



Course Outline – FN 9711 Nutritional Epidemiology and Statistics

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COURSE DESCRIPTION:

This course will introduce principles of epidemiology as applied to nutrition. Students will learn about study design, conduct, analysis, and interpretation of epidemiologic studies related to nutritional status, diet and disease relationships. Emphasis will be placed on population-level dietary and nutritional status assessment, and the influence of methods, study designs, and statistical analysis on the interpretation of, and conclusions from research. Using IBM SPSS Statistics, students will learn how to analyze their own data and will develop an understanding of multivariate statistics.

COURSE OBJECTIVES:

This course provides graduate students in the Master of Science in Foods and Nutrition program with an understanding of the theoretical and practical considerations in the conduct of epidemiologic studies related to diet, nutrition, and chronic diseases.

LEARNING OUTCOMES:

Upon completion of the course, students will be able to:

1. Identify and evaluate the strengths and limitations of currently available dietary intake assessment methods and understand the limitations of methods on study results.
2. Select the most appropriate epidemiologic study design for specific nutrition-related research questions, considering the strengths and limitations of various designs.
3. Identify and evaluate the use of biomarkers in epidemiology.
4. Describe the data analysis and interpretation of nutritional epidemiology studies.
5. Understand statistical techniques used in nutritional epidemiology.
6. Enter and analyze nutritional epidemiological data using IBM SPSS statistical software.

7. Evaluate the methodological and statistical quality of nutrition-related research.

APPROACHES:

Lectures, discussions, experiential learning, self-directed learning, reading reflections, and qualitative and quantitative study proposals. Active participation in classroom discussion is required.

COURSE/REFERENCE MATERIALS:

Weekly reading assignments - students will be required to locate the posted assigned readings.

ADDITIONAL REFERENCES:

Drummond KE, Murphy-Reyes A., Goodell LS, Stage VC, Cooke NK. 2023. Nutrition Research: Concepts & Applications: Second Edition. Jones & Bartlett Learning.

Simon SD. 2006. Statistical Evidence in Medical Trials: What do the Data Really Tell Us? Oxford University Press.

USE OF GENERATIVE AI

The use of generative Artificial Intelligence (AI) tools, including but not limited to writing assistants (e.g., ChatGPT, QuillBot) and translation services (e.g., Google translate) is prohibited. Use of generative AI tools when prohibited or in a way not specifically allowed is a scholastic offence and subject to the penalties for a scholastic offence outlined in the Academic Calendar.

EVALUATION:

- **Participation: Contributions to Class Discussions (10%)**

Active engagement in class discussion is mandatory. Students will be evaluated on the quality of their contribution to class discussion. Students will receive up to 1% per lecture for a maximum of 10% of the overall course grade. Attendance in class does not count for participation marks.

- **Assignment 1: Reading Reflections (30%)**

Each student will write a maximum 1.5-page, single-spaced, 1-inch margins, 12-point Times New Roman text reflection on the readings assigned for each lecture. The reflection should NOT be a summary of the readings. The reflection should answer the following questions:

1. What surprised you most about the readings?
2. What did you learn from the readings?
3. What did you agree with and why? - This cannot be a direct conclusion from the readings.
4. What did you disagree with and why? - This cannot be a direct “limitation” from the readings.

5. Has your personal approach to your profession changed based on what you read and, if so, how has it changed?

For the reflection, please make sure that you integrate ALL the readings assigned for the specific lecture. You do not need to answer every question for each article, but you do need to answer each question once and use different articles as the basis for your answers. Each reflection is worth 5%. **Please hand in your assignment via Brightspace on the due date BEFORE the start of class.**

- **Assignment 2: Study proposal (25%)**

A 2-3-page write-up to propose a study protocol based on a given topic. The study must follow a qualitative study design. The write-up must include study objectives, study design, study population, sampling procedures, data collection methods, timelines, and data analytic techniques. Each student will have one week from the time the student receives their topic. You will be able to choose a topic from a list provided. Please **hand in** your write-up **via Brightspace before the start of class on Oct 21**. The purpose of this assignment is to provide you with the opportunity to utilize qualitative study designs to create a research project. You will be evaluated on your ability to adequately design and justify your study in writing.

- **Assignment 3: Study proposal (35%)**

A 4-5-page write-up to propose a study protocol based on a given topic. The study must follow a quantitative study design. The write-up must include study objectives, hypothesis(es), study design, study population, sampling procedures, variables and their levels of measurement, data collection methods, timelines, data analytic techniques, results, and discussion. The student must **MAKE UP** the results. Please use tables and/or figures only (i.e., no text for results). Each student will have one week from the time the student receives their topic. You will be able to choose a topic from a list provided. Please **hand in** your write-up **via Brightspace before the start of class on Dec 2**. The purpose of this assignment is to provide you with the opportunity to put together a study (from start to finish) using the tools that you learned in this class. You will be evaluated on your ability to adequately design and communicate your study in writing.

COURSE SCHEDULE – Fall 2024

Twynstra*	Course Overview Introduction to Epidemiology
Twynstra*	Qualitative Research Methods <ul style="list-style-type: none"> • DUE: Assignment #1 – Reading reflection
Twynstra*	Dietary Intake Methods for Epidemiological Studies: <ul style="list-style-type: none"> • Food frequency and other methods • Validity and reliability in dietary data collection
	No Classes – National day for truth and reconciliation
Twynstra*	Biochemical Indicators of Dietary Intake DUE: Assignment #1 – Reading reflection Assignment #2 topics released at the end of class
	Reading Week
Seabrook*	Inferential statistics – estimation procedures, research questions about one group and two independent (separate) groups DUE: Assignment #2
Seabrook*	Inferential statistics – research questions about three or more groups and about relationships among variables DUE: Assignment #1 – Reading reflection
Seabrook*	Introduction to multivariate statistics: multiple regression
Seabrook*	Introduction to multivariate statistics: logistic regression DUE: Assignment #1 – Reading reflection
Seabrook /Twynstra*	Research Articles as assigned – in class discussions Integration of Nutritional Epidemiology and Statistics DUE: Assignment #1 – Reading reflection
Seabrook /Twynstra*	Research Articles as assigned – in class discussions Integration of Nutritional Epidemiology and Statistics DUE: Assignment #1 – Reading reflection Assignment #3 topics released at the end of class
Seabrook /Twynstra*	DUE: Assignment #3

* Lead Professor

Brescia School of Food & Nutritional Sciences Graduate Course Academic Policies and Regulations 2024-2025

Enrolment Restrictions

Enrollment in this course is restricted to graduate students in Brescia School of Food & Nutritional Sciences, as well as any student that has obtained special permission to enroll in this course from the course instructor as well as the Graduate Chair (or equivalent) from the student's home program.

Support Services

There are various support services around campus and these include, but are not limited to:

1. Academic Support and Engagement - <http://academicsupport.uwo.ca>
2. Wellness and Well-being - <https://www.uwo.ca/health/>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>

Health and Wellness Services

Students who are in emotional/mental distress should refer to Mental Health Support at <https://www.uwo.ca/health/psych/index.html> for a complete list of options about how to obtain help.

Statement on Gender-Based and Sexual Violence

Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html

To connect with a case manager or set up an appointment, please contact support@uwo.ca

Student Code of Conduct

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at Western University, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed and set out the disciplinary procedures that the University will follow. For more information, visit <https://www.uwo.ca/univsec/pdf/board/code.pdf>

Statement on Academic Offences

Scholastic offences are taken seriously, and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

Additionally,

- A) All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the

detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

- B) Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Copyright and Intellectual Property

Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws. Unless explicitly noted otherwise, you may not make audio or video recordings of lectures – nor may you edit, re-use, distribute, or re-broadcast any of the material posted to the course website.

Policy for Accommodation for class absence, late and/or missed assignments

In case of a class absence, the student will notify the instructor as soon as possible. The student is responsible for any missed material covered during class. Academic accommodation for work representing 10% or more of the student's overall grade in the course shall be considered only in those cases where there is documentation indicating that the student was seriously affected by illness or other exceptional, extenuating circumstances and could not reasonably be expected to meet their academic responsibilities. For missed work worth less than 10% of the overall grade, the student must contact the instructor in advance of missing the deadline. In arranging accommodation, instructors will use good judgment and ensure fair treatment for all students. A penalty of 10% will be applied for late work without accommodation. Missed assignment more than 7 days late will be assigned a mark of zero without accommodation. Students who have been denied accommodation by an instructor may appeal this decision to the Graduate Chair of the Brescia School of Food and Nutritional Sciences.

Use of Artificial Intelligence for the Completion of Course Work

Within this course, you may only use artificial intelligence tools (e.g., “ChatGPT”) in ways that are specifically authorized by the course instructor. All submitted work must reflect your own thoughts and independent written work.

Accessible Education Western (AEW)

Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program.

Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are strongly encouraged to register with Accessible Education Western (AEW), a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both AEW and their graduate programs (normally their Graduate Chair and/or Course instructor) to

ensure that appropriate academic accommodations to program requirements are arranged. These accommodations include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction