

VIBS 610 – Epidemiologic Methods II

Fall Semester – 2012

Schedule: 12:45-2:00 (lecture) and 2:20-3:35 (lab) on **Tuesdays** and **Thursdays**, beginning on *August 28, 2012* (Both lectures and labs will be held in **Building 1194, FAS 106**)

Instructor:

Dr. Kevin Cummings

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Office hours: After lecture/lab or by appointment

Credit Hours: 4 Hours

Prerequisites: STAT 651 or equivalent; VIBS 608 or equivalent

Course Description: The overarching goals of this course are to (i) introduce students to the statistical methods commonly used in the analysis of epidemiologic data and (ii) illustrate the application of these methods using SAS to analyze various types of data.

Learning Outcomes: By the end of this course, students will be able to do the following:

- 1) Explain the proper use and interpretation of linear regression, logistic regression, Poisson regression, and survival analysis for studying epidemiologic data.
- 2) Perform basic and advanced methods of statistical analysis using SAS.
- 3) Discuss methods to deal with clustering of data.
- 4) Analyze various types of epidemiologic data using the methods listed above and describe the results in scientific paper format.

I am looking forward to getting to know each of you and working together as we accomplish these learning outcomes.

Course Outline: The following topics will be covered during this course:

- 1) Overview of SAS
- 2) Brief review: Measures of disease frequency and association
- 3) Brief review: Study design

- 4) Linear regression
- 5) Logistic regression
- 6) Poisson regression
- 7) Survival analysis
- 8) Clustering of data
- 9) Mixed models
- 10) Analysis of spatial data

Grading: Your grade for this course will be based on performance on the five homework assignments (worth 15 points each) and final project (25 points). The homework assignments will involve application of a statistical method to analyze a dataset, followed by a written description of the results. The final project will be of similar format but require more comprehensive analysis and description of results.

Standard Letter Grading Scale:

- A = 90-100
- B = 80-89
- C = 70-79
- D = 60-69
- F = < 60

Attendance: The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. Students are expected to attend all lectures/labs and to have read the assigned portion of the textbook beforehand. University rules related to excused and unexcused absences are located online at <http://student-rules.tamu.edu/rule07>.

Required Textbook:

Veterinary Epidemiologic Research, 2nd edition by I. Dohoo, W. Martin, and H. Stryhn, 2009.

Other Recommended Textbooks:

Categorical Data Analysis, 2nd edition by A. Agresti, 2002.

Categorical Data Analysis Using the SAS System, 2nd edition by M.E. Stokes, C.S. Davis, and G.G. Koch, 2001.

Modern Epidemiology, 3rd edition by K.J. Rothman, S. Greenland, and T.L. Lash, 2008.

Survival Analysis Using SAS: A Practical Guide, 2nd edition by P.D. Allison, 2010.

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