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

FOOD 3010 Food Process 1

Course Syllabus – Winter 2018

COURSE TECHNOLOGY
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.

POLICY ON CLASS COMMUNICATION
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

Please note that all communication between me 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). You are required to obtain and use your U of M email account for all communication between yourself and the university.

RECORDING CLASS LECTURES
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, openly or surreptitiously, in whole or in part without permission of 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. 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/](http://umanitoba.ca/copyright/) or contact [um_copyright@umanitoba.ca](mailto:um_copyright@umanitoba.ca).

**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 personation. (Please see Exam Personation, found in the Examination Regulations section of the General Academic Regulations). 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.
STUDENTS ACCESSIBILITY SERVICES

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

OTHER STUDENT SERVICES

Writing and Learning Support:
The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

You can also meet one-to-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. If you are interested in meeting with a writing tutor, reserve your appointment two to three days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor’s feedback.

These Academic Learning Centre services are free for U of M students. For more information, please visit the Academic Learning Centre website at: http://umanitoba.ca/student/academiclearning/

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 201 Tier Building.

University of Manitoba Libraries (UML):
As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject or by name: http://bit.ly/1tU0bB4. In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: http://bit.ly/1sXe6RA. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries’ homepage: www.umanitoba.ca/libraries.
**Student Counselling Centre (SCC):**
Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling. **Student Counselling Centre:**
474 University Centre or S207 Medical Services
(204) 474-8592

**Student Support Case Management:**
Contact the Student Support Case Management team if you are concerned about yourself or another student and don’t know where to turn. SSCM helps connect students with on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team.
520 University Centre
(204) 474-7423

*For 24/7 mental health support, contact the Mobile Crisis Service at 204-940-1781.*

**University Health Service:**
Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation.
**University Health Service** [http://umanitoba.ca/student/health/](http://umanitoba.ca/student/health/)
104 University Centre, Fort Garry Campus
(204) 474-8411 (Business hours or after hours/urgent calls)

**Health and Wellness:**
Contact our Health and Wellness Educator if you are interested in information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault.
**Health and Wellness Educator** [http://umanitoba.ca/student/health-wellness/welcome.html](http://umanitoba.ca/student/health-wellness/welcome.html)
Katie.Kutryk@umanitoba.ca
469 University Centre
(204) 295-9032

**Live Well @ UofM:**
For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site:

**Your Rights and Responsibilities:**
As a student of the University of Manitoba you have rights and responsibilities. It is important for you to know what you can expect from the University as a student and to understand what the University expects from you. Become familiar with the policies and procedures of the University and the regulations that are specific to your faculty, college or school. The **Academic Calendar** [http://umanitoba.ca/student/records/academiccalendar.html](http://umanitoba.ca/student/records/academiccalendar.html) is one important source
of information. View the sections *University Policies and Procedures* and *General Academic Regulations*.

While all of the information contained in these two sections is important, the following information is highlighted.

- If you have questions about your grades, talk to your instructor. There is a process for term work and final grade appeals. Note that you have the right to access your final examination scripts. See the Registrar's Office website for more information including appeal deadline dates and the appeal form [http://umanitoba.ca/registrar/](http://umanitoba.ca/registrar/)

- You are expected to view the General Academic Regulation section within the Academic Calendar and specifically read the Academic Integrity regulation. Consult the course syllabus or ask your instructor for additional information about demonstrating academic integrity in your academic work. Visit the Academic Integrity Site for tools and support [http://umanitoba.ca/academicintegrity/](http://umanitoba.ca/academicintegrity/) View the Student Academic Misconduct procedure for more information.

- The University is committed to a respectful work and learning environment. You have the right to be treated with respect and you are expected conduct yourself in an appropriate respectful manner. Policies governing behavior include:
  
  **Respectful Work and Learning Environment**

  **Student Discipline**
  [http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html](http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html) and,

  **Violent or Threatening Behaviour**

- If you experience Sexual Assault or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The Sexual Assault policy may be found at:
  More information and resources can be found by reviewing the Sexual Assault site [http://umanitoba.ca/student/sexual-assault/](http://umanitoba.ca/student/sexual-assault/)

- For information about rights and responsibilities regarding Intellectual Property view the policy [http://umanitoba.ca/admin/governance/governing_documents/community/235.html](http://umanitoba.ca/admin/governance/governing_documents/community/235.html)

For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective faculty/college/school web site [http://umanitoba.ca/faculties/](http://umanitoba.ca/faculties/)

Contact an Academic Advisor within our faculty/college or school for questions about your academic program and regulations [http://umanitoba.ca/academic-advisors/](http://umanitoba.ca/academic-advisors/)
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
Credits: (0-0:3-L)3

Description: The basic principles and practices of the major techniques used in food processing and preservation are covered. Emphasis is placed on thermal processing, drying, evaporation, chilling, freezing, separation, packaging and sanitation. Also, preservation by salting, smoking, microwave, radiation and chemical techniques is presented. Critical issues in food regulations are introduced.

Prerequisite: Any MATH course at the 1000 level.

Instructor: Martin G. Scanlon
Room 259 Agriculture Bldg (Dean’s Office)
204-474-6082
scanlon@cc.umanitoba.ca
Available for individual student consultation after class on Mondays and Fridays, and by appointment at any mutually agreeable time.

Lecture schedule: Monday, Wednesday, Friday at 1:30 PM, Room 134, Agriculture Bldg

Laboratory schedule: Wednesday at 2:30 pm, Pilot Plant, Ellis Bldg.
Lab attendance is compulsory.

Policy on Academic Integrity
It is the responsibility of the student to know the rules regarding academic integrity, including prohibition of plagiarism and cheating. Consult instructor if unsure, or information can be obtained at: http://umanitoba.ca/student/resource/student_advocacy/cheating_plagiarism_fraud.html

Marks Awarded

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Final examination</td>
<td>45%</td>
</tr>
<tr>
<td>Laboratory reports</td>
<td>30% (40% of reports will be graded prior to VW date)</td>
</tr>
<tr>
<td>Mid-term examination</td>
<td>25% (graded papers will be returned to class prior to VW date)</td>
</tr>
</tbody>
</table>

Grades:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>90-100</td>
<td>C+ 60-65.9</td>
</tr>
<tr>
<td>A</td>
<td>80-89.9</td>
<td>C   56-59.9</td>
</tr>
<tr>
<td>B+</td>
<td>75-79.9</td>
<td>D   50-55.9</td>
</tr>
<tr>
<td>B</td>
<td>66-74.9</td>
<td>F   under 50</td>
</tr>
</tbody>
</table>

Lab Reports and Assignments: Reports should be about 3 to 5 pages long (excluding cover page), typewritten double-spaced with 2.5cm margins (or in neat handwritten form). Tables and figures should be attached with table title and figure captions. Lab reports are due ten days after a lab. Assignments can be handwritten, but must be legible.

Late reports and assignments will lose 10% of credit for submission after the due date, and 10% for each additional day late. If there are compelling reasons why you will have a late submission, an alternate due date must be arranged with instructor prior to the scheduled due date.
Topics Covered

1. Introduction to Process Operations, Principles, Good Manufacturing Practices, Food Laws and Regulations

2. Food Preservation by Application of Heat
   a. Principles of Heat Transfer
   b. Blanching
   c. Pasteurization
   d. Heat Sterilization

3. Food Preservation through Water Removal
   a. Forms of Water in Foods
   b. Sorption of Water in Foods
   c. Water Activity
   d. Drying Technology
   e. Evaporation Technology

4. Food Preservation through Temperature Reduction
   a. Chilling
   b. Freezing

5. Food Preservation by Radiation
   a. Ionizing Radiation
   b. Microwave

6. Food Preservation by use of:
   a. Salt
   b. Smoke
   c. Sugar
   d. Other Chemical Additives

7. Food Packaging

8. Food Plant Sanitation

9. Environmental Aspects of Food Processing
   a. Roles and Scientific Use of Water in Food Processing
   b. Food Processing Waste Management

Laboratories

One three-hour laboratory per week.- Practical applications of processing at a pilot plant scale.
Plant tours- commercial food process industry.

Laboratory Topics

Examples:

- Field Trips
- Thermal Processing - Canning, Pasteurization
- Meat (sausage) processing
- Drying Technology
- Processing of Jam, Jelly, Syrups
- Processing of Potato French Fries and Chips
Assignments

Students will be operating in small groups. Laboratory/trip reports should be organized as outlined in the lectures and lab handouts. Reports must be completed on an individual basis or on a group basis as required.

Texts/References: No primary textbook

Books (which provide appropriate background material for the course):


Journals / trade publications

1. Food Processing
2. Food Technology- IFT
3. Food Engineering
4. Prepared Foods
5. Food in Canada
Learning Objectives:

By the end of the course, the student should:

1. Know the source and variability of raw food material and their impact on food processing operations
2. Know the principles that make a food product safe for consumption
3. Know the principles and current practices of processing techniques and the effects of processing parameters on product quality
4. Know the properties and uses of various packaging materials
5. Know the major chemical reactions that limit shelf life of foods
6. Identify the conditions, including sanitation practices, under which the important pathogens and spoilage microorganisms are commonly inactivated, killed or made harmless in foods
7. Be able to apply and incorporate the principles of Food Science in practical, real-world situations and problems
8. Apply critical thinking skills to new situations
9. Commit to the highest standards of professional integrity and ethical values
10. Work and/or interact with individuals from diverse cultures