STA 2171 Statistics for Biology (4 credits)

A. Term: Fall 2025

B. **Section:** 0005 & 0007

C. **Delivery Method(s)/Location:** Face-to-Face

Section 0005:
03:05 PM – 04:20 PM (Tu & Th) OSB 0204
10:40 AM – 11:30 AM (Fr) HCB 0317

Section 0007:
01:20 PM – 02:35 PM (Tu & Th) OSB 0110
09:20 AM – 10:10 AM (Fr) HCB 0316

D. Instructor Information

Name: Sudhir Tamang
Contact Information: st24g@fsu.edu
Office Hours: Wed 02:00 PM – 03:00 PM or by appointment
Office Location: OSB 0408

E. Prerequisites or Co-requisites

Prerequisite: MAC 2311 and biology major status or departmental approval.

F. Course Description

This course provides an introduction to statistics emphasizing applications in Biology. Topics include descriptive statistics, elementary probability, the binomial and normal distributions, confidence intervals and hypothesis tests for means and proportions, correlation and regression, contingency tables and goodness-of-fit tests, analysis of variance and non-parametric tests. The purpose of this course is to prepare students for further study and job preparation in the field of Biological Sciences including Medicine, Dentistry, other healthcare professions, Veterinary Medicine, Zoology and Botany. It will emphasize understanding of data and interpretation of statistical analyses. It will require students to think of data, and report the results of their analyses, in context.

G. Course Objectives

1. Select and apply appropriate methods (i.e., mathematical, statistical, logical, and/or computational models or principles) to solve real-world problems.
2. Use a variety of forms to represent problems and their solutions.
3. Use descriptive statistics and graphical methods to summarize data accurately.
4. Use inferential statistics to make valid judgments based on the data available.
5. Select the appropriate statistical tools to analyze a particular problem.
6. Describe the goals of various statistical methodologies conceptually.
7. Develop a healthy skepticism toward statistical studies and their results based on a sensible consideration of the techniques employed.

H. CoreFSU Syllabus Language

This course has been approved to meet FSU's CoreFSU Quantitative and Logical Thinking requirements and helps you become a critical analyst of quantitative and logical claims.

In order to fulfill the State of Florida's College mathematics and computation requirement the student must earn a "C–" or better in the course.

By the end of the course, students will demonstrate the ability to:

1. Select and apply appropriate methods (i.e., mathematical, statistical, logical, and/or computational models or principles) to solve real-world problems.
2. Use a variety of forms to represent problems and their solutions.

I. Required Texts, Readings, and/or other Resources

~ A personal computer, reliable internet connection, and Chrome or Firefox browser.
~ A TI-84 Plus or equivalent calculator or app.
~ A textbook is not required. Notes and exercises will be posted on Canvas.

J. Tentative Course Schedule

Week	Dates	Topics
1	8/25 – 8/31	Preliminary Definitions, Summary Statistics
2	9/1 – 9/7	Summary Statistics
3	9/8 – 9/14	Probability
4	9/15 – 9/21	Random Variables
5	9/22 – 9/28	Binomial Distributions
6	9/29 – 10/5	Central Limit Theorem (including Normal Distributions)
7	10/6 – 10/12	Confidence Intervals for Mu
8	10/13 – 10/19	Hypothesis Tests for Mu
9	10/20 – 10/26	Paired T-tests
10	10/27 – 11/2	One-way Anova
11	11/3 – 11/9	Simple Linear Regression Basics
12	11/10 – 11/16	Simple Linear Regression Inference
13	11/17 – 11/23	Chi-Square Tests
14	11/24 – 11/30	Two-way Anova, Multiple Regression
15	12/1 – 12/7	One-proportion Inference (Sampling Distribution of $\hat{p}$, Confidence Intervals for p, Hypothesis Tests for p)
FE	**There is no final exam. The final individual-work quiz will be available on Canvas from 12:01am EST Monday Dec 8 to 11:59pm EST Wednesday Dec 10.**	

K. Grading/Evaluation

a.

Component / Category	Percentage Weight	Graded for	Help permitted	Number of submissions permitted	Done where
Daily Attendance	10%	Attendance	N/A	N/A	In class
Daily Comprehension	15%	Accuracy	Yes	1 each	In class
QLT Assessment	10%	Accuracy	No	2	Out of class, on Canvas
Quizzes, approx. 1 per week	65%	Accuracy	No	2 each	Out of class, on Canvas
Total	100%	---	---	---	---

b. Letter grades will be selected from the table below after rounding the numerical course grade up to the next higher whole number.

A ≥93 A- 90-92	B+ 87-89 B 83-86 B- 80-82	C+ 77-79 C 73-76 C- 70-72	D+ 67-69 D 63-66 D- 60-62	F ≤59

c. The use of AI (artificial intelligence) and unsanctioned internet sources is not permitted on any of the assessments in this class. All internet sources (apart from the course Canvas) are considered unsanctioned unless the instructor specifically states in writing that a given source is sanctioned.

L. Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation statement, this syllabus is a guide for the course and is subject to change with advance notice.

M. University Policies and Syllabus Language

Visit link below to review

University Attendance Policy
Academic Honor Policy
Americans With Disabilities Act
Academic Success
Free Tutoring from FSU
Statement on Public Health Protocols

https://facsenate.fsu.edu/Curriculum-Resources/syllabus-language