



STA 1013: Statistics Through Example

Fall 2021 – Section 0015/0016

Course Information

Instructor: Siqi Mao

Email: smao@fsu.edu

Office Hours: Tuesday 2:00 – 3:30 PM

Office Location: OSB 324

Times and Locations: Section 0015: Classes meet Aug. 23~ Dec. 3, TuTh, 08:00 AM – 09:15 AM, HCB 0312

Section 0016: Classes meet Aug. 23~ Dec. 3, TuTh, 09:45 AM – 11:00 AM, OSB 0110

Required Materials:

Textbook: There is no required textbook for this class. I will post slides and relevant materials to Canvas prior to the next class. Print and bring the appropriate notes and materials to the class. **I will not email any filled in notes.**

For your own study, the following book is recommended as supplementary material:

Statistical Reasoning for everyday life, 5th ed. by Bennet Briggs Triola.

Calculator: TI-84 (or TI-83) is required. Cell phones are not permitted as calculators during exams and quizzes.

A personal computer, reliable internet connection, and Chrome or Firefox browser.

Canvas Class Website: Grades, homework, notes, announcements and other pertinent information will be available through this site. You are responsible for assignments and announcements posted on this website, as well as those sent through your FSU email.

COURSE DESCRIPTION

Prerequisite: None

Credit Hours: 3

Course Modality: **Face-to-Face/F2F (in-person in a classroom)**



This course provides students with a background in applied statistical reasoning. Fundamental topics are covered including graphical and numerical description of data, understanding randomness, central tendency, correlation versus causation, line of best fit, estimation of proportions, and statistical testing.

Statistical thinking, relevant ideas, themes, and concepts are emphasized over mathematical calculation. In this class students learn many of the elementary principles that underlie collecting data, organizing it, summarizing it, and drawing conclusions from it.

Honorlock will not be applied in this course.

LEARNING 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:

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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 this course, students will:

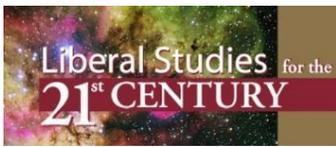
- (1) Select and apply appropriate methods (i.e., mathematical, statistical, logical, and/or computational models or principles) to solve real-world problems.
- (2) Use a variety of forms to represent problems and their solutions.

The above two competencies will be assessed in the Liberal Studies Quantitative Assessment for STA 1013, which includes a written summary of results.

- (3) Apply sound concepts of sample selection and experimental design in producing data.
- (4) Use statistical thinking in the context of work processes, academic endeavors, and everyday life.
- (5) Describe how inferential statistical methods are used to make valid judgments based on the data.
- (6) Evaluate the validity of statistical results with skepticism based on sensible considerations.

Tentative Topics:

- 1) Terminology/Initial ideas: population, sample, parameter, statistics, categorical, quantitative;

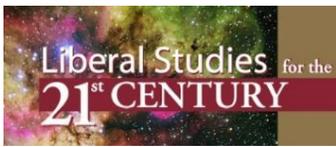


- 2) Sampling: simple random sample, systematic sampling, stratified sampling, cluster sampling, convenience sampling;
- 3) Graphs: histograms (sketch and interpret), bar charts (sketch and interpret), pie charts (interpret);
- 4) Summary statistics: mode, mean, quartiles, range, standard deviation, five-number summary, boxplot;
- 5) Empirical rule;
- 6) Normal Distributions: forward problems (finding area under the curve/percentage of data)
- 7) Central Limit Theorem: sampling distributions of \bar{x} , features of the distributions and implications when using a larger/smaller sample to estimate μ , forward problems (finding probabilities);
- 8) Probability: random process, probability models, addition rule for mutually exclusive events;
- 9) Random variable: definition, expected values;
- 10) One-sample mean: obtain and interpret z-intervals, carry out and interpret results of z-test, interpret p-value;
- 11) One-proportion: z-intervals and z-tests;
- 12) Correlation: what the sign and absolute value of r imply, correlation does not imply cause-and-effect;
- 13) Simple Linear Regression: read scatterplots, given equation make prediction, interpret R^2 .

Tentative Pacing Schedule:

For Section 0015/0016

		Tuesday	Thursday
Week 1	Aug. 23 ~ Aug. 27	Syllabus and Pre-math	Terminology
Week 2	Aug. 30 ~ Sep. 3	Graphs	Graphs
Week 3	Sep. 6 ~ Sep. 10	Sampling	Quiz 1
Week 4	Sep. 13 ~ Sep. 17	Summary statistics	Summary statistics
Week 5	Sep. 20 ~ Sep. 24	Probability	Random variable
Week 6	Sep. 27 ~ Oct. 1	Quiz 2	Normal Distributions
Week 7	Oct. 4 ~ Oct. 8	Normal Distributions + Empirical rule	Central Limit Theorem
Week 8	Oct. 11 ~ Oct. 15	Central Limit Theorem	Central Limit Theorem
Week 9	Oct. 18 ~ Oct. 22	Quiz 3	One-sample mean
Week 10	Oct. 25 ~ Oct. 29	One-sample mean	One-proportion
Week 11	Nov. 1 ~ Nov. 5	One-proportion	Make-up Day
Week 12	Nov. 8 ~ Nov. 12	Correlation	Veterans' Day observed. No Classes.



Week 13	Nov. 15 ~ Nov. 19	Quiz 4	Simple Linear Regression
Week 14	Nov. 22 ~ Nov. 26	Simple Linear Regression	Thanksgiving Day Holiday. No Classes.
Week 15	Nov. 29 ~ Dec. 3	Make-up Day	Review

Note: ALL EXAMS WILL BE HELD ONLINE.

Liberal Studies for the 21st Century: Quantitative and Logical Claims

The Liberal Studies for the 21st Century Program at Florida State University builds an educational foundation that will enable FSU graduates to thrive both intellectually and materially and to support themselves, their families and their commitments through a broad and critical engagement with the world in which they live and work. This course has been approved as meeting the Liberal Studies requirements and this is designed to help you become a critical analyzer of quantitative and logical claims. **In order to fulfill the state of Florida’s College mathematics and computational requirement, the student must earn a C- or better in the course.**

Grades

Attendance/Pop quiz (10%): Attendance will be checked randomly, or a short pop-quiz will be given instead, except the Labor Day, Veterans’ Day, Thanksgiving Day Holiday, Quiz days and make-up days. Arriving late or leaving early will be taken as non-attendance. **Absences will require documents as excuses, otherwise 0.5 pts will be taken off your attendance grade.** For detailed policy about DOCUMENTATION FOR ABSENCES *, please refer to the policy information part. If you are unable to make it to class, it is your responsibility to get the notes from either the instructor or a classmate, review those notes, and come to my office hours if you have any questions over what you missed. All deadlines are released at the beginning of the semester, so it is up to you to be aware of those and make sure you are caught up by the deadline.

Quiz (50%): There will be 4 quizzes during the semester. You could bring one 8.5’’ ×11’’ hand-written single-side cheat sheet and a calculator. For detailed policy about make-up, please refer to the policy information part. **There should be absolutely no late submission for any quizzes, if you refuse to submit your quiz paper and cheatsheet at the end of the class, you will be taken extra 20% credits off whatever you get in that quiz.**

LSQA(10%): Note that, STA 1013 has been certified as one of FSU’s Liberal Studies Quantitative and Logical Thinking courses. As a requirement, administer the appropriate Liberal Studies Quantitative Assessment (LSQA) during the semester. This will be a common assessment (not final exam). It will be **part of the Quiz 3** and the total time length will be about 50 mins.



Final Exam (30%): There will be a (cumulative) final exam given at our usual classroom. On the final exam, you could also bring one 8.5'' × 11'' hand-written single-side cheat sheet and a calculator. If you need to miss the final, you must notify the instructor in advance. **There should be absolutely no late submission for Final Exam, if you refuse to submit your Final Exam paper and cheatsheet at the end of the class, you will be taken extra 20% credits off whatever you get in Final Exam.**

Final Exam Schedule:

Section	Class Time	Exam Day	Exam Time	location
0015	08:00 AM	Dec. 9 (Thursday)	7:30 a.m. – 9:30 a.m.	HCB 0312
0016	09:45 AM	Dec. 7 (Tuesday)	7:30 a.m. – 9:30 a.m.	OSB 0110

For details, please double check the exam schedules at <http://registrar.fsu.edu/calendar/> by yourself and mark it on your calendar.

Extra Credits (5%): Extra credits could be earned by answering bonus questions either in quizzes or exams.

Grades will be posted on Canvas within one week. After a grade is posted the student has 5 workdays to request a grade change. After a grade has been posted for one week, no grade changes will be made.

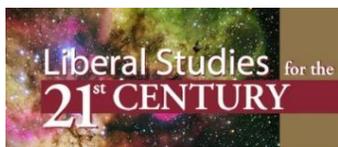
The grading scale for the course is as follows:

		B+	87-89	C+	77-79	D+	67-69		
A	93-105	B	83-86	C	73-76	D	63-66	F	0-59
A-	90-92	B-	80-82	C-	70-72	D-	60-62		

Your raw grade(percentage) will be rounded to the nearest integer to determine your letter grade. And actual letter grades cutoffs may change but no stricter than the above. If you want to appeal your grade, you must contact the instructor within 7 calendar days since the grade is posted, otherwise the grade will be final.

Example:

Student P's scores are listed as follows:



Quiz 1: 10/15; Quiz 2: 9/10; Quiz 3+LSQA: 20/20; Quiz 4: 12/15; Final: 30/30; Attendance: 9/10; Bonus Credits:
0/5.

The final grades for A will be calculated as:

$$10 + 9 + 20 + 12 + 30 + 9 + 0 = 90$$

So, Student P will get a A- as final grade!

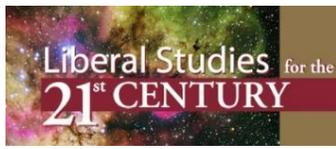
Note: the weights in above example are not real, they are just for explanation.

Policy Information:

Exams and quizzes will not be distributed for future using. If you want to check your exam and quizzes, come to office hours.

Make-up Quiz:

- Assessments that are not taken, or not made up, will receive a zero grade. When a makeup is submitted, the zero will be replaced with the earned grade.
- Absolutely no make-ups are allowed after the last day of class; make-ups are not allowed during final week.
- If you need to miss a quiz, you must notify the instructor by email at least one day before the quiz and provide university approved* documentation within one week. **If you miss a quiz without notifying the instructor or without university approved* documentation, you will get a zero for the quiz.** Your make-up deadline should not be less than one week after the assessment has taken place.
- You are encouraged to come to the office hours to get missed work or get the missed work from Canvas.
- Absolutely no documentation will be accepted after the last day of class.
- If you must be absent on a religious holiday, please submit a self-written-and-signed letter at least **ONE WEEK BEFORE** the holiday informing the instructor that you will be absent due to the religious holiday.
- If you have extenuating circumstances that prevent you from complying with the policy in this syllabus, then the instructor will need to receive verification of your extenuating circumstances from the **Dean of Students department** to make an exception in your case. In such situations the instructor will give you time to make up the missed work. The instructor and you will agree on a deadline for making up each missed activity.
- If you could not complete the make-up by its deadline or at the appointed time, you must notify the instructor by email at least one day before that and provide university approved* documentation, otherwise your grade for that make-up will also be zero.



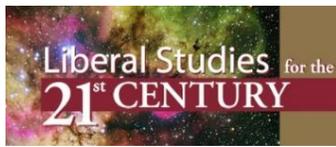
- You only have 2 chances to make up for the missed quizzes, that means you could at most miss 2 regular quizzes and make them up at specified date and location, further missed quizzes will directly result in a zero. Please save these 2 quiz allowances for emergencies and do not use them for reasons that can be avoided. We do not promise any further help with low quiz grades. We do not allow quiz re-takes, that is, if you were present for a quiz you may not take the same quiz again later.
- In exceptional circumstances, the make-ups for quizzes may be changed, and notifications will be sent by the instructor in advance.

* WE WILL ACCEPT DOCUMENTATION FOR ABSENCES CAUSED BY:

- religious holidays: write a letter, date and sign it, and give it to your recitation TA by the Monday of the week in which the holiday occurs; letters presented after this deadline will not be accepted and your absence will count as a “without documentation” case.
- health matters related to self or immediate family members: doctor’s note must be dated at most 5 calendar days before or after the date of absence.
- crises for which we receive a notification letter from the Dean of Students Department
- events where you represent FSU, such as FSU sports teams, FSU music groups, etc
- traffic accident or any other event where law enforcement was called in
- death in the family and other documented crises as approved by the Dean of Students Department
- jury duty or any other court appointments
- military-related matters

Please note that lack of future planning, or mismanagement of time and other resources, are not acceptable reasons for being absent. In addition, travel tickets and itineraries do not count as documentation, because travel per se is not an acceptable reason for being absent. You must have an acceptable reason for travelling.

Please note that the FSU University Health Services ‘Verification of Visit’ does not constitute a documented absence.



Classroom Conduct: You are expected to act professionally in the classroom. You should arrive on time and prepared for class. If you do arrive late or leave early, please do so in a manner that does not disturb the class.

Email and Communication:

- Please check the Class Log on our STA1013 course site on Canvas every day to keep up with what happens in class, especially the announcements part. 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 in Fall/Spring, or one work day in Summer.
- Please check your @my.fsu.edu email every day for emails from the instructor.
- Please refer to Syllabus and other uploaded documents related to this course first whenever you have questions.
- Please always do the above three before you email the instructor.
- If you email us with an enquiry that was already addressed in the Class Log, in a class email, in a Canvas announcement or in one of our syllabus documents, you may not get a response.
- If you email me, please send from your @my.fsu.edu account. **Other emails address will not get a response.**
- Always include your name and section number when you email to the instructor, if we need to know this information in order to answer your query and you have not provided it, you may not get a response.
- Send assessment-related questions at least 24 hours before the assessment is due to begin, otherwise you may not get a response.
- Be aware that email sent from outside the FSU domain may not get through to the instructor, so if you send an email and you don't get a response within two working days, please try to meet the instructor in person before class or after class or during office hours.
- The instructor is not a tutor, if you miss a class with documentation listed in the policy section, you should check the notes by yourself first. If you have further questions, please bring specific questions to the office hour. The instructor is not allowed to tutor anyone for this course.



- Please do not email the instructor and talk about grades. The instructor will not do grades calculation for you, you could check syllabus for calculation details. If you have any questions about the grades or need to appeal your grade, please talk to the instructor face-to-face during the office hour within one week after the grades has been posted.

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.

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>)

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/>), 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.

Final Exam Rescheduling Policy

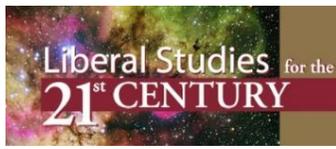
You may not take the final exam before final exams week. Individual students who need to reschedule the final exam for a different time during final exams week will need to

- (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/sites/g/files/upcbnu321/files/2020-09/Request_to_Reschedule_revised.pdf

and get it approved by the Dean of Arts and Sciences office, and

- (iii) 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.

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.

To receive academic accommodations, a student:

- (1) must register with and provide documentation to the Office of Accessibility Services (OAS);
- (2) must provide a letter from OAS to the instructor indicating the need for accommodation and what type; and,
- (3) should communicate with the instructor, as needed, to discuss recommended accommodations. A request for a meeting may be initiated by the student or the instructor.

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 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

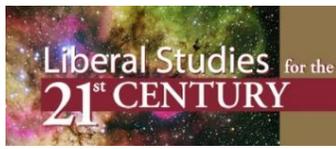
Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

oas@fsu.edu

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



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/>

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 Dean of Students office to learn more.

Syllabus Change Policy



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

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, [https://urldefense.com/v3/__http://www.openstax.org/details/introductory-statistics__;!!Epnw_ITfSMW4!_BrAaCD1iK245fXtEVSG7w9Ss7YvwA4W7ywtQ7EDfgJu0YUqL9fSYhAtQ_LJf7SBkw\\$](https://urldefense.com/v3/__http://www.openstax.org/details/introductory-statistics__;!!Epnw_ITfSMW4!_BrAaCD1iK245fXtEVSG7w9Ss7YvwA4W7ywtQ7EDfgJu0YUqL9fSYhAtQ_LJf7SBkw$.).

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.

Lecture videos and other recordings:

Please note that the recorded lectures and other recordings 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 recorded lectures or other recordings with any other persons outside of this class. Copyrights of the recorded lectures and other recordings are reserved by the instructor and Florida State University.

Course advisers:

1. Come to lectures on time and stay for the entire period.
2. Do homework on time.
3. Come to office hours for help.
4. Feel free to ask questions.