



UNIVERSITY  
OF MANITOBA

**Faculty of Agricultural and Food Sciences  
Department of Food Science**

**FOOD 7260 Advanced Meat Science  
Winter Term 2017**

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## COURSE DETAILS

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<b>Course Title &amp; Number:</b>	FOOD 7260 Advance Meat Science; CRN 55440
<b>Number of Credit Hours:</b>	3
<b>Class Times &amp; Days of Week:</b>	Tuesday, from 2:30 am to 5:30 pm
<b>Location for classes/labs/tutorials:</b>	TBA
<b>Pre-Requisites:</b>	Consent of instructor. Offered in alternate years thereafter.

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## Instructor Contact Information

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<b>Instructor(s) Name:</b>	Argenis Rodas-González
<b>Preferred Form of Address:</b>	Anything polite
<b>Office Location:</b>	Animal Science/Entomology Building RM 229
<b>Office Hours or Availability:</b>	Make an appointment, send an email or call me
<b>Office Phone No.</b>	(204)474-9523
<b>Email:</b>	<a href="mailto:Argenis.RodasGonzalez@umanitoba.ca">Argenis.RodasGonzalez@umanitoba.ca</a>
<b>Contact:</b>	If you want to contact me an email with the subject heading Food 7260 and your name is best, but you can see me after a class session. I expect to respond telephone and email queries within 24-48 hours (circumstances permitting) during the week. I will not normally be checking my email or UM-Learn on weekends and holidays.

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## Course Philosophy

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Meat is a dynamic and exciting commodity which is very important in many economies around the world. Meat products have to provide safety, nutritional, affordable and pleasant food for human consumption. Consequently, the production of meat products under food quality and safety parameters and regulations is beyond the simple memorization of knowledge. It requires critical thinking, integration of knowledge and innovative approaches to problem solving. This course will combine classroom lectures, group discussion, and multiple writing assignments.

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## Course Description

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Builds on fundamental aspects of muscle biochemistry and function to explain how pre- and post-harvest technologies affect meat quality and safety. Issues of current concern, their resolution as well as recent advances will be discussed.

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## General Course Information

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Meat Science study at the beginning of animal production and ending with final preparation for meat consumption (animal breeding, feeding, management, packers, processor, purveyors, etc.). Understanding of the basic properties of the tissues present in meat may lead to improved utilization and better meat products. Meat technology is applied to maintain product quality and wholesomeness and to develop new and different products.

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## Course Objectives

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1. To review the evolution over time and current trends of the meat industry.
2. To describe the humanly slaughter processes of the different food animals (e.g. cattle, pork, sheep, chicken) and obtaining and processing their by-products.
3. To examine the criteria established in the current Canada legislation to evaluate and grade food animal carcasses.
4. To identify the major constituents of meat their characteristics and functions.
5. To discuss and contrast the pre- and post-mortem factors that affect carcass composition, constituent properties, quality and processing attributes.
6. To recognize and explain the principles and current practices of processing techniques in meat.
7. To explain causes and prevention of biological, physical and chemical foodborne illnesses and food spoilage.

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## Learning Outcomes

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1. Analyze how the meat industry has changed over time.
2. Differentiate and assess the slaughter processes and by-product transformation according to the food animal.
3. Discriminate food animal carcasses according to quality and yield grades.

4. Recognize and differentiate the chemistry and physical characteristics of constituents of meat.
5. Describe, differentiate and analysis how pre- and post-harvest factors affect composition, quality and processing attributes of meat.
6. Differentiate and compare the principles and current practices of processing techniques to produce new products.
7. Describe and differentiate the principles and current practices of processing techniques to control foodborne illnesses and spoilage in the meat industry.

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## Using Copyrighted Material

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**Example:** Please respect copyright. We will use copyrighted content in this course. 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/> or contact [um\\_copyright@umanitoba.ca](mailto:um_copyright@umanitoba.ca).

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## Recording Class Lectures

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Dr. Rodas-González and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission from Dr. Rodas-González. Course materials (both paper and digital) are for the participant's private study and research only, and must not be uploaded to the internet or shared in any way either physically or electronically.

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## Textbook, Readings, Materials

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The following are recommended:

Elton D. Aberle, John C. Forrest, David E. Gerrard, Edward W. Mills. 2012. **Principles of Meat Science**. Kendall Hunt Publishing Company.

Rodrigo Tarté. 2009. **Ingredients in Meat Products: Properties, Functionality and Applications**. Springer. UofM library online access.

A.M. Pearson, T.A. Gillett. 2012. **Processed Meats**. Chapman & Hall.

Journals: Meat Science, Journal of Food Science, Journal of Animal Science, Canadian Journal of Animal Science, etc.

## Course Technology

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It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. The student can use all technology in classroom setting only for educational purposes approved by instructor and/or the University of Manitoba Disability Services. Student should not participate in personal direct electronic messaging / posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook) online and offline “gaming” during scheduled class time. If student is on call (emergency) the student should switch his/her cell phone on vibrate mode and leave the classroom before using it. (adapted from ©[S Kondrashov](#). Used with permission)

Material for this course is uploaded to UM Learn. Please see this link for support:  
[http://intranet.umanitoba.ca/academic\\_support/cat/resources/359.html](http://intranet.umanitoba.ca/academic_support/cat/resources/359.html)

## Class Communication

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The University requires all students to activate an official University email account. For full details of the Electronic Communication with Students please visit:  
[http://umanitoba.ca/admin/governance/media/Electronic Communication with Students Policy - 2014 06 05.pdf](http://umanitoba.ca/admin/governance/media/Electronic_Communication_with_Students_Policy_-_2014_06_05.pdf)

Please note that all communication between myself and you as a student must comply with the electronic communication with student policy ([http://umanitoba.ca/admin/governance/governing\\_documents/community/electronic communication with students policy.html](http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html)). You are required to obtain and use your U of M email account for all communication between yourself and the university.

## Expectations: I Expect You To

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Attend,  
Participate,  
Demonstrate willingness to learn,  
Be courteous,  
Show academic integrity and honesty.  
Work effectively as a team to design and execute class activities.  
Not to leave the class before it ends unless there is an emergence to which you must attend.  
Leaving a class before the end is disrespectful to your instructor and disruptive towards your fellow students.  
Not use your cell phone- Please be respectful in class and turn your cell phone off or onto vibration mode for the duration of the class.  
Use your laptop computers to aid your learning- Laptops are a perfect way to take notes in class and share information with peers; be respectful to the instructor and other students while using laptops by staying on task in class. Answer questions that I will ask of the class. I do not

expect you always (or ever!) to get the correct answer, but I do expect you to try and to participate.

See [Respectful Work and Learning Environment Policy](#).

## **Academic Integrity**

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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 ([http://umanitoba.ca/student/resource/student\\_advocacy/media/Advoc-Cheat-Booklet-rev04-web.pdf](http://umanitoba.ca/student/resource/student_advocacy/media/Advoc-Cheat-Booklet-rev04-web.pdf)).

## **Students Accessibility Services (SAS)**

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If you are a student with a disability, please contact SAS for 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* <http://umanitoba.ca/student/saa/accessibility/>

520 University Centre

204 474 7423

[Student\\_accessibility@umanitoba.ca](mailto:Student_accessibility@umanitoba.ca)

## **Expectations: You Can Expect Me To**

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To treat you fairly and with respect.

To be available for consultation regularly.

To treat all of your questions and comments with respect and to take your concerns seriously.

To remain in the classroom for 5 minutes after class to answer any immediate questions.

To provide a clarification or explanation at the time in class for any doubt. Otherwise, send me an email.

To offer advice about class materials, assignments or exams.

To grade and return the assignments and exams within 2 weeks of the due date; late assignments will be graded as my time permits.

To ask questions and gives everyone a chance to participate in class.

## Respectful Work and Learning Environment

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In this course we support a climate of respect in the workplace and in the learning environment where individuals or groups of individuals are free from harassment and discrimination. For more information in this policy visit the following link:

[http://umanitoba.ca/admin/governance/governing\\_documents/community/230.html](http://umanitoba.ca/admin/governance/governing_documents/community/230.html)

## Course Evaluation Methods

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Assignments	Grade
Four class group activities: field trip, lab demonstrations, discussion and report	40%
Midterm exams (two at 20% each)	40%
Final examination	20%

## Grading

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Standardized grades used are those followed by the Food Science Department:

Final grade	Letter Grade	Grade Point Value	
90 - 100%	A+	4.5	Exceptional
80 - 89%	A	4.0	Excellent
75 - 79%	B+	3.5	Very Good
67 - 74%	B	3.0	Good
61 - 66%	C+	2.5	Satisfactory
56 - 60%	C	2.0	Adequate
50 - 55%	D	1.0	Marginal
Under 50%	F	0.0	Failure
	P	Null	Pass

**Note: Grades will not be curved.**

## Referencing Style

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For each assignment you are asked to write a paper 750 - 1000 words in length. This paper should be typed, double-spaced with a font size of 10 or 12. Margins should be 2.54 cm (1") on all sides. The format of the paper should follow Chicago style (include key items from the material we were given, see Appendix). Assignments will be evaluated based on your ability to

discuss the topic in a coherent fashion and support the ideas presented. Points will be deducted for poor grammar and spelling.

## **Assignment Descriptions**

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### **Group activities: 30%.**

Teamwork, written assignments (short essay 750-1000 words in length) or class discussions/short presentations (5-8 min) related to lab demonstrations, documentaries, watch industrial production processes or field trip. The report have to be submitted in UM-Learn system.

### **Midterm exams: 40%**

Short answer, short essay, multiple choices, fill the blank, true/false and/or matching exams.

Midterm I: Fresh Meat (20%; 07/03/2017).

Midterm II: Processed Meat (20%; 04/04/2017).

### **Final examination: 30%**

The final exam will be comprehensive and will cover all lecture materials and handouts.

## **Assignment Grading Times**

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All assignments handed in on time will be graded and returned within 2 weeks of the due date; late assignments will be graded as my time permits.

## **Assignment Extension, Late Submission Policy, Make up exams or absence**

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Attendance is essential to student success in this course.

Assignment extensions, Make up exams or absence on required days will be given only with the professor's permission, and it will grant in cases of genuine need (sickness, death or funeral of a close relative). You will need to talk to me in person as soon as possible if you require an extension.

Late submissions will be marked, but do not expect a prompt return of the work. Late submission will incur a deduction of 5% for each weekday that the assignment is submitted after the deadline, unless an assignment extension has been permitted by me in advance of the deadline.

Arrangements should be made with the professor in the case of missed exams.

## **Additional comments**

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If you have any conflict with these scheduled lecture exams, talk to the professor now (that is, at the beginning of the semester). Please don't wait until the exam is upon us to present your conflict.

### Use of Third Party Detection and Submission Tools

Electronic detection tools may be used to screen assignments in cases of suspected plagiarism. If you are struggling with coursework or any of life's other challenges please familiarize yourselves with the resources available in to you by visiting the Student Affairs website at <http://umanitoba.ca/student/index.html> The site contains helpful general information as well as links to webpages for the Aboriginal Student Centre, the International Centre for Students, the Academic Learning Centre, Student Advocacy & Accessibility, the Student Counselling & Career Centre, and University Health Service.

## Important Dates

Voluntary withdrawal date: March 31, 2017.

## Class Schedule

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 the – [ROASS-Procedure](#)).

Month	Day	Module	Topics, Readings, Assignments, Exams	
January	24	Fresh Meat	Introduction / Overview of Meat industry /	
	31		Slaughtering Operations and By-products	
February	07		Carcass evaluation and grading systems / Carcass and meat composition	
	14		Muscle chemistry pre- and post-mortem / Properties of fresh meat	
	20 -24		<b>Louis Riel Day / Mid Term Break</b>	
	28		Palatability of fresh meat / Technology Post-mortem I	
March	07			<b>First Mid-term exam</b>
	14		Processed Meat	Technology Post-mortem II / Meat processing I
	21			Meat processing II
	28			Meat processing III / Meat cookery and cooked meat products
April	04		<b>Second Mid-term exam</b>	
	11	Meat Safety	Storage and Preservation of Meat / Meat Inspection and Food Safety	
	18		Best Practice in fresh and processed meat / Pre- and post-harvest intervention	
	22 - 29		<b>Final Exam</b>	

- This course will have field trips to different meat industry in Manitoba; however, those trips may not happen in the established course schedule because they will depend of the industry availability.