HNSC 4540 and FOOD 4540: Functional Foods and Nutraceuticals, 3 Credit Hours

Course Syllabus – Winter 2018

**COURSE DETAILS**

<table>
<thead>
<tr>
<th>Course Title &amp; Number:</th>
<th>FOOD 4540 &amp; HNSC 4540 Functional Foods and Nutraceuticals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Credit Hours:</td>
<td>3</td>
</tr>
<tr>
<td>Class Times &amp; Days of Week:</td>
<td>Wednesdays 5:30-8PM</td>
</tr>
<tr>
<td>Location for classes/labs/tutorials:</td>
<td>Richardson Centre for Functional Foods and Nutraceuticals</td>
</tr>
<tr>
<td>Pre-Requisites:</td>
<td>[CHEM 2770 or MBIO 2770 (002.277 or 060.277) or CHEM 2360 or MBIO 2360 (002.236 or 060.236)].</td>
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<tr>
<td>Voluntary Withdrawal Date:</td>
<td>March 16, 2018</td>
</tr>
</tbody>
</table>

**INSTRUCTOR CONTACT INFORMATION**

<table>
<thead>
<tr>
<th>Instructor(s)</th>
<th>Dr. P. Jones, Food and Human Nutritional Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Dr. Mohammed Moghadasian, Food and Human Nutritional Sciences</td>
</tr>
<tr>
<td>Office Location:</td>
<td>For Dr. Jones: Richardson Centre for Functional Foods and Nutraceuticals</td>
</tr>
<tr>
<td></td>
<td>For Dr. Moghadasian: Canadian Centre for Agri-Food Research in Health and Medicine</td>
</tr>
<tr>
<td>Office Hours or Availability:</td>
<td>For Dr. Moghadasian: Mondays 11-12 by appointment</td>
</tr>
<tr>
<td></td>
<td>For Dr. Jones: by appointment</td>
</tr>
<tr>
<td>Office Phone No.</td>
<td>For Dr Jones: 204 474-8883</td>
</tr>
<tr>
<td></td>
<td>For Dr. Moghadasian: 204-235-3934</td>
</tr>
<tr>
<td>Email</td>
<td>For Dr. Jones: <a href="mailto:Peter.Jones@umanitoba.ca">Peter.Jones@umanitoba.ca</a></td>
</tr>
<tr>
<td></td>
<td>For Dr. Moghadasian: <a href="mailto:mmoghadasian@sbrc.ca">mmoghadasian@sbrc.ca</a></td>
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</tbody>
</table>
**COURSE DESCRIPTION**
(Formerly 030.454) This course will examine the bioactive components of functional foods and nutraceuticals, their sources, chemistry, process technology, efficacy, safety and regulation.

**LEARNING OUTCOMES**
Upon completion of this course, students should be able to:

**FOUNDATIONAL KNOWLEDGE CONTENT AREAS FOR DIETETICS EDUCATION**
This dietetic education program is an accredited program recognized by the Partnership for Dietetic Education and Practice (PDEP) and prepares students for eligibility for registration with a provincial dietetics regulatory body.

*Highest level achieved: 1 = demonstrate broad knowledge; 2 = demonstrate comprehension; 3 = analyze, interpret and apply knowledge*

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Foundational Knowledge</th>
<th>Cognitive Complexity Level</th>
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<tbody>
<tr>
<td><strong>Food</strong></td>
<td>Physical properties and chemical composition of food</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Application of dietary requirements, guidelines, and guidance tools to food planning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Food labeling</td>
<td>2</td>
</tr>
<tr>
<td><strong>Human Nutrition Across the Lifespan</strong></td>
<td>Nutrition recommendations and guidelines</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Food sources of nutrients and dietary supplements</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Role of nutrients and other food components in health</td>
<td>3</td>
</tr>
<tr>
<td><strong>Pharmacology</strong></td>
<td>Natural health products</td>
<td>1</td>
</tr>
<tr>
<td><strong>Professional Practice in Dietetics</strong></td>
<td>Federal, provincial / territorial requirements</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Practice in a regulated health profession</td>
<td>2</td>
</tr>
<tr>
<td><strong>Research and Evaluation</strong></td>
<td>Evidence-informed practice</td>
<td>2</td>
</tr>
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**TEXTBOOK, READINGS, MATERIALS**
Required textbook – author, title, date (and edition), publisher, cost and availability.
None

Supplementary readings – where they are located, costs, method of access if they are electronic.
CRC Press ISBN1420071106


**Journals:**

Functional Ingredients

Nutraceuticals World
Food Technology

J. Agric. Food Chem

American Journal of Clinical Nutrition

European Journal of Clinical Nutrition

Journal of Nutritional Biochemistry

Others

Websites:
	nutraingredients.com

foodsafetynetwork.ca

All available at UM libraries

Recommended or required materials (e.g. lab equipment, art supplies, computers, etc.) – why they are needed, cost and where they can be purchased.
None

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.

If you are using a wiki or a UM Learn, explain how to get access and navigate in these technologies. (see the Centre For The Advancement Of Teaching & Learning for details on f2f and online resources).
Use UM learn by logging in university website and chose for students under online section.

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**

*Drs. Jones and Moghadasian* 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 Drs. Jones and Moghadasian. Course materials (both paper and digital) are for the participant’s private study and research.

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**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 umCopyright@umanitoba.ca.

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**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

### 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: http://bit.ly/WcEbA1 or name: 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. 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: 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
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/
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
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
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: [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/media/Intellectual_Property_Policy_-_2013_10_01.pdf](http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.pdf)

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/
Contact an Academic Advisor within our faculty/college or school for questions about your academic program and regulations 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

Expectations: I Expect You To
We 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.

Expectations: You Can Expect Me To
A large part of our teaching practice includes lectures.

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).

UNIVERSITY OF MANITOBA
Departments of Food and Human Nutritional Sciences

Functional Foods: 4540    Coordinators: Drs. P. Jones, A. Hydamaka, M. Moghadasian
Wednesday: 5:30 – 8:00 PM    Ph: 474-9787    Ph: 474-9642    Ph: 235-3934

Richardson Centre for Functional Foods Lecture Theatre

Winter 2018 Schedule

FUNCTIONAL FOODS AND NUTRACEUTICALS

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 3</td>
<td>Wed History of Functional Foods</td>
<td>Dr. Moghadasian</td>
</tr>
<tr>
<td>January 10</td>
<td>Wed Probiotics and Prebiotics</td>
<td>Dr. Jones</td>
</tr>
<tr>
<td>January 17</td>
<td>Wed Oils, Fats, Plant Sterols</td>
<td>Dr. Moghadasian</td>
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</table>
January 24 Wed Cereals/Biomakers Dr. Ames/Dr. Moghadasian
January 31 Wed Grains/Bioprocesses Dr. Beta/Dr. Moghadasian
February 7 Wed Novel Oils Dr. Jones
February 14 Wed Midterm Examination Dr. Jones/Dr. Moghadasian
February 21 Wed Midterm Break
February 28 Wed Laboratory Tour and Practicum Dr. Jones/Dr. Moghadasian
March 7 Wed Bioactive Peptides/Nutrigenetics Dr. Aluko/Dr. Eck
March 14 Wed Antioxidants Dr. Hydamaka
March 21 Wed Antioxidant Tests/Superfruits Dr. Hydamaka
March 28 Wed Dairy / Chocolate/ Coffee/Tea Dr. Hydamaka
April 4 Wed Business Development Dr. Jones

Course Evaluation Methods

Mid-term test 50%
Final Exam 50%
Total 100%
Final exam will not contain materials from mid-term.

Grading

<table>
<thead>
<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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<tbody>
<tr>
<td>A+</td>
<td>90-100</td>
<td>4.25-4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>A</td>
<td>80-89.9</td>
<td>3.75-4.24</td>
<td>4.0</td>
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<tr>
<td>B+</td>
<td>75-79.9</td>
<td>3.25-3.74</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>70-74.9</td>
<td>2.75-3.24</td>
<td>3.0</td>
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<tr>
<td>C+</td>
<td>65-69.9</td>
<td>2.25-2.74</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>60-64.9</td>
<td>2.0-2.24</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>50-59.9</td>
<td>Less than 2.0</td>
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</tr>
<tr>
<td>F</td>
<td>Less than 50</td>
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