

Course Outline – FN 9711 Nutrition Research and Epidemiology

Day/time:

Room:

Dr. Jamie Seabrook

Professor

Email: jseabro2@uwo.ca

Office hours:

Dr J Seabrook– by appointment only

Dr J Twynstra - by appointment only

Dr. Jasna Twynstra

Associate Professor and Graduate Chair

Email: jasna.twynstra@uwo.ca

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, 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 (OPTIONAL):

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 (20%)**
Active engagement in class discussion is required and will be assessed based on the quality of each student's contributions. Students will earn up to 2% per lecture, contributing to a maximum of 20% of the final course grade. Please note that mere attendance does not count towards participation marks.
- **Assignment 1: Reading Discussion (40%)**
Students will be assigned to groups and will lead a class discussion based on a selected research article. Each group will be assigned an article relevant to the course content to guide their discussion. See the course Brightspace page for detailed instructions.
- **Assignment 2: Quantitative Study (40%)**
Students will complete a 4-5-page written proposal outlining a study protocol based on a given topic. Submissions must be uploaded to **Brightspace December 12 by 11:59pm**. The goal of this assignment is to give you hands-on experience in designing and articulating a complete study protocol, applying the concepts and tools learned throughout the course. Evaluation will be based on the clarity, coherence, and methodological rigor of your proposed study. See the course Brightspace page for detailed instructions.

COURSE SCHEDULE – Fall 2025

Sept 5 Twynstra*	Course Overview
Sept. 12 Twynstra*	Introduction to Epidemiology
Sept. 19 Twynstra*	Qualitative Research Methods
Sept 26 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
Oct 3 Twynstra*	Biochemical Indicators of Dietary Intake
Oct 10 Seabrook*	Inferential statistics – estimation procedures, research questions about one group and two independent (separate) groups
Oct. 17 Seabrook*	Inferential statistics – research questions about three or more groups and about relationships among variables
Oct 24 Seabrook*	Introduction to multivariate statistics: multiple regression
Oct 31 Seabrook*	Introduction to multivariate statistics: logistic regression
Nov. 7	READING WEEK
Nov. 14 Seabrook /Twynstra*	Research Articles as assigned – in class discussions Integration of Nutritional Epidemiology and Statistics Assignment #1: STUDENT LED DISCUSSIONS
Nov. 21 Seabrook /Twynstra*	Research Articles as assigned – in class discussions Integration of Nutritional Epidemiology and Statistics Assignment #1: STUDENT LED DISCUSSIONS
Nov. 28 Seabrook /Twynstra*	Research Articles as assigned – in class discussions Integration of Nutritional Epidemiology and Statistics Assignment #1: STUDENT LED DISCUSSIONS
Dec. 5 Seabrook /Twynstra*	Research Articles as assigned – in class discussions Integration of Nutritional Epidemiology and Statistics Assignment #1: STUDENT LED DISCUSSIONS Assignment #2 topics released

* Lead Professor

Brescia School of Food & Nutritional Sciences Graduate Course Information 2025-2026

Enrolment Restrictions

Enrollment in this course is restricted to graduate students in Faculty of Health 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. In case of missed assessments, 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. In arranging accommodation, instructors will use good judgment and ensure fair treatment for all students. 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 (see “Appealing a Grade Within this Course” for details on appeals).

Policy for Accommodation for Missed Final Exam

In case of a missed final exam, permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents. Please speak with your instructor about the date on which the Special Examination for this course will be held.

Use of Artificial Intelligence for the Completion of Course Work

Within this course, artificial intelligence tools (e.g., “ChatGPT”) may only be used if, or in ways, 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

Appealing a Grade Within this Course

You have the right to appeal any grade within this course. The grounds for a grade appeal may be one or more of: medical or compassionate circumstances, extenuating circumstances beyond the student's control, bias, inaccuracy, or unfairness. All grounds advanced in a request for relief must be supported by a clear and detailed explanation of the reasons for the request together with all supporting documentation. For more details information, student can consult [this](#) resource.

Appeals generally proceed in this order:

1. Course instructor (informal consultation)
2. Graduate Chair (submission of written request)
3. SGPS (submission of written request)