HE220 Introduction to Epidemiology and Health Data Analysis
Linn-Benton Community College
Spring 2010 Hybrid Course
(Online begins 3/29 class meetings 4/10 and 5/1)

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Office Location: AC 109
Office Hours: MW 11-12, TR 10-11 and by appointment (virtual office hours are also available)

Course Description:
This course is an introduction to epidemiology and the use of elementary statistics for students in health-related studies. The course is designed to provide preparatory background for taking subsequent course in epidemiology and health statistics offered by the Department of Public Health. This course introduces the measures of disease frequency, analytical epidemiology, study designs, experimental designs, and basic elements of descriptive statistics and inferential statistics.

Course Objectives:
1. Demonstrate an understanding of the basic concepts, constructs, and principles fundamental to epidemiology.
2. Demonstrate an understanding of essential concepts of infectious and chronic diseases.
3. Demonstrate an understanding of measures of mortality and morbidity rates and ratios.
4. Gain an understanding of the basic types of research and uses of statistics.
5. Describe and compute the measures of central tendency: mean, median, and mode.
6. Describe and compute the measures of variability: range, variance, and standard deviation.
7. Learn and work with various statistical distributions.
8. Understand the importance and process of sampling in research and various research designs.
9. Demonstrate and understanding of epidemiological hypothesis generating and evaluation.
10. Describe and compute tests of significance, point estimates, and confidence intervals.

Course Materials:
You will need the following text book and materials to complete this class:
- A calculator with square root and exponential notations for this class.
- Course handouts and Blackboard Materials

Evaluations:
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<tbody>
<tr>
<td>Study Questions (8x50)</td>
<td>400 points</td>
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<tr>
<td>Final Exam</td>
<td>150 points</td>
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<td>TOTAL</td>
<td>550 points</td>
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Course Comments:

1. Out of respect for your classmates and me, no cell phones, BlackBerry Devices, iPods, or MP3 players in lecture class. Please turn off all electronics before class.
2. I do accept late assignments; there is a 10% penalty for each day late.
3. Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:
   - Cheating – use or attempted use of unauthorized materials, information or study aids
   - Fabrication – falsification or invention of any information
   - Assisting – helping another commit an act of academic dishonesty
   - Tampering – altering or interfering with evaluation instruments and documents
   - Plagiarism – representing the words or ideas of another person as one’s own
4. Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know of, or who need special arrangements in the even of an emergency, should speak with the instructor during the first week of classes. If you have not accessed services and think you may need them, contact the Office of Disability Services at 917-4789.

Attendance: You have two class meetings, both on a Saturday, April 10 and May 1, 2010 and attendance is required. If you miss a class, you will have to make it up the following term to pass the class. We will review work done in prior weeks and learn the more difficult of the statistic problems. Please bring a calculator to each class.

Study Questions: You will have study questions due each time we meet and the remaining are due online. Please see your tentative schedule for those assignments and due dates/times.

Final Exam: There will be one final exam for this class. The instructions for the exam will be delivered in class and written on the top of the exam.

“The single biggest threat to man’s continued dominance on the planet is the virus”
– Joshua Lederberg, Ph.D., Nobel Laureate
# Reading Schedule for Spring Term 2010
## Intro to Epidemiology and Health Data Analysis Hybrid Class

<table>
<thead>
<tr>
<th>Date</th>
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| March 28-April 4 | Course Introduction  
Introduction to Epidemiology  
Blackboard notes |
| April 5-11    | Statistics and How They are Used  
Populations and Samples  
Readings: Chapter 1 & 2 |
| **Saturday April 10** | CLASS MEETING: 8:00am – 4:50 pm in NSH 109.  
Bring your text, notes for Chapters 3-5,  
Incidence and Prevalence and a calculator |
| April 12-18   | Organizing and Displaying Data  
Summarizing Data  
Readings: Chapters 3 & 4 |
| April 19-25   | Incidence and Prevalence  
Readings: PowerPoint and handouts |
| April 26-May 2 | Probability  
Readings: Chapter 5 |
| **Saturday May 1** | CLASS MEETING: 8:00am – 4:50 pm in NSH 109.  
Bring your text, your notes on Chapters 6-8, 12,  
and Sensitivity and Specificity and a calculator. |
| May 3-9       | The Normal Distribution  
Sampling Distribution of the Means and Estimation  
Readings: Chapters 6 & 7 |
| May 10-16     | One Sample Significance Testing  
Two Sample Significance Testing  
Readings: Chapters 8 & 9 |
| May 17-23     | Sensitivity and Specificity  
Readings: Powerpoint and handouts |
| May 24-30     | The Chi Square Test  
Readings: Chapter 12 |
| May 31-June 6 | Vital Statistics and Demographic Methods  
Life Tables  
Health Survey and the Research Report  
Readings: Chapters 15, 16 & 17 |

**Final Exam Due Monday June 7, 2010 by 4pm.**