

Department of Population Medicine

Epidemiology I, POPM*6200

Credits: 0.5

Semester Offered: Fall 2011

Course Coordinators* and Instructors:

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Teaching Assistants:

Shiona Glass, Clinical Research Building, Room 107, ext. 54728, sglass@uoguelph.ca

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Evaluation:

2-hour midterm exam (35%)

3-hour final exam (50%)

Term assignment (15%)

Class Organization:

The class will meet for 1.5 hours on Monday and Wednesday each week from 10:30-12:00. Traditional lectures will begin most topics, but students will be expected to participate in group discussions concerning analytical and reading assignments. Readings from the required textbook and journal articles will often be assigned at the end of class, and students will be expected to have read the articles and be prepared to discuss them in the following class. During lectures, students will also be introduced to a variety of software packages used for epidemiological research including EpiInfo and STATA. All of these packages will be available through the OVC Network and/or the internet. Students will be expected to use these software packages for assignments and examinations. Assignments with answer keys will be provided regularly throughout the course. Students are expected to complete and review these assignments on their own. However, there will be time to review assignments with the instructors or TAs on Mondays from 15:00-17:00 in the computer lab in Room 2500 of the Stewart Building.

Course Objectives:

The overall objective of this course is to provide students with a basic knowledge of a wide range of epidemiological concepts and methods. The role of epidemiology as a basic discipline for population research and disease control activities in both animals and humans will be stressed. Areas covered include: concepts of causation, measures of disease frequency, measures of association, sampling methods, selection and interpretation of diagnostic tests, and design features for observational studies and field trials.

At the end of the course, students are expected to be able to do the following:

1. Explain how epidemiological studies contribute to understanding disease etiology and designing prevention strategies;
2. Identify, calculate and explain common measures of disease frequency;
3. Explain the basic terminology used in descriptive epidemiology;
4. Describe the major types of sampling strategies;
5. Calculate appropriate sample sizes;
6. Calculate and explain measures of association and effect;
7. List and describe the major types of observational study designs;
8. Choose and justify the choice of an observational study design for answering a research question;
9. Describe the characteristics of a well designed randomized controlled trial;
10. Demonstrate understanding of diagnostic and screening test characteristics, including sensitivity, specificity, and predictive values at both the individual and herd levels;
11. List and explain the major types of bias affecting epidemiological studies;
12. Describe how to control for the major types of bias in epidemiologic studies;
13. Demonstrate a basic understanding of infectious disease epidemiology;
14. Demonstrate a basic understanding of survival analyses and life tables;
15. Describe the steps involved in an outbreak investigation and designing disease surveillance systems.

Required Textbook:

Veterinary Epidemiologic Research (2nd Edition) by Ian Dohoo, Wayne Martin, and Henrik Stryhn. AVC Inc., 2009.

This text can be purchased on line at <http://www.upei.ca/ver>, or in the bookstore.

Other References:

Veterinary Epidemiology by Wayne Martin, Alan Meek, and Preben Willeberg, Iowa University Press, 1987.

Epidemiology (4th Edition) by Leon Gordis, Saunders-Elsevier, 2009.

Veterinary Epidemiology (3rd Edition) by Michael Thrusfield, Blackwell Publishing, 2005.

PDQ Epidemiology (2nd Edition) by Geoffrey Norman and David Streiner, B.C. Decker, 1998.

Modern Epidemiology (2nd Edition) by Kenneth Rothman, and Sander Greenland, Lippincott Williams & Wilkins, 1998.

Course Presentations, Assignments and Answer Keys:

PowerPoint presentations for lectures will be available in PDF format through the courses site accessed through CourseLink (<https://courselink.uoguelph.ca/shared/login/login.html>) the evening or morning before lectures. Course assignments and answer keys will also be accessible from this site.

Academic Integrity:

Students are expected to have reviewed the graduate calendar concerning academic integrity and academic misconduct (http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1563.shtml), and should feel free to talk with the course instructors if they are concerned about these issues in relation to a specific assignment and/or examination.

Please note that academic misconduct takes many forms and includes, but is not limited to: copying, plagiarism, submitting a product prepared in whole or by another person, buying or selling academic work, submitting the same piece of work twice for academic credit. Also note that aiding/abetting academic misconduct is itself academic misconduct.

Academic accommodations:

Students who require academic accommodation due to a disability must first contact the Centre for Students with Disabilities (CSD) (<http://www.uoguelph.ca/csd/>). The Centre will review the student's documentation concerning the disability and assist the student in making the appropriate arrangements with the faculty member.

Digital recordings:

Students are welcome to make their own audio and/or video recordings of the lectures with permission of the course coordinators and instructors. However, we will attempt to make a digital audio recording of each lecture that will be available through CourseLink (<https://courselink.uoguelph.ca/shared/login/login.html>). These recordings are for personal use only, and not to be re-broadcast publicly, posted on other on-line sites, or stored on other on-line forums without the written permission of the course coordinators and instructors.

Proposed Session Schedule – Fall 2011

CS-Clinical Studies

Session	Date	Room	Instructor	Subject
1	Sept. 12	1438 CS	Pearl	Course Overview and Introduction to Epidemiology
2	Sept. 14	1438 CS	Pearl	Descriptive Epidemiology
3	Sept. 19	1434 CS	Pearl	Measures of Disease Frequency
4	Sept. 21	1438 CS	Sargeant	Screening and Diagnostic Tests
5	Sept. 26	1434 CS	Sargeant	Screening and Diagnostic Tests
6	Sept. 28	1438 CS	Sargeant	Screening and Diagnostic Tests
7	Oct. 3	1434 CS	Sargeant	Disease Detection in Herds
8	Oct. 5	1438 CS	Poljak	Standardization
--	Oct. 10	--	--	No Class – Thanksgiving
9	Oct. 12	1438 CS	Poljak	Sampling
10	Oct. 17	1434 CS	Poljak	Sampling
11	Oct. 19 [^]	1438 CS	Glass	Surveillance
12	Oct. 24	1438 CS	--	MIDTERM EXAM (10:30-12:30 pm)
13	Oct. 26	1434 CS	Pearl	Measures of Association
14	Oct. 31	1434 CS	Pearl	Measures of Association
15	Nov. 2	1438 CS	Pearl	Causation
16	Nov. 7	1438 CS	Guerin	Introduction to Field Studies: Cross-Sectional Studies
17	Nov. 9	1438 CS	Guerin	Cohort Studies
18	Nov. 14	1438 CS	Guerin	Case-Control Studies
19	Nov. 16	1438 CS	Falzon	Field Trials
20	Nov. 21	1438 CS	Jones	Validity Issues: Selection and Information Bias
21	Nov. 23	1438 CS	Jones	Validity Issues: Controlling for Confounding (Assignment handed out)
22	Nov. 28	1438 CS	Pearl	Infectious Disease Epidemiology
23	Nov. 30	1438 CS	Jones	Life Tables ASSIGNMENT DUE

24	Dec. 1*	1434	Jones	Outbreak Investigation
--	Dec. 7	1434	--	FINAL EXAM (1:30-4:30 pm)

^ Please note that on Mondays from 3-5 pm room 2500 will be used for non-mandatory assignment review sessions.

* Thursday December 1st is a University-scheduled make-up day for class missed on Oct. 10th (Thanksgiving).