



Spring 2023

Florida State University, Department of Statistics

Main office 214 OSB, phone 850-644-3218.

FSU Police non-emergency: 850-644-1234.

Emergency: 911.

Course Information

Name: **Statistics for Biology**

Course Code: **STA 2171** Section: **0002**

Credit-hours: 4

Prerequisites: MAC 2311 Calculus I and Biology major status, or departmental approval.

Special Note: No credit is given for STA 2171 if a "C-" or better has been previously earned in STA 3032 or QMB 3200.

Format: Face-to-face

Class Meeting Days, Times, Locations: **Tuesday/Thursday 11:35-12:50, HCB 207. Friday 12:00-12:50, HCB 209**

Students will need to follow the University's current health and safety guidelines when they attend class.

Final Exam Day & Time: **The final exam is online and will be available for the entirety of finals week.**

Please note that, for each class period, if no students show up within the first 15 minutes, or if there is a 15-minute stretch of time when no students show up after the last student has left, then the rest of the period will be cancelled. The next lecture will begin where the cancelled lecture would have left off, and the next assessment will include the material that would have been taught in the cancelled lecture.

Instructor Information

Name: **Hunter Melton**

Email: **hjm19d@fsu.edu**

You may expect a response from me within two working days if you send me an email.

Office Hours & Locations: **Tuesdays from 1:00 – 2:00pm in OSB 427a**

If you're unable to make office hours at this time, please send me an email and we can find time to meet.

Grader Information

Name: **Anjana Renganathan**

Email: **ar22cj@fsu.edu**

Office Hours & Locations: **Mondays and Wednesdays from 5:00-6:00pm on Zoom (see Canvas for Zoom link)**

Please be aware that the Teaching Assistant assigned to work with the instructor of this class will have access to your grades and academic accommodations information since it is not possible for the instructor alone to perform all the duties related to grading and the provision of academic accommodations.

Course Access

- Course website: <https://canvas.fsu.edu>

- Canvas Support

Email: canvas@fsu.edu

Phone: 850-644-8004

Website: <https://support.canvas.fsu.edu/home/>

Hours: 8am-5pm, Mon-Fri

- Please turn on the course notifications on Canvas by going to Account/Notifications and selecting the *Notify immediately* option for all of the items under Course Activities.
- Please check your FSU email, your Canvas Inbox, and the course announcements on Canvas every day.
- If you communicate with me via email, please use your @fsu.edu account.
- We will not use Honorlock.

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.

Learning Objectives

This course has been approved to meet FSU's Liberal Studies **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.

The above two competencies will be assessed in the Liberal Studies Quantitative Assessment (LSQA) which includes a written summary of results. The LSQA forms a mandatory ten percent of the course grade. If you do not take it, you will not be permitted to pass the class, regardless of how well you perform on the other assessments. The LSQA will be an online assessment graded for accuracy; two attempts will be allowed; collaboration is not permitted; no internet sources are allowed apart from the course Canvas.

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.

Required Materials

- A personal computer, reliable internet connection, and Chrome or Firefox browser.
- A TI-84 Plus or equivalent calculator. We will teach you how to use a TI-84 series calculator, but we cannot promise to be able to help with any other type of calculator.

A textbook is not required for this class. The instructor will provide all required course notes and exercises.

Please note that the materials provided by the instructor were put together for your individual use only. While you may share these materials with classmates, we ask that you do not share them with third parties who are not enrolled in this class. If you seek help outside of class, you **may allow** your helper to see the materials, but

please do not allow them to make copies or in any other way take our material. We appreciate your cooperation in protecting our material. Thank you!

Additional Resource

The following free online textbook is an additional resource that you might find useful: Introductory Statistics from OpenStax, Print ISBN 1938168208, Digital ISBN 1947172050, www.openstax.org/details/introductory-statistics.

Video/audio recordings

Please note that any recordings provided by the instructor are the property of Florida State University and are being made available only to the students enrolled in this class. Students are not permitted to share the recordings with any person or entity outside of this class. Copyrights of the recordings are reserved by the creators of the recordings and Florida State University.

Note on Technology-dependent Assessments

This course is technology-dependent. While we will do our best to work with you on technology issues, please be aware that if you take an assessment but we can find absolutely no record of the fact, then we will not be able to give you credit for it. Please do not use Safari when you take assessments on Canvas, please use Chrome or Firefox.

Completing assessments in a timely manner so that you can stay on track

This is a semester-long college course, designed to be taken one step at a time throughout the semester rather than hurriedly over the span of a few days, or a few weeks. We will therefore not allow extensions on due dates during the last two weeks of classes unless you have completed at least eighty percent of the assessments given up to that point, including the LSQA. For example, if the LSQA and nine other assessments have been given by the start of the last two weeks of classes, then you will need to have completed the LSQA and at least seven other assessments in order to receive any extensions on due dates during the last two weeks of classes. Please note that the assessments need to be completed in order. Therefore, an extension on a specific assessment will not be granted if you have prior outstanding assessments. For example, if you request an extension on Assessment 8 but you did not complete Assessment 3, then you will be denied an extension on Assessment 8 but you may receive an extension on Assessment 3. The last day of classes will be the deadline for all assessment submissions, including assessments where extensions were granted, but not including the final assessment.

Grades

Assessments that are not completed will receive a grade of zero. If a makeup is allowed and completed, the zero will be replaced with the earned grade. If you believe that the grade you received on an assessment is incorrect, please bring it to my attention within **two work days** after the grade has been made available to you. If no issues are raised during that time frame, then it will be assumed that the grade is accepted and subsequent requests for a grade review may not be granted.

Your overall course grade will consist of the following:

Assessment	Quantity	Weight
Weekly Check-ins	14 drop 3	10%
Homeworks	5 drop 1 = 4 counted	15%
LSQA	1	10%
Exams	5 drop 1 = 4 counted	40%
Final Exam	1	25%
Total		100%

Weekly Check-ins (10%)

Each week, we'll have a small question for you guys to work on in groups based on what we've been learning in class. You'll get credit for your weekly check-in for working and engaging with your group. Your lowest 3 grades in this section will be dropped.

Homeworks (15%)

Homeworks will be on Canvas and will be designed to see if you are engaged in the course and up-to-date with what is being taught. They will be testing both knowledge gained and effort put in. Unlimited attempts will be allowed over a week or two. They will be typically be assigned Monday morning and due approximately two weeks later. They are in the form of Canvas quizzes with unlimited attempts. There will be no make-ups and no extensions, but I will drop your lowest grade. These are homeworks, so, if you need help, feel free to ask questions via email or during office hours. Also, I encourage you guys to collaborate with your classmates on the homeworks.

Exams and LSQA (50%)

CLASSROOM ASSESSMENTS	
LSQA (10%)	Online Exams (40%)
Mandatory; not dropped; not substituted	Lowest grade dropped.
Will be available on Canvas from 1:00pm Friday until 11:59pm Sunday.	
60 minutes (1 hour) allowed, two attempts allowed.	
Will generally not be cumulative, except in the sense that the material is naturally cumulative.	
The questions will include a few question types that were <u>not</u> previously presented in the class notes or exercises, but these question types will cover material that was definitely previously presented. This means that you should aim to learn the concepts and not just learn how to answer specific types of questions.	
Each assessment is open note, but collaboration is NOT ALLOWED. The ONLY allowed website is the course Canvas, do not use other online resources for exams.	
You will want to use a TI-84 Plus or equivalent calculator.	
Solutions to exams will not be posted, but you may discuss them with me in office hours.	
DO NOT COMMIT ACADEMIC DISHONESTY. Collaboration is not allowed for the online exams. I understand that, given the online class format, there are numerous temptations. Please do not take them.	
I reserve the right to impose a penalty on your grade if you violate any of the guidelines above.	

To prepare for the exams:

- the topics/class notes covered will be announced on the course website prior to each assessment;
- study the information and examples in the class notes that are specified in the announcements, your notes should have all of the examples that we did in lecture filled in, the notes are incomplete without the filled-in examples;
- do all of the try-on-your-own exercises in the notes;
- do all of the extra/investigative exercises posted with the notes;
- study the solutions even if you get the answers right because the solutions can provide insights to the problems;
- make sure you know how to use your calculator appropriately; and
- come to office hours for additional help if necessary

Missing Exams and Extensions

With exception for university excused absences, **no makeups or extensions will be allowed for exams.**

Final Exam (25%)

The final exam will be cumulative. You will have two hours to take it and two attempts, and all rules for the online exams apply (no collaboration, etc.). The exam will be available for you to take for the entirety of finals week, from 8:00am Monday 5/1 to 11:59pm Friday 5/5.

Overall Course Grade

Please ignore the grade totals or averages that you may see on Canvas; they are not correct. In this class, we only store and display individual assessment grades on Canvas, we do not do grade calculations there. All grades will be recorded as percentages, and these percentages (not points) will be used in your overall course grade calculation as described in the following steps:

- (i) Homework Average = average of all the Homework percentages (omitting the lowest one);
- (ii) Exam Average = average of all the Exam percentages (omitting the lowest one);
- (iii) Weekly Check-in Grade = $10\% - (\text{number of check-ins you've missed} - 3)\%$;
- (iv) Overall numerical course grade = $0.15 \times \text{Homework Average} + 0.10 \times \text{LSQA percentage} + 0.40 \times \text{Online Exam Average} + 0.25 \times \text{Final Exam percentage} + \text{Weekly Check-in Grade}$;
- (iv) Your letter grade will be selected from the table below after rounding the above number grade UP to the next highest whole number.

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

See the final grade calculator posted on the course website to get a good idea of your current grade.

Issues with Grading

All our assessments take place on Canvas, so hopefully there will be no problems with missing grades. If Canvas is being strange when you're taking an exam **take a video (probably easiest with your phone) and email it to me.** This is the only way I can guarantee an accommodation. If you complete an exam or homework and your grade isn't showing up in the gradebook, send me an email right away.

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 should talk to me about it first to get my approval and then fill out and follow the instructions on the "Request to Reschedule a Final Examination" form at [https://artsandsciences.fsu.edu/sites/g/files/upcbnu321/files/2022-01/Request to Reschedule 01032022.pdf](https://artsandsciences.fsu.edu/sites/g/files/upcbnu321/files/2022-01/Request_to_Reschedule_01032022.pdf).

The form needs to be submitted to the College of Arts and Sciences before 5pm on 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.

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.

Drop and Withdrawal deadlines are given in the University's Academic Calendar at <https://registrar.fsu.edu/calendar/>.

If you are absent for an extended period of time and/or you do not respond to emails from the instructor over an extended period of time, the instructor reserves the right to deny access to assessments or limit the number of allowed attempts until attendance and/or contact is resumed.

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." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/academic-resources/academic-integrity-and-grievances/academic-honor-policy>)

Academic Success

Your academic success is a top priority for Florida State University. University resources to help you succeed include tutoring centers, computer labs, counseling and health services, and services for designated groups, such as veterans and students with disabilities. The following information is not exhaustive, so please check with your advisor or the Department of Student Support and Transitions to learn more.

Americans with Disabilities Act

Florida State University (FSU) values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive, and welcoming. FSU is committed to providing reasonable accommodations for all persons with disabilities in a manner that is consistent with academic standards of the course while empowering the student to meet integral requirements of the course.

Students with disabilities needing academic accommodation should:

- (1) register with and provide documentation to the Office of Accessibility Services; and
- (2) request a letter from the Office of Accessibility Services to be sent to the instructor indicating the need for accommodation and what type; and,

(3) meet (in person, via phone, email, skype, zoom, etc...) with each instructor to whom a letter of accommodation was sent to review approved accommodations.

Please note that instructors are not allowed to provide classroom accommodations to a student until appropriate verification from the Office of Accessibility Services has been provided.

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

For the latest version of this statement and more information about services available to FSU students with disabilities, contact the:

Office of Accessibility Services
 874 Traditions Way
 108 Student Services Building
 Florida State University
 Tallahassee, FL 32306-4167
 (850) 644-9566 (voice)
 (850) 644-8504 (TDD)

oas@fsu.edu
<https://dsst.fsu.edu/oas>

Academic accommodations will be provided as soon as possible after email notification from the OAS is received. Academic accommodations are not retroactive, so they will not apply to lectures/lessons and assessments that took place before verification was received.

Sexual Misconduct and Title IX Reporting

As an instructor, I am obliged to report all instances of sexual misconduct and other Title IX issues that I become aware of to the University's Title IX Director; 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/>), Counseling & Psychological Services (<https://counseling.fsu.edu/>), the Employee Assistance Program (<https://eap.fsu.edu/>), University Health Services (<https://uhs.fsu.edu/>), or pastoral counselors. If you would like to submit a report to the University's Title IX Director, please go to <https://report.fsu.edu/>.

Confidential Campus Resources

Various centers and programs are available to assist students with navigating stressors that might impact academic success. These include the following:

Victim Advocate Program University Center A, Rm. 4100 (850) 644-7161 Available 24/7/365 Office Hours: M-F 8-5 https://dsst.fsu.edu/vap	Counseling and Psychological Services Askew Student Life Center, 2nd floor 942 Learning Way (850) 644-8255 https://counseling.fsu.edu/	University Health Services Health and Wellness Center (850) 644-6230 https://uhs.fsu.edu/
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Disaster

At times of severe weather or other disasters, please check your FSU email, your text messages, the Seminole Safe App and FSU Alerts (<https://alerts.fsu.edu/>) as often as you can to keep yourself informed. In the absence of internet access, you may call 850-644-4636 for updates. Check for the latest information every day before you leave home so that you don't miss any last minute announcements. If the University closes due to a disaster, we will all be informed via the above means, and classes and office hours will be automatically cancelled even if I don't announce it. As long as the University remains open, classes will still be on. However, please practice safety first. If it will be unsafe or impracticable for you to come to class or complete an

assignment due to the effects of a disaster, please do not attempt to do so. You will not be penalized, we will work with you.

You can sign up to receive alerts via SMS text messages here: <https://emergency.fsu.edu/services/fsu-alert-emergency-notification-warning-system/fsu-alert-sms-text-messages>.

See here for other ways in which FSU delivers warnings: <https://emergency.fsu.edu/services/fsu-alert-emergency-notification-warning-system>.

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.

Classes Subject to HB233 Recording

In this class, consistent with state law and university policy, students are permitted to make recordings of class lectures for personal use only. As noted, sharing, posting, or publishing classroom recordings may subject you to honor code violations and legal penalties associated with theft of intellectual property and violations of other state law. Moreover, students and educators have expressed concern that recording classroom activities may negatively impact the learning experience for others, especially in classes that involve questions, discussion, or participation. To protect a learning environment in which everyone feels free to experiment with ideas, we ask you refrain from recording in ways that could make others feel reluctant to ask questions, explore new ideas, or otherwise participate in class. Students must monitor their recording so that they do not include participation by other students without permission. Students with disabilities will continue to have appropriate accommodations for recordings as established by the Office of Accessibility Services.