11:59 pm on the date (CDT or CST) they are due. If you are living in a different time zone, please take this into accoun**t.**

Although the University is not requiring medical notes for students that are unable to meet courser requirements due to medical circumstances, students are required to contact their instructor or academic advisor by email to inform of the missed work and make arrangements for extensions, deferrals, or make-up assignments.

Schedule A – Support Services Available to Students

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 writing and learning supports to help you throughout your academic program. These supports are offered online during the Covid-19 pandemic.

Make an appointment with an ALC 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. The ALC also has an English as an Additional Language (EAL) specialist available to work with students on improving their English-language academic writing skills.

Consult an ALC learning specialist or attend an academic skills workshop to improve your time management, learning strategies and test-taking strategies. Get support in select courses by making an appointment with an ALC content tutor. The ALC also offers peer-facilitated study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In SI study groups, students ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

In addition to one-to-one and group sessions, you can also find writing and study tip sheets and videos on the ALC website.

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/

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.

University of Manitoba Libraries (UML)
Research begins at UM Libraries. Learn at the Libraries is a great place to start, with information for students on academic writing, how to search the library, evaluating resources, and writing citations. 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 locating appropriate resources or managing citations, 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 online. When working remotely, students can also receive help online

through Ask Us! chat. For further detail about the libraries' services and collections, visit the Libraries' web site. Regularly check our COVID-19 Update page for available library services and access to resources for Fall 2020

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 UMSU University Centre or S211 Medical Services Building
(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.
http://umanitoba.ca/student/case-manager/index.html
520 UMSU University Centre
(204) 474-7423 (Student Support Intake Assistant)

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. Note that due to fire displacement, UHS is unable to provide in-person medical care on the Fort Garry Campus until October, 2020.
University Health Service http://umanitoba.ca/student/health/
(204) 474-8411 (Business hours or after hours/urgent calls)

Health and Wellness
Contact our Health and Wellness Educator if you are seeking information on health topics, including physical and mental health concerns, alcohol and substance use harms, or sexual violence. You can also access peer support from a *Healthy U* peer health educator.
Health and Wellness Educator
https://umanitoba.ca/student/health-wellness/welcome-about.html
britt.harvey@umanitoba.ca
469 UMSU University Centre
(204) 295-9032

Sexual Violence Resource Centre
Contact SVRC if you have experienced sexual violence or are seeking information about how to help somebody else. SVRC provides inclusive, survivor-centred, trauma-informed services, such as consultation, referrals, safety planning, and a range of on-site supports, including counselling by Klinic.
Sexual Violence Resource Centre
https://umanitoba.ca/student-supports/sexual-violence-support-and-education
svrc@umanitoba.ca
537 UMSU University Centre
(204) 474-6562 (Sexual Violence Intake and Triage Specialist)

Student Services at Bannatyne Campus
Contact SS@BC to access a full range of resources and supports for learners at the Rady Faculty of Health Sciences. Services are provided through a one-stop hub that includes a range of supports for personal and academic success, including counselling, mental health consultation, and spiritual care.
Student Services at Bannatyne Campus
https://umanitoba.ca/student-supports/student-services-bannatyne-campus
bcss@umanitoba.ca
S211 Medical Services Building
(204) 272-3190 (Intake and Triage Specialist

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 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 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

  Student Discipline
  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

- 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 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/admin/governance/governing_documents/community/235.html

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