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

PLNT 7670 Quantitative Genetics and Plant Breeding

Course Syllabus – Winter 2021

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COURSE DETAILS

Course Title & Number:	PLNT 7670 – Quantitative Genetics and Plant Breeding
Number of Credit Hours:	3
Class Times & Days of Week:	Lectures – Mon. 1:30 – 4:00 pm
Location for classes/labs/tutorials:	Lectures will be held synchronously using Cisco Webex that can be accessed through the course in UMLearn
Pre-Requisites:	PLNT 3520 and PLNT4330 or consent of instructor

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 Tuesdays between 3:30 pm and 4:30 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 (currently not monitored due to COVID-19 restrictions)
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).

Contact: The best way to contact the instructor or teaching assistance is via the email addresses listed above.

General Course Information

Course Description
The theoretical basis of quantitative genetic variation. The genetic structure of plant breeding populations. Estimation, interpretation and use of genetic parameters in cross-pollinated and self-pollinated plant species. Variance components, genotype x environment interaction, inbreeding, heterosis, selection, heritability and combining ability. Prerequisites: PLNT 3520 and PLNT 4330 or consent of instructor.

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. Details of the course are provided in this syllabus.

Course Goals and Learning Outcomes

Course Objectives: Through this course students will be able to:

1) Understand quantitative genetic theory and principles as they apply to plant breeding.
2) Read, understand and evaluate literature involving quantitative genetics as it relates to plant breeding.
3) Design, execute, analyse, and interpret results of experiments involving polygenically controlled characters of interest in a plant breeding program.

For this course, students should have a solid understanding of genetics at the intermediate level, a good understanding of basic statistical principles (including analysis of variance, covariance and linear regression), and a thorough understanding of plant breeding principles.

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.

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

Textbook (on reserve in Agriculture library):

Much of the course is based on principles presented in the following resource:

Falconer, D. S. and Mackay 1996. Introduction to Quantitative Genetics Fourth Edition. Longman Inc. New York. pp. 464. **This text is on 4 h reserve in the William Newman library. Note: Chapters listed in the course outline refer to chapters from this text.**

Due to COVID-19 restrictions use of library reserve materials is not allowed at this time.

Class Notes:
I will be providing class notes and supplement these with other resources as appropriate. This is done to provide you with information that has consistent notation and to provide you with information about how equations are derived.

Other useful resources include the following:

Baker, R.J. 1986. Selection Indices in Plant Breeding. CRC Press, Inc. Florida. pp.218.

Bernardo, R. 2010. Breeding for Quantitative Traits in Plants. Second Edition. Stemma Press, Woodbury, MN. pp.390.

Comstock R.E. 1996. Quantitative Genetics with Special Reference to Plant and Animal Breeding. Iowa State University Press. Ames. pp.421.

Crow, J.F. and Kimura, M. 1970. An Introduction to Population Genetic Theory. Harper & Row. New York. pp.591.

Doolittle, Donald P. 1987. Population Genetics: Basic Principles. Advanced Agricultural Series 16. Springer-Verlag. pp. 264.

Hallauer, A.R., Carena, M. J. and Miranda Filho, J.B. 2010. Quantitative Genetics in Maize Breeding. Handbook of Plant Breeding. Volume 6, 2010, DOI: 10.1007/978-1-4419-0766-0 Springer New York. Available on-line through U of M libraries.

Hartl, D.L. and Clark, A.G. 2007. Principles of Population Genetics. Fourth. Ed. Sinauer Associates, Inc. Massachusetts, U.S.A. pp. 652.

Kang, M.S. 2002. Quantitative Genetics, Genomics and Plant Breeding. CABI Publishing, Baton Rouge. pp. 400.

Li, C.C. 1976. First Course in Population Genetics. The Boxwood Press. U.S.A. pp.631.

Li, W.H. 1997. Molecular Evolution. Sinauer Associates, Inc. Massachusetts, U.S.A. pp.487.

Liu, B.H. 1998. Statistical Genomics. CRC Press. New York, U.S.A. pp. 611.

Lynch, M.L. and Walsh. B. 1998. Genetics and Analysis of Quantitative Traits. Sinauer Associates, Inc. Massachusetts, U.S.A. pp.980.

Mather, K. and Jinks, J.L. 1982. Biometrical Genetics. Chapman and Hall. Great Britain. pp. 396.

Mayo, O. 1987. The Theory of Plant Breeding Second Edition. Oxford University Press. New York. pp.334.

Roughgarden, J. 1996. Theory of Population Genetics and Evolutionary Ecology. Prentice Hall, Upper Saddle River, NJ. pp. 612.

Sleper, D. A. and Poehlman, J.M. and 2006. Breeding Field Crops. Iowa State University Press. pp.424.

Steel, R.G.D. and Torrie, J.H. 1980. Principles and Procedures of Statistics Second edition. McGrae-Hill Book Company. U.S.A. pp.633.

Weir, B.S., Eisen, E.J., Goodman, M.M. and Namkoog, G. (Editors). 1988. Proceedings of the Second International Conference on Quantitative Genetics. Sinaur Associates, Inc. U.S.A. pp.724.

Weisling, K., Nybom, H., Wolff, K., and Kahl, G. 2005. DNA Fingerprinting in Plants – Principles, Methods and Applications. Second Edition. CRC Press Inc. Taylor & Francis Group. Boca Raton, FL. pp. 444.

Wricke, G. and Weber, W.E. 1986. Quantitative Genetics and Selection in Plant Breeding. Walter de Gruyter & Co. Berlin. pp. 406.

Wu, R. Ma, C.X. and Casella, G. 2007. Statistical Genetics of Quantitative Traits: Linkage, Maps, and QTL. Springer New York. . Available on-line through U of M libraries. For SpringerLink: http://dx.doi.org/10.1007/978-0-387-68154-2

Other references will be provided through UM Learn or in class as required throughout the course.

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 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. 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 be only 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

Reading materials will be provided to students through UMLearn and synchronous classes will be conducted using Cisco Webex via UMLearn to review the main principles presented in the reading materials. Students are expected to prepare for class by reviewing materials and

classes will be conducted on an interactive basis to ensure understanding of the materials. Students are expected to login and participate in all classes 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 login 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. If further clarification is required, it is the student's responsibility to contact the professor and set an appointment to discuss the problem (see office hours section above). Students and the professor 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 may discuss problems, interact with each other, and ask questions as required. 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. Quantitative genetics and plant breeding are applied sciences and problem solving is a critical skill to gain in this course. Students will be expected to read materials provided prior to the class and be prepared to contribute to discussion. "Lectures" will be conducted through interactive problem solving to ensure that students understand the main principles. I will ask questions and expect students to contribute to the problem solving exercise. Students are expected to volunteer answers to questions posed. 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. This process provides me with a check to make sure student's understood the material.

I believe that we learn best by doing. Everything that is assigned for this class is designed to enhance learning of the subject matter.

Class Schedule

Lectures will be held Mondays from 1:30-4:00 pm using Cisco Webex that can be accessed through UMLearn starting Jan. 18, 2021 and ending April 16, 2021.

Important Dates:

January 18, 2021	Lectures Begin
Feb. 8, Feb. 22, Mar. 8, Mar. 22, Apr. 5, 2021	Tentative Problem Solving Assignment Due Dates*
February 15-19, 2021	Louis Riel Day and Winter Term Break (no classes)
March 31, 2021	Last day for voluntary withdrawal
April 2, 2021	Good Friday (no classes)
April 12, 2021	Major Assignment Due Date and Presentations
April 16, 2021	Last day of classes

*** Firm due dates for problem solving assignments will be indicated on the assignment when it is distributed to students.**

Students can expect to get grades for assignments no later than three 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 different resources. Where no chapters are listed, other information may be provided.

COURSE OUTLINE

1. **INTRODUCTION**

- Genetic basis of population and quantitative genetics

2. **MEASURMENT OF GENETIC VARIATION**

- Phenotype
- Genotype
- Product-based variation
  - Visible traits
  - Protein-based
- DNA-based variation
  - RFLPs
  - RAPDs
  - AFLPs
  - SSRs
  - ESTs
  - CAPs
  - SNPs
  - STSs

3. **GENETIC STRUCTURE OF POPULATIONS** (Chapter 1, Falconer and Mackay)

- Hardy-Weinberg Law
- Single Locus
- Multiple Alleles
- Multiple Loci
- Autosomal Linkage

4. **SYSTEMATIC FORCES** (Chapters 2 and 11, Falconer and Mackay)

- Migration
- Mutation
- Selection
  - Average fitness
  - Selective Advantage
  - Changes in gene frequency with phenotypic selection
  - Standardized selection differential
  - Probability of fixation

5. DISPERSIVE FORCES (Chapters 3, 4, and 5, Falconer and Mackay)

- Small Populations
  - Effective population size
  - Probability of fixation
- Wright's Inbreeding Coefficient F
- Coefficient of Coancestry
- Pedigreed Inbreeding
  - selfing
  - full-sibs and half-sibs
  - backcrossing
  - parent-offspring matings
- Effect of Population Size on Inbreeding

6. REVIEW OF STATISTICAL CONCEPTS

- Frequency Distributions
- Population Parameters and Sample Estimates
- Mean, Variance, Covariance, Correlation and Regression
- Expectations of Mean Squares
- Analysis of Multiple Environment Trials

7. GENETIC VALUES AND MEANS (Chapter 7, Falconer and Mackay)

- Genotypic Value
- Average Effect
- Breeding Value

8. GENETIC VARIANCE (Chapters 8, Falconer and Mackay)

- Additive Genetic Variance
- Dominance Genetic Variance
- Interaction Variance

9. COVARIANCES AMONG RELATIVES (Chapter 9, Falconer and Mackay)

- Offspring and One Parent
- Offspring and Mid-Parent
- Full-sibs
- Half-sibs
- Intraclass Correlation
- Estimation of Genotypic Variances

10. GENOTYPE-ENVIRONMENT INTERACTION (Selected papers to be provided as this section is covered)

- Theoretical Model
- Operational Model
- Analysis of Genotype-Environment Interaction
    - analysis of variance
    - joint regression
    - genotypic correlations
    - cross-over interactions

11. HERITABILITY (Chapter 10, Falconer and Mackay)

- Comparison of Definitions of Heritability
- Methods of Estimating Heritability
    - offspring-parent relationships
    - sib-analysis
    - selection experiments
- Precision of Estimates of Heritability

12. RESPONSE TO SELECTION (Chapters 11, 12 and 13, Falconer and Mackay; Chapter 6, Hallauer et al. 2010; Crow and Kimura)

- Expected Response
- Schemes for Artificial Selection
    - mass selection
    - single seed descent
    - full-sib family selection
    - half-sib family selection
    - within-family selection
    - sib selection
- Variance of Response to Selection
- Practical Considerations

13. MULTIPLE TRAIT SELECTION (Chapters 18 and 19, Falconer and Mackay and selected references to be provided as this section is covered)

- Genotypic Correlation
- Indirect Selection
- Multiple Trait Selection
    - Tandem Selection
    - Independent Culling
    - Selection Indices
    - Combined Selection

14. METHODS FOR STUDYING QUANTITATIVE GENETICS (Selected references to be provided as this section is covered)

- Diallel Analysis
- North Carolina Design I, II, III
- Generation Mean Analysis

15. QUANTITATIVE TRAIT LOCI (Chapter 21, Falconer and Mackay and selected references to be provided as this section is covered)

- Genetic Markers
- Construction of Genetic Maps
- Statistical Analyses and Confidence Intervals
- Identification and Verification of QTL

Note: The order of topics may change depending on the availability of guest lecturers. Some topics may not be covered based on time constraints.

Course Evaluation Methods

Students will be evaluated through problem solving assignments, participation, and a paper with presentation.

Grade Assignment:

Problem Solving Assignments (Total of 5 @ 12% each)*	60%
Tentative Due Dates: Feb. 8, Feb. 22, Mar. 8, Mar. 22 and Apr. 5	
Major Paper and Presentation (Total of 1 @ 25% each)	25%
Due Date: Apr. 12	
Participation in Discussion	15%
Total	100%

***Firm due dates will be established when assignments are issued.**

There is no final exam.

Grading

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

A+	≥ 85%
A	80-84.9%
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 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 must 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 I cannot read what you have written you will not receive credit for an answer.

The paper and presentation assignment is designed for you to use what you have learned in the class and apply this information to a proposal that can be related to your current research, but cannot be the exact research you are conducting.

Assignment Grading Times

Students can expect to receive a grade within three weeks of an assignment deadline. Evaluative feedback from at least two assignments will be available 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 course 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
bcstudentservices@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
stadv@umanitoba.ca