Syllabus

AGRI 3030: Innovations in Agriculture

(Winter 2020)
**COURSE DETAILS**

**Course Title & Number:** AGRI 3030 Innovations in Agriculture  
**Number of Credit Hours:** 3  
**Class Times & Days of Week:** Tues 2:00 PM – 5:00 PM CST  
**Location for classes/labs/tutorials:** JH Ellis 245  
**Pre-Requisites:** Nil  

**Instructor Contact Information**

**Instructor(s) Name & Preferred Form of Address:** Dr. Charles Grant  
**Office Location:** 373 Agriculture Building  
**Office Hours or Availability:** By appointment  
**Office Phone No.:** (204) 474 9619  
**Email:** charles.grant@umanitoba.ca  
**Contact:** Contact instructor in-person during or after class

**Course Description**

**General Course Description**
The course investigates IoT innovations in agriculture in both primary and value-added sectors of the industry. A multi-disciplinary approach is taken where innovations in all parts of agriculture are included in the course of study. The course will be of interest to any agricultural student who wishes to be up to date with the latest IoT innovations in agriculture and has a curiosity about how such products are brought to market.
Course Goals

Students are to develop critical thinking skills as applied to IoT innovations in agriculture. Technical skills in that regard will also be developed by studying and developing simple IoT innovations that could advance agricultural automation in both the primary production and value-added sectors of the industry. A proof-of-concept agricultural IoT product will be developed by students in working groups.

Course Learning Objectives

- To learn to think critically about IoT innovations in agriculture
- To learn to work in a development group for an agricultural innovation
- To understand the process of bringing an IoT innovation to the agricultural market
- To develop a proof-of-concept IoT innovation for agriculture

Course Materials

There is no required textbook. A process for innovative IoT product development will be provided to be completed by each working group.

Using Copyrighted Material

Please respect copyright. 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, unless an exception to the Copyright Act applies or written permission has been confirmed. For more information, see the University’s Copyright Office website at [http://umanitoba.ca/copyright/](http://umanitoba.ca/copyright/) or contact um_copyright@umanitoba.ca.

Course Technology

Students are required to bring a laptop computer to class. Other digital equipment will be provided by the instructor.

Expectations: I Expect You To

I expect you to take an active role in your group to develop an IoT agricultural innovation. For that to happen you will need regular attendance and be attentive and interested.

I will treat you with respect and would appreciate the same courtesy in return. See [Respectful Work and Learning Environment Policy](#).

I expect you to follow these policies around Class Communication, Academic Integrity, and Recording Class Lectures.

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

Academic Integrity:
Each student in this course is expected to abide by the University of Manitoba Academic Integrity principles. Always remember to reference the work of others that you have used. Also be advised that you are required to complete your assignments independently unless otherwise specified. If you are encouraged to work in a team, ensure that your project complies with the academic integrity regulations. You must do your own work during exams. Inappropriate collaborative behavior and violation of other Academic Integrity principles, will lead to the serious disciplinary action. Visit the Academic Calendar, Student Advocacy, and Academic Integrity web pages for more information and support.

Refer to specific course requirements for academic integrity for individual and group work such as:

I. Group projects are subject to the rules of academic dishonesty;
II. Group members must ensure that a group project adheres to the principles of academic integrity;
III. Students should also be made aware of any specific instructions concerning study groups and individual assignments;
IV. The limits of collaboration on assignments should be defined as explicitly as possible; and
V. All work should be completed independently unless otherwise specified.

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 the permission of Charles Grant. Course materials (both paper and digital) are for the participant’s private study and research.

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

Student Accessibility Services
520 University Centre
Phone: (204) 474-7423
Email: Student_accessibility@umanitoba.ca

Expectations: You Can Expect Me To
You can expect me to attend classes and be attentive and supportive. I will be available during class and for 10 minutes after class to discuss any questions or comments you may have.
CLASS SCHEDULE AND COURSE EVALUATION

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 ROASS.

Classes will be from 2:00 PM – 5:00 PM Tuesdays throughout the term. A written report will be due towards the end of the term along with a slide deck prior to the oral presentation of the project.

ASSIGNMENT DESCRIPTIONS

TITLE: IoT Innovation in Agriculture Project
GOAL: To contribute as part of a working group applying critical thinking and knowledge of developing and taking an IoT agricultural project to market.

PROCEDURE:

SUBMISSION GUIDELINES: A process will be presented and followed for developing an innovative IoT product for agriculture. A proof of concept product will be developed by each working group. The grading percentages for the written report and presentation are shown in the table below. A slide deck for the presentation will also be uploaded to UM Learn prior to the presentation.

EVALUATION CRITERIA:

Process for Developing an Agricultural IoT Product

<table>
<thead>
<tr>
<th>1. Product Need (Grading 2.5% written, 2.5% presentation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In what way is your product needed by producers and/or processors in the agricultural sector? What specific need of the participants in the sector are you addressing? How have you determined the need? What evidence do you have that the need exists?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Product Features (Grading 2.5% written, 2.5% presentation)</th>
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</thead>
<tbody>
<tr>
<td>What features of your IoT product will make it useful to participants in the agricultural sector? How do those features meet their need?</td>
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<table>
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<tr>
<th>3. Product Benefits (Grading 2.5% written, 2.5% presentation)</th>
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<tbody>
<tr>
<td>What are the benefits of your IoT product to the participants in the agricultural sector? How does it make their life easier? How does it feed their ego? How is it</td>
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<tr>
<td>5. Customers (Grading 2.5% written, 2.5% presentation)</td>
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<td>6. Marketing (Grading 2.5% written, 2.5% presentation)</td>
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<td>7. Testing (Grading 2.5% written, 2.5% presentation)</td>
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<tr>
<td>8. Revenues and Expenses (2.5% written, 2.5% presentation)</td>
</tr>
<tr>
<td>9. Financing (2% written, 2% presentation)</td>
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</table>
| 10. Product Details (Grading 2.5% written, 2.5% presentation) | What hardware is needed for the product? What software? What is the input of the
product? Output? Does it require wiring or wifi? Does it interact with mobile phones?

**Assignment Feedback**

Feedback for student working groups as they work through the process for developing an IoT project will be on-going throughout the term. Groups may interact with IoT development people in industry and get feedback from them through periodic conference calls.

**Grading**

<table>
<thead>
<tr>
<th>Written Report (Process for Developing an IoT Project)</th>
<th>50%</th>
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<tbody>
<tr>
<td>Presentation (Slide Deck and Oral Presentation)</td>
<td>50%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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</table>

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage out of 100</th>
<th>Grade Point Range</th>
<th>Final Grade Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>95-100</td>
<td>4.25-4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>A</td>
<td>86-94</td>
<td>3.75-4.24</td>
<td>4.0</td>
</tr>
<tr>
<td>B+</td>
<td>80-85</td>
<td>3.25-3.74</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>72-79</td>
<td>2.75-3.24</td>
<td>3.0</td>
</tr>
<tr>
<td>C+</td>
<td>65-71</td>
<td>2.25-2.74</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>60-64</td>
<td>2.0-2.24</td>
<td>2.0</td>
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<td>D</td>
<td>50-59</td>
<td>Less than 2.0</td>
<td>1.0</td>
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<tr>
<td>F</td>
<td>Less than 50</td>
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**Voluntary Withdrawal**

In this area indicate the last day to drop the class and receive 100% refund and the last day to withdraw with no refund. Make a note that students who did not drop the course by the deadline would be assigned a final grade. Point out that the withdrawal courses will be recorded on official transcript. Ask students to refer to the Registrar’s Office web page for more information. Also identify if you are willing to discuss student’s progress and strategies for improvement prior the withdrawal date.

**UNIVERSITY SUPPORT OFFICES & POLICIES**

Instructors shall provide to every student the information on university support offices and policies in **Schedule “A”** within the first week of classes, either through a paper copy and/or via the university’s student information system (i.e., Aurora, UM Learn, or such other university information system as may be approved by the university from time to time).

**Academic Supports Available to Students**

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

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

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

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 205 Tier Building.

**University of Manitoba Libraries (UML)**

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

**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
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.

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/](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](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:

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.
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.

- 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](mailto:student_advocacy@umanitoba.ca)