

## **Epidemiology (Bio303)** **Fall 2013**

**Professor:** Dr. Sabrina Mueller-Spitz  
**Office:** HS 151  
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**Office Hours:** Monday 10:20-12:20 & Friday 10-11 am  
 Other times are available by appointment.  
**Lecture:** WF 11:30-12:30, Halsey 367

**Course Description:** This was a course created for the environmental health majors. It also serves as an elective for biology and microbiology majors. This course provides a foundation of topics in epidemiology through examining infectious disease, chronic diseases, and “good” health. Students will learn about real world health problems and how epidemiology is used to better understand, prevent, and treat these “health states”. Prerequisite: Biology 105.

**Course Objectives:** At the end of this course you will be able to explain the breathe and depth of the field of epidemiology, explain the importance of this field in improving the overall health of the global population and apply the fundamentals \of study design to understanding distribution and risk factors of infectious and chronic disease. You will learn how to critically evaluate epidemiology in the media and the science behind these studies to better understand your “risk” in developing a chronic disease, infectious disease or preventing a negative health outcome. This will be accomplished by lectures on various topics, homework assignments, classes based discussions, and a written analysis of current research in the field of epidemiology. We will examine how social, economic, genetic, environmental, and cultural factors (e.g. urbanization, transportation, agricultural, manufacturing, energy production, etc.) impact disease development, treatment, and prevention. The entire class will focus on different aspects of control, prevention, and treatment of disease.

<b>Course Topics</b>	<b>Lectures</b>	<b>Readings</b>
Foundations of Epidemiology	1	Understanding the Fundamentals of Epidemiology Ch 1 & Ch 2
<u>Infectious Disease Epidemiology</u> Triangle & Transmission Emerging & Remerging Infectious Diseases Outbreak/Epidemic Investigations Control & Prevention	2-8	Infectious Diseases: A Geographic Guide ** Ch 2 and 3 Emerging Infectious Diseases: A Guide to Diseases, Causative Agents, and Surveillance Ch 1
<u>Measures in Epidemiology</u> Population Statistics Morbidity & Mortality Risk/ Risk Analysis	10-12	Understanding the Fundamentals of Epi Ch 5 Population Doom or Vroom (Science paper) Health Research Methodology Ch 7 & Ch 9
<u>Epidemiology Study Types/Design</u> Descriptive Studies Analytical Studies Experimental & Clinical Studies	13-20	Health Research Methodology Ch 3 Health Research Methodology Ch 4 Understanding the Fundamentals of Epi Ch 8
<u>Specialties of Epidemiology</u> Environmental Epidemiology Occupational Epidemiology Molecular Epidemiology Social Aspects of Epidemiology	22-26	Additional Papers will be posted on D2L for this section.

**Course Readings:** Electronic textbooks and various primary literature papers will be used for this COURSE. \*\* Infectious diseases a geographic guide / [edited by] Eskild Petersen, Lin H. Chen, Patricia Schlagenhauf-Lawlor is an e-book available from Polk Library (call number [RA643 .I54 2011eb](#)).\* Emerging Infectious Diseases : A Guide to Diseases, Causative Agents, and

Surveillance by L. Beltz is an e-book available from Polk Library (call number [RA643 .B45 2011eb](#)). The topic order could change. If there is a specific topic that you would like to included in the course topics, please feel free to share this information with me, so I can best address the interests and needs of the students in the class.

**Graded Course Items:**

- There will be **three** exams that will focus on application of the concepts from the lecture material, data interpretation, and critical analysis of the field of epidemiology. **(56.25 % of final grade= 225 points)**
- There will be in-class activities as the semester proceeds, which will be used to determine attendance, contribution to the class environment, analysis of epidemiology data, and application of core concepts. These activities will include group discussions of in-class questions, sharing information gathered about topic associated with previous course material, data analysis, and/or short quizzes. **(12.5% of final grade=50 points)**
- There will be five homework assignments where you will further explore some concepts presented in lecture and examine health information from freely available data sets. These assignments will be posted on D2L and explained in class a couple of days before each is due. **(12.5% of final grade=50 points)**
- There will be **three** discussions of current topics in epidemiology. Each student is responsible for reading the primary literature papers and participating in the class discussion. The class will determine the topics that we will focus on for each discussion **(3.75% of final grade=15 points)**
- There will be a literature analysis about a health topic of your choice. **The goal of this assignment is to CRITICALLY address how to interpret and present epidemiology topics to the general public.** The core element of this project is for you to practice writing about peer-reviewed science/research and clearly portraying the science to an educated public. The details of the project are posted on D2L. **(15 % of final grade=60 points)**

**Grading Scale:**

93-100 %	A	71-76.9 %	C
90-92.9 %	A-	69-70.9 %	C-
87-89.9 %	B+	67-68.9 %	D+
82-86.9 %	B	61-66.9 %	D
81.9-80 %	B-	60.9-60 %	D -
77-79.9 %	C+	less than 60	F

**Course Policies:**

Exams: Graded exams will be handed back approximately one week after the scheduled date of the exam, providing the professor sufficient time to grade the short answer exams. There are no make-up exams! If a student misses an exam because of extreme circumstance such as death of a close relative or a documented medical excuse, the student will be allowed to take a make-up exam. The student must talk with the professor within 24 hours of the missed exam to schedule a make-up (your responsibility). However, just missing an exam does not warrant a make-up exam.

Homework Assignments & Epidemiology Project: These assignments **MUST BE** submitted on D2L's drop box as a word document (e.g. .doc or .docx file) to receive full credit. These assignments will be graded for how the topic is presented, writing style, grammar/spelling, and inclusion of references (correctly cited reference and up-loading the PDF of the scientific paper). **Late assignments will be**

**accepted with a loss of 10% of the point total per day the assignment is late.** A separate late drop-box will be created for all late assignments. Assignments will be graded within 2 weeks of submission.  
Class discussions: Grading will be based upon on participation in the discussion of the assigned paper(s). If you do not contribute to the discussion in a constructive manner, this will be considered a ZERO for participation.

Academic Dishonesty: Cheating on an exam, plagiarizing (e.g. using information from a website, textbook, journal article, or public press without a citation or paraphrasing), or any other form of academic dishonesty will be dealt with in accordance with the current UWO Student Discipline Code section 14. **Academic dishonesty could result in the instructor assigning a grade of "F" for the course should circumstances warrant. I TAKE ACADEMIC MISCONDUCT VERY SERIOUSLY.** If you have any questions when working on assignments for this class or any other please come. **REMEMBER WHEN IN DOUBT CITE THE SOURCE or ASK QUESTIONS.**

Email: When contacting me by email include the course number (Bio 303 or Epidemiology) in the subject line to make sure that your email receives a response in a timely manner. If I am unable to understand the content or context of your email, I will not respond, so please send a detailed message. Emails that are received after 5 pm on weekdays and over the weekend may not be responded to until the next business day.

Mobile Devices: Turn off all **cell phones**, mp3players, or any other device that can be distracting to classmate prior to lecture. **Any mobile device use during class will result in a loss of 20 points from your final point total.**

Important Dates for the Course	
Date	Event
Sept 7 <sup>th</sup>	Homework #1
Sept 21 <sup>st</sup>	Homework #2
September 27 <sup>th</sup>	Discussion #1 Infectious Disease Epidemiology
<b>October 4<sup>th</sup></b>	<b>Exam 1</b>
October 5 <sup>th</sup>	Topic Choice for Epidemiology Project
October 16 <sup>th</sup>	Homework #3
October 30 <sup>th</sup>	Homework #4
November 1 <sup>st</sup>	Discussion #2
November 2 <sup>nd</sup>	Submit Collection of Papers for Epidemiology Project
<b>November 13<sup>th</sup></b>	<b>Exam 2</b>
November 18 <sup>nd</sup>	Rough Draft Outline Due
November 25 <sup>th</sup>	Homework #5
December 6 <sup>th</sup>	Discussion #3
December 6 <sup>th</sup>	Health News Story
December 11 & 13 <sup>th</sup>	News Story Panel Discussions
<b>December 13<sup>th</sup></b>	<b>Exam 3 (Take Home Due)</b>