

Stat 689: Biostatistics and Data Analysis

Fall 2009

Time and Place: TBD

Instructor: Dr. Alan Dabney

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Office Hours: By appointment only

Course Description: This course will present a survey of many important topics in biostatistics, including correlated data analysis, survival analysis, and clinical trials, and epidemiology. The goal is for each student to gain an understanding of the statistical issues underlying these topics, as well as existing methods and their use in R. This will be a Masters-level course, suitable for students in their second year of studies. Students from disciplines other than statistics are encouraged to enroll. Whereas the existing two-semester STAT 643-644 biostatistics sequence focuses on the mathematical details of biostatistics methods, this course will be geared toward preparing Masters-level statisticians for real-world data analysis.

Course Material: Textbook to be decided, although material will be representative of that in books like *Applied Survival Analysis* and *Applied Logistic Regression* by Hosmer and Lemeshow, *Fundamentals of Clinical Trials* by Friedman, Furberg, and DeMets, and *Analysis of Longitudinal Data* by Diggle, Liang, Zeger, and Heagerty, among others.

Prerequisites: STAT 651, 652, and 659, or equivalent. Or prior approval by the instructor.

Computing: All computing will be done with R.

Grading: Your grade will be computed as follows:

- **Homework:** 30% - There will be periodic homework assignments. The assignments will typically involve the analysis of real datasets.
- **Exams:** 30% - There will be two midterm exams, each counting 15% of your grade.
- **Research Project:** 40% - You will be assigned a research project requiring a comprehensive analysis of a real biostatistics dataset. Each student will present their analysis report at the end of the semester.

Incomplete Grade: A temporary grade of I (Incomplete) at the end of a semester indicates that the student has COMPLETED THE COURSE WITH THE EXCEPTION OF A MAJOR QUIZ, FINAL EXAM, OR OTHER WORK. The instructor shall give this grade only when the deficiency is due to an authorized absence or other cause beyond the control of the student.

Statement on Disabilities: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Office of Support Services for Students with Disabilities in Cain Hall. The phone number is 845-1637.

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