Department of Epidemiology and Biostatistics

3330G: Systematic Review and Meta-Analysis

**Time:** Thursday 1:30 pm – 2:30 pm  
**Location:** K106

**Lab Time:** Tuesday 1:30 pm – 3:30 pm  
**Lab Location:** Computer Lab

**Office Hours:** Tuesday 3:30 pm – 4:30 pm

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**Phone Extension:**  
61288 (Monday – Thursday)  
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**Instructor:**  
Monali Malvankar, PhD  
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Office: K215, Kresge Building

**Course Information**

Systematic reviews and meta-analyses are used in numerous fields in medical research. They form the core of evidence-based decision-making in health care sector. Vital policy decisions made by federal as well as provincial governments are based on reliable syntheses of increasing amount of research information. Additionally, pharmaceutical companies use meta-analysis to synthesis evidence from a series of studies to assess the efficacy of a drug. Meta-analysis is used in every field including education, psychology, criminology, business, and ecology. This course is designed to provide undergraduate students with the details of the process of conducting a systematic review and meta-analysis, discuss strengths and limitations of the methods, and give step-by-step guidance on how to do a systematic review and meta-analysis.

Unless you have either the requisites for this course or written special permission from the Undergraduate Chair to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

**Course Syllabus**

1) Systematic Review design
2) Introduction to EPPI for systematic review
3) Fixed- and Random-effect models
4) Heterogeneity
5) Forest plots
6) Publication bias/Funnel plots
7) Introduction to STATA for meta-analysis

Course Materials

Required Text:

Chapter 1 and Chapters 12 – 18.

Link: [http://handbook.cochrane.org/](http://handbook.cochrane.org/)
Chapters 5 - 8.

Chapters 1 – 7, Chapters 10 – 16, Chapters 19 – 21, and Chapter 30.

*Meta-analysis in Stata*, by Sterne J. (Stata Press, 2009)
Chapters 1 – 3.

Other Texts:

Methods of Evaluation

- 5% - Attendance
- 10% - Participation
- 35% - Presentations
- 50% - Project

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](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.

**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](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/](http://www.music.uwo.ca/), and our own McIntosh Gallery [http://www.mcintoshgallery.ca/](http://www.mcintoshgallery.ca/). Information regarding health- and wellness-related services available to students may be found at [http://www.health.uwo.ca/](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](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](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:** A laptop or a computer would be helpful, but not required.