



UNIVERSITY  
OF MANITOBA

**University of Manitoba**  
**Faculty of Agricultural and Food Sciences**  
**Department of Animal Science**

<b>Course Title &amp; Number:</b>	ANSC 0680 DAIRY CATTLE PRODUCTION ANSC 4530 RUMINANT PRODUCTION SYSTEMS-MILK
<b>Number of Credit Hours:</b>	3 credit hours
<b>Class Times &amp; Days of Week:</b>	Mon, Wed, and Fri: 10:30 a.m. - 11:20 a.m.
<b>Lab Times &amp; Days of Week:</b>	Wednesdays: 2:30 – 4:30 p.m. (or later for field trips)
<b>Location for classes:</b>	AGRIC 343
<b>Location for labs:</b>	AGRIC 134
<b>Pre-Requisites:</b>	For ANSC 4530: ANSC 2500. For ANSC 0680: ANSC 0420 or equivalent

<b>Instructor(s) Name:</b>	Dr. J.C. Plaizier The Department of Animal Science in consultation with the Faculty of Agricultural and Food Sciences has devised a plan so that there is minimal impact on the delivery and content of the course, should the instructor fall sick and is unable to continue lectures in-person. Please be assured that the alternative plan outlining any deviation from the normal mode of instruction will be communicated to you as quickly as possible if/when the need arises.
<b>Office Location:</b>	N.A.
<b>Office Hours or Availability:</b>	Office hours will be immediately following classes. If you want to talk to me individually or as a group, you can email me, and we will set up a video conference. All email communication must conform to the “Communicating with Students” university policy. (Please familiarize yourself with the policy). Use the subject line to state the reason for your e-mail and add the course number. This will help to expeditiously determine which e-mails may need a quick response. Please avoid salutations such as ‘Hey You’ or ‘Hi There’. Dear Dr. Plaizier will be fine. Email response may take up to 36 hours. If you send an email on Friday afternoon or

	over the weekend you will most likely get a response no earlier than the following Monday.
<b>Office Phone No.</b>	204-474-9500 (email preferred)
<b>Email:</b>	plaizier@umanitoba.ca

## **1.1 Course Description**

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### **ANSC 4350: Ruminant Production Systems-Milk**

Will describe the industry in terms of size, complexity and relationship to the economy and give an understanding of the breeding, feeding, management and marketing practices in a modern system for milk production. The course will focus on dairy cows, but some references will be made to milking goats and sheep.

### **ANSC 0680: Dairy Cattle Production and Management**

A study of current production practices in Canada's dairy industry with focus on nutrition, reproduction, genetics, health, replacement rearing and marketing. The course will focus on dairy cows, but some references will be made to milking goats and sheep.

## **1.2 . General Information**

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Students are expected to have background in animal science, including anatomy, nutrition, reproduction, and genetics. The student's own initiative in reading the reference material and related publications is required for maximum benefit.

Course instruction will include three 50-minute lectures each week and 3 hours per week of laboratory practicum. Lab sessions will take the form of tutorials/ lectures using PowerPoint presentations and video clips.

Students are expected to take the initiative to read and understand the concepts covered and the listed reference text would be able to assist them achieve this.

Students will visit the dairy unit Glenlea Research Farm and 2 commercial dairy farms during the laboratory period. During these visits, information provide during classes will be demonstrated. Students will be expected to be engaged in all these learning activities and are reminded that the materials covered in tutorials complement the lectures and are designed to give students an opportunity to observe relevant practical exercises. Material covered in the labs may still form part of the tests.

## **1.3 Course Goals**

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The objectives of the courses are:

- a) To introduce students to the basic principles and practical skills in milk production systems with special reference to dairy production and management.
- b) List and explain the management practices used in modern dairy production.
- c) Discuss these management practices in relation to their impact on the profitability of dairy and other milk production systems.
- d) To develop critical thinking skills so that students can make management decisions based on science-based animal husbandry principles.

#### **1.4 Behavioural Learning Objectives**

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- Be familiar with the marketing of raw milk in Canada, supply management, and international issues related to milk marketing.
- Develop an understanding of the different needs of dairy calves, heifers and cows at different stages of their life and production.
- Develop an understanding of the basic digestive, physiological and metabolic processes of dairy calves, heifers and cows, as they relate to production, health, welfare, pregnancy, growth of dairy animals at different stages of their life and production.
- Be familiar with the current methods and techniques used for the management of reproduction, breeding, and sire selection of dairy cows and heifers.
- Be familiar with the milking procedure and milking machines, and issues related to milk quality and mastitis.
- Be familiar with the environmental impacts of the dairy industry and manure management.
- Be familiar with housing systems of confined dairy animals in Canada, and how housing affects production welfare, and health of dairy cows.
- Be aware about the relationships between nutrition, environment, welfare and health.
- Be exposed to current and emerging issues in the dairy industry.
- Acquire some of the skills needed to be able to effectively gather, integrate and analyze scientific information to make informed decisions related to the management of dairy animals and dairy farms and be able to develop a critical view of management practices on dairy farms.

#### **1.5 Textbook, Readings, Materials**

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There are no text books for this course. The following books provide good background information and additional reading material. Dairy Cattle Science 2006 by Tyler, H. D. Z., and M. Eugene, Large Dairy Herd Management (e-book) by the American Dairy Science Association; NRC Nutrient Requirements for Dairy Cattle 2001, National Research Council, Washington, USA.

Journals that include good information on dairy cattle production include Hoards Dairyman, Progressive Dairy, The Milk producer (from Dairy Farmers of Ontario). You will need to do a literature search for your term project. For this search I recommend Google Scholar (<https://scholar.google.com>).

## **1.6 Course Technology**

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- Classes end labs will be in-person, but some invited speakers may want to present virtually via Webex. I will show these virtual presentations in class.
- Assignments 1 and 2 will require Microsoft Excel on your computer. Assignment 2 will need the Solve Add-In of Excel to be installed.
- The Class presentations (Assignment 3) will include presenting a Microsoft PowerPoint presentation.
- Lecture and tutorial notes will be posted on UMLearn and students are expected to print the notes before class and bring them for the lecture. I will make every effort to post these notes in advance.

## **1.7 I Expect You To**

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- Fully participate in class, make an effort to consult recommended textbooks on issues that may not be clear to you, pay attention in class and contribute to class discussions.
- Complement the notes that I provide with your own notes that you take during lectures. The notes that I provide are sometimes incomplete and you will be expected to attend lectures in order to complete your notes. You will also be evaluated based on your comprehension of material covered in the lectures, handouts and any relevant discussions during class.
- Produce university-level quality writing: legible and proofread. You will have to submit assignments by email. If there are a significant number of errors or if it is difficult to read, the assignment will be returned to you prior to grading for changes. In most cases, your assignment will then be late and docked points.

## **1.8 You can expect me to**

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- Treat you with respect and I would appreciate the same courtesy in return. See [Respectful Work and Learning Environment Policy](#).
- Change the course plan outlined herein in response to genuine concerns or events that may be beyond my or your control. Thus where necessary class topics or laboratory exercises may be changed.
- Give you feedback – particularly for tests and laboratory exercises. I expect that comments, corrections and suggestions that I make are taken seriously because that feed back is an important way to learn.
- Provide clarity when you face difficulties understanding some of the concepts for the course
- Treat you, as adult learners, with the related style of respect.

## **1.9 Course Syllabus**

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### **Class Schedule**

#### **September**

- 6 - Nutrient utilization in ruminants (JP)
- 8 - Nutrient utilization in ruminants (JP)
- 11 - First class diploma, Industry overview (JP)
- 13 - Dairy breeds, production cycles, levels of production (JP)
- 15 - Supply management (JP)
- 18 - The cow's digestive tract (JP)
- 20 - Feeding the lactating dairy cow (JP)

- 22 - Feeding the lactating dairy cow (JP)
- 25 - Feeding the lactating dairy cow (JP)
- 27 - Management of calves (JP)
- 29 - Management of heifers (JP)

### **October**

- 2 - National Day for Truth and Reconciliation - University is closed
- 4 - **Midterm 1**
- 6 - Manure management (JP)
- 9 - **Thanksgiving, University closed**
- 11 - Diploma experiential learning, Degree: Milk (JP)
- 13 - Diploma experiential learning, Degree: Milk processing (JP)
- 16 - Milk production (JP)
- 18 - Mammary gland and milking (JP)
- 20 - Mastitis (JP)
- 23 - Milk quality. Dr. Rob Berry, MAFRD
- 25 - Organic milk production, Dr. Rob Berry, MAFRD
- 27 - Gut microbiota (DH)
- 30 - Gut microbiota (DH)

### **November**

- 1 - Welfare (MK)
- 3 - Dry cow management (GG)
- 6 - Metabolic diseases (GG)
- 8 - **Midterm 2**
- 13 - Remembrance Day - University is closed
- 15 - Fall Term Break
- 17 - Fall Term Break
- 20 - Housing (JP)
- 22 - Reproduction (JP)
- 24 - Reproduction (JP)
- 27 - Genetics (JP)
- 29 - Genetics (JP)

### **December**

- 1 - Class presentations (Assignment 3)
- 4 - Class presentations (Assignment 3)
- 6 - Class presentations (Assignment 3)
- 8 - Last class Diploma-Review (JP)
- 11 - Last class Degree- International comparisons (JP)

## **1.10 Lab Schedule**

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- September 6 - No lab
- September 13 - The digestive tract, videos (JP, HD)
- September 20 - Cost of production, Assignment 1 (JP)
- September 27 - Feeding the dairy cow, videos (JP)

- October 4 - Dairy Farmers of Manitoba (JP)  
 October 11 - Diploma experiential learning. Metabolism and Product Synthesis (JP)  
 October 18 - Feed formulation. Assignment 2. (JP)  
 October 25 - Feeding dairy cows: (CP)  
 November 1 - Feeding dairy cows: (CP)  
 November 8 - Glenlea: Body condition scoring (LL, JCP)  
**November 15 - Fall term break**  
 November 22 - Glenlea: Reproduction and milking (JP, LL)  
 November 29 - Interpretation of DHI reports (JP)  
 December 6 - Farm tour (JP)

JP = J.C. Plaizier

LL = Lindsey Lippens

GG = George Gozho

HD = Hooman Derakhshani

MK = Meagan King

CP = Carla Plett

## 1.11 Grading

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### Course Grading Schedule

Participation in class	- 5 %
Term project (Group presentation)	- 15%
Outline and references (due November 2),	- 5%
Presentations (December 1 - 6)	- 10%
Mid-term test 1(October 4)	- 15%
Mid-term test 2 (November 8)	- 15%
Assignment #1 (Cost of production, Due September 27)	- 7.5%
Assignment #2 (Feed formulation, Due October 25)	- 12.5%
Final exam (TBA)	- 30%

All of your assignments and tests will be calculated as a percentage and converted into a letter grade. Your total mark, adjusted for the proportion contributed from each assignment or test will be used to determine the letter grade.

Letter Grade	Marks
A+	92-100%
A	85-91.9%
B+	78-84.9%
B	70-77.9%
C+	62-69.9%
C	55-61.9%
D	50-54.9%
F	Less than 50%

## 1.12 Seminar Assignment Descriptions

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You must select a topic on which to make your presentation. This is a group presentation and groups can be made up to a maximum of three members. You must submit electronic copies of the PowerPoint presentation. Subjects for presentations that you can choose from are given below. Other subjects will be considered, but need to be approved by me.

Potential topics:

How does BSE affect the Manitoba dairy industry?

How can we dispose of culled cows?

The future of supply management in the dairy industry

The value of manure as fertilizer

The Manitoba dairy industry and the environment

Infectious disease (Johne's disease and leucosis): the problem and possible solutions

Are we burning out our dairy cows?

Strategies to optimize longevity of dairy cows.

Improving reproductive performance on dairy farms.

## 1.13 Seminar Submission Guidelines

### Peer Evaluation Rubric

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Students will be asked to determine the quality of the presentation, presenters' understanding of the subject and the ability to stimulate discussion.

Criteria	
<b>Quality of presentation</b> Organization of ideas /4 Delivery of presentation /3 Quality of slides /2	
<b>Understanding of subject matter</b> Depth and breadth of coverage /5 Ability to answer questions /5	
<b>Ability to stimulate discussion</b> Interest generated /1	
<b>Total marks</b> /20	

## 1.14 Assignment Grading Times

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Your marks will be available about 1 week after the submission of your assignment or test. Final grades will be posted in Aurora 7 days after you write the final examination.

## 1.15 Assignment Extension and Late Submission Policy

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- All assignments should be submitted by the due date listed in the course schedule. If an extension is required all group members must come and see me and present the reason they need the extension.

- Groups that fail to submit work on time and do not ask for an extension are subject to the late assignment penalty. The penalty is an 8% per working day reduction in the value of the project's grade for up to five working days. After that point, the work is worth zero percent. Students who are not able to contribute to group work and who may otherwise hold everyone back due to health or other compassionate reasons need to submit a written explanation ahead of time or, if that is not possible, after the missed due date. However, group members are expected to complete the assignment on time.
- If an extension is granted to a group, the penalty will be 2% for each working day. Only in extreme circumstances (medical note is required) will an extension be granted with no late deductions.
- We all live and work in an environment that requires us to balance among many demanding tasks and to that end, excuses such as; computer failure, employment responsibility and routine financial support needs, social activities and commitments and stress will not be acceptable grounds for turning in your work late.

### **1.16 Laboratory Assignment Descriptions**

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There are two laboratory assignments. Assignment 1 is related to the estimation of the cost of production and the margin over feed costs using a cost of production Excel spread sheet from Dairy Farmers of Manitoba, the milk check and the cost of feeds. Assignment 2 is related to the least cost diet formulation for lactating dairy cows using the WUFFF Excel spreadsheet, nutrient requirements, and feed analysis. You will need Microsoft excel for both assignment. For the feed formulation assignment, you will need to Solver add-in of Excel, which you may have to install.

### **1.17 Policies Related to Student Discipline**

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#### **Academic Dishonesty: Plagiarism, Cheating and Examination Impersonation**

You should acquaint yourself with the University's policy on plagiarism, cheating, and examination impersonation as detailed in the General Academic Regulations and Policy section of the University of Manitoba Undergraduate Calendar or you may refer to Student Affairs at <http://www.umanitoba.ca/student>.

#### **Policy on Respectful Work and Learning Environment**

[http://umanitoba.ca/admin/governance/governing\\_documents/community/566.html](http://umanitoba.ca/admin/governance/governing_documents/community/566.html)

#### **Inappropriate and Disruptive Student Behaviour**

[http://umanitoba.ca/admin/governance/governing\\_documents/students/279.html](http://umanitoba.ca/admin/governance/governing_documents/students/279.html)

#### **Accessibility Policy for Student with Disabilities**

[http://umanitoba.ca/admin/governance/governing\\_documents/students/281.html](http://umanitoba.ca/admin/governance/governing_documents/students/281.html)

#### **Writing [and Learning] Assistance**

The following information from the Learning Assistance Centre may be helpful to those of you who may struggle with content, or writing papers.

#### **The Learning Assistance Centre (LAC)**

Through the LAC, you may meet with a study skills specialist to discuss concerns such as time management, reading and note-taking strategies, as well as test-taking strategies. You may also meet one-on-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. Writing tutors can also give you feedback if you submit a draft of your paper online. Please note that the online tutors require 48 business hours (i.e., Monday to Friday) to return your paper with comments. (Located in 201 Tier Building)

**Writing Tutors [and Learning Skills Tutors]** work on both the Fort Garry and Bannatyne Campuses. Tutors on the Fort Garry campus work in the Elizabeth Dafoe Library and the Learning Assistance Centre (201 Tier). Tutors



on the Bannatyne campus work in 245 “T” wing (Basic Science Building). Check scheduled hours of availability on-line through the Learning Assistance Centre site ([www.umanitoba.ca/student/u1/lac](http://www.umanitoba.ca/student/u1/lac)), or call 480-1481 (Fort Garry Campus) or 272-3190 (Bannatyne Campus).

The [Virtual Learning Commons](#) is a unique learning and social networking site at the University of Manitoba. Students can access a variety of Learning Assistance Centre resources on-line at [www.umanitoba.ca/virtualllearningcommons](http://www.umanitoba.ca/virtualllearningcommons). Of special interest are several links to excellent, brief, on-line tutorials on integrity in academic work (e.g., what is plagiarism? How do you paraphrase? What are appropriate citation formats?), and an Assignment Manager program that automatically creates a timetable for completion of each step in the writing process.

#### [Student Accessibility Services](#)

Student Accessibility Services (SAS) provides support and advocacy for students with disabilities of all kinds: hearing, learning, injury-related, mental health, medical, physical or visual. Students with temporary disabilities such as sprains and breaks are also eligible to use our services. SAS acts as a liaison between students and the faculty and staff of the University of Manitoba as well as support agencies within the province of Manitoba. Please phone: 474-6213 (voice) or 474-9690 (TTY) for service.

#### [Student Counselling and Career Centre](#)

Student Counselling and Career Centre (SCC) offers individual, couple or family counselling in individual and groups formats. Please phone: 474-8592 or visit SCCC at 474 University Centre.

#### [University of Manitoba Libraries](#)

Students can access e-journals to look up the most recent journal articles in most animal science journals. Course text books may also be available in the library. There currently is no course material placed on reserve.

## 1.18 Important Dates

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For a complete list of important dates, please see ‘**Important Dates and Deadlines**’ under Registrar’s Office (Student Affairs) on the university website: <http://umanitoba.ca/student/records/deadlines/>

### General Dates

a)	First day of classes	Diploma: September 9, 2023; Degree September 6, 2023
a)	Last Course Drop Date:	September 19, 2023
b)	Last Course Add Date:	September 20, 2023
c)	National Day for Truth and Reconciliation	October 2, 2023
d)	Fees Payment Deadline	October 4, 2022
g)	Thanksgiving Day (No classes):	October 9, 2023
e)	Experiential Learning, Diploma	Oct 11 to 14, 2022 (Subject to change)
f)	Midterm Break (No classes):	November 13 – 17, 2023
h)	Remembrance Day (No classes):	November 13, 2022
i)	Last Day of classes:	Diploma: December 9, 2022; Degree December 11, 2022

### Course Specific Dates

<b>Term Test 1:</b>	<b>October (15% of final grade)</b>
<b>Term Test 2:</b>	<b>November (15% of final grade)</b>