

# EPID 801: Introduction to Epidemiology

## Course Syllabus Fall 2020

Course management: onQ EPID 801 F20. **You will get access on Sept 8.** <https://my.queensu.ca/>  
Asynchronous course material, readings, independent study posted onQ: complete on your own schedule with suggested calendar

Synchronous session times: Mondays 10:00-11:30am and Wednesdays 10:00-11:30am

Time with Teaching Assistants: Wednesday 11:30am-12:15pm or Thursday 3-3:45pm (email your TA to get an appointment. You will be able to find which TA is assigned to you onQ.)

**First session of 801 is Wednesday Sept 9 10:00-11:30am on Zoom (link will be onQ Sept 8)**

Instructor: Kristan Aronson

Professor, Dept of Public Health Sciences, and School of Environmental Studies

Office: Division of Cancer Care and Epidemiology, Cancer Research Institute (2<sup>nd</sup> floor)

<https://phs.queensu.ca/faculty-research/kristan-aronson>

Teaching Assistants: Salman Ahmadi [saa15@queensu.ca](mailto:saa15@queensu.ca), Laura Cramm [lec7@queensu.ca](mailto:lec7@queensu.ca),

Matthew Crocker [mc253@queensu.ca](mailto:mc253@queensu.ca),

Time with Kristan: "In person" during synchronous sessions; email with any concerns re accessibility or accommodations: [aronson@queensu.ca](mailto:aronson@queensu.ca)

### COURSE DESCRIPTION

Evidence for effective public health comes in part from epidemiologic studies. Epidemiology is a science underlying and supporting public health, and as such is a broad and exciting field that "provides logic and structure to the analysis of health problems" (p. 2, Webb et al. text). Epidemiologic study designs include ecologic studies, randomized trials, intervention studies, cross-sectional studies, case-control studies, and cohort studies. This course focuses on the determinants of health, data sources, measurement, and design principles that are intended to produce the highest quality evidence for public health issues. Epidemiologic methods and principles are the focus, which can be applied to all substantive health areas. This course introduces students to the principles and methods of epidemiology, study designs, measures of effect, sources of error, confounding, systematic reviews, and internal and external validity. We also introduce appraisal of the literature, criteria for causality, prevention and screening, ethics, communication/knowledge translation and cite examples of how epidemiology can be applied to a range of health issues.

### LEARNING ENVIRONMENT

We look forward to working together in an atmosphere of mutual respect and promotion of diversity. We have made every effort to make this course accessible to all. We encourage active learning and critical thinking through a range of activities designed to engage learners. Acceptance of diversity and principles of equity are the foundations for learning in this course. If you have any concerns, please contact Kristan.

## LEARNING OUTCOMES

Within a population health framework of evidence to action, this course provides foundational knowledge through the lens of epidemiologic principles on how human evidence is created, assessed and communicated.

Upon successful course completion, students will be able to:

1. Conceptualize and explain how determinants of health (social/cultural, biological and physical) can influence health and well-being
2. Integrate ethics into human health research
3. Calculate and interpret absolute and relative measures of disease frequency and risk, and contrast these across populations
4. Identify the main types of epidemiologic studies, appraise their relative strengths and limitations, and justify study design choices
5. Demonstrate critical thinking in identifying potential sources of bias, confounding and chance in human research evidence, and evaluate their impact while considering potential resource constraints
6. Assess epidemiologic evidence for causal inference and contribution to policies and actions

These learning outcomes have been developed in accordance with the competencies of several graduate programs in PHS: <https://phs.queensu.ca/> and the Public Health Agency of Canada Core competencies: <https://www.canada.ca/en/public-health/services/public-health-practice/skills-online/core-competencies-public-health-canada.html>

## COURSE COMMUNICATIONS

All information about the course will be provided through onQ EPID801 F20: **you will get access on Sept 8**. We welcome student inquiries in synchronous sessions throughout the term. For time with a TA, please email the TA you have been assigned. If a TA cannot answer your inquiry, they will ask Kristan, and concerns that are relevant to the whole class will be posted onQ.

## COURSE FORMAT

Learning strategies include: slides, sessions with instructors and TAs, reading the text and assigned articles, doing all problems in the text, your note taking, group exercises with deliverables, assignments, pop quizzes, videos, reviews and exams. **Please study all slides and do the assigned readings prior to synchronous sessions** – this is critical for learning and engagement in live sessions.

This is a graduate class where **most learning occurs outside of class**, with highlights and application of main concepts in synchronous sessions. **Expected student learning hours necessary for success in this course in addition to class time are approx 10 to 12 hours/week.**

At Queen's, all course materials including pre-recorded content are the **property of the instructor** unless otherwise stated: copying or sharing course material can be a copyright violation, and copying or sharing materials from other students can be a privacy violation as

well. Also, at the start of live sessions, you will be reminded about our expectation that you are **not allowed to record or take screen shots** of any synchronous sessions or meetings since this would constitute a privacy violation.

### **COURSE MATERIALS**

Required text: Essential Epidemiology: An Introduction for Students and Health Professionals, fourth edition, by Penny Webb, Chris Bain, Andrew Page, Martyn Kirk, Adrian Sleight, 2020.  
<https://www.cambridge.org/ca/academic/subjects/medicine/epidemiology-public-health-and-medical-statistics/essential-epidemiology-introduction-students-and-health-professionals-4th-edition?format=DO&isbn=9781108766807>

You can purchase this textbook through the Queen's bookstore using the following link:

<https://www.campusbookstore.com/?ID=90&Course=EPIDB04653>

Additional course readings/materials will be posted onQ.

**Videos** supplement the material in your text. Many that are particularly helpful are produced by the Canadian National Collaborating Centre for Methods and Tools (NCCMT) and on their website <http://www.nccmt.ca/resources/multimedia> with others on Youtube such as:

Topic: Epidemiology as Evidence for Public Health

Video: Evidence-informed decision making: a guiding framework for public health

<https://www.youtube.com/watch?v=QtrnT3sFSL0>

Topic: Measures of Association

Video: Relative risk: it's easy to calculate and interpret

<https://www.youtube.com/watch?v=fellAwyaGFM>

Video: How to calculate an odds ratio

[https://www.youtube.com/watch?v=5zPSD\\_e\\_N04](https://www.youtube.com/watch?v=5zPSD_e_N04)

Topic: The Role of Chance

Video: Understanding a confidence interval

<https://www.youtube.com/watch?v=v0FXSAdYckQ>

Topic: Systematic Reviews

Video: What are Systematic Reviews:

<https://www.youtube.com/watch?v=egJlW4vkb1Y&feature=youtu.be>

Video: Forest plots: understanding a meta-analysis in 5 minutes or less:

<https://www.youtube.com/watch?v=GWLnlGN3POM>

## ASSESSMENTS

Pop quizzes	0%
3 Assignments: Due dates Sept 25, Oct 19, Nov 20	15%
Viewing of NCCMT videos:	Yes/no
Mid-term exam: Oct 28	35%
Cumulative final exam: Dec 4	50%

Please note:

1. The minimum passing grade in Graduate School is 70%.
2. Pop quizzes are for **self-assessment** of progress in comprehending course material, and for the TAs and instructor to learn who might need extra help.
3. Assignments give you an opportunity to apply new concepts, practice new skills, and express yourself in writing. You can work alone or in groups up to 4 people (hand in ONE version with all names). If you submit the assignment by 5pm on the due date, you will get some feedback from TAs in one week. If you submit the assignment later than 5pm on the due date and prior to one week after the due date, you will get a grade with no feedback. No assignment will be accepted after the period of one week after the due date. **Check all work for plagiarism prior to submitting.** Submissions are through onQ.
4. Please note that you are also strongly urged to complete ALL questions in the text and use the “student resources” on the text’s website.
5. The midterm and final exams are “open book” and will be conducted through onQ. Built into the total timing will be a period for accommodations.
6. Exams assess independent comprehension of the course material: various approaches are used (multiple choice, matching, short answer, calculations etc). The final exam will be cumulative, testing all the material covered in the course. As exams are the only truly independent assessments of your learning, please note that failing both the mid-term and final exams means that you fail the course, regardless of your assessment in other aspects of this course.

## University & Course Policies:

### Academic Integrity

Academic integrity provides the foundation for the “freedom of inquiry and exchange of ideas” fundamental to the educational environment at Queen’s University (<https://www.queensu.ca/sgs/graduate-calendar/academic-integrity-policy>). The Academic Integrity Policy outlines the behaviors that constitute academic dishonesty and the processes for addressing academic offences. If you have any questions or concerns about what constitutes appropriate academic behavior or appropriate research and citation methods, please seek out additional information on academic integrity from your professor or other institutional resources.

### Queen's Student Accessibility Services (QSAS)

With other members of the Queen’s community, we work to ensure the university and its programs are accessible to students with disabilities. Our goal is to support your successful transition to university and to foster an inclusive and equitable environment at Queen's.

<https://www.queensu.ca/studentwellness/accessibility-services>

## Some Resources

### ***School of Graduate Studies Habitat***

This brings together resources for living well and staying well in grad school. There is information on: taking care of yourself and managing stress, finding friends and fun, living in Kingston, managing finances, accessibility, building a career and more. <http://www.queensu.ca/sgs/current-students/sgs-habitat>

### ***Student Wellness Services***

Student Wellness Services supports the personal, academic, and social development of students at Queen's by providing a range of programs and services including accessibility services, counselling services, and health services. Their mission is to provide a welcoming, confidential, and integrated service that is responsive to the needs of students. A full listing of services including how to make an appointment is here: <http://www.queensu.ca/studentwellness/>

Note-taking by hand: [A powerful tool to support memory](#)

Hetty Roessingh, University of Calgary

Taking notes by hand involves manipulating and transforming information in ways that lead to deeper understanding.

### Some suggested resources for our times (not required!)

Search [healthevidence.org](http://healthevidence.org) for systematic reviews evaluating public health interventions

“This podcast will kill you” <http://thispodcastwillkillyou.com/>

Indigenous-led health care partnerships in Canada <https://doi.org/10.1503/cmaj.190728>

Environmental Justice in Mi'kmaq & African Nova Scotian Communities TEDxMSVUWomen <https://www.youtube.com/watch?v=itRiNmo3hq8>

Film: There's something in the water. <https://www.youtube.com/watch?v=nKhIYFDnCoY>

Allegories on race and racism: <https://www.youtube.com/watch?v=GNhcY6fTyBM>

How to Be an Antiracist by Ibram X. Kendi

Boston University online learning modules: <https://sphweb.bumc.bu.edu/otlt/MPH-Modules/Menu/index.html>

dropdown for Epidemiology

Public Health Agency of Canada. Skills Online: <http://www.phac-aspc.gc.ca/php-ppsp/ccph-cesp/index-eng.php>

Public Health Ontario. <https://www.publichealthontario.ca/>

OnCore-EnCours: <https://oncore-encours.ca/>

World Health Organization (WHO): [www.who.int/en](http://www.who.int/en)

Statistics Canada: <http://www.statcan.gc.ca/>

Health Canada: <http://www.hc-sc.gc.ca/>

Statistics without borders <https://swb.wildapricot.org/>

The Public Health Spot <https://phspot.ca/> Also on instgram (@phspot)

Instagram: WHO (@who), Healthy Canadians (@healthycdns), CDC (@cdcglobal)

Sustainable Kingston <https://www.sustainablekingston.com/>

Public health journals: <https://www.springer.com/public+health/journal/41997>;  
<http://www.biomedcentral.com/bmcpublichealth/>

Pan American Health Organization (PAHO): <http://www.paho.org/hq/index.php?lang=en>

Centers for Disease Control and Prevention (CDC- USA): [www.cdc.gov](http://www.cdc.gov)