

## BIOS506 Biostatistical Methods I

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### **TA Office Hour**

Friday, 3:30-4:30              GCR 344

### **Required Textbooks:**

Fundamentals of Biostatistics, (7<sup>th</sup> or 8<sup>th</sup> Edition), by Bernard Rosner

### **Prerequisites:**

College-level courses in Linear algebra and Calculus, SAS programming experience (or concurrent enrollment in BIOS 531: SAS Programming.)

### **Evaluation:**

Homework:                      30%

Mid-term Exam:                25%

Final Exam :                    25%

Data Analysis Project:        20%

**Homework:** Homework will be assigned on a regular basis and will be due on the indicated date, usually one week after the date the homework is assigned. Late homework can only be accepted in emergencies.

**Exams:** Exams will be in-class and will be open-book and open-notes. Make-up exams can only be given for emergencies.

**Data Analysis Project:** The data analysis project will be an exercise to put into practice what you have learned. You will be asked to prepare a short report (max 8 pages without tables or figures) describing the study and your analysis.

### **Student Honor Code:**

**You are bound by Emory University's Student Honor and Conduct Code.** RSPH requires that all material submitted by a student fulfilling his or her academic course of study must be the original work of the student. Violations of academic honor include any action by a student indicating dishonesty or a lack of integrity in academic ethics. *Academic dishonesty refers to cheating, plagiarizing, assisting other students without authorization, lying, tampering, or stealing in performing any academic work, and will not be tolerated under any circumstances.*

The RSPH Honor Code states: "Plagiarism is the act of presenting as one's own work the expression, words, or ideas of another person whether published or unpublished (including the work of another student). A writer's work should be regarded as his/her own property."

([http://www.sph.emory.edu/cms/current\\_students/enrollment\\_services/honor\\_code.html](http://www.sph.emory.edu/cms/current_students/enrollment_services/honor_code.html)(Links to an external site.))

**Objective:**

The course provides a mathematically sophisticated introduction to the concepts and methods of biostatistical data analysis. It aims to provide the students the skills to collaborate with investigators and statistical colleagues in the analysis of data from biomedical and public health studies and to communicate the results of statistical analyses to a broad audience. The topics include descriptive statistics; probability; detailed development of the binomial, Poisson and normal distributions and simulation of random variables from these distributions; sampling distributions; point and confidence interval estimation; simulation studies; hypothesis testing; power analysis and sample size calculations; a variety of one- and two-sample parametric and non-parametric methods for analyzing continuous or discrete data and resampling statistics. The course will also equip students with computer skills for implementing these statistical methods using standard statistical software SAS or R.