University of Manitoba

Faculty of Agricultural and Food Sciences
Department of Food and Human Nutritional Sciences

250 Ellis Building
Winnipeg, Manitoba
Canada R3T 2N2
Tel 204-474-9621
Fax 204-474-7630
foodsci@umanitoba.ca

FOOD 3170 – Cheese and Fermented Milk Products

Course Outline: Winter 2022

Credits: (3-L:0-0)3 Winter Term 2022 (Classes Begin Monday January 24th, 2022)

Class Times: Monday, Wednesday, Friday – 11:30 AM to 12:20 PM

Location for Classes: This course is delivered remotely until at least February 25th, 2022 due to restrictions caused by the pandemic. Students are expected to be on line and logged in during the scheduled class times. The course will be delivered using UM Learn and Cisco Web Ex. Students must have Web Ex installed. Tests and exams will be given using UM Learn. Your computer or device, and Internet connection must meet the UM minimum requirements found here *https://umanitoba.ca/sites/default/files/2021-08/student-connectivity-recommendations.pdf* These are required for all Winter 2022 classes. Once the restrictions are lifted in person courses will resume in Dairy Science Building Room 206.

Location for Labs: Dairy Science Building Room 101 and Pilot Plant Areas

Prerequisite: No prerequisite

Voluntary Withdrawal Date: April 25, 2022

Last date to drop a course with refund: February 4, 2022

Instructor: John Thoroski, Dept. of Food and Human Nutritional Sciences
(Available during normal working hours)
Room 006A – Dairy Science Building
Phone # 204 474 9332
E Mail – John.Thoroski@umanitoba.ca

Course Description: *Selection and evaluation of raw materials and lactic cultures are covered. Processing, packaging and distribution of cheddar and cottage cheese, cultured milk, cream and yogurt are studied. Offered in 2005-2006 and alternate years thereafter.* The purpose of the course is to impart the basic knowledge required for the production of a selected variety of cheeses and fermented milk products. Selection and evaluation of raw materials and lactic cultures are covered. Processing, packaging and distribution of cheddar and other cheese, cultured milk, cream and yogurt are studied. Regulatory and industrial standards and quality assurance tests for major cheeses and fermented dairy products will be covered. Offered in alternate years.

Learning objectives and course goals:
At the completion of this course, the student should be able to:

- Explain the importance of milk composition and microbiology to fermented dairy products
- Summarize industry statistics, trends, and milk supply system
- Explain the principles of cheese and fermented dairy products technology
- Identify and explain the unit process operations involved in cheese and fermented dairy products manufacture
- Describe the use of ingredients and related technology
- Illustrate practical techniques in product manufacture, and analytical techniques in product assessment
- Summarize current research and development in the industry
- Give advice on government regulations required for manufacture and sale of dairy products

Texts/References:

Fundamentals of Cheese Science, 2000, Fox, P.F. et al. Aspen Publishers Inc., Gaithersburg, Maryland.

Cheesemaking Practice. 1998. Robinson, R.K. and Wilbey, R.A., Aspen Publishers Inc. Gaithersburg, Maryland.

Cheese and Fermented Milk Foods (3rd edition). 1997. Frank V. Kosikowski and Vikram V. Mistry. F.V. Kosikowski LLC, 1 Peters Lane, Westport CT 06880.

Journals: Journal of Dairy Science, Dairy Foods

Dairy Education e-book series - University of Guelph
Website: www.foodsci.uoguelph.ca/cheese
www.foodsci.uoguelph.ca/dairyedu Cheese Making Technology e-book
The Dairy Science and Technology e-book

Subject Outline:

- Principles of milk microbiology relating to fermented dairy products
- Composition of milk and evaluation of milk for cheese and fermented milk manufacture
- Dairy industry background and statistics (International, National, Provincial)
- Milk treatment processes with focus on pasteurization
- Types of fermented dairy products; microorganisms involved; and factors affecting their activities in the various products
- Cultures and starters
- Coagulation agents
- The fundamentals of cheese manufacture
- Manufacture of several varieties of cheeses, including cheddar, cottage, cream cheese, artisanal, and processed cheese

- Defects, probable causes and remedies of defects in cheese and fermented milk products.
- The yield of cheese
- Nutritional properties of cheese and fermented milk products
- Yoghurt, sour cream, buttermilk, kefir
- Sanitation and government regulations
- Whey handling

Schedule for Tests and Laboratories: March 18th – Mid Term Exam
March 21st - Assignment of Project
Lab Dates – Fridays beginning February 4th
Lab Reports – Due two weeks after lab date
Final Exam Date - To Be Determined

- Late assignments will be downgraded. Missed tests must be completed and may be rescheduled with the consent of the Instructor.

Laboratory Information: The lab schedule has been compressed from 8 to 5 sessions for the 2021 term in order to accommodate COVID-19 protocols. The topics remain consistent with previous offerings.

The 2022 Laboratory Schedule Under Covid-19 Safety Protocols (On Line Classes starting January 24th, 2022):

Topic	Date
Laboratory 1 - Microbiology of Milk and Fermented Dairy products	Friday Feb 4th
Laboratory 1 - Microbiology of Milk and Fermented Dairy products	Friday Feb 11th
Laboratory 2 - Chemistry of Milk and Fermented Dairy products	Friday Feb 18th
Laboratory 2 - Chemistry of Milk and Fermented Dairy products	Friday Mar 4th
Laboratory 3 - Coagulation of Cheese and Fermented Dairy Products	Friday Mar 11th
Laboratory 3 - Coagulation of Cheese and Fermented Dairy Products	Friday Mar 25th
Laboratory 4 - Manufacture and Sensory Evaluation of Cheddar Cheese	Friday Apr 1st
Laboratory 4 - Manufacture and Sensory Evaluation of Cheddar Cheese	Friday Apr 8th
Laboratory 5 - Manufacture and Evaluation of Process Cheese Spread	Friday Apr 15th
Laboratory 5 - Manufacture and Evaluation of Process Cheese Spread	Friday Apr 22nd

Lab Sessions are held on Fridays
Each of the 5 Lab Sessions will be allocated over a 2-week period.
Session 1 9:00 - 11:00 am
Session 2 12:30-2:30 pm
Session 3 2:30 -4:30 pm

6 Student limit per lab session
Students Registered = 38 (Maximum 36)

Marks Awarded

Laboratory reports	20%
Project	10%
Mid-term test	20%
Final examination	40%
Attendance	10%

Grades:

A+	90-100	C+	65-69.9
A	80-89.9	C	60-64.9
B+	75-79.9	D	50-59.9
B	70-74.9	F	under 50

Class Attendance: Attendance **will be monitored** and graded proportionally as listed above.

Assignment Descriptions: Formats, referencing style, and grading rules for the lab reports and term project for FOOD 3160 will be posted on UM Learn.

Evaluative Feedback: This will be both formative and summative**.** Each test will be reviewed and discussed during class. Laboratory report feedback and suggestions will be ongoing during the time required for completion. The evaluation of lab reports will be completed within 7 working days after submission. Feedback and evaluation detail will be available upon request.

Electronic Equipment (course technology): Electronic equipment (IPhone, laptop, notebook, etc.) is permitted during regular class time providing it does not disrupt other students. This equipment is not permitted during quizzes, tests, or exams. *This course is delivered remotely until February 25th, 2022. Students are expected to be on line and logged in during the scheduled class times. The course will be delivered using UM Learn and Cisco Web Ex. Students must have Web Ex installed. Tests and exams may be given using UM Learn depending on the current University of Manitoba Covid Protocol.* Your computer or device, and Internet connection must meet the UM minimum requirements found here *https://umanitoba.ca/sites/default/files/2021-08/student-connectivity-recommendations.pdf* These are required for all Winter 2022 classes.

Class Communication: Course material will be presented thoroughly during class time and all of the digital materials presented in class will be posted on UM Learn. Discussion and questions during class time are encouraged.
The University requires all students to activate an official University email account. Please note that all communication between me and you as a student must comply with the electronic communication within the student policy. You are required to obtain and use your U of M email account for all communication between yourself and the university.

Recording Class Lectures: The instructor 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, in whole or in part without

permission of the instructor. Course materials (both paper and digital) are for the participant's private study and research.

Using Copyrighted Material: Please respect copyright. We will use copyrighted content in this course. The content should be appropriately acknowledged and is copied in accordance with copyright laws and university guidelines. Copyrighted works, including those created by the instructor, are made available for private study and research and must not be distributed in any format without permission. For more information, see the University's Copyright Office website at http://umanitoba.ca/copyright/ or contact um_copyright@umanitoba.ca.

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

Students Services: A list of students services provided by the University of Manitoba will be posted in UM Learn for this course.

Expectations: The instructor will review expectations in the first week of classes.

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.

Policy on Plagiarism and Cheating
"Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty (e.g. suspension or expulsion from the faculty or university). Cheating in examinations or tests may take the form of copying from another student or bringing unauthorized materials into the exam room (e.g., crib notes, pagers or cell phones). Exam cheating can also include exam impersonation. (Please see Section 4.2.8 on Exam Personation). A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty.
To plagiarize is to take ideas or words of another person and pass them off as one's own. In short, it is stealing something intangible rather than an object. Plagiarism applies to any written work, in traditional or electronic format, as well as orally or verbally presented work. Obviously it is not necessary to state the source of well known or easily verifiable facts, but students are expected to appropriately acknowledge the sources of ideas and expressions they use in their written work, whether quoted directly or paraphrased. This applies to diagrams, statistical

tables and the like, as well as to written material, and materials or information from Internet sources.
To provide adequate and correct documentation is not only an indication of academic honesty but is also a courtesy which enables the reader to consult these sources with ease. Failure to provide appropriate citations constitutes plagiarism. It will also be considered plagiarism and/or cheating if a student submits a term paper written in whole or in part by someone other than him/herself, or copies the answer or answers of another student in any test, examination, or take-home assignment.

Working with other students on assignments, laboratory work, take-home tests, or on-line tests, when this is not permitted by the instructor, can constitute Inappropriate Collaboration and may be subject to penalty under the Student Discipline By-Law.
An assignment which is prepared and submitted for one course should not be used for a different course. This is called "duplicate submission" and represents a form of cheating because course requirements are expected to be fulfilled through original work for each course.

When in doubt about any practice, ask your professor or instructor."

The Student Advocacy Office, 519 University Centre, 474-7423, is a resource available to students dealing with Academic Integrity matters.

Plagiarized material will receive a grade of ZERO (0) in this course.

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/
520 University Centre
204 474 7423
student_advocacy@umanitoba.ca