

STA2122-0018/19: Introduction to Applied Statistics

Florida State University, Department of Statistics
FALL 2020

Instructor: Haesong Choi **Email:** hc18e@myfsu.edu

Office Hours: TUE 10:00-12:00AM or by appointment.

- **Office hours** will be on **Zoom** – see the Zoom link in the Navigation Menu on the left when you enter the course on Canvas.
 - This class will be taught **remotely** and **asynchronously** on **Canvas**.
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Course Descriptions

- **Prerequisite:** A grade of “C-” or better in MAC 1105 College Algebra (or equivalent)
- **Credit Hours:** 3
- **Special Note:** Subsequent credit for STA 5126 is not permitted. No credit given for STA 2122 if a grade of “C-” or better is earned in STA 2171, STA 3032 or QMB 3200.

The course covers Normal distributions, sampling variation, confidence intervals, hypothesis testing, one-way and two-way analysis of variance, correlation, simple and multiple regression, contingency tables and chi-square tests, non-parametric statistics.

The purpose of this course is to prepare students for further study and job preparation in the field of Natural Sciences. 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.

Required Materials

- **Calculator:** A TI-84 Plus or equivalent calculator, or a free 90-day trial version of the TI Emulator downloadable from <https://education.ti.com/en/software/details/en/FFE90EE7F9B4C24A6EC427622C77D09/sdati-smartview-ti-84-plus>. We will help you to learn how to use a TI-84 series calculator. We cannot promise to be able to help with any other type of calculator.
- **Textbook:** (Optional) Introduction to the Practice of Statistics, Ninth Edition 2017, Moore McCabe Craig, Publisher: Macmillan W.H. Freeman
- **Class notes:** Class notes will be posted on Canvas.
- Ideally, it would aid your learning if you are able to fill in the blank notes yourself (on paper or on tablet) as you watch the lecture videos. But if you are unable to, you will still be able to do well in the class. I will post the filled-in notes that I use in the videos, so you will be able to review them after you watch the lecture videos.

Lecture Videos

Watching the lecture videos is equivalent to attending class and listening to lectures. We acknowledge that the lecture videos are not short, but remember that class time would have been 50 or 75 mins - not short either. On the bright side, however, you may pause the video at any time and return to it later - you would not have been able to do that with live lectures. Therefore, we fully expect you to watch the lecture videos in their entirety. Pause whenever you need to, but always be sure to return and finish watching the video. Please note that the recorded lectures are the property of Florida State University and are made available only to students enrolled in this class. Students are not permitted to share the recorded lectures with any other persons outside of this class. Copyrights of the recorded lectures are reserved by the instructor and Florida State University.

Course Objectives

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 2122, 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.

Email

- [Please turn on the course notifications in Canvas](#) by going to Account / Notifications / and checking the *Notify me right away* option for all of the items under Course Activities. You may expect a response to your email within two work days.
- Please check your [@my.fsu.edu email](#) and the [Canvas announcements](#) every day.
- If you email me, please send from your [@my.fsu.edu](#) account. Always include your full name, course code and section number when you email me.
- Send assessment-related questions at least 24 hours before the assessment is due to begin.
- Be aware that email sent from outside the FSU domain may not get through to us, so if you email us and you don't get a response within two days, please try to meet us during office hours.

Assessment and Grading

- We will allow absolutely no make-ups, no extra credit assignments, and in general, no opportunities for grade improvement, after the Last Day of Class, so please do your best during the term. Assessments that are not submitted will receive a grade of zero. When a makeup is submitted, the zero will be replaced with the earned grade. All assessments will be open-notes.
- **Note on Technology-dependent Assessments:** This course is heavily 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](#).
- Your overall course grade will consist of the following:

Assessment	Weight
Open Quizzes (12)	20%
Timed Quizzes (4)	45%
Cumulative Final Exam	25%
Liberal Studies Quantitative Assessment (LSQA)	10%
Total	100 %

[Open book](#) means that the following resources may be used during quizzes and final exam: class notes, personal notes (these are notes that you can take while preparing/studying for quizzes), textbooks. (The internet will not be allowed.)

1. **Open Quizzes** (10 Quizzes · 2% = 20%)
 - (a) There will 12 open quizzes each worth 2% of your grade. The quizzes are NOT cumulative.
 - (b) [The lowest two quizzes](#) will be dropped.
 - (c) Quizzes will be open-book.
 - (d) Each quiz will allow [unlimited](#) attempts.
 - (e) Quizzes will allow collaboration with others.
2. **Timed Quizzes** (3 Quizzes · 15% = 45%)
 - (a) There will four timed quizzes each worth 15% of your grade. The quizzes are NOT cumulative.
 - (b) [The lowest one quiz](#) will be dropped.
 - (c) Quizzes will be open-book.
 - (d) Each quiz will allow [two](#) attempts.
 - (e) [Collaboration](#) with others will [not be permitted](#).
3. **Cumulative Final Exam** (25%)
 - (a) [Monday–Tuesday, Dec. 7th-8th](#) (Available for 48 hours)
 - (b) [Collaboration](#) with others will [not be permitted](#).
 - (c) The exam will allow [one](#) attempt.

(d) Exam will be open-book.

4. Liberal Studies Quantitative Assessment (LSQA) (10%)

(a) STA 2122 has been certified as meeting FSU’s Liberal Studies requirements in the area of Quantitative and Logical Claims. In order to maintain that certification, we must administer the appropriate Liberal Studies Quantitative Assessment (LSQA).

(b) It is a timed test and allows **two** attempts.

- Grade cutoffs will be established at the end of the course.

Average	Letter	Average	Letter	Average	Letter	Average	Letter	Average	Letter
$\geq 93\%$	A	$\geq 87\%$	B+	$\geq 77\%$	C+	$\geq 67\%$	D+		
$\geq 90\%$	A-	$\geq 83\%$	B	$\geq 73\%$	C	$\geq 63\%$	D		
		$\geq 80\%$	B-	$\geq 70\%$	C-	$\geq 60\%$	D-	< 60%	F

- **Grade Review:**

1. **Quiz:** If you believe that a correct answer was counted as incorrect on a quiz, please come to my office hours or email me about it **within two days** after you submit the quiz. If it turns out that your answer was correct, you will be given credit for it. **within two days** after you receive the assignment.
2. If no complaints are voiced within that time frame, then it is assumed that the grade is accepted.

Attendance, Absence and Drop/Withdrawal

- Drop/Withdrawal deadlines are given in the University’s academic calendar at https://registrar.fsu.edu/registration_guide/fall/academic_calendar/
- First-day attendance will be taken electronically on the course website.
- Documentation for missing assessment deadlines will not be accepted after the Last Day of Class.
- Reasons for missing assessment include Documented illness, deaths in the family, documented crises, jury duty, religious holy days, and official University activities. Other situations will be considered on a case-by-case basis.
- Lack of future planning, or mismanagement of time and other resources are not acceptable reasons for missing assessment deadlines.

Course Policies

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.

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.

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

1. talk to me about it first and get my permission to reschedule,
2. fill out the “Request to Reschedule Final Examination” form at <https://artsandsciences.fsu.edu/students/undergraduate/forms-requiring-deans-approval/rescheduling-final-examination> and get it approved by the Dean of Arts and Sciences office, and
3. let me have the approved form *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.

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/Academics/Academic-Honor-Policy>)

Sexual Misconduct and Title IX Reporting

As an instructor, I am obliged to report all instances of sexual misconduct 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/>), the University Counseling Center (<https://counseling.fsu.edu/>), the Employee Assistance Program (<https://eap.fsu.edu/>), University Health Services (<https://uhs.fsu.edu/>), or pastoral counselors.

Americans With Disabilities Act

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.

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/>

Tentative Pacing Schedule

Week / Holidays	Dates	Day 1	Day 2	Day 3	Quizzes Due
1	Aug 24 th –30 th	First Day Attendance	Introduction	Summary Statistics	OQ 1
2	Aug 31 st –Sep 6 th	Summary Statistics	Summary Statistics	Timed Quiz 1	OQ 2
3 / Labor Day	Sep 7 th –13 th	Normal distribution	Normal distribution	Normal distribution	OQ 3
	Sep 14 th –20 th	Normal distribution	Normal distribution	Central Limit Theorem	OQ 4
5	Sep 21 st –27 th	Central Limit Theorem	Central Limit Theorem	Timed Quiz 2	OQ 5
6	Sep 28 th –Oct 4 th	One Sample CI	One Sample CI	One Sample CI	OQ 6
7	Oct 5 th –11 th	One Sample CI	One Sample HT	One Sample HT	OQ 7
8	Oct 12 th –18 th	One Sample HT	One Sample HT	LSQA Test	OQ 8
9	Oct 19 th –25 th	One-way ANOVA	One-way ANOVA	One-way ANOVA	OQ 9
10	Oct 26 th –Nov 1 st	Two-way ANOVA	Timed Quiz 3	Simple Linear Regression	–
11	Nov 2 nd –8 th	Simple Linear Regression	Simple Linear Regression	Simple Linear Regression	OQ 10
12 / Veteran's Day	Nov 9 th –15 th	Multiple Linear Regression	Multiple Linear Regression	Regression Inference	OQ 11
13	Nov 16 th –22 nd	Regression Inference	Regression Inference	Timed Quiz 4	OQ 12
14 / Thanksgiving	Nov 23 rd –29 th	Chi-square tests	–	–	–
15	Nov 30 th –Dec 6 th	Chi-square tests	Chi-square tests	Review	–
Final Exams	Dec 7 th –13 th	Monday – Tuesday, Dec. 7th-8th			

- This class is remote and asynchronous.
- This schedule is intended to be a guide as you work through the course material: you will need to watch lecture videos and take Open quizzes/Timed quizzes.
- Schedule your time so that you will finish watching the videos before you take the quizzes.
- Exact due dates are provided on Canvas.
- OQ = Open Quiz