UM | Faculty of Agricultural and Food Sciences

Effective September 2024

B.Sc. in Agriculture (Animal Systems)

High school courses required as prerequisites to required degree courses include:

- Math 40S (Pre-Cal with 60% or Applied with 70%)
- Biology 40S (50% or higher)
- Chemistry 40S (50% or higher)

*Upgrading options available – please contact aginfo@umanitoba.ca for information.

Year 1

Course No.	Course Name	Credit Hours
ABIZ 1000	Introduction to Agribusiness Management	3
AGRI 1600	Introduction to Agrifood Systems	3
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics	3
CHEM 1110 or CHEM 1130[1]	Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties or Introduction to Organic Chemistry	3
ECON 1010	Introduction to Microeconomic Principles	3
HNSC 1200 or HNSC 1210	Food: Facts and Fallacies or Nutrition for Health and Changing Lifestyles	3
MATH 1300[2] or MATH 1210[2] or MATH 1500[2] or MATH 1510[2] or MATH 1524[2]	Vector Geometry and Linear Algebra or Techniques of Classical and Linear Algebra or Introduction to Calculus or Applied Calculus 1 or Mathematics for Management and Social Sciences	3
Free Elective[5]		3
Total Credit Hours		30

Year 2

Course No.	Course Name	Credit Hours
ABIZ 2510	Introduction to Agricultural and Food Marketing	3
AGEC 2370/BIOL 2300	Principles of Ecology	3
AGRI 2030	Technical Communications	3
AGRI 2400	Experimental Methods in Agricultural and Food Sciences	3
ANSC 2500	Animal Production	3
ANSC 2510	Anatomy and Physiology 1: Control Systems	3
ANSC 2520	Anatomy and Physiology 2: Nutrient Utilization	3
CHEM 2730/MBIO 2730[3]	Elements of Biochemistry 1	3
CHEM 2740[4]	Introduction to the Biochemistry Laboratory	3
Restricted/Free Elective[5]/Co-op		3
Total Credit Hours		30

Note: Any discrepancies between this document and the Academic Calendar, the Academic Calendar takes precedent.

Year 3

Course No.	Course Name	Credit Hours
ANSC 3510	Feeds and Feeding	3
ANSC 3520	Animal Reproduction	3
ANSC 3500	Principles of Animal Genetics	3
ANSC 3530	The Animal and Its Environment	3
PLNT 2500	Crop Production	3
PLNT 2520/BIOL 2500	Genetics	3
Restricted[6]/Free Electives[5]/Co-op		12
Total Credit Hours		30

Year 4

Course No.	Course Name	Credit Hours
AGRI 4100	Current Issues in Agricultural Systems	3
SOIL 3600	Soils and Landscapes in Our Environment	3
Restricted[6]/Free Electives[5]/Co-op		24
Total Credit Hours		30

Notes:

1. CHEM 2100 (Organic Chemistry 1: Foundations of Organic Chemistry) can be substituted for CHEM 1130 (Introduction to Organic Chemistry).

2. Students are recommended to take one of the MATH courses listed in the program requirements above however may also use either MATH 1220 or MATH 1230 to meet the requirement.

3. Under required courses, students can take either CHEM 2730/MBIO 2730 (Elements of Biochemistry 1) or CHEM 2700/MBIO 2700 (Biochemistry I: Biomolecules and an Introduction to Metabolic Energy).

4. While CHEM 2740 (Introduction to the Biochemistry Laboratory) is the recommended lab course for this program, students who are completing the Pre-Vet requirements may use either CHEM 1120 (Introduction to Chemical Techniques) or CHEM 2740 to complete this requirement for Animal Systems. If a student has both courses, one is used towards free electives. Under required courses, students may also take CHEM 2720 (Principles and Practices of the Modern Biochemistry Laboratory) in place of CHEM 2740.

5. There are 27 credit hours of Free Electives required for the Animal Systems program. Students may apply for the Cooperative Education Program. Two work terms are required to graduate with Co-op designation. Co-op courses (3 credit hours each) are used towards Free Electives.

6. There are 15 credit hours of Restricted Electives required in the Animal Systems program. Students must complete:

Restricted Electives		Credit Hours
Group 1 - Ruminant Production: choose one course from the following:		3
ANSC 4520	Ruminant Production Systems - Meat	
ANSC 4530	Ruminant Production Systems - Milk	
Group 2 – Monogastric Production: choose one course from the following:		3
ANSC 4550	Avian Production Systems	
ANSC 4640	Swine Production Systems	

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Group 3 – Advanced Animal Science: choose <u>two courses</u> from the following:		6
Any ANSC 2000, 3000, or 4000 courses; or FOOD 3500*; or ENTM 3160		
Group 4 – Human Resources: choose <u>one course</u> from the following:		3
ABIZ 2620	Agricultural Human Resource Management	
GMGT 2070	Organizational Behaviour	
HRIR 2440	Human Resource Management	

*This course is usually offered every 2nd year - planning ahead is important.