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PUBH 510.50: Introduction to Epidemiology

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PUBH 510
Introduction to Epidemiology
3 credit hours
Fall 2008

Instructor: Curtis Noonan, PhD, Assistant Professor
Department of Biomedical Sciences,
College of Health Professions and Biomedical Sciences

Format: Online
For purposes of assignments and class activities, the week typically starts on Wednesday, 12:01 a.m. and ends on Tuesday at Midnight

Office Hours: Fridays 1-3pm
Dr. Noonan will be available on the phone, via e-mail, and in his office during office hours. Dr. Noonan will post exceptions as a class announcement on Blackboard.

Contact Info: curtis.noonan@umontana.edu,
College of Health Professions and Biomedical Sciences
Skaggs Building Room 273 (mail), Room 173D (office)
Phone: 406-243-4957
Fax: 406-243-2807

COURSE DESCRIPTION

This course introduces principles and methods of epidemiologic investigation and an overview of relevant biostatistical applications. Students will be provided with the basis for conducting and interpreting epidemiologic studies. The techniques of descriptive and analytic epidemiology are presented. Measures of disease frequency and quantitative measures to determine risk association will be described as well. Several types of study design will be introduced, including randomized trials, case-control and cohort studies, and outbreak investigations. Approaches for assessing causality and validity will be described. Finally, we will discuss approaches for using biomarkers in epidemiological studies.

COURSE OBJECTIVES

At the end of the course the student should be able to:

- 1) Describe what epidemiology is and how it relates to other public health disciplines
- 2) Describe general uses and applications of epidemiology
- 3) Describe some commonly used terms and methods in epidemiology, e.g.:
 - A. Rates and proportions
 - B. Ratios
 - C. Terms used to describe disease and disease transmission
 - D. Techniques of outbreak investigation
 - E. Properties of tests (sensitivity, specificity, predictive value)
 - F. Study design (descriptive v. analytical, experimental v. observational, cohort and case-control)
 - G. Relative risk, odds ratio, and attributable risk
 - H. Design a case-control study to investigate a risk factor for a selected chronic disease

PUBLIC HEALTH COMPETENCIES

This course provides students with knowledge, skills, and abilities in the following public health competency areas:

[This section will list the competencies when the UM Public Health Program adopts a specific competency set.]

COURSE FORMAT

This course will be delivered online with support from UOnline. Readings and assignments designed to develop applied skills will form the basis for review and discussion during the weekly class postings on the discussion board. A self-study format (e.g., reading assignments, PowerPoint presentations, and web links) will be used to present key points, however, the emphasis will be on discussion and application of the course material in assignments and in a semester paper. As you will note in the Course Schedule, a typical "Week" in this class begins on Wednesday, midnight and ends on the following Tuesday, midnight.

UMOnline Blackboard Tutorial

UMOnline has made available an interactive tutorial for using Blackboard as a student. The tutorial and other resources can be found at the following web site: <http://umonline.umt.edu/StudentInfo/>

Library Resources

Some assignments may require library resources. To access the UM's Mansfield Library resources from off-campus, students will be required to enter their SCAUID and password. This is the same ID and password that you use to login to Blackboard and use for your official UM e-mail address. Information on resources available through the Mansfield Library can be found at http://www.lib.umt.edu/services/distance_education.htm

According to the UM library web page: "When connecting to licensed library resources from off-campus, users will be prompted to login using the "standard UM-M computer access user ID" (SCAUID) and password. This is the same account used for campus wireless accounts and students' Cue1 email. Creation of a separate library remote access account will no longer be necessary. For students this is the "first initial" + "last initial" + six digit unique number sign-on name, e.g. "jd123456". Students and employees can now look up their SCAUID on [CyberBear](http://weblib.lib.umt.edu/remoted.html)" (<http://weblib.lib.umt.edu/remoted.html>)

If you need assistance with library resources, please contact Samantha Hines, the library's distance learning coordinator at Samantha.Hines@umontana or 406-243-4558. The toll-free number for the reference desk is 1-800-240-4939.

Discussion Questions

The Course Schedule is arranged in order to allow for students to participate in the Week's Discussion Topics over the weekend, if needed. Each week one (or two) students will be assigned as discussion leads. The instructor will assign students to specific weeks during the first week of class. Discussion leads will be required to prepare a discussion question based on the week's readings, lecture material, or other on-line assignments. Discussion leads will also be asked to locate and present a recent item from the popular press or the scientific literature that is relevant to the week's topic and prepare a related discussion question. At a minimum, the student should summarize the article/media piece before forming the discussion question. If possible, the student should post the actual article/media piece (e.g., web link or pdf). Discussion questions and relevant attachments must be posted by Friday at noon. This will allow adequate time for the other students to discuss the items and/or questions presented by the week's discussants.

Weekly postings to the discussion board

All students are required to participate in discussions every week by midnight (MST) on the Monday following the Friday postings by the Discussion Leads. As needed, the instructor will present follow-up comments to individual postings or to the class as a whole by midnight (MST) on Tuesday. Students should revisit the week's discussion to view and respond to comments from classmates and the instructor, as necessary. Comments to colleagues throughout the discussion week are encouraged. This format necessitates completion of readings and assignments as well as participation in the discussion board every week during the week. Class participation constitutes a portion of the grade.

Assignments

Approximately every other week students complete a small assignment designed to provide practice in applying the course material. Assignments are due Tuesday midnight, MST. Please refer to Syllabus for the due dates of each Assignment. Assignments are to be turned in to the instructors using the Assignment feature in Blackboard.

Late assignments will be graded zero unless there are very serious and verifiable extenuating circumstances. Students who wish to request permission to submit an assignment late must contact Dr. Noonan well before the assignment deadline.

Project Paper

A course project paper will constitute a portion of the grade. The project paper will be drafted in three sections with specific due dates for each section.

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|------------|--|
| Section 1: | Descriptive epidemiology of selected disease |
| Section 2: | Problem statement and study question |
| Section 3: | Epidemiologic study design; all sections due |

The first two due dates will serve as check points to allow an opportunity for the student and instructor to discuss the student's chosen topic and study question and revise these sections as necessary. The final paper will include all three sections. No formal grading will occur at the first two time points, but the final grade will be reduced by 10% for each day the student is late in turning in these sections. As with the Assignments described above, failure to turn in the final paper (i.e., all sections) by the specified due date will result in a zero for this portion of the grade.

Personal Contact

When the student has selected a disease for their Project Paper, they will need to make a contact with a community person with some connection to the disease that has been selected. The selected person can be: 1) someone who has the disease; 2) a health care provider who treats people with the disease; 3) a researcher who investigates the disease; or 4) a representative from a patient advocacy group for this disease. The student will interview this person, either in person or by telephone, but not by email. Following the Personal Contact, the student will write a one-page paper to summarize this encounter. The summary will NOT include the name or contact information of the person being interviewed. The summary should include the date of interview, the mode of interview (e.g., in person or by phone), the information provided by the interviewee, and how this encounter may have changed the student's perspective on the disease being studied. This summary will need to be posted to the Discussion Board by the specified due date. This summary will be included as a portion of the student's Class Participation grade. Please note that this encounter is designed to provide the student with a perspective on the disease that they may not otherwise discern through the reading of primary and secondary literature. However, the student should be careful not to include anecdotal or personal account information as part of the Project Paper.

Exams

One midterm and one final exam will be administered through the Blackboard system. The exams will be "open book" with a combination of multiple choice, short answer, and essay questions. The exams are timed and must be completed once the student has begun.

COURSE ASSESSMENT

1. Class participation 20%
 - Discussion lead (4%)
 - Participation in weekly discussion board (1% for each of 12 weekly postings)
 - Presentation of Personal Contact related to disease topic of Project Paper (4%)
2. Assignments 20% [2.8% for each of 7 assignments]
3. Project Paper 30%
4. Midterm exam 15%
5. Final exam 15%

This course will use the traditional letter grade option without the use of pluses or minuses. Therefore, final grades will consist of the following: A, B, C, D, F. Grades will be calculated based on the standard formula (90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 59% and below = F).

BLACKBOARD COURSE PROCEDURES AND EXPECTATIONS

Blackboard will be used in this class and online activities will be required throughout the semester.

Announcements

Class announcements will be posted by the instructor. Blackboard system administrators will sometimes post announcements about the Blackboard system.

Communication

Communication will take place using e-mail, discussion boards and the virtual classroom.

E-mail should be used for "private" communication with the instructor or other students. Any questions regarding grades or communication about more personal issues should be handled via email.

Important: Please put "PUBH 510" in the subject line for e-mail communication with the instructor. This helps the instructor in organizing and responding to e-mail communications.

Discussion boards are appropriate for questions or discussions that would normally occur in the classroom. Remember that the discussion board is public and your classmates can read what you post there!

Course Materials

Assignments, reading notes, and a variety of readings will be posted on Blackboard.

Submitting Assignments Electronically

All assignments will be submitted electronically through the Assignments option within Blackboard.

Important:

- Assignments are due at midnight, MST.
- Save your completed assignments as a Word document with the file name YourLastName_AssignmentNumber (e.g. Smith_assignment1.doc). If turning in a section of your semester paper you should use the file name YourLastName_SectionNumber (e.g., Smith_Section1).
- Make sure that your name, the date, and the assignment number are also included at the top of your completed assignment.
- Submit your assignment through the Assignments area on Blackboard. Assignments submitted by email will not be graded.

If you need assistance with viewing or submitting your assignments, please call the Help Desk at 406-243-4357 or refer to the UOnline student resources at <http://umonline.umt.edu/studentsupport/default.htm>.

Logging In

You are expected to log in every day of the week to read current announcements that have been posted. You may do this at any time of day. The Instructor will generally answer e-mails, respond to discussions, etc. during traditional work hours (M-F 9:00 a.m. - 5 p.m.).

REQUIRED TEXT

Gordis L. 2004. Epidemiology, 3rd Edition. W.B. Saunders: Philadelphia, PA. ISBN# 1416025308

REQUIRED ADDITIONAL READINGS

Additional readings or web assignments will be posted as necessary.

ADDITIONAL NOTES

In accordance with University of Montana's mission to provide equal educational opportunities for all students, necessary accommodations for students with disabilities will be made whenever possible. If you require accommodations, please provide written information regarding your disability from the Disability Services as soon as possible so that accommodations can be made. This syllabus is subject to change by the instructor. Any changes will be announced in the announcement section of Blackboard.

Plagiarism Warning

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umt.edu/SA/VP/SA/index.cfm/page/1321>.

Plagiarism is the representing of another's work as one's own. It is a particularly intolerable offense in the academic community and is strictly forbidden. Students who plagiarize may fail the course and may be remanded to Academic Court for possible suspension or expulsion. (See UM Student Conduct Code).

Students must always be very careful to acknowledge any kind of borrowing that is included in their work. This means not only borrowed wording but also ideas. Acknowledgment of whatever is not one's own original work is the proper and honest use of sources. Failure to acknowledge whatever is not one's own original work is plagiarism. (Source: <http://www2.umt.edu/catalog/acpolpro.htm>)

COURSE SCHEDULE

Week	Topic(s)	Assigned Reading	Assignments/Exams
Week 1 8/25-9/2 <i>Labor day 9/1</i>	History of epidemiology; Public health and epidemiology	Gordis, Ch 1, 19	
Week 2 9/3-9/9	Infectious disease transmission; Notifiable Conditions	Gordis, Ch 2	Assignment #1 DUE: 9/9
Week 3 9/10-9/16	Descriptive Epidemiology I: Outbreak Investigations	Principles of Epidemiology SS3030, Lesson 6: Investigating an Outbreak Pages 347 – 374, steps 1-6 http://www.phppo.cdc.gov/phtn/catalog/pdf-file/LESSON6.pdf	
Week 4 9/17-9/23	Descriptive epidemiology II: Measures of disease frequency	Gordis, Ch 3 (pages 32-42) Gordis, Ch 4 (pages 48-58)	Assignment #2 DUE: 9/23
Week 5 9/24-9/30	Adjusting Rates; Survival and Life Tables	Gordis, Ch 4 (pages 58-68) Gordis, Ch 6	Semester Paper, Section 1 DUE: 9/30
Week 6 10/1-10/7	Diagnostic and screening tests	Gordis, Ch 5	Assignment #3 DUE: 10/7
Week 7 10/8-10/14	Surveillance; Environmental Public Health Tracking	TBA; Gordis, Ch 3 (pages 42-46)	
Week 8 10/15-10/21	Midterm Review Discussion of Study Questions for Semester Paper, Section 2	On-line discussion/question & answer; TBA	Midterm: 10/20-10/21 Personal Contact posting to Discussion Board DUE: 10/17/08
Week 9 10/22-10/28	Experimental epidemiology; Randomized trials	Gordis, Ch 7, 8	Assignment #4 DUE: 10/28
Week 10 10/29-11/4 <i>Elec. Day 11/4</i>	Cohort studies Biomarkers	Gordis, Ch 9, 16	Semester Paper, Section 2 DUE: 11/4 PLEASE VOTE!!!!!!!
Week 11 11/5-11/11 <i>Vets. Day 11/11</i>	Case-control studies Cross-sectional studies	Gordis, Ch 10, 13	Assignment #5 DUE: 11/11
Week 12 11/12-11/18	Estimating risk; Estimating the potential for prevention	Gordis, Ch 11, 12	Assignment #6 DUE: 11/18
Week 13 11/19-11/25	Causal inference; Assessing causality	Gordis, Ch 14, 15	Assignment #7 DUE: 11/25
Week 15 12/1-12/5	Final Review	On-line discussion/question & answer	Semester Paper, All Sections 1-3 DUE: 12/3
Final			Final: 12/9-12/10