FOOD 3170 - Cheese and Fermented Milk Products

Course Outline: Winter 2018

Credits: (3-L:0-0)3   Winter Term 2018 (Classes Begin January 3rd, 2018)

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

Location for Classes: Dairy Science Building Room 206

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

Prerequisite: No prerequisite

Voluntary Withdrawal Date: March 16, 2018

Instructor: John Thoroski, Dept. of Food and Human Nutritional Sciences
(Available during normal working hours)
Room 006A – Dairy Science Building
Room 203 – Ellis Building
Phone # 204 474 9332
E Mail – John.Thoroski@umanitoba.ca

Course Description: 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. Offered in alternate years.

Course objectives
At the completion of this course, the student should be able to:

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

Texts/References:


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
- Dairy industry background and statistics (International, National, Provincial)
- Composition of milk and evaluation of milk for cheese and fermented milk manufacture
- 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:  
February 16th – Mid Term Exam  
March 2nd - Assignment of Project  
Lab Dates – Fridays beginning January 12th  
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

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
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<tbody>
<tr>
<td>Microbiological analysis of fermented dairy products (cheese and milk).</td>
<td>Friday January 12th</td>
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<tr>
<td>No Lab Scheduled</td>
<td>Friday January 19th</td>
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<td>Chemical analysis of fermented dairy products (solids, fat, acidity)</td>
<td>Friday January 26th</td>
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<tr>
<td>Chemical analysis of fermented dairy products (solids, fat, acidity)</td>
<td>Friday February 2nd</td>
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<td>Coagulation and Manufacture of Direct Acidified Cheese</td>
<td>Friday February 9th</td>
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<td>No Lab – Mid Term Exam</td>
<td>Friday February 16th</td>
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<td>No Lab – Reading Week</td>
<td>Friday February 23rd</td>
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<tr>
<td>Manufacture of Yogurt</td>
<td>Friday March 2nd</td>
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<tr>
<td>Manufacture of Processed Cheese</td>
<td>Friday March 9th</td>
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<td>Manufacture of Cheddar Cheese</td>
<td>Friday March 16th</td>
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<td>Grading and Judging of Cheese</td>
<td>Friday March 23rd</td>
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<td>Sanitation and Pasteurization Demonstration</td>
<td>Friday March 30th</td>
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<tr>
<td>Last Day of Classes - No Lab Scheduled</td>
<td>Friday April 6th</td>
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Lab Sessions are held on Fridays

Session 1  9:30-11:30 am  
Session 2  12:30-2:30 pm  
Session 3  2:30 -4:30 pm

# Students Registered = 38 (Maximum 36)  
13 Student limit per lab sessions

Marks Awarded

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

Grades:

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

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

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.

Students with Disabilities: Students with disabilities are encouraged to contact Student Disability Services in order to facilitate the implementation of accommodations. The Instructor will be available to meet with Students to discuss the accommodations recommended by Student Disability Services.

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.

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.