

# COURSE SYLLABUS



COURSE TITLE: CHEM-117: Introduction to Nutrition

CLASS SECTION: 001

TERM: 2024W

COURSE CREDITS: 3

DELIVERY METHOD(S):

Camosun College campuses are located on the traditional territories of the Ləkʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

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*Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.*

## INSTRUCTOR DETAILS

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NAME: Armando Jardim, Ph.D.

EMAIL: [jardima@camosun.ca](mailto:jardima@camosun.ca)

OFFICE: 348D Fisher Building

HOURS: Thursday 10:00 -12:00 pm

Fridays 10:00 – 2:00 pm

Feel free to contact me by email, including in the evenings and on weekends, to correspond by email.

*As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.*

## CALENDAR DESCRIPTION

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This course examines fundamental aspects of nutrition in relation to optimal health. Topics include; the nature and nutritional significance of dietary proteins, lipids, (fats and oils), carbohydrates, vitamins and minerals, energy metabolism, dietary standards, food additives and the relationship of nutrition to exercise, cardiovascular disease, obesity and aging.

## PREREQUISITE(S):

One of:

- C in Biology 11
- C in BIOL 090
- C in BIOL 102

- C in BIOL 103

And one of:

- C in Chemistry 11
- C in Camosun Alternative

CO-REQUISITE(S):

One of:

- C in English 12
- C in Camosun Alternative

EXCLUSION(S):

## COURSE LEARNING OUTCOMES / OBJECTIVES

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Upon completion of this course a student will be able to:

1. Explain the fundamental roles and importance of dietary proteins, lipids, carbohydrates, vitamins and minerals.
2. Make basic decisions about relevant aspects of their personal diets.
3. Evaluate information concerning the fundamental aspects of diet, including certain dietary supplements, and relate this information to human health.

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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### **Textbook**

**Nutrition: A functional approach.** Fourth Canadian Edition. J. Thompson, M. Manore, B. Hartman, L. Lafave & J. Sheeshka. Pearson Canada. 2022.

This eTextbook is *absolutely required* for this course. It may be purchased from the Lansdowne Campus bookstore. Chapter study guides are included in the course pack (please see below). Links to relevant web-based learning resources are presented in the textbook. The e-textbook can be purchased using the following link <https://www.campusebookstore.com/link/?id=a12f5125-3b97-4e9e-adf5-c8dd280390c5>.

### **Course package**

The course package, *2023 Edition*, is available on D2L. This course package is **required** material. Each chapter study guide includes an assigned reading list, a listing of the most salient figures and tables, a list of the relevant vocabulary, and sets of practice questions. The course pack also provides small black & white copies of the lecture slides for the purpose of streamlining note taking. For this purpose, having a hardcopy can be very helpful.

### **Calculator**

A basic scientific calculator is required at times in lecture, and during term tests and the final exam. Each student is *required* to provide her or his own scientific calculator. Cell phone-based, tablet-based or computer-based calculators or graphing calculators cannot be used during term tests or the final exam.

**Course Times:**

Mondays 3:30 – 5:20 pm Ewing 348

Thursday 3:30 – 5:20 pm Ewing 348

**Course Length:** 14 weeks

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

| WEEK or DATE RANGE | ACTIVITY or TOPIC  | OTHER NOTES                                  |
|--------------------|--|--|
| Week 1             | Course orientation and overview. Introduction to nutrition. Why do we eat what we eat? Relationship of nutrition to illness. Classes of nutrients; proteins, carbohydrates & lipids, vitamins & minerals, water. Macronutrients and calories. Micronutrients: vitamins and minerals. Nutrient needs and dietary reference intakes (DRI) values: EAR, RDA & AI.   | Please refer to D2L for helpful information. |
| Week 2             | Dietary reference intakes (DRI) values: EER & AMDR. Can we recognize reliable & unreliable information on nutrition? Why so many myths and controversies in nutrition? Types of scientific studies of human nutrition. Nutrigenomics. Nutrition – epigenetic interactions. Microbiome/microbiota. Probiotics. Prebiotics. Phytochemicals. General characteristics of a healthful diet. Food labels. Interpreting food labels. %DV. Food label nutrient content claims. Food label health claims & disease risk reduction claims. More effective food labels? Food label exemptions. Food label accuracy. | Please refer to D2L for helpful information. |
| Week 3             | Diet plans. Nutrient density. Health Canada's new diet plan. Comparable diet plans. Portion size. The gut-brain axis. Hunger vs. appetite. Nutrition & satiety. Role of the digestive tract. Disorders related to digestion, and nutritional approaches to mitigate them.  | Please refer to D2L for helpful information. |
| Week 4             | Disorders related to digestion, and nutritional approaches to mitigate them. Energy (weight) balance. BMI (& associated problems). T2D and other conditions potentially associated with obesity. Body composition analyses. Body fat patterning. Waist circumference. EOSS. Weight gain vs. Weight loss. Energy expenditure. Basal metabolic rate. Thrifty gene theory. Leptin theory. Set-point theory. Thermogenic supplements. Popular diet plans. Atkins Diet. Ketogenic diets. South Beach Diet.  | Please refer to D2L for helpful information. |
| Week 5             | Paleo diets, Ornish diet, Pritikin diet, Weight Watchers diet, Jenny Craig diet, The Zone Diet, Glycemic index-based diets, Eat Right 4 Your (blood) Type diet. Lectins & diet. Mediterranean diet, Dash diet, Mind diet, Flexitarian diet, Volumetrics diet, Raw Foods Diet, Intermittent fasting diets, Grapefruit diet, 'Alkaline' diets. Carbohydrate nutrition. Sugars & complex carbs. Importance of dietary carbohydrates. Added sugars. Glycemic index & glycemic load. Lactose intolerance. Alternative sweeteners.   | Please refer to D2L for helpful information. |

| WEEK or DATE RANGE | ACTIVITY or TOPIC   | OTHER NOTES                                  |
|--------------------|---|--|
| Week 6             | Soluble & insoluble fiber and resistant starch. Whole grains. Diverticulosis. Type 1 & Type 2 diabetes, prediabetes & nutrition. Metabolic syndrome. Hypoglycemia. Review for term test 1.<br><br><i>Thursday, February 15<sup>th</sup>                      <b>Term Test 1</b></i>   | Please refer to D2L for helpful information. |
| Week 7             | <i>Monday, February 19<sup>st</sup> – BC Family Day<br/>Tuesday to Friday, Feb. 20<sup>nd</sup> to 23<sup>th</sup> - Reading Week</i>   | Please refer to D2L for helpful information. |
| Week 8             | Carbohydrate intake for athletes & for everyone else. Introduction to dietary lipids (fats & oils). Lipid nutrition. Triglycerides. Fatty acids including omega-3 & omega-6 essential fatty acids. Food sources of lipids. Visible & invisible fats. Roles of lipids. Lipid digestion. Dietary intakes of lipids. Cholesterol. Recommended lipid intake. Lipids and health. Lipoprotein metabolism. Blood lipids. Concerns for dietary lipids. Fat 'replacements'. Some myths about dietary lipids.<br><br><i>Thursday, March 7<sup>th</sup>                      <b>Week-long Food Journal due</b></i> | Please refer to D2L for helpful information. |
| Week 9             | Protein nutrition. Essential amino acids. Dietary protein. Protein intake recommendations. Vegetarian diets. Protein - energy malnutrition. Macronutrients & exercise: Energy sources during exercise. More about micronutrients: Vitamins and minerals. Hydration: Body composition & roles of water in the body. Electrolytes.  | Please refer to D2L for helpful information. |
| Week 10            | Over-hydration. Dehydration & water balance. Heat stroke. Basic hydration for exercise. Hypertension (high blood pressure). DASH diet. Symptoms of moderate to severe dehydration. Sodium, potassium, phosphate and chloride nutrition. Rehydration drinks. Alcohol. Micronutrients and energy metabolism: Vitamins B1, B2, B3, B5, B6, B7. Choline. Minerals: iodine, chromium, manganese. Element: sulfur. Antioxidants: Beginnings of an interest in plant phytochemicals. Free radicals, ROS and roles for antioxidants. Vitamin E - Roles, nutritional considerations, useful as a supplement?     | Please refer to D2L for helpful information. |
| Week 11            | Antioxidants. Classes of phytochemicals - coloured pigments from plants. Vitamin C - Roles, nutritional considerations, useful as a supplement? Beta-carotene and vitamin A - Roles, nutritional considerations, useful as supplements? Antioxidants: Selenium. Cu, Zn & Mn. Antioxidants & eye health: Macular degeneration & cataracts. Antioxidants & CVD. Cancer risk & antioxidants. Review for term test 2.<br><br><i>Thursday, March 21<sup>th</sup>                      <b>Term Test 2</b></i>   | Please refer to D2L for helpful information. |

| WEEK or DATE RANGE | ACTIVITY or TOPIC  | OTHER NOTES                                  |
|--------------------|--|--|
| Week 12            | Antioxidants and Coffee, Tea & Chocolate. Blood health. Iron nutrition. Zinc nutrition. Copper nutrition. Folate (aka folic acid, vitamin B9) nutrition. Vitamin B12 & blood health. Other nutritional aspects of blood health. Nutrition & Bone health: Bone growth. Introduction to osteoporosis, osteopenia, Roles of calcium & calcium nutrition. Vitamin D nutrition. Role of vitamin K in bone health. Vitamin K nutrition. Phosphorous nutrition. | Please refer to D2L for helpful information. |
| Week 13            | Nutrition & Bone health. Magnesium nutrition. Fluoride nutrition. Osteoporosis & nutrition. Nutrition & Exercise. Benefits of physical activity. Energy sources. ATP & creatine phosphate, glucose, glycogen, triglycerides. fatty acids, protein. A general look at supplements combined with exercise. Ergonomic aids. Protein supplements. Micronutrient supplements.   | Please refer to D2L for helpful information. |
| Week 14            | GMO foods, Organic foods, 'Blue Zone' diets.<br><br>Final exam review.<br><br>Thursday, April 11 <sup>th</sup> <b>Term paper due</b>   | Please refer to D2L for helpful information. |
| Final exam period  |  |  |

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines scan be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

## EVALUATION OF LEARNING

| DESCRIPTION   | WEIGHTING |
|---|-----------|
| <b>Week-long food journal &amp; analysis.</b><br>A detailed description of this assignment will be provided early in the semester.<br>(Due Thursday, March 7 <sup>th</sup> ).                                   | 10%       |
| <b>Term paper: Critical examination of a controversial topic in nutrition.</b><br>A detailed description of this assignment will be provided early in the semester.<br>(Due Thursday, April 11 <sup>th</sup> .) | 15%       |

| DESCRIPTION   | WEIGHTING   |
|---|-------------|
| <p><b>Term Test 1</b></p> <p>This term test covers relevant material from approximately the first five weeks of the course. The delineation of material that students are responsible for will be provided in class about one week prior to the date of the test. This test that will be written during the lecture period on <b>Thursday, February 15<sup>th</sup></b> from <b>3:30 to 5:20 PM</b> in Ewing 348. If this term test is missed due to illness, or a similarly justifiable reason, with accompanying documentation the percentage value of this term test will be added to the value of the other term tests.</p> | 25%         |
| <p><b>Term Test 2</b></p> <p>This term test covers relevant material from approximately the second five weeks of the course. The delineation of material that students are responsible for will be provided in class about one week before the date of the test. This test will be written during the lecture period on <b>Thursday, March 21<sup>th</sup></b> from <b>3:30 to 5:20 PM</b> in E348. If this term test is missed due to illness, or a similarly justifiable reason, with accompanying documentation the percentage value of this term test will be added to the value of the other term tests.</p>               | 25%         |
| <p><b>Term Test 3</b></p> <p>This term test covers relevant material from approximately the last five weeks of the course. The delineation of material that students are responsible for will be provided in class about one week before the date of the test. This test will be written during the lecture period on <b>Thursday, April 11<sup>th</sup></b> from <b>3:30 to 5:20 PM</b> in E348. If this term test is missed due to illness, or a similarly justifiable reason, with accompanying documentation the percentage value of this term test will be added to the value of the other term tests.</p>                 | 25%         |
| (There are no other assignments in this course.)  |             |
| <b>TOTAL</b>  | <b>100%</b> |

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.  
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

## COURSE GUIDELINES & EXPECTATIONS

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Students may **not** use recording devices in the classroom without the prior permission of the instructor or the Centre for Accessible Learning. The instructor's permission is not required when the use of a recording device is sanctioned by the College's Centre for Accessible Learning in order to accommodate a student's disability, *and* when the instructor has been provided with an instructor notification letter which specifies the use of a recording device. Such recordings made in the classroom are for the student's personal use only, and distribution of recorded material is prohibited. Recordings made during the course would include statements, questions and comments made by students in the class, and these are not to be disseminated or repeated in any manner based on the recordings. Otherwise, **please have cell phones turned off and put away while in lectures.** *Thank you.*

## SCHOOL OR DEPARTMENTAL INFORMATION

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Here is a link to the Science Help Centre.

<https://camosun.ca/services/academic-supports/help-centres/science-help-centres>

The schedule for the Chem Tutors will be posted during the semester.

Camosun College is a scent-free institution. **Please refrain from wearing scents.** Thank you.

## STUDENT RESPONSIBILITY

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Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

## SUPPORTS AND SERVICES FOR STUDENTS

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Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

|                                     |   |
|-------------------------------------|---|
| Academic Advising                   | <a href="http://camosun.ca/advising">http://camosun.ca/advising</a>                       |
| Accessible Learning                 | <a href="http://camosun.ca/accessible-learning">http://camosun.ca/accessible-learning</a> |
| Counselling                         | <a href="http://camosun.ca/counselling">http://camosun.ca/counselling</a>                 |
| Career Services                     | <a href="http://camosun.ca/coop">http://camosun.ca/coop</a>                               |
| Financial Aid and Awards            | <a href="http://camosun.ca/financialaid">http://camosun.ca/financialaid</a>               |
| Help Centres (Math/English/Science) | <a href="http://camosun.ca/help-centres">http://camosun.ca/help-centres</a>               |

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|-------------------------------|---|
| Indigenous Student Support    | <a href="http://camosun.ca/indigenous">http://camosun.ca/indigenous</a>               |
| International Student Support | <a href="http://camosun.ca/international/">http://camosun.ca/international/</a>       |
| Learning Skills               | <a href="http://camosun.ca/learningskills">http://camosun.ca/learningskills</a>       |
| Library                       | <a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a> |
| Office of Student Support     | <a href="http://camosun.ca/oss">http://camosun.ca/oss</a>                             |
| Ombudsperson                  | <a href="http://camosun.ca/ombuds">http://camosun.ca/ombuds</a>                       |
| Registration                  | <a href="http://camosun.ca/registration">http://camosun.ca/registration</a>           |
| Technology Support            | <a href="http://camosun.ca/its">http://camosun.ca/its</a>                             |
| Writing Centre                | <a href="http://camosun.ca/writing-centre">http://camosun.ca/writing-centre</a>       |

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If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

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### Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

### Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.



### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures” (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

### Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun’s Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student’s right to choose what is right for them. For more information see Camosun’s Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and [camosun.ca/sexual-violence](http://camosun.ca/sexual-violence). To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-3703841

### Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

**Changes to this syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that

course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.