

BSC 412 – Quantitative Biology

Instructor: Dr. JP Slovak

Office: Science 231 **Hours:** MWF 10-12,T 1-2

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Course Description: The objective of this course is to develop a proper understanding of statistics. Emphasis will be placed on the interpretation of data. The student will also become familiar with several different statistical techniques and their proper usage.

Student learning outcomes

- Students will be able to use the R software to produce basic descriptive statistics such as a mean and standard deviation..
- Students will be able to explain the difference between practical and statistical significance.

Grading

Exam 1	50 points
Exam 2	50 points
Exam 3	50 points
FINAL Comprehensive EXAM	100 points
Participation/Attendance	25 points
Final Project	25 points
Total	300 points

A >270

B 240-269

C 210-239

D 180-209

Textbook: Introductory Biological Statistics by Hampton. Third Edition.

Final Project: You will keep a notebook with example of data analysis with various statistical tests. I will give further instruction during class.

Graduate Students: To receive graduate credit for this class the final project must entail the collection of original data in the field or lab. You will not receive credit for analyzing existing data. This should be documented by your graduate advisor.

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment (see Student's Guide Handbook, Policies and Procedures, Conduct).

Plagiarism is a criminal activity. You must cite all sources of information. Copying of material, whether parts of sentences, whole sentences, paragraphs or entire articles, will result in a score of zero for your assignment and can result in further disciplinary action

Students with Disabilities: The Americans with Disabilities Act (ADA) is a federal antidiscrimination 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 of their disabilities. If you have a disability requiring an accommodation, please contact: **Office of Student Disability Resources and Services, Texas A&M University-Commerce, Gee Library, Room 132, Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148, StudentDisabilityServices@tamu-commerce.edu**

Schedule (Tentative)

Introduction
Hypotheses and Experiments
Computers and Analysis in R(notes)
Data collection
Frequency Distributions
Descriptive Statistics
Probability
Hypothesis Testing
Testing Frequencies
Normal Distribution
One sample tests
T-tests
ANOVA
Correlation and Regression
Experimental Design

Attendance and Absences: You are expected to attend ALL scheduled lectures and labs and take the exams as scheduled. You will be held responsible for all information covered in lecture. Sign-in sheets will be circulated; please sign your name clearly. Do not sign anyone's name but your own... signing in for someone else is a form of academic dishonesty and will not be tolerated. Excessive unexcused absences will result in loss of points from your grade. For each five unexcused absences a reduction of ten (10) points will be subtracted from your final grade.