

BRESCIA UNIVERSITY COLLEGE

SCHOOL OF FOOD AND NUTRITIONAL SCIENCES
Graduate Program in Foods and Nutrition

FALL 2020

FN 9711A - Nutritional Epidemiology and Statistics

Day/time: Tuesday 11:30-2:30 pm
Room: BR - 135

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Office hours:
Dr P Dworatzek – by appointment only
Dr J Twynstra - by appointment only

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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 and study designs on interpretation of, and conclusions from research. Using IBM SPSS Statistics, students will learn how to enter and analyze their own data and will develop a conceptual 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, 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 (available at Brescia's Beryl Ivey library):

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

EVALUATION:

- **Participation: Contributions to class discussions (10%)**
Active engagement in class discussion. The students will be evaluated on the quality of their contribution to class discussion. The students will receive up to 1% per lecture for a maximum 10% of the overall course grade.

- **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 the 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 email your assignment to the identified lead instructor for each lecture/assignment.**

- **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 **email both instructors** your write-up **before class by Oct 13**. The purpose of this assignment is to provide you 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 **email both instructors** your write-up **before class by Dec 8**. The purpose of this assignment is to provide you 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 2020

Sept. 15 Twynstra*	Course Overview Introduction to Epidemiology
Sept. 22 Twynstra*	Qualitative Research Methods DUE: Assignment #1 – Reading reflection
Sept. 29 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 6 Twynstra*	Biochemical Indicators of Dietary Intake DUE: Assignment #1 – Reading reflection Assignment #2 topics released at the end of class
Oct. 13 Dworatzek*	Descriptive statistics – basic descriptive statistics, measures of central tendency and dispersion, the normal curve DUE: Assignment #2

Oct. 20 Dworatzek*	Inferential statistics – estimation procedures, research questions about one group and two independent (separate) groups DUE: Assignment #1 – Reading reflection
Oct. 27 Dworatzek *	Inferential statistics – research questions about three or more groups and about relationships among variables
Nov. 3	Reading week
Nov. 10 Dworatzek *	Introduction to multivariate statistics: multiple regression DUE: Assignment #1 – Reading reflection
Nov. 17 Dworatzek *	Introduction to multivariate statistics: logistic regression
Nov. 24 Twynstra*	Research Articles as assignment – in class discussions Integration of Nutritional Epidemiology and Statistics DUE: Assignment #1 – Reading reflection
Dec. 1 Dworatzek /Twynstra*	Research Articles as assignment – in class discussions Integration of Nutritional Epidemiology and Statistics DUE: Assignment #1 – Reading reflection Assignment #3 topics released at the end of class
Dec. 8	DUE: Assignment #3

* Lead Professor

Brescia Graduate Course Academic Policies and Regulations

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

A) When written work is assigned, 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.

Policy for Accommodation for Illness

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by physical or mental illness. The University recognizes and respects

the need for privacy and confidentiality in these matters. However, in order to ensure fairness and consistency for all students, academic accommodation for work representing 10% or more of the student's overall grade in the course shall be granted only in those cases where there is documentation indicating that the student was seriously affected by illness and could not reasonably be expected to meet his/her academic responsibilities. Documentation must include the Professional person's name and qualifications, the Professional Office name and contact details, the student name, the date, the onset and duration and severity of the condition, and a recovery timeline.

The course instructor should be notified in advance of deadlines and documentation shall be submitted as soon as possible to the School of Food and Nutritional Sciences, Graduate Program office indicating the period of illness and when the student should be able to resume academic responsibilities. Deadlines for submission will be decided between instructor, Graduate Program Office, and student. These documents will be retained in the student's file, and will be held in confidence in accordance with the University's Official Student Record Information Privacy Policy. Once the petition and supporting documents have been received and assessed, appropriate academic accommodation shall be determined by the School of Food and Nutritional Sciences, Graduate Program office in consultation with the course instructor(s).

Academic accommodation may include extension of deadlines, waiver of attendance requirements for classes/labs/tutorials, arranging Special Exams or Incompletes, re-weighting course requirements, or granting late withdrawals without academic penalty. Academic accommodation shall be granted only where the documentation indicates that the onset, duration and severity of the illness are such that the student could not reasonably be expected to complete his/her academic responsibilities, and only when the medical professional providing the documentation is able to make a reasonable assessment of the student's physical or mental state during the period for which accommodation is sought. Minor ailments typically treated by over-the-counter medications will not normally be accommodated. Note that there is no expectation that a student must be in optimum condition to carry out his or her academic responsibilities. For accommodation of work worth less than 10% of the overall grade in a course, 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. In particular, instructors must indicate whether medical documentation will be required for absences, late assignments or essays, missed tests, laboratory experiments or tutorials, etc. Where medical documentation is required, such documentation must be submitted by the student directly to the School of Food and Nutritional Sciences Graduate Program Office. In all cases, the School of Food and Nutritional Sciences Graduate Program Office must be notified of the accommodation, however small, and all accommodations sought and/or approved will be recorded in the student file.

Students who have been denied accommodation by an instructor may appeal this decision to the Chair of the School of Food and Nutritional Sciences but will be required to present appropriate documentation.

STATEMENT ON STUDENT ACCESSIBILITY SERVICES (SAS)

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 encouraged to register with Student Accessibility Services, a confidential service designed to support

graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both SAS 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.

For more information, see <http://www.sdc.uwo.ca/ssd/>

Related Policies and Notes:

Western School of Graduate and Postdoctoral Studies Regulations

http://grad.uwo.ca/current_students/regulations/index.html

Western School of Graduate and Postdoctoral Studies Regulations Important Dates (including timing for change of registration, course add/drop etc.)

http://grad.uwo.ca/current_students/regulations/1.html#01

Related Student Resources:

Academic Advising: [Please contact the Graduate Program Coordinator in your Graduate Program Office at 519-432-8353 ext28047 / UH-110, Brescia University College.](#)

Student Support Services: https://grad.uwo.ca/life_community/self/index.html

Sexual Violence: All members of the Brescia University College community have a right to work and study in an environment that is free from any form of sexual violence. Brescia University College recognizes that the prevention of, and response to, Sexual Violence is of particular importance in the university environment. Sexual Violence will not be tolerated. Brescia is committed to preventing Sexual Violence and creating a safe space for anyone in the Brescia community who has experienced Sexual Violence. If you or someone you know has experienced any form of Sexual Violence, you may access resources at

<http://brescia.uwo.ca/life/sexual-violence/>

Mental Health and Wellness: Students may experience a range of issues that can cause barriers to your learning, such as increased anxiety, feeling overwhelmed, feeling down or lost, difficulty concentrating and/or lack of motivation. Services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about mental health and wellness at Brescia at <http://brescia.uwo.ca/life/mental-health-wellness/>. Students who are in emotional/mental distress should refer to Health and Wellness at Western, http://uwo.ca/health/mental_wellbeing/index.html, for information about how to obtain help for yourself or others.

Health and Wellness: As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. For example, to support physical activity, all students, as part of their registration, receive membership in Western's Campus Recreation Centre. Numerous cultural events are offered throughout the year. For example, please check out the Faculty of Music web page <http://www.music.uwo.ca/>, and our own McIntosh Gallery <http://www.mcintoshgallery.ca/>. Information regarding health- and wellness-related services available to students may be found at <http://www.health.uwo.ca/>. Students seeking help regarding mental health concerns are advised to speak to someone they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), or other

relevant administrators in their unit. Campus mental health resources may be found at http://www.health.uwo.ca/mental_health/resources.html.