



SYLLABUS

Introduction to Biostatistics, Summer 2017, (4 credits, Q)

Description A self-contained course covering various data analysis methods used in the life sciences. Topics include types of experimental data, numerical and graphical descriptive statistics, concepts of (and distinctions between) population and sample, basic probability, fitting curves to experimental data (regression analysis), comparing groups in populations (analysis of variance), methods of modeling probability (contingency tables and logistic regression).

Prerequisites Statistics Sequence restriction: Students who have completed any of these courses may not enroll: EN.550.211 or AS.280.345 or AS.200.314 or AS.200.315 or EN.550.310[+] or EN.550.311 or EN.560.435 or EN.550.420 or EN.550.430.

Instructor

Prashant Athavale, pathaval@jhu.edu

Office: Whitehead 208-B, 410-516-7596

Office hours: Mondays, Tuesdays, Wednesdays, Thursdays at 12:00 pm to 1:00 pm, and by appointment.

Lecture Meetings

Mondays, Tuesdays, Wednesdays, Thursdays 09:00 am to 11:30 am, Homewood Campus. First day of the class : July 3, 2017 Last day of the class : August 3, 2017

Textbook

Biostatistics: A Foundation for Analysis in the Health Sciences, (10th edition)

Author: Wayne W. Daniel and Chad L. Cross.

Online Resources Please log in to Blackboard for all materials related to this course.

Course Topics

1. Introduction to Biostatistics
2. Descriptive Statistics
3. Some Basic Probability Concepts
4. Probability Distributions
5. Some Important Sampling Distributions
6. Estimation
7. Hypothesis Testing
8. Simple Linear Regression and Correlation
9. Introduction to R programming language
10. Analysis of Variance
11. The Chi-square distribution and the analysis of frequencies

Course Expectations & Grading

Grade distribution: The final grade will be decided upon homework (20%), quizzes (20%), midterm exam (30%), and one cumulative final exam (30%). There will be no make-up quizzes, or homework.

The letter-grades for the overall percentage will be as follows:

A- / A / A+ : 90 - 100%

B- / B / B+ : 80 - 89%

C- / C / C+ : 70 - 79%

D : 60 - 69%

F : 0 - 59%

Policy regarding the quizzes: There will be 13 quizzes. The quizzes will be given at the beginning of the class on Tuesdays, Wednesdays, and Thursdays. There will be no make-up quizzes under any circumstances. We will drop the least 3 scores from the quizzes.

Policy regarding the homework: Homework will be assigned on Thursdays. The homework will be due on Monday in the class. No late homework will be accepted. One least score on the homework will be dropped.

Midterm and final exam will be cumulative.

Attendance: I can not overemphasize the importance of attendance. It has been shown than even missing 2 lectures in a month significantly increases the risk of falling behind in a class. This is especially important for a fast-paced class such as this.

Calculators: You are allowed to use any calculator, during the quizzes, homework, and exams. For example, TI-83 and above is more than enough for this class.

Policy regarding cell-phones: Research shows that use of cell-phones in classroom is negatively related to classroom learning. Hence, any non-academic use of cell-phones, laptops, or any other electronic devices in the classroom is **strictly prohibited**.

Key Dates

Midterm : Thursday, July 20

Final Exam: Thursday August 3

Assignments & Readings Recommended problems will be posted on Blackboard.

Ethics

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition.

Report any violations you witness to the instructor.

You can find more information about university misconduct policies on the web at these sites:

- Undergraduates: e-catalog.jhu.edu/undergrad-students/student-life-policies/
- Graduate students: e-catalog.jhu.edu/grad-students/graduate-specific-policies/

Students with Disabilities

Any student with a disability who may need accommodations in this class must obtain an accommodation letter from Student Disability Services, 385 Garland, (410) 516-4720, studentdisabilityservices@jhu.edu.