

MCGILL UNIVERSITY
PPHS 501, POPULATION HEALTH AND EPIDEMIOLOGY (WINTER 2019)
PURVIS HALL, ROOM 25

Instructor

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Teaching assistant

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Office hours: By appointment. For same-day responses to assignment-related questions, emails should be sent before 19:00 the day preceding the due date.

Classes

Mondays and Wednesdays 13:00-14:25.

Restrictions

Not open to students enrolled in Epidemiology or Public Health programs. This course is designed for undergraduate students but enrollment of graduate students is allowed. Numerical literacy is recommended.

General information

This course presents concepts and methods of epidemiology at the introductory undergraduate level. The use of epidemiologic methods for public health research will be illustrated. A review of selected public health questions, such as the HIV/AIDS epidemic, the cardiovascular disease epidemic, cigarette smoking, and screening for disease will be presented.

The course is broadly divided in three modules: 1) population health, 2) epidemiologic methods, and 3) special topics (pharmacoepidemiology, infectious disease epidemiology, mental health, etc.). At the end of this course, students will have acquired a basic understanding of population health sciences and general epidemiologic methods. They will be aware of the principal sources of bias in epidemiologic research. They will understand the interplay between epidemiology and public health. They will also be able to describe selected public health problems affecting populations in different parts of the world.

Grading criteria

Items	Description
Short assignments (65%)	<p>Short exercises will be assigned approximately once or twice a week. These assignments must be completed before a specified date (usually the next lecture) and be submitted to MMG at the beginning of these lectures (printed). The maximum mark for assignments received late will be 50%. All assignments must be completed to pass the course.</p> <p>Students may work on these assignments individually or in groups: group work is encouraged. Students working in groups, however, must prepare the final formulation of their answers individually, not as a group. It is not permitted for a team of students to submit identical copies of the same answers.</p> <p>In general, you may use internet or any other material as extensively as you want. However, when the text is not yours, you must indicate your sources and provide appropriate quotes.</p>
Mid-term presentations (10%)	<p>Students will present book reviews on public health and epidemiology topics. Further instructions about these presentations will be provided early during the course.</p>
End-of-term presentations (15%)	<p>Student presentations will address an epidemiologic problem to be defined early during the course.</p>
Class participation (10%)	<p>Students will get full marks if they attend all lectures and participate in class discussions.</p>
In-class activities (Pass/Fail)	<p>Certain lectures (identified on the course timetable) will include activities to be completed during the lecture itself. These activities are compulsory and must be completed as part of course requirements. Students who do not complete all in-class activities will fail the course. If you must miss such an activity, an extra take home assignment must be completed.</p>

The passing grade for the course is 65%. Students with a “fail”, or students wishing to improve their mark, may write a final exam in April. The final exam mark will represent 50% of the course grade; the other 50% will consist of the marks accumulated over the entire term. This final exam is optional. The mark obtained at the final exam will only serve to improve the overall term mark. Students will not be penalized by a poor mark on the final exam.

Academic integrity

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the *Code of Student Conduct and Disciplinary Procedures* (see [here](#) for more details).

Recommended text (not obligatory)

Carr S, Unwin N, Pless-Mullooli, T. 2007. Introduction to public health and epidemiology. McGraw-Hill Education.

Friis R, Sellers T. 2009. Epidemiology for public health. 4th Ed. Jones and Bartlett Publishers.

Gordis L. 2014. Epidemiology. Elsevier/Saunders. (Available as an ebook from McGill library.)

Rothman K. 2012. Epidemiology – An Introduction. 2nd Ed. Oxford University Press.

Tentative class schedule

Date and session	Topics, exercises, and readings
Session 1 2019-01-07 (M)	Introduction to the course. A brief history of epidemiology and public health.
Session 2 2019-01-09 (W)	Population health: Descriptive epidemiology (<u>exercise 1</u>). Reading: Kinding. 2007. Understanding population health terminology. The Milbank Quarterly 85(1):139-161.
Session 3 2019-01-14 (M)	Population health: Special topic (<u>activity 1</u> : read a book)
Session 4 2019-01-16 (W)	Population health: Incidence and prevalence (<u>activity 2</u> : outcomes; <u>exercise 2</u> : birth defects).
Session 5 2019-01-21 (M) <i>*Add/Drop</i> <i>Deadline is January 22nd</i>	Population health: Life expectancy (<u>exercise 3</u> : life expectancy). Reading: Kolata. 2015. Death Rates Rising for Middle-Aged White Americans, Study Finds. The New York Times, 2015-11-02.
Session 6 2019-01-23 (W)	Population health: Burden of disease. Reading: Murray. 2013. Measuring the global burden of disease. NEJM 269:448-457.
Session 7 2019-01-28 (M)	Epidemiologic method: Basics of causal inference (<u>exercise 4</u> : causal inference).
Session 8 2019-01-30 (W)	Epidemiologic method: Measures of association (<u>exercise 5</u> : effect size measures).
Session 9 2019-02-04 (M)	Epidemiologic method: Cohort studies.
Session 10 2019-02-06 (W)	Epidemiologic method: Cohort studies (<u>activity 3</u> : Spicy paper; <u>exercise 6</u> : cohort studies). Reading: Grimes and Schutz. 2002. Cohort studies: marching towards outcomes. The Lancet 359:341-45.
Session 11 2019-02-11 (M)	Epidemiologic method: Case-control studies (<u>exercise 7</u> : case-control). Reading: Schulz. 2002. Case-control studies: research in reverse. The Lancet 359:431-434.
Session 12 2019-02-13 (W)	Epidemiologic method: Confounding (<u>exercise 8</u> : confounding). Reading: Taubes. 2007. Do we really know what makes us healthy? The New York Times Magazine, 2007-09-16.
Session 13 2019-02-18 (M)	Epidemiologic method: Effect modification.

Session 14 2019-02-20 (W)	Epidemiologic method: RCT. (<u>exercise 9</u> : randomization)
Session 15 2019-02-25 (M)	Book reviews (student presentations).
Session 16 2019-02-27 (W)	Book reviews (student presentations).
Reading Week 2019-03-04 to 03-08	<i>No classes.</i>
Session 17 2019-03-11 (M)	Epidemiologic method: Meta-analysis. Epidemiologic method: Meta-analysis (<u>activity 4</u> : methadone and HIV).
Session 18 2019-03-13 (W)	Special topic: Neglected tropical diseases. Speaker: Dr. Theresa Gyorkos (McGill).
Session 19 2019-03-18 (M)	Special topic: Population health risk factors (<u>exercise 10</u> : risk factors). Reading: Rose G. 1985. Sick individuals and sick populations. International Journal of Epidemiology 14(1): 32-38.
Session 20 2019-03-20 (W)	Special topic: Screening (<u>exercise 11</u> : sensitivity and specificity). Reading: Grimes. 2002. Uses and abuses of screening tests. The Lancet 359:881-884.
Session 21 2019-03-25 (M)	Special topic: Pharmacoepidemiology. Speaker: Dr. Kris Fillion (McGill).
Session 22 2019-03-27 (W)	Special topic: Mental health. Speaker: Dr. Geneviève Gariépy (McGill) (<u>exercise 12</u> : mental health).
Session 23 2019-04-01 (M)	Group session for final project.
Session 24 2019-04-03 (W)	Special topic: Ecologic studies (<u>activity 5</u> : critical appraisal).
Session 25 2019-04-08 (M)	Term papers (student presentations).
Session 26 2019-04-10 (W)	Term papers (student presentations).
Session 27 2019-04-15 (M)	Final exam (optional).

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