STAT 213.50 Introduction to Applied Statistics Using Biological Data

Official Course Description:
This course intends to be an introductory statistical data analysis course for biology students. It is a combination of theory and R practice. The course introduces basic statistical concepts together with basic statistical analysis using R. Numerous real biological data sets have been analyzed in the textbook and are available for download from the author's website below. The textbook also contains content for a graduate-level course. In this undergraduate-level course, only basic content and R code will be covered.

Learning Outcomes
Understanding of basic descriptive statistics and inferences
Be able to use R to summarize data and make biological inferences
Be able to use R to visualize biological data sets

Prerequisite: C or better in MATH12400, 12500, or 12550

Required Textbook: *Analysis of Biological Data*, 3rd edition, by Whitlock & Schluter
Website: https://whitlockschluter3e.zoology.ubc.ca/
Whitlock BIOL300 website: https://www.zoology.ubc.ca/~whitlock/bio300/
Optional Textbook: *Getting Started with R: An Introduction for Biologists*, 2nd edition, by Beckerman, Childs, and Petchey

Attendance:
Students are required to attend all classes. Missing classes may result in a grade penalty at the instructor's discretion. Slides are intended to facilitate the instructor's teaching. Students are expected to take their own notes.

Homework:
Homework exercises from the textbook (and possibly other sources) will be assigned in class and handed in in-person to the instructor in class. No late homework will be accepted. Please write up homework papers neatly and clearly.

Exams:
There will be one in-class midterm exam and one final in-class exam. Exams may not be made up, except in extreme circumstances, for which written documentation of excuse (doctor's note, funeral notice, etc.) is required. If you suspect you may miss an exam day, it is important to contact the instructor well in advance of the test date.

Grading:
The course grade will be based on homework (40%), midterm exam (30%), and a final exam (30%).

Students wishing to *request a CR/NCR grade* must notify the instructor one week before final, must have taken all the exams, and have at least a 40% average.

During Class:
No cell phones may be on during class. Laptop computers must be put away during class time. Tablets (e.g., i-pads) may be used *only for note-taking*, only if flat on the desk like a traditional notebook. Students may not use tablets to look at web pages, play games, etc.

Academic Integrity Statement:
Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

ADA Statement:
In compliance with the ADA and with Section 504 of the Rehabilitation Act, Hunter College is committed to ensuring educational access and accommodations for all its registered students. Hunter College's students with disabilities and medical conditions are encouraged to register with the Office of AccessABILITY for assistance and accommodation. For information and appointment contact the Office of AccessABILITY located in Room E1214 or call (212) 772-4857 /or VRS (646) 755-3129.

Hunter College Policy on Sexual Misconduct:
In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.
a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).
b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.
CUNY Policy on Sexual Misconduct Link:
http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf

Tentative Schedule:

Week 1	Chapter 1, Chapter 2
Week 2	Chapter 3
Week 3	R session 1
Week 4	Chapter 4, Chapter 5
Week 5	Chapter 6
Week 6	R session 2
Week 7	Midterm
Week 8	Chapter 7, Chapter 8
Week 9	Chapter 9
Week 10	R session 3
Week 11	Chapter 10, Chapter 11
Week 12	Chapter 12
Week 13	R session 4
Week 14	Review for final
Week 15	Final Exam