Department of Epidemiology & Biostatistics
Epidemiology 9516T:
Analysis of Population Health Data

Time: Wednesday, 8:30 am – 11:30 am
Location: Kresge Building K7
Instructor: Piotr Wilk
Office Hours: By appointment
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Phone Extension: 89109
Teaching Assistant: TBD
Office Hours: TBD
E-Mail: TBD

Course Information
This course will introduce and familiarise students with selected methodological and statistical techniques related to the analysis of population health data. In this hands-on seminar, students will learn how to prepare and clean data files for analysis and how to address some of the methodological challenges of working with survey data. Students will also further develop their analytical skills by conducting a linear and logistic regression analyses on selected health outcomes, utilising data from the 2014 Canadian Community Health Survey. Finally, students will be introduced to multilevel modeling techniques for hierarchical data and to techniques for mapping and analysing spatial data. All analyses will be conducted with SAS.

Course Syllabus and Learning Objectives
Week 1 (February 28): Course overview and exploratory analysis of survey data. In this lecture, students will learn how to prepare and clean a secondary data file for further analysis and how to generate basic descriptive statistics. [Assignment 1]

Week 2 (March 7): Applied linear regression. In this lecture, students will practice and further develop their skills on how to build and test a linear regression analysis and how to interpret the results. [Assignment 2]

Week 3 (March 14): Analysis of categorical data. In this lecture, students will practice and further develop their skills on how to model a categorical response variable, interpret the output, and report the results. [Assignment 3]
Week 4 (March 21): Selected methodological issues. In this lecture, students will learn how to address some of the methodological challenges of working with survey data such as missing data and how to use replication weights for data generated by a complex sampling design.

Week 5 (March 28): Multilevel analysis. In this lecture, students will be introduced to the basic concepts of multilevel modeling. [Assignment 4]

Week 6 (April 4): Spatial data analysis. In this lecture, students will acquire basic skills for mapping population health data and will be introduced to the most common spatial data analysis techniques.

Course Materials
There are no mandatory textbooks for this course. The weekly readings can be downloaded from Dropbox.

Prerequisite
There are no prerequisites for this course. However, students are expected to have basic knowledge of multivariate linear and logistic regression analyses. Prior knowledge and experience using the SAS System is beneficial but not a requirement for this course.

Recommended Books


Methods of Evaluation
1) Participation – 10%
2) Assignments – 90%
   a) Exploratory analysis of survey data – 15%
      - Assignment – 10% (Due March 6)
      - Peer Review – 5% (Due March 9)
   b) Linear regression – 25%
      - Assignment – 20% (Due March 13)
      - Peer Review – 5% (Due March 16)
   c) Logistic regression – 25%
      - Assignment – 20% (Due March 26)
      - Peer Review – 5% (Due March 29)
   d) Multilevel analysis – 25%
      - Assignment – 20% (Due April 5)
      - Peer Review – 5% (Due April 9)

If for any reason you cannot meet one or more of the requirements, it is essential that you let the instructor know in advance or as soon as you are aware of the situation.

Policy on Accommodation for Medical and Non-Medical Absences
For assignments worth 10% or more, refer to Western University’s Policy on Accommodation for Medical Illness: https://studentservices.uwo.ca/secure/index.cfm.

All non-medical absences must be approved in advance. In the case of an unexpected absence on compassionate grounds, documentation may be requested. If documentation is required by the instructor for either medical or non-medical academic accommodation, then such documentation must be submitted by the student directly to the appropriate Faculty Dean’s office and not to the instructor. It will be the Dean’s office that will determine if accommodation is warranted.

Policy on Recording Classes
Classes may not be audio-recorded without advance written permission from the instructor and other students, and may not be video-recorded. Permission will not be granted for classes involving unpublished materials from the instructor or others.

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

Support Services
As part of a successful 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 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. 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 or undergraduate 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.

To help you learn more about mental health, Western has developed an interactive mental health learning module, found here: http://www.health.uwo.ca/mental_health/module.html. This module is 30 minutes in length and provides participants with a basic understanding of mental health issues and of available campus and community resources. Topics include stress, anxiety, depression, suicide and eating disorders. After successful completion of the module, participants receive a certificate confirming their participation.

**Department & Faculty Offices**
The Epidemiology & Biostatistics main office is located in K201 in the Kresge Building on Main campus.

**Technology Requirements**
You are responsible for all required course materials and announcements posted to the course’s OWL website. Please ensure after the first class that when you log in you are able to access the course site. A copy of the course outline will be available on both OWL and the departmental website.