INSTRUCTOR: Dr. Janet Pritchard  Office: IWC 216  Email: pritcjm@mcmaster.ca

Course Description: Through interactive, small and large group activities, this course provides an introduction to the basic concepts of epidemiology, with an emphasis on understanding epidemiologic methods and identifying risk and protective factors. Students will become familiar with epidemiologic terminology, outcome measures and study designs used to answer various research questions.

PREREQUISITES: Registration in Level III of an Honours Life Sciences program. LIFESCI 3Z03 may be repeated, if on a different topic.

ANTIREQUISITE: N/A

Required Texts & Materials:

   Note: copies are available in the bookstore, but an e-version of this text is also available to students through McMaster University Library.


Additional reading materials and basic lecture notes will be posted on the course website through Avenue to Learn (http://avenue.mcmaster.ca/) for students to download and bring to class.

Course Objectives:

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

1. Define terminology related to the field of epidemiology
2. Discuss the advantages and disadvantages associated with various study designs used in human research
3. Explain the rationale for conducting various types of randomized controlled trials
4. Compare and contrast measures of morbidity, including incidence rate, cumulative incidence, attack rates, prevalence and person-time at risk
5. Define and interpret age-adjusted mortality rates
6. Compare and interpret measures of validity and reliability and discuss the relevance to diagnostic tests
7. Describe approaches for calculating survival over time
8. Compare relative risk and odds ratio as measures of association between an exposure and a disease
9. Explain how bias arises in epidemiological studies and discuss ways to mitigate bias/confounding
10. Describe how epidemiological research is used to inform public health policies

Format: There is a 3-period seminar on Mondays, 8:30-11:20am in the Think Space (Thode Library, 301)
Schedule of Topics:

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<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
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<tr>
<td>Week 1</td>
<td>No class</td>
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<tr>
<td>Week 2</td>
<td>Jan 9</td>
<td>• Introduction to the study of epidemiology</td>
<td>Chapter 1,2</td>
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<td>• Dynamics of disease transmission</td>
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<td>Week 3</td>
<td>Jan 16</td>
<td>• Observational study designs</td>
<td>Chapter 9,10</td>
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<td>Week 4</td>
<td>Jan 23</td>
<td>• Observational study design considerations: association to causation</td>
<td>Chapter 13,14</td>
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<td>Week 5</td>
<td>Jan 30</td>
<td>• Randomized controlled trials</td>
<td>Chapter 7,8</td>
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<td>Week 6</td>
<td>Feb 6</td>
<td>• Studying morbidity and mortality</td>
<td>Chapter 3,4</td>
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<td>Week 7</td>
<td>Feb 13</td>
<td>• Diagnostic tests: validity and reliability</td>
<td>Chapter 5</td>
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<td>Week 8</td>
<td>Feb 27</td>
<td>• Ways of expressing prognosis</td>
<td>Chapter 6</td>
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<td>Week 9</td>
<td>Mar 6</td>
<td>• Estimating risk</td>
<td>Chapter 11, 12</td>
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<td>Week 10</td>
<td>Mar 13</td>
<td>• Presentations</td>
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<td>Week 11</td>
<td>Mar 20</td>
<td>• Presentations</td>
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<td>Week 12</td>
<td>Mar 27</td>
<td>• Bias, confounding and interaction. <em>Proposal due</em></td>
<td>Chapter 15</td>
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<td>Week 13</td>
<td>April 3</td>
<td>• Epidemiology in public health</td>
<td>Chapter 19</td>
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</table>

Reading week Feb 20-24

Evaluation:

1) Assignment 40%
2) Quizzes, top 4 marks, 5% each 20%
3) Attendance and Participation 5%
4) Cumulative final exam, as scheduled by the registrar 35%

Notes on Assessment:

1) **Assignment**: Please download the assignment guideline on Avenue to Learn
2) **Quizzes**: There will be pop-quizzes administered during class (either at the beginning or end) throughout the semester. The quizzes will be based on the readings assigned (see Critical Path). Students who do not attend class will not have access to the quizzes. MSAFs for quizzes will not be accepted, as there is provision in the grading scheme for missed class.
3) **Attendance and participation**: Attendance will be graded according to the scheme below. Participation will be graded based on student attitude, enthusiasm and involvement in small and large group discussions and during presentations. MSAFs for attendance and participation grades will not be accepted, as there is provision in the grading scheme for missed class.
   - **Attended 10-12 classes**: 10/10
   - **Attended 7-9 classes**: 5/10
   - **Attended 6 or fewer classes**: 0/10

   Criteria: Participated with a respectful, enthusiastic attitude. Engaged and involved in small and large group discussion. Asked questions during class and during student presentations.
   - **Always**: 10/10
   - **Most of the time**: 8/10
   - **Some of the time**: 6/10
   - **Rarely**: 4/10
   - **None of the time**: 0/10
4) **Final exam**: The final exam will be scheduled during Final Exam Period. Exams may include multiple choice, short answer, labeling figures, definitions, and can include compare and contrast short answer questions.
MSAF, Absences & Missed Work:
If you are absent from the university for a minor medical reason, lasting up to 3 calendar days, you may report your absence, once per term, without documentation, using the McMaster Student Absence Form (MSAF). Absences for a longer duration or for other reasons must be reported to your Faculty office, with documentation, and relief from term work may not necessarily be granted.

Communication between Students and Faculty:
The University’s official method of correspondence with students is through a valid McMaster University e-mail account. It is the student’s responsibility to keep his/her @mcmaster.ca account active and check it on a regular basis. All emails from students must include your full name, student #, and course code (LIFESCI 3Z03). Please refrain from using email to ask course content-related questions, as visiting your Professor during office hours is the best way to have content-related questions addressed.

Student Responsibilities:
To get the most out of the course, you must be prepared to:
• attend all sessions, make up all missed work, and provide documentation for authorized absences;
• interact frequently with faculty, students, and other support staff;
• plan and manage your own time;
• complete preparatory tasks (such as reading, writing assignments, and initial research) in advance of sessions;
• develop and use reflective learning skills (for example identifying learning objectives, planning and carrying out research tasks, acting on academic feedback);
• work as an effective, efficient, and responsive team member on group assignments;
• check the course Avenue site, and your McMaster e-mail daily for updates; and,
• follow all university policies and guidelines, and in all ways be a responsible university member

Senate Student Policies
Students can view full policies here (http://www.mcmaster.ca/policy/Students-AcademicStudies/).
Senate Policy Statements are also available from the Senate Secretariat Office, Room 104, and Gilmour Hall.

• Academic Integrity - http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf
Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty.
The following illustrate only four of many forms of academic dishonesty:
  ➢ plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained;
  ➢ copying or using unauthorized aids in laboratory exercises
  ➢ improper collaboration in group work; and
  ➢ copying or using unauthorized aids in quizzes, tests and examinations

All students are reminded of the importance of academic integrity, and the serious consequences of academic dishonesty.

You acknowledge that your behaviour in all aspects of this course should meet the standards of the McMaster University Student Code of Conduct. You understand that any inappropriate behaviour directed against any of your colleagues, teaching assistants, or the instructional team will not be tolerated. Disruptive behaviour during any session (e.g. lecture, seminar, lab, tutorial) such as talking, sleeping or non-class computing while an individual presents information, or constantly being late, will also not be tolerated. Abuse, ridicule, slander, inappropriate language, and discrimination towards instructors teaching staff, teaching assistants and other students will not be tolerated in any capacity. Shared spaces including e-spaces such as the Avenue to Learn course discussion board are to be considered inclusive and safe.
Section on Use of Turnitin.com
In this course, we will be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com so that it can be checked for academic dishonesty. To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity).

Copyright Policy
In this course you will have access to material that is subject to copyright laws. This includes (but is not limited to) textbooks and all resources developed by the instructors such as lab manuals, demonstration videos, quizzes, assignments, tests, class notes and class slides. Under no circumstance are you allowed to share or redistribute this material in any printed or electronic form without the explicit written consent of the copyright holder. This includes posting any course material on Internet bulletin boards, course repositories, social networks, etc.

Academic Accommodation of Students with Disabilities
Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Policy for Academic Accommodation of Students with Disabilities.

Academic Accommodation for Religious, Indigenous and Spiritual Observances
McMaster University (the University) strives to be welcoming and inclusive of all its members and respectful of their differences. Students, staff, and instructors come from a range of backgrounds, traditions and beliefs. The University recognizes that, on occasion, the timing of a student’s religious, Indigenous, or spiritual observances and that of their academic obligations may conflict. In such cases, the University will provide reasonable academic accommodation for students that is consistent with the Ontario Human Rights Code, through respectful, accessible, and fair processes.

The instructors and the university reserve the right to alter this outline if necessary.
The instructors and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.