

STA 1013: Statistics through Example

Sections 0001/0011

Florida State University, Department of Statistics

Fall 2019 Course Syllabus

Classes Meet: Section 0001 MWF 10:10 a.m. - 11:00 a.m. in OSB 110
Section 0011 MWF 9:05 a.m. - 9:55 a.m. in OSB 110

Instructor: Hongyu Wu

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Office Hours: MW 11:10 a.m. - 12:10 p.m., or by appointment.

Office: OSB 426

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.

Required Materials

Textbook: There is no required textbook for this class. But *Statistical Reasoning for Everyday Life*, Pearson, Fifth Edition, 2018, by Bennet Briggs Triola is a good source.

Course Website: Canvas is accessible through canvas.fsu.edu. Please check Canvas regularly for class notes, announcements, grades and other course materials.

Study Material: Lecture notes will be provided on-line. Any additional (or changes to) lecture notes/slides will be added on the Canvas website so it is important that you check daily for updates via announcements. You will be filling in the notes during lectures, so you can choose to do this manually by printing the notes or on your laptop.

Calculator: TI-84 or equivalent. You may not use your phone as a calculator on exams. You need to bring this calculator to each class meeting.

Course Objectives

This course has been approved to meet FSUs 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 Floridas 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 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.

Course Topics

- Terminology/Initial ideas
- Sampling: simple random sample, systematic, stratified, cluster, convenience
- Visualization of data: histograms, stem plots, bar charts, pie charts
- Summary Statistics
- Empirical Rule
- Normal Distribution
- Central Limit Theorem
- Probability: random process, four rules, probability models, addition rule for mutually exclusive events
- Random variable
- One-sample mean: obtain and interpret z-intervals, carry out and interpret results of z-test, interpret p-value
- One-proportion: z-intervals and z-tests
- Correlation
- Simple Linear Regression

Important Dates

- First Day Attendance: Please meet the First Day Attendance requirement of FSU, otherwise you will be dropped from the class automatically.
- 4 Quizzes: Please see details in Tentative Pacing Schedule.
- LSQA: October 11st (tentative).
- No classes: Labor day (September 2nd); Homecoming (October 25th); Veterans Day (November 11th); Thanksgiving Day Holiday (November 27-30th).
- Final Exam: **Section 0001**: December 12th, 7:30 - 9:30 a.m.;
Section 0011: December 12th, 3:00 - 5:00 p.m..

Tentative Pacing Schedule

		Monday	Wednesday	Friday
Week 1	Aug 26 th -Aug 30 th	Introduction	Terminology	Terminology
Week 2	Sep 2 nd -Sep 6 th	No Classes	Sampling	Visualization
Week 3	Sep 9 th -Sep 13 rd	Visualization	Visualization	Quiz 1
Week 4	Sep 16 th -Sep 20 th	Summary statistics	Summary statistics	Summary statistics
Week 5	Sep 23 rd -Sep 27 th	Probability	Probability	Random variable
Week 6	Sep 30 th -Oct 4 th	Random variable	Normal Distribution	Quiz 2
Week 7	Oct 7 th -Oct 11 st	Normal Distribution	Empirical rule	Central Limit Theorem
Week 8	Oct 14 th -Oct 18 th	Central Limit Theorem	Central Limit Theorem	Central Limit Theorem
Week 9	Oct 21 st -Oct 25 th	Quiz 3 & LSQA	One-sample Mean	No Classes
Week 10	Oct 28 th -Nov 1 st	One-sample Mean	One-sample Mean	One-proportion
Week 11	Nov 4 th -Nov 8 th	One-proportion	One-proportion	Quiz 4
Week 12	Nov 11 st -Nov 15 th	No Classes	Correlation	Correlation
Week 13	Nov 18 th -Nov 22 nd	Simple Linear Regression	Simple Linear Regression	Simple Linear Regression
Week 14	Nov 25 th -Nov 29 th	Simple Linear Regression	No Classes	No Classes
Week 15	Dec 2 nd -Dec 6 th	Review Class	Quiz Make-up	Quiz Make-up

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 taken will receive a zero grade. Your overall course grade will consist of the following:

- **In-class Quizzes (50%):** There will be 4 in-class quizzes during the semester. At each quiz you may use ONE self-planned self-handwritten two-sided 8.5x11 sheet of notes and your calculator.
- **Attendance (10%):** Attending class is important. I'll randomly check the attendance 10 times (random date & random time). 10 presence gives you the full credit for attendance. A proper absence excuse with corresponding documentation will give exemption.
- **Liberal Studies Quantitative Assessment (10%):** Note that, STA 1013 have been certified as one of FSUs 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). 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. At the final exam you may use TWO self-planned self-handwritten two-sided 8.5x11 sheet of notes and your calculator. Make sure you arrive 5 minutes earlier as there will be random seating assignments.
- **Extra credits (5%):** Extra credits could be earned by answering extra credits problems either in quizzes or exams.

Grading Scale

Final Letter grade will be calculated based on the following chart. All grades will be recorded as percentages, and these percentages (not points) will be used in your overall course grade calculation. I will round your overall course grade UP to the next higher whole number before matching it to a letter grade.

Grading Appeals

During the course of the term, if you believe that a paper was improperly graded, please come to my office hour, (or make an appointment with me) 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.

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

Makeup Policy

- Assessments that are not taken, or not made up, will receive a zero grade.
- If you have to miss a quiz or the LSQA, you need to send me an email at least **ONE DAY** before the quiz/LSQA, and remember to provide the documentation for your absence. If you miss a quiz/LSQA without notifying me or without documentation, then you will get zero for that quiz.
- Absolutely no make-ups are allowed after the last day of class; make-ups are not allowed during final week.
- Absolutely no documentation will be accepted after the last day of class.
- Quiz and LSQA make-ups will not be given unless the student has an official document for an excused absence; see the University Attendance Policy for more information. No documentation will be accepted any later than **ONE WEEK** after the absence.
- 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.
- 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.
- All the make-ups for quizzes will be set on December 4th and December 6th. In exceptional circumstances, the date may be changed, and notifications will be sent by the instructor in advance.

Attendance, Absence and Drop/Withdrawal

- First day attendance is mandatory per university regulations.
- Drop/Withdrawal deadlines are given in the Universitys academic calendar at registrar.fsu/dirclass/spring/acd_cal.htm
- If you have to miss a class, you need to send me an email before that class.

- Students shall, upon notifying their instructor by formal self-written-and-signed letter at least one weeks before the holiday, be excused from class to observe a religious holy day of their faith.
- If you miss the final exam, email me immediately and well take it from there.

Classroom Policy

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.
- 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.

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.

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-deansapproval/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 well 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.

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 STA1013 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/>