HNSC FOOD 3220: Grains for Food & Beverage (3.0 credit hours)

Course Syllabus – Winter 2018

COURSE DETAILS

Course Title & Number: FOOD 3220
Number of Credit Hours: 3.0
Class Times & Days of Week: 12:30 pm –1:20 pm Mondays, Wednesdays & Fridays
Location for Classes/labs/tutorials: 344 Ellis Building
Pre-Requisites: FOOD 2500 or equivalent
Voluntary Withdrawal Date: March 16, 2018

INSTRUCTOR CONTACT INFORMATION

Instructor(s) Name: Dr. T. Beta
Office Location: 226 Ellis
Office Hours or Availability: Fridays 2:30 to 4:30 pm by appointment
Office Phone No. 204-474-8214
Email: All email communication must conform to the Communicating with Students university policy.
COURSE DESCRIPTION

The science and technology behind the functionality of major Canadian cereal grains and grain legumes for food and beverage. Grains covered include wheat, barley, oats, peas, beans, and lentils in the context of their processing into products such as bread, pasta and beer, and foods high in dietary fibre. Details are presented on the differing physical and chemical attributes of grains to make quality products with focus on the roles of protein, starch, and non-starch polysaccharides.

COURSE OBJECTIVES

Upon completion of this course, students should be able to:
• understand the definition of ‘grains’
• delineate differences between cereals and legumes in terms of structure and composition
  o visualize and explain the major anatomical features of grains
  o understand the distribution of major nutritional components in the grains
  o discuss the roles of starch, non-starch polysaccharides and protein as major chemical constituents of grains
• gain fundamental understanding of the grain dry milling process and typical processing steps used to obtain products suitable for consumption and/or for being incorporated in various foods
• acquire a fundamental understanding of the wet milling process and typical processing steps used to make wet milling coproducts
• gain an understanding of the principles of bakery production of bread and baked products
• understand the major snack food types and the methods of their manufacture
• understand the basic principles of extrusion and its use to transform grains into food products
• achieve a general understanding of the manufacture of breakfast cereals
• understand the malting process and biochemical changes in germinating barley to transform grain into quality malt for beer brewing
• understand the basic principles involved in the production of traditional fermented grain food and beverage products

TEXTBOOK, READINGS, MATERIALS

On reserve in Agriculture Library with loan period of 3 days


Other recommended textbooks with online access

- B. K. Bala (Bilash Kanti). Drying and Storage of Cereal Grains. Wiley InterScience (Online service). Chichester, West Sussex, United Kingdom: John Wiley & Sons, Ltd 2017

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.

Use electronic reserves and library databases identified above.

iClickers will be required for in class quizzes during lectures.

The course will make use of UM Learn (see the Centre For The Advancement Of Teaching & Learning for details on f2f and online resources).

You may link to the Centre’s instructional videos on accessing and contributing to wikis and blogs at http://intranet.umanitoba.ca/academic_support/Centre for the Advancement of Teaching & Learning/resources/wikis_blogs.html.

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**

Dr. T. Beta 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 Dr. Beta. 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/ or contact 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/](http://umanitoba.ca/student/saa/accessibility/)

520 University Centre
204 474 7423
[Student_accessibility@umanitoba.ca](mailto: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/1tJ0bB4](http://bit.ly/1tJ0bB4). 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](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](http://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:** [http://umanitoba.ca/student/counselling/index.html](http://umanitoba.ca/student/counselling/index.html)
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. **Student Support Intake Assistant** [http://umanitoba.ca/student/case-manager/index.html](http://umanitoba.ca/student/case-manager/index.html)
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:  [http://umanitoba.ca/student/livewell/index.html](http://umanitoba.ca/student/livewell/index.html)

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

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.


520 University Centre

204 474 7423

student_advocacy@umanitoba.ca

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**Expectations: I Expect You To**

I will be in class for 10 minutes prior to and after the class time. I will treat you with respect and would appreciate the same courtesy in return. See **Respectful Work and Learning Environment Policy**.

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**Expectations: You Can Expect Me To**

A significant part of my teaching practice includes the use of questions/quizzes during lectures. I expect students to respond but I do not expect perfection.
Class Schedule

This schedule is subject to change at the discretion of the instructor and/or based on the student learning needs but such changes are subject to Section 2.8 of the – ROASS- Procedure.

FOOD 3220 Calendar 2017- 2018

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Lecture #</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>03</td>
<td>1</td>
<td>Introducing grains</td>
</tr>
<tr>
<td></td>
<td>05</td>
<td>2</td>
<td>Wheat &amp; other <em>Triticum</em> grains</td>
</tr>
<tr>
<td></td>
<td>08</td>
<td>3</td>
<td>Structure &amp; composition of the wheat kernel</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>4</td>
<td>Wheat carbohydrate constituents and properties</td>
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<tr>
<td></td>
<td>12</td>
<td>5</td>
<td>Wheat protein constituents and properties</td>
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<tr>
<td></td>
<td>15</td>
<td>6</td>
<td>Wheat milling (Lab Demonstration)</td>
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<tr>
<td></td>
<td>17</td>
<td>7</td>
<td>Bakery products of wheat</td>
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<td></td>
<td>19</td>
<td>8</td>
<td>Products based on other types of wheat</td>
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<tr>
<td></td>
<td>22</td>
<td>9</td>
<td>Beverages based on wheat</td>
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<tr>
<td></td>
<td>24</td>
<td>10</td>
<td>Structure &amp; composition of the maize kernel</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>11</td>
<td>Maize processing (dry &amp; wet milling)</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>12</td>
<td>Application of maize in foods and beverages</td>
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<tr>
<td></td>
<td>31</td>
<td>13</td>
<td>Structure &amp; composition of the rice kernel</td>
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<tr>
<td>February</td>
<td>02</td>
<td>14</td>
<td>Application of rice in foods and beverages</td>
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<tr>
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<td>05</td>
<td>15</td>
<td>Structure &amp; composition of the barley kernel</td>
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<tr>
<td></td>
<td>07</td>
<td>16</td>
<td>Barley processing (malting and milling)</td>
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<td>09</td>
<td>17</td>
<td>Application of barley in foods and beverages</td>
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<tr>
<td></td>
<td>12</td>
<td>18</td>
<td>Structure &amp; composition of the oat kernel</td>
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<td>14</td>
<td>19</td>
<td>Application of oats in foods and beverages</td>
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<td>16</td>
<td>20</td>
<td>Other cereals and pseudocereals</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td></td>
<td>Reading week</td>
</tr>
<tr>
<td></td>
<td>23</td>
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<td>Reading week</td>
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<tr>
<td></td>
<td>26</td>
<td></td>
<td>Exam 1</td>
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</table>
March
02 22 Structure of pulses
05 23 Major constituents of pulses
07 24 Minor constituents of pulses
09 25 Pulse proteins
12 26 Pulse starches
14 27 Postharvest handling of pulses
16 28 Processing of pulses
19 29 Pulse products and utilization
21 30 Pulse grain quality criteria (Pulse Canada Tour)

23 Exam 2

26 31 Presentations (Term papers due 10 am March 26)
28 32 Presentations

30 Good Friday

April
04 33 Presentations
06 34 Presentations

TBA Final comprehensive exam

Course Evaluation Methods

<table>
<thead>
<tr>
<th>Evaluation Tool</th>
<th>Points</th>
<th>% of Grade</th>
<th>Date</th>
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<tr>
<td>Quizzes (iClicker)</td>
<td>100</td>
<td>10</td>
<td>During classes</td>
</tr>
<tr>
<td>Exam 1</td>
<td>100</td>
<td>15</td>
<td>February 26</td>
</tr>
<tr>
<td>Exam 2</td>
<td>100</td>
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<td>March 23</td>
</tr>
<tr>
<td>Term Paper</td>
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<td>March 26 to April 6</td>
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<tr>
<td>Final Exam</td>
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<td>50</td>
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*To be advised
Grading

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<tr>
<th>Letter Grade</th>
<th>Percentage out of 100</th>
<th>Grade Point Range</th>
<th>Final Grade Point</th>
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<tr>
<td>A+</td>
<td>90-100</td>
<td>4.25-4.5</td>
<td>4.5</td>
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<tr>
<td>A</td>
<td>80-89</td>
<td>3.75-4.24</td>
<td>4.0</td>
</tr>
<tr>
<td>B+</td>
<td>75-79</td>
<td>3.25-3.74</td>
<td>3.5</td>
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<tr>
<td>B</td>
<td>67-74</td>
<td>2.75-3.24</td>
<td>3.0</td>
</tr>
<tr>
<td>C+</td>
<td>61-66</td>
<td>2.25-2.74</td>
<td>2.5</td>
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<tr>
<td>C</td>
<td>56-60</td>
<td>2.0-2.24</td>
<td>2.0</td>
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<tr>
<td>D</td>
<td>50-55</td>
<td>Less than 2.0</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>Less than 50</td>
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<td>0</td>
</tr>
</tbody>
</table>

Referencing Style
Assignments should use the Cereal Chemistry journal style of referencing.

Assignment Descriptions
Term Paper assignments will cover lesser known grains. The assignment will be due March 26 at 10 am at the latest. Detailed instructions will be posted on UM Learn.

Assignment Grading Times
NA

Assignment Extension and Late Submission Policy
Missed Quizzes, Missed Exams or Missed Assignments: No marks will be earned. Accommodation will only be provided for medical reasons or other emergency upon submission of satisfactory documentation. Whenever possible, give prior notification.

Late Assignments: Late assignments attract a penalty of 10% of total marks per business day.

Class Participation: Bonus points of up to 4% can be earned through active participation in class presentations and discussions of term papers.