July 15, 2021

Course Title: Biological Data Analysis
Course Number: GBIO 408/508
Course Date: Fall 2021
Course Meeting Times: TTh 12:30-3:50
Course Meeting Location: Biology Building 412

Course Faculty: Dr. April Wright
Office: Biology Building 403
Office Phone: 5556
Email: april.wright@selu.edu
Office Hours: Monday 1-3, TTh 10-11, and by appointment

Course Description In this course, we will explore the fundamentals of managing data and performing analyses computationally. This course is intended for biologists who do not have experience with programming or computational sciences.

Course Objectives

- Work with data using programming
- Make appropriate visualizations of data
- Create computational reports from raw data
- Use revision management to track changes to data and code
- Distribute analyses to colleagues

Assessment A grade of 'C" or better in this course is required to satisfy the curriculum requirements for the College of Science and Technology. There are a total of 700 points in this course. They are distributed as follows:

- **Projects:** 100 pts each
- **Homeworks:** 100 pts (10 points each)
- **Classroom exercises:** 100 pts

- **Presentation:** 100 pts

Grades will be assigned as follows:

A: 630-700 points, B: 560-629 pts, C: 490-559 pts, D: 420-489, F: Below 419 pts

Attendance and Make-Up

Attendance is expected, and completion grade activities will be turned in almost every class period. Homeworks will be posted via the course Moodle. Homework will be due every Friday on non-exam weeks. Because they will be available for the entire week before they are due, **no make ups** will be available for assignments unless prior approval is granted.

If you are aware in advance of absences, please let me know. The more information we have, the easier it is for me to accommodate you.

Important Dates

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- Wednesday, September 16: Academic Checkpoint 1
- Wednesday, October 14: Academic Checkpoint 2
- Friday, November 20: Withdrawal deadline
- Monday, Nov 23: Last day of classes

Schedule

Lectures will be posted the day before they are given by 5 pm.

- Week of Aug. 17: Introduction to R and RStudio
- Week of Aug. 24: Working with Data I
- Week of Aug. 31 Working with Data II
- Week of Sept. 7: Visualization, Project 1 due
- Week of Sept. 14: Project Structuring
- Week of Sept. 21: Programming I
- Week of Sep. 28: Revision management
- Week of Oct. 5: Programming II

- Week of Oct. 12: Project II due
- Week of Oct. 19: Making an R Package
- Week of Oct. 26: Deploying an analysis
- Week of Nov. 2: Tree Of Life
- Week of Nov. 9: Maps and Location
- Week of Nov. 16: Project Three
- Week of Nov. 23: Final presentation work time
- Final: Week of November, we will present final presentations