

Department of Epidemiology and Biostatistics
Epidemiology 9580S – Systematic Reviews
Winter 2020

Class: Tuesdays 1:30 to 3:30 pm (MSB 190)

Lab: Thursdays 2:30 to 3:30 pm (K7)

Dates: January 7 to February 13

TA: TBD

Instructor: Dr. Kelly Anderson

Office Hours: After class or by appointment

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Phone Extension: 81001

Course Information

Pre-Requisite Information:

Enrollment in the graduate program in Epidemiology & Biostatistics, or permission of the course instructor. Unless you have the requisites for this course or written special permission from the Graduate Chair to enroll, 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

Systematic reviews form the core of evidence-based decision-making in health care and are based on reliable syntheses of research and information. This course will cover the theory and rationale behind systematic reviews, discuss the strengths and limitations of the method, and provide step-by-step guidance on how to actually perform a systematic review

Learning Outcomes:

By the end of this course, students will be able to:

- Recognize different types of literature reviews and understand how they are used in health care decision making
- Develop a systematic review protocol that clearly defines the study objectives and outlines the search strategy
- Conduct the literature search, study screening, data extraction, and quality assessment
- Write-up a systematic review manuscript

Weekly Topics:

| Week | Date | Class (Tuesday) | Lab (Thursday) |
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| 1 | January 7 to 9 | Introduction to Systematic Reviews - Defining the Research Question - Developing a Review Protocol | - Finalize the Research Question |
| 2 | January 14 to 16 | Developing a Search Strategy - Database and Grey Literature Searches - Forward and Backward Citation Tracing | - Finalize the Search Strategy |
| 3 | January 21 to 23 | Study Screening - Levels of Screening - Setting Inclusion and Exclusion Criteria | - Work on Study Screening |
| 4 | January 28 to 30 | Data Extraction - Developing Data Extraction Template - Handling of Missing Data | - Create Data Extraction Form |
| 5 | February 4 to 6 | Quality Assessment - Risk of Bias - GRADE | - Work on Data Extraction and Quality Assessment |
| 6 | February 11 to 13 | Reporting Systematic Reviews - Qualitative Synthesis of Findings - Reporting Guidelines | - Summarize Review Findings - Work on Final Report |

Course Structure:

The class sessions (Tuesdays) will cover key information on how to conduct a systematic review, and lab sessions (Thursdays) will allow students to work on these skills in a supported environment. It should be noted that this course requires a significant amount of independent work, but it is intended to be highly practical and will prepare you to conduct systematic reviews. Over the course of seven weeks, you will plan, conduct, and report a rigorous systematic review on a topic of your choosing. With sufficient planning and effort, your final report may be appropriate for publication in a peer-reviewed journal. Students are also encouraged to also take EPID 9582T if they anticipate that their systematic review will generate data suitable for a meta-analysis. Because of the short time frame of this course, students are **required** to have identified a topic for their project before the start of the term. The topic can be related to the student's thesis but must not overlap directly. Students are encouraged to consult with their supervisors regarding a suitable topic.

Course Materials

Required Text:

Khan K, Kunz R, Kleijnen J, Antes G. (2011) *Systematic Reviews to Support Evidence-Based Medicine, 2nd Edition*. London: Arnold Publishers Ltd.

Download Available from the UWO Library: <https://www.taylorfrancis.com/books/9781853157998>

Other Reference Texts:

Higgins JPT, Thomas J (Editors). *Cochrane Handbook for Systematic Reviews of Interventions*. Version 6 (2019). The Cochrane Collaboration, 2019.

Download Available From: <https://training.cochrane.org/handbook/current>

Additional readings will be posted to OWL.

Methods of Evaluation

A. Participation (10% of final grade)

- Students are expected to attend and actively participate in all class discussions and labs.
- Participation will be assessed on a weekly basis using a short iClicker quiz at the end of lecture. Absences without a valid reason will be assigned a mark of zero.
- Students can gain additional participation marks by providing suggestions and feedback on their classmates' journal entries on OWL.

B. Weekly Journal Entries (10% of final grade)

- At the end of each week, students are expected to provide an update on their progress for the week's tasks in the forum on OWL, including specific details of the task (e.g. finalized research question, results of screening) and any issues they may be encountering.
- Journal entries will be due on Sunday of each week, and will be marked as pass/fail
- **Deadlines:**

Journal Entry #1: Final Research Question – **January 12**

Journal Entry #2: Search Strategy – **January 19**

Journal Entry #3: Inclusion and Exclusion Criteria – **January 26**

Journal Entry #4: Study Screening Results – **February 2**

Journal Entry #5: Summary of Data Extraction and Quality Assessment – **February 9**

C. Review Protocol (20% of final grade)

- Each student will prepare a brief (2 page) protocol outlining the review methods, including a brief background/rationale, research question, proposed search strategy, inclusion and exclusion criteria, and key variables for data extraction
- **Due: Thursday January 30 at the start of tutorial**

D. Full Review Report (60% of final grade)

- Students will prepare a final report for their systematic review in the style of a journal manuscript
- **Due: Friday February 21 by 5:00 pm on OWL**

Late Assignment Policy

Please negotiate an alternative deadline with the instructor in advance if you foresee difficulties meeting the assigned due dates.

Marking Reassessments

Should you have concerns about a mark you have received on an assignment, you are welcome to request a reassessment from the instructor. In order to request a reassessment, please write one paragraph explaining why you believe you deserve a different mark from the one that you received. This will be read in conjunction with your original submission. The instructor will reassess your assignment based on this information. Requests for changes in marking made in any other manner will not be considered.

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| Policy on Accommodation for Medical and Non-Medical Absences |
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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 for either medical or non-medical academic accommodation, then such documentation must be submitted by the student to the instructor.

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:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

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>).

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/>

Registrarial Services: <http://www.registrar.uwo.ca>

USC Student Support Services: <http://westernusc.ca/services/>

Student Development Centre: <http://www.sdc.uwo.ca/>

SGPS Life & Community web page: https://grad.uwo.ca/life_community/self/index.html

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.

Students who are in emotional/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.

Student Accessibility Services

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.

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 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.

The iClicker virtual response system will be used in class to increase engagement and active learning, and is available to download on your mobile devices. You can find more information about setting up a free account at https://presswestern.uwo.ca/students_and_audience/index.html.

Students may also use other software or online platforms throughout the course (all available free of charge) to support the systematic review process.