COURSE TITLE: Introduction to Soils and Crops
Department: Diploma Agriculture
Course Number: DAGR 0420
Academic Session: Fall 2016
Credit Hours: 4
Prerequisites and how they apply to this course: none

Classroom Location: Room 172, Agriculture building
Meeting Days and Class Hours: Monday, Wednesday and Friday, 1:30-2:20PM Sept 15 - December 7, 2016
Lab Location: B03 Tuesday 8:30-9:45 Soils labs in 318 Ellis building/Plant labs Room 134 Agriculture
B02 Thursday 10:00-11:15 Soil Labs in 318 Ellis/Plant Labs in 134 Agriculture
B01 Thursday 11:30-12:45 Soils Lab in 318 Ellis/ Plant Labs in 134 Agriculture

Department Office location: Room 160 Agriculture building
Phone Number: 474-9295
Course Web Page: Desire2Learn at https://universityofmanitoba.desire2learn.com/

Instructor Information
Name & Title: Dr. Tee Boon Goh
Office Location: Room 311 Ellis building
Office Phone Number: 474-6046
Office Hours: Monday, Wednesday and Friday 2:30-4:00PM by appointment
Email Address: TeeBoon.Goh@umanitoba.ca

Name & Title: Dr. Doug Cattani
Office Location: Room 105 Plant Science, Agriculture building
Office Phone: 474-6071
Office Hours: Monday to Friday 8:30-4:30 appointment preferred
Email address: doug.cattani@ad.umanitoba.ca

Teaching Assistants
Soils labs: Fernanda Pereira, pereiraf@myumanitoba.ca.
Crops labs: Nicholson Jeke, jeken@myumanitoba.ca.

Course Philosophy
Students' Learning Responsibilities
Students are expected to attend lecture and lab classes. Printed course notes, at cost, for soils lectures will be handed out in class, additional reading materials for the crops portion will be placed on Desire2Learn https://universityofmanitoba.desire2learn.com/. Students are encouraged to participate in class and labs by asking questions or providing appropriate comments from their own experiences that will add to the learning of all students. Students are expected to complete and hand in assignments on time. During class and lab periods, students are expected to restrict their wireless computer or phone activity to subjects pertaining to the topics under discussion. Computer and phone use should not disturb or distract other students.

Why is this course useful?
This course will introduce students to concepts and principles of crop production that they will use in subsequent courses and during the development of their farm plan. The basics of soil quality, texture, chemistry and evaluation will be studied. These soils concepts will then be applied to the growing of crops, which is the basis of both crop and livestock production. This course should be useful to all diploma students in all majors.

How this course fits into the curriculum
This is an introductory course that will introduce students to concepts of soils and crops. It will provide the basic principles that will be built upon in subsequent courses.
Course Description/Objectives

Undergraduate Calendar Description

This course provides a broad understanding of soil forming factors, soil characteristics, climate, nutrient supply and crop production, biology of crop plants, crop establishment and protection, harvest management, farming systems and crop rotations.

Instructional Methods
Lectures will be presented three days per week. The soils portion will have paper hand out notes for assisting students in note taking. The crops portion will have additional reading materials for the crops portion will be placed on Desire2Learn https://universityofmanitoba.desire2learn.com/.

Course Objectives
Students will learn how to identify and classify soils according to their limitations and their agricultural capabilities. Students will be able to describe soil quality characteristics such as texture, pH and structure. Students will be able to list the macro and micro nutrients essential for plant growth and development and be able to recognize appropriate soil nutrient levels and calculate appropriate application rates of nutrients for given crop production objectives. Students will be able to construct a crop rotation suitable for an intended purpose in a given geographic location within Manitoba. Students will be able to explain the limitations to crop yields and discuss the factors contributing to high crop yields. Students will be able to plan the seasonal activities essential for the successful production of a crop.

Learning outcomes
Learning outcomes assist: i) students to identify the knowledge, skills, attitudes and personal attributes expected of them to successfully complete their program of studies; ii) faculty to develop learning goals and objectives in their courses and programs, in prioritizing and focusing the learning experiences, and in the selection of appropriate assessment tools and; iii) potential students and outside agencies to assess the quality of our academic programs.
These learning outcomes areas include: Scholar, Content and technical expertise, Social accountability, Communicator, and Professional

Description of Examinations
4 lecture quizzes worth 8 marks each 32%
Final lab exam with a crops and a soils component 12%
Final lecture exam (2 hours) 33%
Participation through iClicker 5%

Description of Assignments
9 lab worksheets worth 2 marks each 18%
(includes the Field Trip attendance and report)

Assignment Due Dates
Lab worksheets are due at the end of the lab unless arrangements have been made with the TA for the lab.

Important Dates (e.g., voluntary withdrawal date)
Field trip: September 22 at Ian Morrison Research Center, Carman. Buses leave and return to U of M.
NO CLASS dates: October 6 and 7, 2016 – Fall mid-term Break, October 10 - Thanksgiving, November 11 - Remembrance Day
Voluntary withdrawal date: November 15, 2016
Final lab exam: Friday, December 05, 2016 at 6PM

Texts, Readings, Materials

2
Textbook(s) – Authors, Titles, Edition
“Required Readings for Introduction to Soils and Crops DAGR 0420” available in the U of M bookstore
iClicker available at the University of Manitoba bookstore or get the iClicker Go app for your laptop or phone at
http://www1.iclicker.com/mobile-polling-iclicker-go

Course Policies

Class: No use of cell phones and/or computers for communication purposes, surfing and data downloading during class. The instructor reserves the right to confiscate equipment used for the above. No disrupting of class or student will be asked to leave. Multiple offences may result in student being asked to withdraw from the course.

Late Assignments: Lab assignments are due at the end of each lab period unless arrangements have been made with the TA for the lab. Attendance is compulsory and there will be no makeup labs for missed labs.

Missed Assignments: There will be no makeup labs for missed labs. A mark of zero is assigned to a missing lab.

Missed Exams: Unexcused missed exams will be given a grade of zero. Where exams are missed and excused through written notification such as a doctor’s certificate of illness, evidence of death in the family, or other circumstances that are beyond the control of the student, the student may be given the following options:
1) Re-schedule a date for the exam with the instructor and complete the exam at that time (the instructor has the option to set a different exam) or
2) The final grade will be determined by increasing the value of the course work completed by the amount that would have been allocated to the missed exam.

Academic Integrity
Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty. Cheating in examinations or tests may take the form of copying from another student or bringing unauthorized materials into the exam room. Exam cheating can also include exam impersonation. A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty. Students should acquaint themselves with the University’s policy on plagiarism; cheating, exam impersonation and duplicate submission (see the University of Manitoba Undergraduate Calendar).

Use of Third Party Detection and Submission Tools
Electronic detection tools may be used to screen assignments in cases of suspected plagiarism.

Group Work Policies: Students are expected to work independently except in labs where groups have been formed or assigned. In the case of approved group work each student is still expected to hand in individual papers.

Course Content

Description of lectures (tentative) G = Goh, C = Cattani
DATE: Fall 2015 LECTURE TOPIC (INSTRUCTOR) QUIZZES
September 16 Introduction and Registration of iClickers (G, C) Agriculture Origin and Evolution (C)
September 19 Soil Quality and Agricultural Production (G)
September 21 Soil Textural Classes (G)
September 22: Compulsory Diploma Field Trip – Carman Farm – Laboratory #5 and Soil Characterisation
September 23 Soil pH and Nutrient Availability (G)
September 26 Macro- and Micro-Nutrients (G)
September 28 Nutrient Deficiencies (G) Quiz #1
September 30 Nutrient Toxicities (G)
October 3 Diagnosing Nutrient Disorders (G)
October 5 Soil Structure and Recognizing Soil Structure Problems (G)
October 7 NO CLASS: Fall-term Break
October 10 NO CLASS: THANKSGIVING HOLIDAY
October 12 Saline Soils (G)
October 14 Sodic Soils (G)
October 17 Soils at Risk for Disease and Erosion (G)
October 19 **Quiz # 2**
October 21 Calculating Fertilizer Requirements (G)
October 24 Soil Testing (G)
October 26 Soil Sampling and Nitrogen in Soils (G)
October 28 Nitrogen in Soils (G)
October 31 Plant Biology: Transport, Transpiration, Photosynthesis, Respiration (C)
November 04 Plant Biology II; Technology and Agriculture (C)
November 07 Agronomy: Crop Yield Increases (C)
November 09 Crop Yield Limitations (C)
November 11 **No Class: Remembrance Day**
November 14 Agronomy: Crop Yield Increases (C)
November 16 Crop Yield Limitations (C) **Quiz #3**
November 18 Tillage Systems (C)
November 21 Seeding Practices (C)
November 23 Crop Rotations (C)
November 25 Crop Rotations (C) **Quiz #4**
November 28 Pedigreed Seed Production (C)
November 30 Crop Protection (C)
December 02 Harvest Management (C)
December 05 Lecture Completion (C) and Review (G, C)

**Description of laboratories**

<table>
<thead>
<tr>
<th>DATE</th>
<th>Lab Exercise Number (in the Required Readings book)</th>
<th>Where it is held</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 22</td>
<td>Compulsory Field trip including Lab 5, Plant ID</td>
<td>Carman, Manitoba</td>
</tr>
<tr>
<td>September 29</td>
<td>No labs – Compulsory Field trip (DAGR 0690 &amp; DAGR 0410)</td>
<td>134 Agriculture</td>
</tr>
<tr>
<td>October 11,13</td>
<td>Lab 4, Seed structure and Germination</td>
<td>134 Agriculture</td>
</tr>
<tr>
<td>October 18, 20</td>
<td>Lab 1, Soil Texture</td>
<td>318 Ellis</td>
</tr>
<tr>
<td>October 25, 27</td>
<td>Lab 2, Lime content and other properties</td>
<td>318 Ellis</td>
</tr>
<tr>
<td>November 01, 03</td>
<td>Lab 3, Soil Capability</td>
<td>318 Ellis</td>
</tr>
<tr>
<td>November 08, 10</td>
<td>Lab 7</td>
<td>134 Agriculture</td>
</tr>
<tr>
<td>November 15,17</td>
<td>Lab 8, Emergence, growth and Development</td>
<td>134 Agriculture</td>
</tr>
<tr>
<td>November 22, 24</td>
<td>Lab 6, Soil water</td>
<td>318 Ellis</td>
</tr>
<tr>
<td>Nov 29, Dec 01</td>
<td>Lab 9 Flowers and Inflorescences</td>
<td>134 Agriculture</td>
</tr>
</tbody>
</table>

Final Lab exam **Monday December 05, 2016** at 6PM
Schedule “A”

The following information may be used to fulfill the requirement of Schedule “A.” Such information is to be provided to students within the first week of classes, either through a paper copy and/or a University student information system (including Aurora or UM Learn).

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

Writing and Learning Support

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

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

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

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 201 Tier Building.

University of Manitoba Libraries (UML)

As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: http://bit.ly/WcEbA1 or name: http://bit.ly/1tJ0bB4. In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: http://bit.ly/1sXe6RA. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries’ homepage: www.umanitoba.ca/libraries.
Section (b) sample: re: A statement regarding mental health that includes referral information:

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

Student Counselling Centre
Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling. Student Counselling Centre: http://umanitoba.ca/student/counselling/index.html
474 University Centre or S207 Medical Services
(204) 474-8592

Student Support Case Management
Contact the Student Support Case Management team if you are concerned about yourself or another student and don’t know where to turn. SSCM helps connect students with on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team. Student Support Intake Assistant http://umanitoba.ca/student/case-manager/index.html
520 University Centre
(204) 474-7423

University Health Service
Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation. University Health Service http://umanitoba.ca/student/health/
104 University Centre, Fort Garry Campus
(204) 474-8411 (Business hours or after hours/urgent calls)

Health and Wellness
Contact our Health and Wellness Educator if you are interested in information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault. Health and Wellness Educator http://umanitoba.ca/student/health-wellness/welcome.html
Katie.Kutryk@umanitoba.ca
469 University Centre
(204) 295-9032

Live Well @ UofM
For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site: http://umanitoba.ca/student/livewell/index.html

Section (c) sample: re: A notice with respect to 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 provides copyright resources and support for all members of the University of Manitoba community. Visit [http://umanitoba.ca/copyright](http://umanitoba.ca/copyright) for more information.

**Section (d) sample:** re: A statement directing the student to University and Unit policies, procedures, and supplemental information available on-line:

**Your rights and responsibilities**

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

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

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

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


  **Student Discipline**

  [http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html](http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html) and,

  **Violent or Threatening Behaviour**

• If you experience **Sexual Assault** or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The **Sexual Assault** policy may be found at: [http://umanitoba.ca/admin/governance/governing_documents/community/230.html](http://umanitoba.ca/admin/governance/governing_documents/community/230.html) More information and resources can be found by reviewing the Sexual Assault site [http://umanitoba.ca/student/sexual-assault/](http://umanitoba.ca/student/sexual-assault/)

• For information about rights and responsibilities regarding **Intellectual Property** view the policy [http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.pdf](http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.pdf)

For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective faculty/college/school web site [http://umanitoba.ca/faculties/](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/](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/](http://umanitoba.ca/student/advocacy/)

520 University Centre
204 474 7423
student_advocacy@umanitoba.ca