



STA 2122

Introduction to Applied Statistics

Dept. of Statistics, FSU

Spring, 2020 / 3 CH

Section 0020

TR 8:00am-9:15am

OSB 0110

Section 0035

MWF 2:30pm-3:20pm

TUL B001

Yi Luo

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(please allow several hours for a response)

Office Hours:

Tuesday

9:30am -10:30am

Wednesday

3:30pm - 4:30pm

@ LOV 306A

(I am happy to schedule an appointment if these times don't work for you; just ask!)

Course Description

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.

Liberal Studies for the 21st Century:

Quantitative and Logical Thinking

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.

Course Objectives

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.

Required Materials

A textbook is not required for this class. However, you will need to read each set of completely filled in class notes carefully after we cover them in lecture and before the

next assessment. We will fill in the class notes during lectures.

Class Notes: You will need to print out class notes from our course website and bring them to class on a regular basis, so please budget some money for printing. The current estimate of your printing costs for the entire term is \$80.00 (about 400 pages @ 20 cents/page).

Writing Materials: Notepaper and sharpened pencils.

Calculator: TI-84 Plus or equivalent.

Pacing Schedule (tentatively schedule in brief)

week	Course coverages (# of topics)	quiz & hw
1 st Jan 6 - Jan 10	Math skills (1), histograms (1), segmented bar charts (1)	
2 nd Jan 13 - Jan 17	Summary statistics (2), simple random sample (1)	
3 rd Jan 20 - Jan 24	Jan 20 Martin Luther King, Jr. Day. No Classes. Normal distribution (2)	Hw1 assigned along with its due date
4 th Jan 27 - Jan 31	Central limit theorem (2), empirical rule (1)	
5 th Feb 3 - Feb 7	One sample mean (5)	
6 th Feb 10 - Feb 14	One sample mean (5), some exercises	Problems set (no credit)
7 th Feb 17 - Feb 21	One-way ANOVA (1), type I / type II errors (1)	LSQA
8 th Feb 24 - Feb 28	Correlation (1)	midterm
9 th Mar 2 - Mar 6	Two-way ANOVA (1), simple linear regression (4)	
10 th Mar 9 - Mar 13	Simple linear regression (4)	Hw2 assigned along with its due date
11 th Mar 16 - Mar 20	Spring break. No Classes.	
12 th Mar 23 - Mar 27	Multiple linear regression (1)	
13 th Mar 30 - Apr 3	Chi-square test of independence (1)	Hw3 assigned along with its due date
14 th Apr 6 - Apr 10	Nonparametric tests (1)	
15 th Apr 13 - Apr 17	Review, exercises	
16 th Apr 20 - Apr 24	Reviews, exercises	

Last day to drop a course without receiving a grade is February 21st.

Class Policy

~ On test days, please come to class 5 mins early, I will begin giving out papers 5 mins before the period starts; be sure to sign the roster; only one sitting is allowed.

~ For midterm and final, you may use ONE 8½"x11" self-planned self-handwritten back-and-front original sheet of notes.

~ Each sheet of notes must be labeled with your name and the assessment for which it is used, for example, "Yi Luo midterm". The sheet(s) will be collected with your question paper. Please do not bring typed up sheets, photocopies of any sort, electronically copy-pasted collages or hard-paper cut-and-pasted collages. Please do not bring cheat sheets provided by a tutor or tutoring agency, or any other person or organization.

~ **Cheat sheet** should not have any solutions or examples or specific problem-solving process or the like. If your cheat sheet contains any of these items then the penalty will be at least half of the total score. The maximum penalty will be a grade of zero on that assessment.

~ TI-84 Plus or equivalent calculator. You must bring your own calculator because sharing of calculators is not permitted. You may not use someone else's calculator, not even after they have turned in their paper.

~ You may not use a phone for any purpose whatsoever, not even as a calculator. Your phone must be stored out of view and be silent for the entire period.

~ If I believe that you or persons sitting near to you are engaging in academic dishonesty or have previously engaged in academic dishonesty, I may ask you to move to a different seat. This will be a subjective judgment on our part. In such situations you should move to the indicated seat as quickly and as quietly as possible in order to keep distraction to a

minimum during testing.

~ You can enter the exam room **within half hour of the official start time**. However, if you arrive late you will not be given any extra time beyond the scheduled end time for the exam.

~ I reserve the right to impose a penalty on your grade if you violate any of the guidelines above.

Homework

~ **A homework** assignment will be considered late and will be worth only 7% instead of 10%, if you fail to hand in the assignment by the specified time and date, but before the solutions have been posted. (late before solution)

~ A late assignment with a valid excuse will be accepted after the solutions have been posted and will be worth 3% instead of 10%. (late after solution)

~ Working together on these assignments is ok. However, copying from other student is considered cheating. Be sure that you follow the **homework rules** listed below:

1. Do not turn in paper that is torn out of a spiral notebook
2. Write your name, section, homework number (e.g. Hw1) at the top of the paper
3. If your homework takes more than one page, then staple the papers together in the upper left corner.
4. Do not work on the back of the paper. Any work on the back will not be graded.
5. Be neat and legible

Papers that do not follow all or some of the homework rules, are graded at the grader's discretion.

Test Question Security & Academic Honesty

The following pledge and affirmations will be printed on most assessments (wording may vary slightly). We regret to say that if you do not sign the pledge and affirmations, we will not grade your paper and your grade will be zero. Please bear in mind that academic dishonesty and question disclosures reduce the worth of the academic qualification that you are working toward.

I pledge that I will never disclose the questions herein to anyone, and I will not discuss them with anyone other than my course instructor or my recitation TA. I understand that if I break this pledge at any time, the grade that I earn on this paper will be reduced to zero and my overall numerical course grade will be calculated, or re-calculated, accordingly, and my course letter grade will be demoted if necessary. I affirm that I did not receive help with this assessment, and I affirm that I did not help anyone with this assessment.

Assessment and Grading

No extra credit assignments, and in general, no opportunities for grade improvement, after the Last Day of Class, please do the best during the term. Assessments that are not taken, and assignments that are not submitted, will receive a grade of zero. When a missed assessment/assignment is made up, the zero will be replaced with the earned grade. Overall course grade will consist of the following:

10% attendance (10 pop quizzes, from 2nd week, arriving late/ leaving early within 15mins considered missed attendance)

10% LSQA (maybe cumulative)

20% midterm (one-hour)

30% final (two-hour, non-cumulative, 2122 will have a block **final exam** on TUESDAY April 28th at 12:30-2:30pm.)

30% homework (10% x 3 assignments)

Overall Course Grade

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 numerical course grade calculation as follows:

Overall grade = 0.1 x Attendance + 0.1 x LSQA + 0.1 x hw1 + 0.1 x hw2 + 0.1 x hw3 + 0.2 x midterm + 0.3 x final;

Overall numerical grade will be round up, then grant the corresponding letter grade.

FSU does not award A+.

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

Receiving a Grade of “Incomplete”

A request for a grade of “Incomplete” will

- ~ NOT be granted if you have completed all the coursework, including the final exam.
- ~ be granted only if both of the following conditions are satisfied:
 - you have completed the LSQA and all the homework and midterm;
 - you are passing the class at the time the incomplete is granted.

Missing Grades

- ~ be sure to attend quizzes and hand in your paper in that class properly
- ~ check your grade on the course website every week to make sure your latest grade has been posted; please do this even if you already know your grade
- ~ if a grade is not posted, alert Yi immediately via email, it is important that you alert me via email so that there will be a record of the fact that you reported the matter
- ~ if you report a missing grade within two weeks after the assessment took place, I will do my best to locate your missing grade; if you report a missing grade more than two weeks after the assessment took place, I will not be able to help you and the missing grade will have to remain as a zero grade

Grading Appeals

- ~ During the course of the term, if you believe that a paper was improperly graded, go to office hours to see your paper and discuss it with Yi.
- ~ Any question regarding grading/scoring must be done within one week of the return of the homework or no change to the grade will be made.

Attendance, Absence, makeup and Drop/Withdrawal

- ~ Drop and Withdrawal deadlines are given in the University’s academic calendar at <https://registrar.fsu.edu/calendar/>.
- ~ You are expected to attend every class meeting.
- ~ **Lack of future planning, or mismanagement of time and other resources, are not acceptable reasons for being absent.**
- ~ Bear in mind that the opportunities presented in this class are made equally available to all students in the class and it is up to each individual to make the most of these opportunities.
- ~ Since I will deal with many students each term, in the interests of fairness, I will not do for one student what I cannot do for all students who are likely to request the same.
- ~ Documentation for absences will not be accepted after the Last Day of Class.
- ~ **If you miss midterm or LSQA**, you need notify me within two weeks after that assessment so that we can set up a time for a makeup. No makeup after the last day of class.
- ~ If you took a quiz you may not re-take it. If you schedule a makeup, be sure you can show up on time. If you miss it too, there is not another chance.
- ~ For an absence to be excused, the student must provide, **at most one week after the absence**, an explanation to Yi and supply supporting evidence as required by Yi, which may include an absence letter, when the absence meets the criteria outlined in the University Attendance Policy below. No documentation will be accepted after the last day of class.

Email & Communication

- ~ please check our course website and @my.fsu.edu email every day to keep yourself informed about what happens in class
- ~ if you email me with an enquiry that was already addressed in a class email, in a course announcement or in one of our syllabus documents, you may not get a response
- ~ please send messages from your @my.fsu.edu account, include your name, if I need to know this type of information in

order to answer the query and have not been provided, you may not get a response

~ be aware that email sent from outside the FSU domain may not get through to me, so if you send an email and you don't get a response within two working days, please try to meet me in person before class or after class or during office hours

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.

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/>), 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-deans-approval/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 we'll take it from there.

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.

This can be accomplished by logging in to the AIM system and electing to receive academic accommodations in this class so that an email notification will be sent to the instructor.

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.

Special accommodations will be provided as soon as possible after I get your letter. We cannot provide testing

accommodations in the classroom, so you must take your in-class quizzes, the LSQA and the final exam at the SDRC testing center. You must take them on the same day as the other students take them in class, but the time of day is up to you, and you will not come to class on those days. If you need to take one of these assessments on a different day, please talk to me (Yi) about it first. Please do not schedule any of these assessments for a different day without first clearing it with me (Yi). If you choose to take any of these assessments in the classroom, or in our office hours, or at some other location, then you will not receive special accommodations and you must comply with the rules that the other students follow.

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/>