Syllabus
BIOST 515: Biostatistics I
Winter 2004

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Course Web Page: http://faculty.washington.edu/elizab/biost515
Check the web page regularly for announcements, data sets, and class notes.

Time and Place: Lecture: Tuesdays and Thursdays, 9:00-10:20
Quiz: Thursdays 1:30-2:20

Textbooks:

Required:,
1. Kleinbaum, Kupper, Muller, Nizam, *Applied Regression Analysis and Multivariable Methods,* 3rd edition. Duxbury Press.
2. Harrell. *Regression Modeling*. Springer.

Recommended:
Venables and Ripley. *Modern Applied Statistics with S*. Springer

Course Objectives

This course provides an introduction to the basic theory and application of regression methods for the statistical analysis of data. The emphasis will be on results rather than theory. The course is designed for graduate students in Biostatistics who have a foundation in statistical theory.

A primary goal of this course is to learn how to appropriately implement and interpret regression models. This includes understanding the assumptions underlying the methods as well as knowing which methods are appropriate in which settings. This will require critical thinking and understanding of the scientific questions.

Specific topics will include linear regression models, logistic regression models and Cox proportional hazards models for censored data. We will explore interpretation, estimation and hypothesis testing for these models as well as diagnostics.

Using statistical computing software is necessary to fit these models. Another goal of this course is to learn how to appropriately use statistical packages when performing data analyses and how to interpret and present results obtained from software in a clear and meaningful manner.

Grading

Weekly Assignments:	30%
Class participation:	5%
Midterm:	20%
Project:	25%
Final:	20%

Homework

In order to receive credit, homework should be typed, neat, well-organized, and written in clear, grammatically-correct English. When assignments involve use of statistical software, raw computer output is not acceptable. Numerical output should be incorporated into text, and plots should be electronically or manually integrated into the pages to be turned in. Plots should be labeled, including axis labels. Multiple pages should be stapled together (no paper clips). Homework submissions that do not meet these standards may be returned to the student without grades and with no credit given. Late homework is NOT accepted without prior permission from the instructor. The teaching assistant cannot give permission for late homework.

Students may help each other on the METHODS for completing a homework assignment. However, the assignment handed in must represent a student's own work.

Software

All examples and solutions will be in R. Students are free to use whatever packages they choose to complete assignments (providing these packages require coding by the user – point and click packages are discouraged). Assistance will only be provided for R.

Tentative Schedule

Week 1	1/6	
	1/8	
Week 2	1/13	
	1/15	Homework due
Week 3	1/20	
	1/22	Homework due
Week 4	1/27	
	1/29	Homework due
Week 5	2/3	
	2/5	Homework due
Week 6	2/10	
	2/12	Midterm
Week 7	2/17	
	2/19	Homework due
Week 8	2/24	
	2/26	Homework due
Week 9	3/2	
	3/4	Homework due
Week 10	3/9	
	3/11	Final exam