



STA 2171 Spring 2019
Department of Statistics
Florida State University

STA 2171 Statistics for Biology

Section 01

Florida State University - Department of Statistics

Spring 2019 Course Syllabus

Class Meeting Information:

Class Meeting Time: Tuesday & Thursday: 8:00 am - 9:15 am; Friday 10:10 am – 11:00 am

Location: OSB 108

Final Exam: Thursday May 2nd, 3:00 pm – 5:00 pm @ OSB 108

Instructor: Qing Han

E-mail: qing.han@stat.fsu.edu

Office hours: Tuesday 3 pm - 4 pm (or by appointment via email)

Office: OSB 201G

Teaching Assistant: Hongyu Wu

E-mail: hongyu.wu@stat.fsu.edu

Office hours: Wednesday 2 pm – 3 pm (or by appointment via email)

Location: OSB 210 conference room

Please contact TA only for questions regarding to graded quizzes (see more in *Grading Appeals*) or as directed by the instructor.

Textbook (Optional): *Practice of Statistics in the Life Sciences*, 4th Edition, Author: Baldi, Moore,
Publisher: Pearson

Class Notes will be provided on Canvas

Calculator (**Required**): TI-84 Plus or equivalent.

Course Description:

Prerequisite: MAC 2311 Calculus I and Biology major status, or department approval.

Credit Hours: 4

Special Note: No credit given for STA 2171 if a grade of “C-“ or better is earned in STA 3032 or QMB 3200.



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, and 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.

Course Objectives:

- **Quantitative and Logical Thinking**
This course has been approved to meet FSU's **Liberal Studies Quantitative and Logical Thinking** requirements and is designed to help 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.
The above two competencies will be assessed in the Liberal Studies Quantitative Assessment for STA 2171, which includes a written summary of results.
 - (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.

Grade Structure:

- **Quizzes (40%)** – There will be 5 quizzes during the semester. Your lowest quiz grade will be dropped, and the other four will equally worth 10% of your grade. There are two class days set aside for making up missing quiz (see make-up policies below). At each quiz you may use ONE self-planned self-handwritten two-sided 8.5"x11" sheet of notes.



- **Activities (10%)** – There will be 6 activities covering concepts from lectures throughout the semester. These activities will typically be done in small groups during certain Friday classes. These will not be graded for accuracy. Students will receive full credit if they are present and participating. Missed activities cannot be make up. 5 “participate” gives you the full credit for activities. If you participate all 6 activities, you will earn **1 bonus credit** to your overall grade.
- **Liberal Studies Quantitative Assessment (10%)** – As you may know, STA 2171 have been certified as one of FSU’s Liberal Studies Quantitative and Logical Thinking courses. As a requirement, we must administer the appropriate Liberal Studies Quantitative Assessment (LSQA) during the semester. This will be a common assessment (not final exam). Time length will be about 50 mins.
- **Attendance (10%)** – Attending class is important. I’ll randomly check the attendance 10 times (random date & random time). 8 “presence” gives you the full credit for attendance. A proper absence excuse with corresponding documentation will give exemption.
- **Homework (0%)** – Homework problems will be given after lecture, but they will not be turned in or graded. They are for you to gain practice in preparation for the quizzes. Be careful there might be similar questions in exams!
- **Final Exam (30%)** – The final exam will be administered on Thursday May 2nd, 3:00 pm – 5:00 pm in room OSB 108. At the final exam you may use TWO self-planned self-handwritten two-sided 8.5”x11” sheet of notes.

Final Letter grade will be calculated based on the following chart. I will round your overall course grade UP to the next higher whole number before matching it to a letter grade.

FSU does not award A+	B+	87 – 89	C+	77 – 79	D+	67 – 69	F	≤59	
A	≥93	B	83 – 86	C	73 – 76	D			63 – 66
A-	90 – 92	B-	80 – 82	C-	70 – 72	D-			60 – 62

Important Dates:

- First Day Attendance: Please meet the “First Day Attendance” requirement of FSU, otherwise you will be dropped from the class automatically.
- 5 Quizzes: Please see details in *Tentative Pacing Schedule*.
- LSQA: March 8th. (tentative)
- Holidays: Spring Break: March 18th – 22nd.
- Final Exam: May 2nd, 3:00 pm – 5:00 pm @ OSB 108.



Grading Appeals:

During the course of the term, if you believe that a paper was improperly graded, please come to TA's office hour, (or make an appointment with him) to discuss about it within **ONE WEEK** that the grade is posted on Canvas. If no complaints are voiced within that time frame, it is assumed that the grade is accepted.

Absence:

If you have to miss a quiz, you need to send me an email at least **ONE DAY before** the quiz, and remember to provide the documentation for your absence. If you miss a quiz without notifying me or without documentation, then you will get zero for that quiz.

Please note that before you actually making up the missed quiz, your temporary score for that quiz would be **ZERO**. It would be updated once you have finished the make-up.

If you have to be absent for class/activity/quiz because of a religious holiday, please notifying me **WITHIN THE FIRST TWO WEEKS** of the semester.

If you have absolute emergency issues, please send me emails as soon as possible and we can go from there.

Make-up Policy:

There will be two quiz make-up days on **Apr 19th** and **Apr 26th**. Please get an approval from the instructor for make-up first.

Quizzes that have not yet been taken can be made up on make-up days. **Quiz retakes are not allowed.**

If you miss one quiz, you may choose one day from these two days which works best with your schedule. If you miss two quizzes, you can choose to take them all in one day or each one on each day.

If you miss more than two quizzes because of circumstances beyond your control, which may include medical illness, deaths in family, legal issues, etc., I will make necessary arrangements to facilitate completion of quizzes once a suitable, timely, and acceptable written excuse is submitted.



Classroom Policies:

The classroom environment is an important factor for effective learning. To avoid distractions and disruptions during class, please follow the following policies, in addition to all University policies:

- Come to the class **on time**.
- Bring download, print and bring the notes to the class.
- No food or drink is allowed in the classroom.
- Silence all phones.
- Please do not talk or distract others during lecture.
- Please show respect for everyone in the classroom.
- The instructor reserves the right to assign and reassign seats if needed.



Tentative Pacing Schedule:

Week	Tuesday	Thursday	Friday
1	Syllabus Jan 8	Introduction Jan 10	Sampling, Graphs Jan 11
2	Summary Statistics Jan 15	Summary Statistics Jan 17	Activity 1 Jan 18
3	Probability Jan 22	Probability Jan 24	Quiz 1 Jan 25
4	Random Variables Jan 29	Binomial Distribution Jan 31	Activity 2 Feb 1
5	Normal Distribution Feb 5	Normal Distribution Feb 7	Quiz 2 Feb 8
6	Central Limit Theorem Feb 12	Central Limit Theorem Feb 14	Activity 3 Feb 15
7	Confidence Interval Feb 19	Confidence Interval Feb 21	Quiz 3 Feb 22
8	One-way Hypo Testing Feb 26	One-way Hypo Testing Feb 28	Activity 4 Mar 1
9	Nonparametric Test Mar 5	Nonparametric Test Mar 7	LSQA Mar 8
10	Chi-square Tests Mar 12	Chi-square Tests Mar 14	Activity 5 Mar 15
11	Spring Break Mar 19	Spring Break Mar 21	Spring Break Mar 22
12	One-way ANOVA Mar 26	One-way ANOVA Mar 28	Quiz 4 Mar 29
13	Two-way ANOVA Apr 2	Two-way ANOVA Apr 4	Activity 6 Apr 5
14	Simple Linear Regression Apr 9	Simple Linear Regression Apr 11	Quiz 5 Apr 12
15	Multiple Linear Regression Apr 16	Multiple Linear Regression Apr 18	Quiz make-up day Apr 19
16	TBA Apr 23	Final Exam Review Apr 25	Quiz make-up day Apr 26
Final Week			



University Attendance Policy:

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

If you miss class, I expect you to keep up-to-date with the lessons, activities and announcements by getting in touch with a classmate or with me, and by reading the Class notes on our STA2171 course site on Canvas.

Academic Honor Policy:

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University."

Americans With Disabilities Act:

Students with disabilities needing academic accommodation should:

- (1) register with and provide documentation to the Student Disability Resource Center; and
- (2) bring a letter to the instructor indicating the need for accommodation and what type.

Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center

874 Traditions Way

108 Student Services Building

Florida State University

Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

sdrc@admin.fsu.edu

<http://www.disabilitycenter.fsu.edu/>



Sexual Misconduct and Title IX Reporting

As an instructor, I am obliged to report all instances of sexual misconduct that I become aware of; I cannot hold such information confidential. If you would like to discuss your situation in confidence, you may contact the Victim Advocate Program (<https://dos.fsu.edu/vap/>), the University Counseling Center (<https://counseling.fsu.edu/>), the Employee Assistance Program (<https://eap.fsu.edu/>), or University Health Services (<https://uhs.fsu.edu/>).

Final Exam Rescheduling Policy

You may not take the final exam before final exams week. Individual students who need to reschedule the final exam for a different time during final exams week will need to

- (i) talk to me about it first and get my permission to reschedule,
- (ii) fill out the “Request to Reschedule Final Examination” form at <https://artsandsciences.fsu.edu/students/undergraduate/forms-requiring-deans-approval/rescheduling-final-examination> and take it to the Dean of Arts and Sciences office at 010 LON to get it approved, and
- (iii) bring the approved form back to me *by the last day of classes*.

If you experience a documented emergency that prevents you from observing the above deadline, contact me as soon as you are able to, and we’ll take it from there.

Syllabus Change Policy:

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