



**UM** | Faculty of Agricultural  
and Food Sciences

# Syllabus

HNSC 3310 Macronutrients in Human Health  
(Fall 2021)



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## COURSE DETAILS

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<b>Course Title &amp; Number:</b>	HNSC 3310 Macronutrients and Human Health
<b>Number of Credit Hours:</b>	3
<b>Class Times &amp; Days of Week:</b>	10:00 – 11:15 am, Tuesdays and Thursdays, Sept 9-Dec 9 [no class on September 30 (National Day for Truth and Reconciliation), or November 9 and 11 during the Fall Term Break]
<b>Location for classes/labs/tutorials:</b>	All classes will be virtual (synchronous) offered via WebEx (accessed through UM Learn)
<b>Pre-Requisites:</b>	[CHEM 2780 or MBI0 2780 (002.278 or 060.278) or CHEM 2370 or MBI0 2370 (002.237 or 060.237)] and [HNSC 2140 (030.214)] and [BIOL 1412 or 2420 (ZOOL 1330 or 2540, 022.133 or 022.254)]

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## Instructor Contact Information

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<b>Instructor(s) Name &amp; Preferred Form of Address:</b>	Dr. Carla Taylor You can address me as Professor or by first name (Carla)
<b>Office Location:</b>	Fort Garry campus: W569 Duff Roblin Building Primary office: R2034 St. Boniface Research Centre Note: Due to the COVID-19 pandemic, office hours will be conducted by video conference
<b>Office Hours or Availability:</b>	Available immediately before class (for quick questions and without prior arrangements) and immediately after class (for approximately 10 minutes as I have another class at 11:30) via WebEx, AND by appointment for a video conference (arrange a time by email – <b><i>please put HNSC 3310 in the subject line of your email</i></b> ), AND drop-in “virtual” office hours will be announced before each test.
<b>Office Phone No.</b>	My office number is 204-258-1361 (leave message on voice mail), however, <i>note that I prefer to be contacted by email to set a time for a phone call or video conference, and that my response time by email is much quicker.</i>
<b>Email:</b>	<b><i>Note that I prefer emails for messages and that emails will be responded to more quickly.</i></b> My email is <a href="mailto:Carla.Taylor@umanitoba.ca">Carla.Taylor@umanitoba.ca</a> (sending questions by email is fine, or contact me by email to set up an appointment for a video conference or a phone call); <b>please put HNSC 3310 in the subject line of your email.</b> My goal is to respond to emails within 24 hours during weekdays.

*Note:* All email communication must conform to the [Communicating with Students](#) university policy.

**Contact:**

Questions immediately before and immediately after class are an excellent way to clarify material covered in the previous or current class. Book an appointment for more in-depth discussions. There will be 'drop-in' office hours before each test to clarify and discuss course material as you study. Ask questions in class – the chat box works well for questions or to initiate a discussion that continues via audio.

## Course Description

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### U of M Course Calendar Description

Macronutrient functions and metabolic roles in human health, including the prevention and pathogenesis of various diseases. Pre-requisites: [CHEM 2780 or MBIO 2780 (002.278 or 060.278) or CHEM 2370 or MBIO 2370 (002.237 or 060.237)] and [HNSC 2140 (030.214)] and [BIOL 1412 or 2420 (ZOO 1330 or 2540, 022.133 or 022.254)]

### General Course Description

The syllabus provides information about the course goals and content, the course schedule and requirements, and how you will be evaluated. Students are expected to use the syllabus to plan their class preparation and studying with respect to the schedule of course topics (textbook readings, review of previous course material in nutrition, biochemistry, physiology, foods, etc) and the schedule for course evaluation (tests, assignment).

## Course Goals

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- To understand the physiological importance of macronutrient (carbohydrates, lipids and protein) metabolism and function in the human body, including factors that affect dietary requirements.
- To understand macronutrient metabolism and function in relationship to the metabolic abnormalities of various diseases (diabetes, cardiovascular, Celiac, carbohydrate intolerances, etc.), and the roles of dietary prevention and nutritional management in these disease states.
- To develop a sound knowledge base that can be applied to a wide variety of practical situations.

This course will also meet the following **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*

Content Area	Foundational Knowledge	Cognitive Complexity Level
<b>Biochemistry</b>	Major metabolic pathways	2
<b>Human Nutrition across the Lifespan</b>	Ingestion, digestion, absorption, metabolism and excretion of nutrients	3
	Biochemical utilization of nutrients and energy	3
	Nutrient and energy requirements	2
	Nutrition recommendations and guidelines	3
	Food sources of nutrients and dietary supplements	3
<b>Nutrition Assessment</b>	Role of nutrients and other food components in health	3
	Biochemical parameter interpretation	3
<b>Nutrition Care Process and Medical Nutrition Therapy</b>	Etiology and pathophysiology of nutrition-related diseases	2
	Nutrition-related disease management strategies	3
	Oral, enteral, and parenteral nutrition support	1
	Complementary and alternative nutrition therapies	1
<b>Pharmacology</b>	Drug classifications relevant to nutrition and their modes of action	1
	Common medication side effects and contraindications relevant to nutrition	1
	Nutrients and nutraceuticals as pharmacological agents	1
<b>Professional Practice in Dietetics</b>	Role of research and new knowledge	2
<b>Research and Evaluation</b>	Evidence-informed practice	1

### Course Learning Objectives

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

1. Integrate the metabolism of macronutrients (carbohydrates, fats, protein) in the context of whole body and inter-organ metabolism.
2. Analyze the digestion, absorption, transport, utilization, and excretion of macronutrients when provided with the structure of the compound(s) [could be standard nutrients or compounds present in specially formulated products to increase or decrease energy intake, provide sweetness, etc.] and the route of delivery [oral, enteral or parenteral].
3. Predict how macronutrient digestion, absorption, transport, utilization, and/or excretion will be affected if a specified organ(s) is(are) not able to support its normal functions.
4. Differentiate the contribution of metabolic pathways to energy production (or storage) during the fed, post-absorptive and fed states, and how this relates to longer term energy balance (weight gain, weight loss).
5. Predict how the metabolic pathways are altered if the dietary pattern overemphasizes or underemphasizes a particular macronutrient (carbohydrates, protein, fat).
6. Understand how insulin contributes to the regulation of the metabolic pathways and describe how a deficiency of insulin (type 1 diabetes mellitus) or insulin resistance (type 2 diabetes mellitus) leads to dysregulation of the metabolic pathways.

7. Understand the etiology and pathophysiology of carbohydrate intolerances, Celiac disease, food hypersensitivities, type 1 and type 2 diabetes, cardiovascular disease, and some cancers.
8. List the risk factors and identify the symptoms of carbohydrate intolerances, Celiac disease, food hypersensitivities, type 1 and type 2 diabetes, cardiovascular disease, and some cancers.
9. Apply the nutritional management guidelines (and explain their scientific basis) for carbohydrate intolerances, Celiac disease, food hypersensitivities, type 1 and type 2 diabetes mellitus, cardiovascular diseases, and some cancers, to specific case examples for the prevention or management of the specified disease state.
10. Assess whether a dietary food recall meets the nutritional management guidelines for carbohydrate intolerances, Celiac disease, food hypersensitivities, type 1 and type 2 diabetes mellitus, cardiovascular diseases, and some cancers, and to provide alternative food choices, including potential use of dietary supplements, to have the revised dietary pattern meet the guidelines.
11. Understand clinical terminology and interpret laboratory (biochemical) values and other nutritional assessment indicators relevant to carbohydrate intolerances, Celiac disease, food hypersensitivities, type 1 and type 2 diabetes, cardiovascular disease, some cancers, and body weight management.
12. Describe the mode of action, and common side effects and contraindications, for medications used in the management of some gastrointestinal disorders, type 1 and type 2 diabetes, cardiovascular disease, and body weight management.
13. Evaluate whether there is sufficient scientific evidence (or not) to support the use of nutrients and nutraceuticals as pharmacological agents, or the use of complementary and alternative nutrition therapies, for the management of chronic diseases such as diabetes and cardiovascular disease.
14. Describe key components of the position statements and evidence-based practice guidelines for management of diabetes, cardiovascular disease and cancer.

### Textbook, Readings, and Course Materials

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- **Required textbook:** Janice L Raymond and Kelly Morrow, *Krause and Mahan's Food and the Nutrition Care Process (15<sup>th</sup> edition)*. 2021. Elsevier, St. Louis, Missouri. Available at the University of Manitoba Bookstore (\$230 new; \$172.50 used). **This is also the text for HNSC 4320. If you already own a copy of the 14<sup>th</sup> edition, you can continue to use it, however, the chapter numbers, page numbers, and some of the content will be different from the 15<sup>th</sup> edition.**
- **Supplementary readings**, available on internet sites (e.g. websites of national organizations, and position paper posted on these websites), will be provided in the course notes.
- **Materials that will be useful references for this course:**
  - **Previous Coursework and Textbooks** from Nutrition (HNSC 1210, 2130, 2140) and Foods (HNSC 1200, 2150, 2160) courses, Biochemistry (CHEM 2770 and 2780), and Human Anatomy and Physiology (ZOOL 1320 and 1330, or ZOOL 2450). In particular, the textbook from HNSC 2140 [*Advanced Nutrition and Human Metabolism* (7<sup>th</sup> edition, 2016) by SS Gropper, JL Smith, JL Groff] will be helpful for this course.
- **The following are some internet sites relevant to the chronic diseases discussed in this course :**
  - General Health [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

Dietetics (DC/AND)	<a href="http://www.dietitians.ca">www.dietitians.ca</a> <a href="http://www.eatright.org">www.eatright.org</a>
Diabetes (CDA/ADA)	<a href="http://www.diabetes.ca">www.diabetes.ca</a> <a href="http://www.diabetes.org">www.diabetes.org</a>
Heart & Stroke	<a href="http://www.heartandstroke.ca">www.heartandstroke.ca</a>
Celiac Disease	<a href="http://www.celiac.ca">www.celiac.ca</a>
Cancer	<a href="http://www.cancer.ca">www.cancer.ca</a>
Food Allergy Canada	<a href="http://www.foodallergycanada.ca">www.foodallergycanada.ca</a>
Medical procedures and terminology, medical dictionaries, drug directories:	<a href="http://www.merck.com/mmhe/index.html">www.merck.com/mmhe/index.html</a> <a href="http://www.medterms.com">www.medterms.com</a>

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## Using Copyrighted Material

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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 (course materials, recordings of lectures/classes), are made available for private study and research and must not be distributed in any format without permission. Note that copyrighted works cannot be uploaded 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](mailto:um_copyright@umanitoba.ca).

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## Course Technology

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Classes will be offered via Cisco Webex which can be accessed through UM Learn when logged into UM Learn for HNSC 3310. Google Chrome is the preferred browser for Webex. There may be some issues with FireFox and possible microphone issues with Safari. The course will be taught synchronously, with classes on Tuesdays and Thursdays at 10:00 – 11:15 am.

Classes will be recorded and thus students will be able to review what was covered, particularly if there are interruptions to internet connections.

Course materials will be available on UM Learn.

Tests will be administered via UM Learn during class time.

The assignments will be submitted electronically via UM Learn.

The Powerpoint slides used in class will be available on UM Learn before class (usually posted as sections of the course). Students are responsible for having the Powerpoint material during class time as either a copy they have printed, or by viewing on their laptop or other electronic device.

- **Students are responsible for taking additional notes for material covered in class as the Powerpoint slides and other items are discussed in class. The tests will cover all material covered in class (i.e. questions on the tests are not limited to the information on the Powerpoint slides).** Guest speaker presentations, including additional material and questions discussed in class, are included on tests.

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 the classroom/virtual setting only for educational purposes*** approved by instructor and/or the University of Manitoba Student Accessibility Services.

## Expectations: I Expect You To

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- I expect that your interactions with the instructor and with other students in the class will be respectful [See [Respectful Work and Learning Environment Policy](#)].
- I expect that you come to virtual classes prepared to learn. For example, having a copy of the PowerPoint slides (either electronically or printed) and taking additional notes for material that is covered and discussed in class; reviewing course material after class as part of your ongoing studying throughout the term; preparing for the next class by completing the suggested readings and reviewing material from previous courses. I expect you to attend virtual classes as part of your learning process.
- I expect you to raise questions about what you don't understand, to respond to the instructor's questions in class and to participate in class discussions to increase your level of understanding. I want you to appreciate and learn how to approach contradictory information (including outcomes of research studies) and contrasting points of view. I expect you to bring your curiosity, and to share examples and experiences which are relevant to the course material.
  - In the virtual class format, use the chat box, or raise your hand icon, to indicate that you have a question, or verbally indicate you have a question. The instructor can unmute everyone for questions and discussion.
- I expect that your use of technology (ie. laptops, mobile devices, etc) will not be disruptive to others or to their learning environment.
  - In the virtual class format, have yourself muted to reduce background noise for everyone else, unless you are speaking or participating in a discussion.

In addition, I expect you to follow these policies around Class Communication, Academic Integrity, and Recording Class Lectures:

### **Class Communication:**

You are required to obtain and use your University of Manitoba email account for all communication between yourself and the university. All communication must comply with the Electronic Communication with Student Policy:

[http://umanitoba.ca/admin/governance/governing\\_documents/community/electronic\\_communication\\_with\\_students\\_policy.html](http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html).

### **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 in written assignments. You are required to complete your assignments independently unless otherwise specified. 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.

### **Recording Class Lectures:**



Dr. Carla Taylor holds copyright over the course materials, presentations and lectures for 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. Carla Taylor. Dr. Taylor will be recording the classes (offered on on WebEx) during the current term and making these available to all students for the current term. Course materials (paper and digital and electronic) are for the participant's private study and research.

**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](mailto:Student_accessibility@umanitoba.ca)

The policies and services students are expected to follow/utilize are described in [Section 2.5 ROASS](#).

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**Expectations: You Can Expect Me To**

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- To be respectful and to encourage you in the learning environment.
- To post the PowerPoint slides on UM Learn in advance of each class (and usually posted as a section of the course).
- To expand on the PowerPoint slides in class by providing additional material, using examples that are applicable to real life situations, and asking questions. My style is to lead students through a scenario by prompting with a series of questions. I expect students to respond but I do not expect perfection. My goal is for you to understand (not just recite or memorize) concepts and processes, and to be able to apply your knowledge to problem-solving questions and practical situations.
- At the beginning of each class, to recap important points from the previous class and to address any questions.
- To discuss some sample test questions in class and to post sample questions on UM Learn prior to the tests. To provide results from the tests, and assignment within the timeframes indicated in the course syllabus.
- To be available immediately before and after class for questions and clarifications. To be available for booking appointments. To provide drop-in office hours before the tests (usually the afternoon before the test).

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**CLASS SCHEDULE AND COURSE EVALUATION**

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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 ROASS](#).

**For each of the macronutrients, a review of**

- types, dietary and endogenous sources

- metabolic pathways and inter-organ metabolism
- hormones and regulatory control of metabolism
- functions (in addition to energy metabolism)

**and a focus on**

- role in the etiology and prevention of chronic disease
- relevant clinical terminology and laboratory values/nutritional assessment
- dietary recommendations and requirements for prevention and management of disease states; position statements and evidence-based practice guidelines
- issues and controversies

**NOTE: Chapters and page numbers for Krause and Mahan's Food and the Nutrition Care Process (15<sup>th</sup> edition) and Krause's Food and the Nutrition Care Process (14<sup>th</sup> edition) are provided.**

Date	Class Content	Required Readings or any Pre-class Preparation	Evaluation
Sept. 9	Introduction		
Sept. 14, 16	Digestion, Absorption and Transport & Excretion of Macronutrients  Food & Nutrient Delivery  Carbohydrate Intolerance	Chapter 1 (15 <sup>th</sup> and 14 <sup>th</sup> ) Intake: Gastrointestinal Digestion, Absorption, Transport & Excretion of Nutrients  Chapter 12 (15 <sup>th</sup> ) Chapter 13 (14 <sup>th</sup> ) Food and Nutrient Delivery: Nutrition Support (Enteral and Parenteral Nutrition access and formula content pages 209-214 and 216-219 for 15 <sup>th</sup> edition and pages 210-215 and 217-221 for 14 <sup>th</sup> edition)  Chapter 27, pages 559-561 for 15 <sup>th</sup> and Chapter 28, pages 539-541 for 14 <sup>th</sup> for Intestinal Brush Border Enzyme Deficiencies	
Sept. 21, 23	Celiac Disease  Food Hypersensitivities	<a href="http://www.celiac.ca">www.celiac.ca</a>  Chapter 27, pages 553-559 for 15 <sup>th</sup> and Chapter 28, pages 532-539 for 14 <sup>th</sup> for Celiac Disease  <a href="http://www.foodallergy.org">www.foodallergy.org</a>  Chapter 25 for 15 <sup>th</sup> and Chapter 26 for 14 <sup>th</sup> , Medical Nutrition Therapy for Adverse Reactions to Food: Allergies and Intolerances	

	Colon Cancer	<p><a href="http://www.cancer.ca">www.cancer.ca</a> (see colorectal)</p> <p>Chapter 27, page 568-569 for 15<sup>th</sup> and Chapter 28, page 549 for 14<sup>th</sup> for Intestinal Polyps and Colorectal Cancer; Chapter 35, pages 758-762 for 15<sup>th</sup> and Chapter 36, pages 726-729 for 14<sup>th</sup> for pathophysiology, and nutrition and carcinogenesis</p> <p>Appendix 27 for 15<sup>th</sup> and Appendix 35 for 14<sup>th</sup> for Nutritional Facts on a High-Fibre Diet</p>	
Sept. 28, Oct. 7	<p>Overview of Metabolism and Metabolic Pathways; Biochemical Utilization of Energy from the Macronutrients; Regulation of Metabolism</p> <p>Fed, Post-absorptive, and Fasting States</p> <p>Energy Balance, Undernutrition, Overnutrition</p> <p>Body Composition Phenotypes</p>	<p>Chapter 2 (15<sup>th</sup> and 14<sup>th</sup>) Intake: Energy</p> <p>Chapter 7 (15<sup>th</sup>) and Chapter 3 (14<sup>th</sup>) Inflammation and the Pathophysiology of Chronic Disease, pages 110-113 for 15<sup>th</sup> and pages 33-34 for 14<sup>th</sup> for Body Composition, Energy Dysregulation and the Clinical Insight on Sarcopenic Obesity/Body Composition Phenotypes, and Inflammaging</p>	
Sept. 30	No class – National Day of Truth and Reconciliation		
Oct. 5 Test			Term Test 1 (marks will be available within 2 weeks)
Oct. 12, 14, 19, 21	<p>Impaired Glucose Tolerance &amp; Diabetes (Type 1, Type 2, Gestational)</p> <ul style="list-style-type: none"> <li>▪ Pathophysiology</li> <li>▪ Screening and diagnostic criteria</li> <li>▪ Management with diet, exercise, hypoglycemic agents, insulin</li> <li>▪ Monitoring glycemic control</li> <li>▪ Management of diabetic complications (acute and long term)</li> <li>▪ Position Statements</li> </ul>	<p><a href="http://www.diabetes.ca">www.diabetes.ca</a></p> <p>Chapter 5 for 15<sup>th</sup> and Chapter 7 for 14<sup>th</sup> for Clinical: Biochemical, Physical and Functional Assessment, page 69-70 for 15<sup>th</sup> and page 109 for 14<sup>th</sup> for Hemoglobin A1c and Diabetes</p> <p>Chapter 8 in 14<sup>th</sup> Clinical: Food-Drug Interactions, Figure 8-1 The Four Basic Pharmacokinetic Processes; Figure 8-3 Factors that Determine the Intensity of Drug Responses; Figure 8-5 Movement of Drugs after GI Absorption [relevant</p>	

	<p>Guest speaker presentation (date is TBA)</p> <p>Reactive Hypoglycemia</p>	<p>information will be brought to class as this is not in the 15<sup>th</sup> edition]</p> <p>Chapter 29 for 15<sup>th</sup> and Chapter 30 for 14<sup>th</sup> for Medical Nutrition Therapy for Diabetes Mellitus and Hypoglycemia of Nondiabetic Origin</p>	
<p>Oct. 21 (due date)</p>			<p>Diabetes Assignment – Part A, Due at 10:00 pm via UM Learn (marks will be available within 2 weeks)</p>
<p>Oct. 26, 28, Nov. 4, 16</p>	<p>Cardiovascular Diseases</p> <ul style="list-style-type: none"> <li>▪ Terminology: hypertension, hyperlipidemia, dyslipidemia, atherosclerosis, coronary heart disease, congestive heart failure, cerebrovascular disease</li> <li>▪ Pathophysiology and etiology</li> <li>▪ Lipoproteins and their metabolism</li> <li>▪ Lipid metabolites</li> <li>▪ Primary prevention, risk factors, role of genetics, male/female differences</li> <li>▪ Management: diet, medications, medical interventions, as well as complementary/integrative approaches with scientific evidence</li> <li>▪ Position statements</li> </ul>	<p><a href="http://www.heartandstroke.ca">www.heartandstroke.ca</a></p> <p>Chapter 32 for 15<sup>th</sup> and Chapter 33 for 14<sup>th</sup> for Medical Nutrition Therapy for Cardiovascular Disease, pages 670-693 for 15<sup>th</sup> and pages 646-668 for 14<sup>th</sup></p> <p>Chapter 7 for 15<sup>th</sup> and Chapter 3 for 14<sup>th</sup> for Inflammation and the Pathophysiology of Chronic Disease, Box 7.3 (15<sup>th</sup>) and Box 3.4 (14<sup>th</sup>) Cardiometabolic Specific Inflammatory Markers; pages 113-118 (15<sup>th</sup>) and pages (14<sup>th</sup>) for lipid modulators of inflammation</p> <p>Chapter 5 for 15<sup>th</sup> and Chapter 7 for 14<sup>th</sup> for Clinical: Biochemical, Physical and Functional Assessment, pages 68-69 and Box 5.1 for 15<sup>th</sup> and page 109 and Box 7.1 for 14<sup>th</sup> for Lipid and Lipoprotein Atherosclerotic Cardiovascular Risk Factors</p> <p>Chapter 6 for 15<sup>th</sup> and Chapter 5 for 14<sup>th</sup> for Nutritional Genomics (general concepts and examples that relate to cardiovascular disease)</p> <p>Chapter 11 for 15<sup>th</sup> for Food and Nutrient Delivery: Bioactive Substance</p>	

		<p>and Integrative Care, or Chapter 12 for 14<sup>th</sup> for Food and Nutrient Delivery: Complementary and Integrative Medicine and Dietary Supplementation (general concepts and examples that relate to cardiovascular disease prevention and management)</p> <p>Appendix 17 (15<sup>th</sup>) and Appendix 26 (14<sup>th</sup>) DASH Diet Appendix 26 (15<sup>th</sup>) and Appendix 34 (14<sup>th</sup>) Nutritional Facts on Essential (Omega) Fatty Acids</p>	
Nov. 2 Test			Term Test 2 (marks will be available within 2 weeks & before the VW date on Nov 22)
Nov. 9, 11	No Classes – Fall Mid-term Break and Remembrance Day on Nov 11		
Nov 18	<p>Cancer and Macronutrient Consumption (e.g. dietary lipids)</p> <ul style="list-style-type: none"> <li>▪ Risk factors</li> <li>▪ Primary prevention</li> <li>▪ Position statements</li> </ul>	Chapter 35, pages 758-762 for 15 <sup>th</sup> and Chapter 36, pages 726-729 for 14 <sup>th</sup> for pathophysiology, and nutrition and carcinogenesis	
Nov. 25 (due date)			Diabetes Assignment – Part B, Due at 10:00 pm via UM Learn (marks will be available before the last test)
Nov. 23, 25, 30	<p>Protein and Amino Acid Metabolism</p> <ul style="list-style-type: none"> <li>▪ Protein-Energy Malnutrition</li> <li>▪ High Protein Diets</li> <li>▪ Gout</li> </ul>	<p>Pages 415-416 for 15<sup>th</sup>, Page 374 for 14<sup>th</sup>, Underweight and Malnutrition</p> <p>Pages 838-840 for 15<sup>th</sup> and Pages 806-807 for 14<sup>th</sup> for Gout</p>	

Dec. 2	Disorders of Amino Acid Metabolism (e.g. Phenylketonuria), Carbohydrate Metabolism, and Fatty Acid Oxidation	Chapter 41 for 15 <sup>th</sup> and Chapter 43 for 14 <sup>th</sup> for Medical Nutrition Therapy for Genetic Metabolic Disorders, pages 938-946 for 15 <sup>th</sup> and pages 890-901 for 14 <sup>th</sup> for Newborn Screening and PKU; pages 949-950 for 15 <sup>th</sup> and pages 904-907 for 14 <sup>th</sup> for carbohydrate metabolism and fatty acid oxidation examples, and Box 42.2 for 15 <sup>th</sup> and Box 43.2 for 14 <sup>th</sup> for Intervention Objectives for the Nutritionist Involved in the Treatment of Genetic Metabolic Disorders	
Dec. 7	Review class		
Dec. 9, Test			Final Grades will be available before the Holiday Break

### Course Evaluation

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Student's learning will be assessed by a variety of methods:

- **Term Tests and Types of Questions:**

- This course has three tests i) to provide students with exposure and experience with the types of questions and expectations regarding a complete answer, ii) to ensure students are learning the course material throughout the course and because the various sections of the course are building on previous sections, and iii) to have the assessment for this course spread across the term.
- The tests have three types of questions to test a combination of knowledge and application of knowledge and problem-solving skills:
  - 1) multiple choice questions (assess knowledge and recognition of the correct answer),
  - 2) fill in the blank questions (provide the answer) and short answer questions (ability to express an answer in your own words, to explain the underlying scientific basis, and to be succinct and identify the most important points), and
  - 3) long answer questions (problem-solving questions that require application of knowledge and concepts covered in class, and ability to express answers in your own words). Examples of problem-solving questions will be discussed in class. Answers will be marked for covering essential points, accuracy of information, etc. (i.e. listing 5 points does not necessarily equal 5 marks; a 'correct' answer that contains some inaccurate information will not receive full marks).
- Although there is a cumulative aspect to this course, each test will have a focus with respect to the material covered and the learning objectives being assessed. The final

test will have some questions that integrate what has been learned across the course.

- **Diabetes Assignment:** For Part A, students find a research article related to diabetes management and compare the results of the study to the relevant position statement. Some additional questions will be answered. Part B is a case study for managing type 1 diabetes and provides an opportunity for students to apply their knowledge and skills to a practical situation. A brief description of the Diabetes Assignment is provided in a following section of the course syllabus. Detailed instructions for the Assignment will be distributed in October when the relevant material on diabetes management is being covered.

Date and Time	Assessment Tool	Value of Final Grade
Tuesday, October 5, 10:00-11:15 am (during class time)	Term Test #1	20%
Thursday, October 21, 10:00 pm (submitted via UM Learn)	Diabetes Assignment – Part A	10%
Tuesday, November 2, 10:00-11:15 am (during class time)	Term Test #2	20%
Thursday, November 25, 10:00 pm (submitted via UM Learn)	Diabetes Assignment – Part B	30%
Thursday, December 9, 10:00-11:15 am (during class time)	Term Test #3	20%

- If you are unable to write a test due to medical reasons or compassionate reasons (e.g. disruption to childcare, death in the family), please contact the instructor (send an email or leave a message on voice mail). In these circumstances, the instructor will make arrangements for another date for writing the test or submitting the assignment.

### **ATTENTION STUDENTS RESIDING OUTSIDE WINNIPEG**

As this is a remote learning course, all instructional activities and deadlines will be Winnipeg time (Central Time). Please make sure your calendars are adjusted to reflect any time changes. Please inform your Instructor as soon as possible if you are taking the course while residing outside of Winnipeg, specifically:

- If you are in a rural Canadian area affected by poor internet connections that may impact completing assessments and exams on time
- If you are in another time zone within or outside Canada, specify where you are, and if you foresee any challenges with attending classes and completing assessments and exams on time

NOTE: It is your responsibility to communicate with your instructors well in advance of tests/exams/assignment due dates, of any ongoing issues, OR immediately once an issue arises that *may* impact your ability to complete course work.

## Grading

Letter grades for this course are as follows:

Letter Grade	Percentage out of 100	Grade Point Range	Final Grade Point
A+	88.0-100	4.25-4.5	4.5
A	80.0-87.9	3.75-4.24	4.0
B+	75.0-79.9	3.25-3.74	3.5
B	70.0-74.9	2.75-3.24	3.0
C+	65.0-69.9	2.25-2.74	2.5
C	60.0-64.9	2.0-2.24	2.0
D	50.0-59.9	Less than 2.0	1.0
F	Less than 50		0

## Voluntary Withdrawal

The last day to drop the class and receive 100% refund is September 22 and the last day to withdraw with no refund is November 23. Students who do not drop the course by the deadline will be assigned a final grade. Note that the withdrawal courses will be recorded on your official transcript. Refer to the [Registrar's Office](#) web page for more information. If you are concerned with your progress in this course and want to discuss strategies for improvement prior the withdrawal date, please make an appointment to discuss with me.

## ASSIGNMENT DESCRIPTIONS

***Instructions for the Assignment will be distributed in October when the relevant material on diabetes management is being covered.***

The Assignment has two parts:

Part A: Current Research Example on Nutritional Management of Diabetes (Type 1 or Type 2)

Part B: Nutritional Management of Type 1 Diabetes Mellitus

The objectives of the Assignment are

Part A: To find a published research paper on nutritional management of diabetes (Type 1 or Type 2) and/or diabetes-related complications, and to describe the main finding(s) relative to the practice guidelines.

- Part B:
1. To gain experience in nutritional management of Type I diabetes mellitus,
  2. To gain experience with carbohydrate counting,
  3. To interact with another health professional involved in diabetes management and to appreciate the financial costs associated with diabetes care.



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## Referencing Style

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For the Assignments, follow the referencing style and instructions for The American Journal of Clinical Nutrition:

[https://academic.oup.com/ajcn/pages/General\\_Instructions#Format%20and%20Style%20Requirements](https://academic.oup.com/ajcn/pages/General_Instructions#Format%20and%20Style%20Requirements)

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## Assignment Feedback

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The Assignments are due on October 21 (Part A) and November 25 (Part B) at 10:00 pm. The goal is to have the assignments marked within two weeks (before the final test for Part B). Students will receive feedback and their mark using a marking rubric.

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## Assignment Extension and Late Submission Policy

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- If you submit a late assignment, 10% of the total marks will be subtracted for each day that the assignment is late (i.e. 10% for 1 day late, 20% for 2 days late, 30% for 3 days late, etc.).
- If you are unable to complete an assignment due to medical reasons or compassionate reasons (e.g. disruption to childcare, death in the family), please contact the instructor (send an email or leave a message on voice mail). In these circumstances, the instructor will make arrangements for an extension for completing the assignment.

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## UNIVERSITY SUPPORT OFFICES & POLICIES

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### Schedule “A”

**Section (a):** A list of academic supports available to Students:

#### 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 205 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](http://www.umanitoba.ca/libraries).

### Section (b): Mental health and health supports:

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

#### Student Counselling Centre

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

#### 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 [peer support from Healthy U](#) or 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* <https://umanitoba.ca/student/health-wellness/welcome->

[about.html](#)

[britt.harvey@umanitoba.ca](mailto:britt.harvey@umanitoba.ca)

### **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>

### **Section (c): Copyright:**

All students are required to respect copyright as per Canada's *Copyright Act*. Staff and students play a key role in the University's copyright compliance as we balance user rights for educational purposes with the rights of content creators from around the world. The Copyright Office provides copyright resources and support for all members of the University of Manitoba community. Visit <http://umanitoba.ca/copyright> for more information.

**Section (d):** Various University and Unit policies, procedures, and supplemental information is available on-line:

#### **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/>
- 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/> 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 to conduct yourself in an appropriate and respectful manner. Policies governing behavior include the:

### **Respectful Work and Learning Environment**

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

### **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**

[http://umanitoba.ca/admin/governance/governing\\_documents/community/669.html](http://umanitoba.ca/admin/governance/governing_documents/community/669.html)

- 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/>
- 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](mailto:student_advocacy@umanitoba.ca)