

# 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-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 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 nutritional 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, 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**

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 ~~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.

x 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.

x 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~~ ~~the~~ ~~up~~ 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 x DUE: Assignment #1– Reading reflection
Twynstra*	Dietary Intake Methods for Epidemiological Studies: x Food frequency and other methods x Validity and reliability in dietary data collection
	No Classes- National day for truth and reconciliation
Twynstra*	Biochemical Indicators of Dietary Intake 12 294.96 591.6 T



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) Computermarked multiplechoice 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 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