

STA 1013: Statistics Through Example

Fall 2021 – Section 0009/0010

Course Information

Instructor:	Wenshan Han
Email:	wh17c@my.fsu.edu
Office Hours:	Monday 10:30 a.m. - 12:30 p.m., or by appointment.
Office Location:	OSB 408
Class Meeting Modality:	Face-to-Face / F2F (in-person in a classroom)
Class Meeting Time:	Aug 23 ~ Dec 10, MoWeFr Section 0009: 8:00 a.m. - 8:50 a.m. Section 0010: 9:20 a.m. - 10:10 a.m.
Class Meeting Location:	HCB 0217 Students will need to follow the University's current health and safety guidelines. We will not use Honorlock.

Required Course Resources

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

~ **Textbook:** There is no required textbook for this class. The notes and relevant materials will be posted on Canvas before class. For your own study, the following book is recommended as supplementary material:

Statistical Reasoning for everyday life, 5th ed 2018, by Bennet Briggs Triola.

~ **Calculator:** **TI-84 Plus or equivalent calculator**. We will help you to learn how to use a TI-84 series calculator, but we cannot promise to be able to help with any other type of calculator.

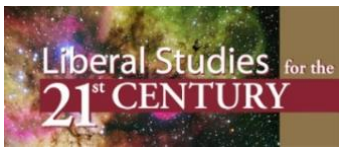
~ **Canvas Website:** Lecture notes, announcements, assessments, grades, and other pertinent information will be available through this site. You are responsible for assignments and announcements posted on this website, as well as those sent through your FSU email. Please check Canvas regularly for the updates through canvas.fsu.edu.

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!4V38r37Wxm81LydT1t8lovJRtfJNKGcq0NuyYYXCr2UxWIFN-XQxPnnnjEG8Ly_CxQ\\$](https://urldefense.com/v3/_http://www.openstax.org/details/introductory-statistics_!!Epnw_ITfSMW4!4V38r37Wxm81LydT1t8lovJRtfJNKGcq0NuyYYXCr2UxWIFN-XQxPnnnjEG8Ly_CxQ$.).



Email & Communication

~ Please **turn on the course notifications on Canvas** by going to Account / Notifications / and checking the Notify me right away option for all of the items under Course Activities.

~ I will send announcements to your FSU email account (@my.fsu.edu) or on Canvas. You are responsible for all information sent via email or put on Canvas website. **Please check your FSU email and the Canvas announcements every day.**

~ When emailing me regarding this class, please always include STA1013-0009/STA1013-0010 and your name. Do use your FSU email account or your emails might not be seen and replied.

~ You may expect a response to your email within two workdays.

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 Description

Prerequisite: None

Credit Hours: 3

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.

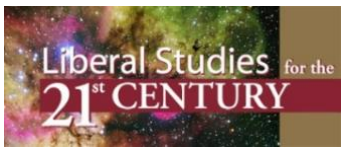
Statistical thinking, relevant ideas, themes, and concepts are emphasized over mathematical calculation. In this class students learn many of the elementary principles that underlie collecting data, organizing it, summarizing it, and drawing conclusions from it.

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:

- (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 STA1013, 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 x-bar, features of the distributions and implications when using a larger/smaller sample to estimate mu, forward problems (finding probabilities);
8. Probability: random process, four rules, probability models, addition rule for mutually exclusive events;
9. Random Variables: 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-squared.

Tentative Pacing Schedule

Week	Dates	Mon.	Wed.	Fri.
1	Aug 23 - Aug 27	First Day Attendance	Terminology	Terminology
2	Aug 30 - Sep 3	Sampling	Visualization	Visualization
3	Sep 6 - Sep 10	Labor Day No class	Visualization	Test 1
4	Sep 13 - Sep 17	Summary Statistics	Summary Statistics	Summary Statistics



5	Sep 20 - Sep 24	Summary Statistics	Summary Statistics	Test 2
6	Sep 27 - Oct 1	Empirical Rule	Normal Distributions	Normal Distributions
7	Oct 4 - Oct 8	Normal Distributions	Normal Distributions	Central Limit Theorem
8	Oct 11 - Oct 15	Central Limit Theorem	Central Limit Theorem	Q & A LSQA (Online)
9	Oct 18 - Oct 22	Probability	Probability	Probability
10	Oct 25 - Oct 29	Random Variables	Random Variables	Random Variables
11	Nov 1 - Nov 5	Test 3	One-sample Mean	One-sample Mean
12	Nov 8 - Nov 12	One-sample Mean	One-sample Mean	One-proportion
13	Nov 15 - Nov 19	One-proportion	One-proportion	Test 4
14	Nov 22 - Nov 26	Correlation	Thanksgiving No Class	Thanksgiving No Class
15	Nov 29 - Dec 3	Simple Linear Regression	Simple Linear Regression	Simple Linear Regression (Last day of classes)
16	Dec 6 - Dec 10	Final Exam (0010)	Final Exam (0009)	

Grading

- 1) **Tests (65%)**: There will be 4 *pencil-and-paper* tests during the semester. Collaboration is *not permitted*.
- 2) **LSQA (10%)**: This is an **online** assessment. STA1013 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). Collaboration is *not permitted*.
- 3) **Final Exam (25%)**: There will be a CUMULATIVE *pencil-and-paper* exam given on the final exam week. Collaboration is *not permitted*.

Final Exam Time: Section 0009 – Dec 8 (Wednesday), 7:30 a.m. – 9:30 a.m.



Section 0010 – Dec 6 (Monday), 7:30 a.m. – 9:30 a.m.

4) **Homework (5% extra):** There will be 8 **online** homework regrading topics for your own study. The homework is not mandatory but are highly recommended to practice. You have unlimited attempts for each homework. For each homework, a grade higher than 50% of total can be viewed as a completion. Your bonus points will be weighted by the number of homework you complete.

~ You are allowed to bring 1 double-sided sheet of notes to the tests, and up to 5 to the final exam. The sheets must be hand-written.

~ Please have your TI-84 Plus or equivalent calculator with you. Any other electronic equipment is NOT allowed during the tests and final exam.

~ Collaboration is NOT allowed for the tests, LSQA and final exam.

~ 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.

~ Grades will be posted on Canvas within one week. **After a grade is posted, you has 5 workdays to request a grade appeal.** After a grade has been posted for one week, no grade changes will be made.

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**.

Grading Scale

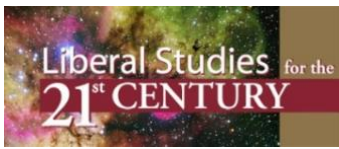
		B+	87-89	C+	77-79	D+	67-69		
A	93-100	B	83-86	C	73-76	D	63-66	F	0-59
A-	90-92	B-	80-82	C-	70-72	D-	60-62		

Please ignore the grade totals or averages that you may see on the course website; they are not correct. In this class, we only store and display individual assessment grades on the course website, 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.

Your letter grade will be selected from the table above after rounding the overall numerical course grade UP to the next higher whole number. If you want to appeal your grade, you must contact me within 7 calendar days since the grade is posted, otherwise the grade will be final.

Make-up Policy

Make-ups are for absences only. Make-ups will not be given due to undesired performance on an assessment. If you are



absent for a test or the LSQA, please email me immediately. You will have until Wednesday of the following week to make up a missed assessment unless you have a documented reason for being unable to do so. If you do not complete a make-up according to the above guidelines, then the missed assessment will receive a grade of zero. **No make-ups will be given after the last day of class.** If you are absent for the Final Exam, you must email me immediately. Absolutely no make-up will be accepted after the last day of class.

Attendance and Drop/Withdrawal

First-day attendance will be taken in class. Drop and Withdrawal deadlines are given in the University's academic calendar at <https://registrar.fsu.edu/calendar/>. For each assessment, you are expected to adhere to the deadline.

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.

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.**

Receiving a grade of "Incomplete"

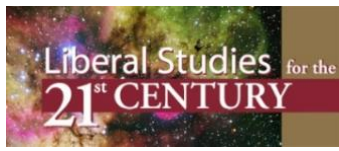
A request for a grade of "Incomplete" will NOT be granted if you have completed the coursework, including the final quiz and excluding the allowable absences. It will be granted only if both of the following conditions are satisfied:

1. the only assessment that you have yet to take is the final quiz, and
2. your overall average excluding the final quiz is a passing grade (70% or above).

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.

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>.)

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/>



Please note that instructors are not allowed to provide academic accommodations to a student until they receive the letter mentioned in item (2) above. Academic accommodations will be provided as soon as possible after the letter is received. Academic accommodations are not retroactive, so they will not apply to lectures/lessons and assessments that took place before the letter was received.

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 & 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/>

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.

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.