Epidemiology 801 – Fall 2017
Course Syllabus – DRAFT

Class time and location: Tuesday 9:30 to 11:30 am, Ellis Hall rm xxx
          Wednesday 3:00 to 4:00pm, Ellis Hall rm xxx

Instructor: Dr. William Pickett
           Professor and Head, Public Health Sciences

Office: Carruthers 210, 613-533-6000 ext 79551

Email: will.pickett@queensu.ca

Office hours: Please email for a meeting time

Teaching Assistants: Catherine Spagnuolo (14cms9@queensu.ca)
                    Kyle Silveira (11krs3@queensu.ca)

Course Description

This course focuses on epidemiological methods and principles. These can be applied to all substantive
health areas, including public health.

Our approaches to learning are traditional. They include: lectures and seminars, slides, note taking, in-
class exercises, assignments, reviews and exams.

Active engagement in discussions and class activities is encouraged.

Expected student learning hours in addition to class time are approximately 10 hours/week.

Course Learning Outcomes:

1. Identify, estimate, and interpret measures of disease frequency
2. Identify, estimate, and interpret measures of association and impact
3. Strengthen your ability to design basic epidemiological studies
4. Strengthen your ability to read, appraise, and interpret findings from basic epidemiologic studies
5. Identify sources of error, bias and confounding in these studies (internal validity), as well as
generalizability and the potential causal nature(s) of study findings
6. Consider special topics in epidemiology, including screening, diagnostic testing, and outbreak
   investigation
7. Strengthen your ability to apply epidemiological evidence to the understanding and solving of public
   health problems
Course Pre-requisites

This course is designed for full-time or part-time MSc (Epidemiology), MSc (Biostatistics) and Master of Public Health (MPH) students. This is a required course for students in these programs.

Other students will be admitted with permission of the course instructor. Demonstrated numeric ability, usually demonstrated through the successful completion of an undergraduate course in statistics, is a requirement.

Course Resources & Readings:

Text

*Essential Epidemiology: An Introduction for Students and Health Professionals, 3rd edition* by Penny Webb and Chris Bain, 2017. A limited number of copies are available at the Queen’s bookstore, or online at Amazon.ca. This text provides an excellent but basic introduction to the field of epidemiology. Some of its sections will be augmented by additional course readings that will be posted on OnQ.

NCCMT Videos

Viewing of videos produced by the (Canadian) National Collaborating Centre for Methods and Tools (NCCMT) supplements the material in your text. Those that are particularly helpful follow:

National Collaborating Centre for Methods and Tools. NCCMT Learning Centre:
http://www.nccmt.ca/resources/multimedia

Class 1: Epidemiology as Evidence for Public Health
Video: Evidence-informed decision making: a guiding framework for public health

Class 7: Measures of Association
Video: Relative risk: it’s easy to calculate and interpret
Video: How to calculate an odds ratio

Class 8: The Role of Chance
Video: Understanding a confidence interval
Video: Understanding what a P value tells us

Class 20: Systematic Reviews
Video: Types of reviews: what kind of review do we need?
Video: Forest plots: understanding a meta-analysis in 5 minutes or less
<table>
<thead>
<tr>
<th>Class Type</th>
<th>Date</th>
<th>Class Topics &amp; Preparation</th>
<th>Instructor</th>
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</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>Sept 12</td>
<td>Epidemiology as Evidence for Public Health Termination; Disease frequency Ch 1, 2</td>
<td>Will</td>
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<tr>
<td>Class 2</td>
<td>Sept 14</td>
<td>Epidemiology in Practice No Assigned Readings</td>
<td>Will/Catherine/Kyle</td>
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<tr>
<td>Class 3</td>
<td>Sept 19</td>
<td>Descriptive Epidemiology Ch 3</td>
<td>Will</td>
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<tr>
<td>Class 4</td>
<td>Sept 21</td>
<td>Standardization exercise Appendix 1, 4</td>
<td>Catherine/Kyle</td>
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<tr>
<td>Class 5</td>
<td>Sept 26</td>
<td>Epidemiological designs for public health Ch 4</td>
<td>Will</td>
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<tr>
<td>Class 6</td>
<td>Sept 28</td>
<td>Optimal designs for public health exercise ASSIGNMENT 1 DUE (10%)</td>
<td>Will</td>
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<tr>
<td>Class 7</td>
<td>Oct 3</td>
<td>Measures of association and impact Ch 5</td>
<td>Will</td>
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<tr>
<td>Class 8</td>
<td>Oct 5</td>
<td>The role of chance Ch 6</td>
<td>Will</td>
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<tr>
<td>Class 9</td>
<td>Oct 10</td>
<td>Internal validity Ch 7, 8</td>
<td>Will</td>
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<tr>
<td>Class 10</td>
<td>Oct 12</td>
<td>External validity and Causation Ch 9, 10</td>
<td>Will</td>
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<tr>
<td>Review</td>
<td>Oct 13 (Fri)</td>
<td>Drop-in Review session for Midterm Time and Place to be Scheduled with Class</td>
<td>Catherine/Kyle</td>
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<tr>
<td>Midterm</td>
<td>Oct 17</td>
<td>MIDTERM EXAM (30%) Botterell Hall, 139</td>
<td>Will</td>
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<tr>
<td>Class 11</td>
<td>Oct 19</td>
<td>Randomized Trials OnQ Reading</td>
<td>Will</td>
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<tr>
<td>No Class</td>
<td>Oct 24</td>
<td>Class Cancelled Study Time for Epid 821</td>
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<tr>
<td>Class 12</td>
<td>Oct 26</td>
<td>Cross-sectional Studies OnQ Reading</td>
<td>Will</td>
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<tr>
<td>Class 13</td>
<td>Oct 31</td>
<td>Cohort Studies OnQ Reading ASSIGNMENT 2 DUE (10%)</td>
<td>Will</td>
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<tr>
<td>Class 14</td>
<td>Nov 2</td>
<td>Critical Appraisal OnQ Reading</td>
<td>Will</td>
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<tr>
<td>Class 15</td>
<td>Nov 7</td>
<td>Case-control studies OnQ Reading</td>
<td>Will King</td>
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### Assessment

<table>
<thead>
<tr>
<th>Assignments (3)</th>
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<tbody>
<tr>
<td>Mid-term exam</td>
<td>30%</td>
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<tr>
<td>Final exam</td>
<td>40%</td>
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### Notes

1. The minimum passing grade in Graduate School is 70% for this course.
2. Assignments may be completed independently, or in teams of up to 3 persons. You will be asked to provide an assessment of each group member’s contribution, as part of your grading.
3. The midterm and final exams are closed-book. Students are allowed to have one sheet (letter size; two-sided) of paper with them during the exam, to minimize the need for memorization.
4. Late assignments without valid reasons will receive a maximum of 75% of the achieved mark if handed in before other assignments are returned to classmates.
5. If you cannot meet a deadline, e-mail the instructor and copy to your TA at least two days prior to the due date and explain your situation.
6. Exams assess independent comprehension of the course material: various approaches are used (multiple choice, short answer, calculations, etc.) to allow for different learning styles. The final exam will be cumulative, testing all the material covered in the course.
7. As the only truly independent assessments of your learning, please note that failing both the midterm and final exams means that you fail the course, regardless of your assessment in the course assignments.
University & Course Policies

Participation policy

Students are expected to demonstrate professionalism by being present and punctual, and by participating actively in all sessions.

Students must inform the Instructor in advance if they will be absent from a session because of illness or other compassionate grounds. If a session is missed, it is up to the student to gather missed information from other students who were present in order to fulfill their assessment requirements.

Academic Integrity

Academic integrity is constituted by five core fundamental values: honesty, trust, fairness, respect and responsibility. Queen’s students, faculty, administrators and staff all have responsibilities to support and uphold the fundamental values of academic integrity.

http://www.queensu.ca/calendars/sgsr/Academic_Integrity_Policy.html

Accommodation of Graduate Students with Disabilities

Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the Student Wellness, Accessibility Services Office and register as early as possible. For more information, including important deadlines, please visit the Accessibility Services website at: http://www.queensu.ca/studentwellness/accessibility-services

Helpful Resources Available to You

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/

Student Academic Success Services

Student Academic Success Services (SASS) comprises Learning Strategies and the Writing Centre. They
offer academic support to students who wish to develop their skills in critical thinking, reading, learning, studying, writing, and self-management. http://sass.queensu.ca/

Queen's Libraries

You can access library materials on-site or via the internet with a Queen’s net ID. In addition, you can book study space, borrow materials from other libraries, seek advice on searching for the information you need, and access information about copyright, open access and scholarly communications. For service descriptions visit: http://library.queensu.ca/

Career Services

Career Services provides career education and employment support services at Queen's for students in all disciplines. A comprehensive range of services are offered including drop-in career advising, supporting graduate students in making informed decisions about career options, job search strategies, and CVs/resumes. For a full description of services see: http://careers.queensu.ca/