

FOOD 2001: PRINCIPLES OF NUTRITION (Fall 2026)

We, the people of the Faculty of Science at Carleton University, acknowledge that our campus is located on the traditional, unceded territories of the Algonquin Anishinabeg people. Miigwetch for your hospitality and stewardship of this territory and the teachings that come from it. We are grateful for this land, the air that we breathe, and the water that sustains us all as well as for the animals, plants and other living beings: these enable us to research, teach, mentor, support, study, and learn. We recognize our responsibility to our natural environment and to reconciliation with Indigenous peoples.

Course Instructor: Apollo Tsopmo

Gender Pronouns: (He/Him)

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Best Ways to be in Touch: in class, via email, or during student hours

Student Hours: By appointment, room SC207D

Office Location: Room 207D Steacie Building

Class Location: Please check Carleton Central for the room location.

Class Times: Mon & Wed, 2:30 pm – 4:00 pm

Prerequisites: CHEM 1002, BIOL 1103.

Preclusions: N/A

Department/Unit: Chemistry

Course TA: Minfang Luo (She/Her)
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Topics Covered and Learning Outcomes

FOOD 2001 values diversity in all its forms. I am committed to fostering a respectful, welcoming, and inclusive learning environment where all students feel valued and supported in their learning. Nutrition is shaped by diverse cultural, social, economic, and personal experiences, and these perspectives enrich our understanding of the relationship between food, health, and well-being. I encourage students to engage thoughtfully with course material, contribute their ideas, and participate in discussions with curiosity, professionalism, and respect for differing viewpoints. Through evidence-based inquiry and critical thinking, I aim to create a learning environment in which all students feel they belong and can succeed.

Topics to be covered:

Week	Topic/Content	Readings/Prep for Class
1	Nutrition and Health Promotion: Definitions of nutrition, health, and nutrients, characteristics of healthy diets; influence of lifestyle, culture, etc. on food choices; types of nutrition research studies providing scientific evidence, differentiation of nutritionists versus dietitians	Chapter 1
2	Evaluating the Nutritional Adequacy of a Diet: Methods for analysis of food intake, Nutrition Recommendations for Canadians, Dietary Reference Intakes, Interpretation of food intake, Eating Well with Canada's Food Guide, Food labels and nutrition information	Chapter 2
3	Utilization of Nutrients by the Body: General metabolism, Digestion, Absorption, transport, metabolism, storage and excretion of nutrients, Diseases of the digestive tract	Chapter 3
4	Carbohydrates: Types, food sources, functions and requirements; Roles in health and disease, Artificial sweeteners, Lactose intolerance, Diabetes	Chapter 5
5	Lipids: Types, food sources, functions and requirements, Fat replacers, Role of dietary fat in the development of cardiovascular disease	Chapter 6
6	Proteins: Types, food sources, functions and requirements, Protein quality, Disorders related to inadequate protein intake	Chapter 7
7	Nutrients Involved in Fluid and Electrolyte Balance: Body needs of water, Nutrients that function as electrolytes in our bodies, how electrolytes assist in the regulation of fluid balance, Hypertension: lifestyle changes to reduce hypertension	Chapter 8
8	Nutrients that Function as Antioxidants: Vitamins, minerals, and other compounds that stabilize free radicals independently or function within complex antioxidant enzyme systems, Toxicity of phytochemicals or antioxidant vitamins, Relationship between antioxidant nutrients and cancer, Antioxidants that can reduce our risk for cardiovascular disease	Chapters 9 & 10

9	Nutrients Involved in Energy Metabolism: Vitamins and minerals that help generate energy from foods, Role of vitamin K, iron, zinc, and copper in blood health, Components of blood, Association among folate, vitamin B12, and vascular disease	Chapter 9
10	Nutrients Involved in Bone Health: Cortical bone and trabecular bone, Processes of bone growth, modelling and remodelling, Vitamins and minerals in maintaining bone health and their food sources, Osteoporosis: impacts on a person's health, factors that influence our risk	Chapter 10
11	Energy Balance and Healthy Body Weight: What is a healthy weight? Methods for assessing body composition, Components of energy expenditure, Genetic influence of weight control, Diets for weight loss or weight gain, eating disorders	Chapter 4
12	Nutrition and Physical Activity: Concepts of physical activity, Components of fitness, Benefits of being physically active, Sport drinks, food supplements, and ergogenic aids	Chapter 11

Important dates and deadlines can be found here: <https://calendar.carleton.ca/academicyear/> including class suspension for fall, winter breaks, and statutory holidays.

Learning Outcomes:

1. Explain the role of nutrients, describe methods to assess diets and strategies to find reliable nutritional information
 - a) List, classify, and provide the function of nutrients in foods
 - b) Calculate food energy based on macronutrient compositions
 - c) Assess diets using established methods: diet records, food guides, dietary reference intakes, nutrition fact table
 - d) Assess nutritional information from TV, internet or newspapers
2. Describe cell needs and basic metabolism
 - a) Cellular organization of the human body and general metabolism of macronutrients
 - b) Describe the role of hormones and vitamins in the metabolism of foods
 - c) Describe the contribution of each organ of the gastrointestinal system to digestion, absorption, transport, and elimination of foods
 - d) Discuss the relationship between foods and conditions such as gastroesophageal reflux, ulcer, diarrhea, etc.
3. Explain the role of nutrients in promoting and preventing chronic diseases
 - a) Identify nutrients that function as electrolytes and describe how they assist in the regulation of a healthy fluid balance
 - b) Discuss the role of certain vitamins and non-nutrients in protecting cells from oxidative damage and their involvement in cardiovascular diseases or cancer
 - c) Identify nutrients involved in bone and blood health

4. Describe how nutrition can be used to achieve healthy body weight
 - a) Define and understand what constitutes a healthy body weight, list methods to assess body composition
 - b) Identify and discuss components of energy expenditure
 - c) Define physical activity and the components of fitness
 - d) Describe how nutrients are used during physical activity
 - e) Discuss the effects, if any, of a high-protein diet or supplement on activity performance

Assessments:

Course content will be assessed through assignments, mid-term and final exams

COMPONENT	GRADE VALUE
ASSIGNMENT A	10%
ASSIGNMENT B	20%
MIDTERM	30%
FINAL EXAM	40%

Assignment A: Role of nutrition in health: The assignment will be related to the role of nutrition in health and the use of the Canada Food Guide for healthy eating. Further details will be given in class.

Assignments: Role of nutrition in health: The assignment will be related to the role of nutrition in health and the use of the Canada Food Guide for healthy eating. Determine nutrient content of foods; Calculate energy or calorie content of foods; Assess the adequacy of diet; Find good sources of nutritional information; Record and analyze your own diet; Assess diets (Calculate concentration and energy (calorie) from proteins, carbohydrates, fats (total fat, omega-3, trans fat), vitamins/minerals) and suggest appropriate changes to make them more nutritious.

Mid-term test and final exams

They will include multiple-choice and short-answer questions focusing on lecture materials, learning activities, and discussion. Examples of questions will be given in class and on Brightspace. Other examples are found at the end of chapters in the textbook.

Late and Missed Work Policies

Late assignments: A penalty of 10% will be applied for the first two days. No submission beyond the two days will be accepted on Brightspace unless it falls under the two categories below

- 1) **Missed work less than 5 days (assignments):** Complete a self-declaration using the online [Academic Consideration for Coursework Form](#). If you don't have medical documentation.
- 2) **Missed work longer than 5 days:** Submit the [Long Term Academic Consideration Request Form](#).

Missed Midterm exam: For approved requests, the instructor will arrange an extension for the assignment or another date for writing the test, in most cases, at the time at which the class is generally held.

Learning Materials Related Resources

Learning Material	Options for Purchasing (e.g. Bookstore, Used, etc.)	Approximate Cost
1) Highly recommended Textbook: Nutrition: A Functional Approach, 4th Canadian Edition by Thompson, Manore, Hartman & Lafave, © Pearson Education Canada ISBN for Ebook-9780137487066	Bookstore, Pearson Education	\$80

The 3rd Canadian Edition is an alternative option.

There is no restriction on using a second-hand book

Internet Sites:

Health Canada, Dietitians of Canada, www.eatright.org, Canadian Food Inspection Agency
www.heartandstroke.ca, www.diabetes.ca, www.cancer.ca, www.osteoporosis.ca, National Eating Disorder Information Centre, Public Health Agency of Canada

Academic Accommodations and Regulations

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances, are outlined on the Academic Accommodations website (<https://students.carleton.ca/course-outline/>).

Statement on Generative Artificial Intelligence (GenAI) Usage

As our understanding of the uses of GenAI and its relationship to student work and academic integrity continues to evolve, students are required to discuss their use of GenAI in any circumstance not described here with the course instructor to ensure it supports the learning goals for the course.

Statement on Academic Integrity

Students are expected to uphold the values of academic integrity, which include fairness, honesty, trust, and responsibility. Examples of actions that compromise these values include but are not limited to plagiarism, accessing unauthorized sites for assignments or tests, unauthorized collaboration on assignments or exams, and using Generative Artificial

Intelligence (GenAI) tools when course assessment instructions indicate such use is not permitted.

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in [Carleton University's Academic Integrity Policy](#). A list of standard sanctions in the Faculty of Science can be found [here](#).

Additional details about this process can be found on [the Faculty of Science Academic Integrity website](#).

Students are expected to familiarize themselves with and abide by [Carleton University's Academic Integrity Policy](#).

Student Rights & Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the [7 Rights and Responsibilities Policy](#) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Student Concern

If a concern arises regarding this course, **your first point of contact is me**: Email or drop in during student hours and I will do my best to address your concern. If I am unable to address your concern, the next points of contact are (in this order):

Note: You can also bring your concerns to [Ombuds services](#).

