DAGR 0630 Soybean Field Agronomy
Summer 2022

Kristen P. MacMillan
Department of Plant Science
113 Agriculture Building
Phone: 204-474-9884
Email: kristen.macmillan@umanitoba.ca

Course Objectives:
By monitoring a soybean or dry bean field and assuming the role of farmer and/or crop advisor during the growing season, students will gain experience in crop scouting, integrating and applying knowledge to make sound agronomic decisions. By visiting a research trial and participating in a knowledge transfer event, they will understand the importance of scientific research to develop crop management information and strategies to transfer knowledge for adoption to the farm. Throughout the course, they will develop critical thinking skills for acquiring and applying information to practice integrated crop management that will bring value to Manitoba farms.

Texts:
Reference material will be provided as needed through UM Learn. Please respect copyright.

Course Components and Grading Scheme:
There are four activities that will contribute to your final grade. General grading scheme is:
90-100 A+, 80-90 A, 75-80 B+, 70-75 B, 65-70 C+, 60-60D, <50 F.

Activity	% of grade	Grade item
1. Crop management portfolio	55%	Assignment x 10
2. Carman research farm visit	15%	Quiz
3. Knowledge transfer event	15%	Written report
4. Independent project & presentation	15%	Oral presentation

Availability of Instructor and In-Person Class Schedule:
This is an independent, guided course taking place during summer session, therefore contact with the instructor will primarily be through UM Learn and email. In-person classes will be limited to the 3-hour orientation class held in spring, the Carman research farm tour for Activity 2, the extension event for Activity 3 (location TBD) and in September, a wrap-up class will be held when fall classes resume.

Course Policies:
Assignments: All grade items should be completed independently and in your own language. You may use short form but grammar, spelling and composition are important. Late assignments will be deducted 10% per day.
Academic integrity: Plagiarism or any other form of cheating in academic work is subject to academic penalty; refer to the University's policy on Academic Integrity available in the undergraduate Academic Calendar.

Activity 1 - Crop management portfolio *(25-30 hours, 55% of grade)*

Students will scout a soybean or dry bean field regularly throughout the growing season assuming the role of crop advisor and/or farmer. In addition to being guided through crop scouting activities and reviewing provided material, students will apply their knowledge gained from first-year courses. The goal of their scouting activities will be to identify and discuss their observations on crop emergence, pest occurrences (weeds, insects, diseases), crop nutrition, crop growth and development and general observations of the crop and landscape. This information will then be used to make crop management decisions for seeding, pesticide applications and harvest. Students must have access to a commercial soybean or dry bean field through their farm or work place and must submit a field access consent form.

Assignment/Scouting event	Key assessments	Marks	~ Deadline	~ Days after seeding
1. Field description	Submit aerial image, describe soil and land resources.	10	May 25	
2. Crop planning	Prior to seeding, describe the crop plans	10	May 25	
3. Seeding	Seed rate, depth, date, soil temp	10	June 5	
4. Emergence	Emergence, weeds, seedling health	10	June 15	10-20
5. V1 to V2	Plant population, weeds, and management	10	June 25	25-30
6. V3 to V4	Plant population, weeds, iron deficiency chlorosis	10	July 1	35-40
7. R1 to R2 Flowering	Nodulation, canopy closure, post-spray assessment	10	July 15	50-60
8. R3 to R4 Pod fill	Leaf diseases and insects, abiotic stresses	10	July 30	60-70
9. R5 to R6 Seed fill	Diseases and yield estimation, abiotic stresses	10	August 20	80-90
10. Maturity and Harvest	Monitoring maturity, measuring harvest losses	20	After harvest	110-130

Activity 2 - Introduction to research/Carman research farm tour *(8-10 hours)*

To understand the scientific research process, students will visit the Carman Ian N. Morrison research farm for a lecture and tour soybean and pulse crop agronomy experiments. Students will be guided through the scientific method and research principles. The aim of this section is to provide students with a basic understanding of scientific research and parameters to assess the quality of information that they will receive as farmers and advisors.

Activity 3 - Knowledge transfer/Extension event *(8-10 hours)*

How does the information generated in research programs get adopted on the farm? Students will attend a knowledge transfer event where researchers and extension specialists communicate with farmers, agronomists and industry members. Outcomes of this activity will be exposure to and assessment of a knowledge transfer event and networking.

Activity 4 - Project presentation *(8-10 hours)*

Students will choose a project at the start of the class to conduct throughout the summer. Oral presentations on the outcomes of the projects will be done on the last day of class which is held in late September.