

STA 2122 Introduction to Applied Statistics

Spring 2022 Section 0028/0035

Course Information

Format: F2F

Class Meeting Days, Times, Rooms:

Section 0028: MoWeFr 1:20PM - 2:10PM HCB 0314

Section 0035: MoWeFr 4:50PM - 5:40PM HCB 0314

Final Exam Day & Time: Tuesday April 26th at 3:00-5:00pm.

Final Exam Location: TBA.

Prerequisites: A grade of “C-“ or better in MAC 1105 College Algebra (or equivalent).

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.

Course website: <https://canvas.fsu.edu>

Please turn on the course notifications in Canvas by going to Account/Notifications and selecting the *Notify immediately* option for all the items under Course Activities.

Please check your FSU email and the course announcements every day.

Instructor Information

Name: Mr. Yuexuan Wu (Y-weh Sh-whan Woo)

Email: yw17g@my.fsu.edu

Office Hours: 2:30PM – 4:00PM, Wednesday / by appointment.

Office Location: Rogers Building (OSB) 104F

Please feel free to ask me any questions about the course, and any suggestions on teaching are welcomed!

Course Description

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.

Learning Objectives

This course has been approved to meet FSU’s Liberal Studies Quantitative and Logical Thinking requirements and helps 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.

Required Materials

- A personal computer, reliable internet connection, and Chrome or Firefox browser.
- A TI-84 Plus or equivalent calculator.
- A textbook is not required for this class. The instructor will provide all required course notes and exercises. Please note that the materials provided by the instructor were put together for your individual use only. While you may share these materials with classmates, we ask that you do not share them with third parties who are not enrolled in this class. If you seek help outside of class, you may, of course, allow your helper to see the materials, but please do not allow them to make copies or in any other way take our material. We appreciate your co-operation in protecting our material. Thank you!
- The following free online textbook is an additional resource that you might find useful: Introductory Statistics from OpenStax, Print ISBN 1938168208, Digital ISBN 1947172050, www.openstax.org/details/introductory-statistics.

Grades

Assessments	Weight
Liberal Studies Quantitative Assessment (LSQA) - collaboration and internet sources (except the course Canvas) are not permitted - 2 timed attempts are allowed - cannot be dropped	10%
Timed Quizzes (TQ) - collaboration and internet sources (except the course Canvas) are not permitted - 2 timed attempts are allowed for each quiz - the lowest percentage grade will be dropped	45%*
Cumulative Final Exam (FE)	30%*
Group Work (GW)	10%
Extra Credit (EC)	5%
Total	100%

* If your Final Exam grade is higher than your Timed Quizzes average, then we will swap those two percentages.

- **Cumulative Final Exam**
 - a. **3:00 – 5:00 PM, Tuesday, April 26th**
 - b. **The Final Exam will be highly correlated with class notes, exercises, and quizzes.**
 - c. You may use TWO self-planned self-handwritten double-sided 8.5”x11” sheets of notes
 - d. You may use a 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. Cell phone is not allowed to use as a calculator.
- **Extra Credit**
 Bonus points for high quality class participation.
- **In each quiz, there will be bonus points.**
- 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. No make-ups will be allowed after the Last Day of Classes – this applies to all assessments given during the term.

- If you believe that the grade you received on an assessment is incorrect, please bring it to my attention within 48 hours after the grade has been made available to you. If it turns out that your answer was correct, you will be given credit for it. If no issues are raised during that 48-hour time frame, then it will be assumed that the grade is accepted and subsequent requests for a grade review may not be granted.
- All grades will be recorded as percentages, and these percentages (not points) will be used in your overall course grade calculation: $(LSQA * 0.1) + (TQ \text{ Average} * 0.45) + (FE * 0.3) + (GW * 0.1) + (EC * 0.05)$.
- **Cheating will not be tolerated.**

Grading scale (percent)

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

Lecture videos and/or other recordings provided by the instructor

Please note that the recorded lectures and/or 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 person or entity outside of this class. Copyrights of the recorded lectures and other recordings are reserved by the instructor and Florida State University.

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.

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 should talk to me about it first to get my approval and then fill out and follow the instructions on the "Request to Reschedule a Final Examination" form at [https://artsandsciences.fsu.edu/sites/g/files/upcbnu321/files/2022-01/Request to Reschedule 01032022.pdf](https://artsandsciences.fsu.edu/sites/g/files/upcbnu321/files/2022-01/Request%20to%20Reschedule%2001032022.pdf). The form needs to be submitted to the College of Arts and Sciences before 5pm on 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.

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.

Drop and Withdrawal deadlines are given in the University's academic calendar at <https://registrar.fsu.edu/calendar/>.

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>)

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 Department of Student Support and Transitions to learn more.

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>

Academic accommodations will be provided as soon as possible after verification is received. Academic accommodations are not retroactive, so they will not apply to lectures/lessons and assessments that took place before verification 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 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/
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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.

Public Health Protocols

In our classroom, I will expect everyone to wear a proper, well-fitting mask. As our President has informed the university community, FSU expects everyone on campus to use face-coverings. In regions where virus rates are high, the CDC recommends that even vaccinated individuals wear masks in public indoor spaces, like classrooms, especially where social distancing is not possible. Florida infection and hospitalization rates are greater now than they were at the height of the 2020 surge due to the Delta variant, a more infectious and easily transmissible version of the COVID-19 virus. The best way to protect against serious illness is to be fully vaccinated, but not everyone among us can be. Because the Delta variant can infect even vaccinated individuals and can be spread by them to others, it poses a special threat to members of the community with underlying health conditions and children at home who are too young for vaccination.

For these reasons, FSU expects each member of the community to comply with the public health protocols our President set forth on August 9, 2021, including (1) wearing masks in public indoor spaces, (2) getting fully vaccinated, (3) being tested for the virus if you have symptoms, and (4) staying home and away from others if you are sick. Please remember that you should NOT attend class in person if you have tested positive for COVID-19 or are quarantining after exposure. Finally, please bear in mind that the COVID-19 situation is fast-moving, and that university guidance on the issue may change at any time.

Classes Subject to HB233 Recording

In this class, consistent with state law and university policy, students are permitted to make recordings of class lectures for personal use only. As noted, sharing, posting, or publishing classroom recordings may subject you to honor code violations and legal penalties associated with theft of intellectual property and violations of other state law. Moreover, students and educators have expressed concern that recording classroom activities may negatively impact the learning experience for others, especially in classes that involve questions, discussion, or participation. To protect a learning environment in which everyone feels free to experiment with ideas, we ask you refrain from recording in ways that could make others feel reluctant to ask questions, explore new ideas, or otherwise participate in class. Students must monitor their recording so that they do not include participation by other students without permission. Students with disabilities will continue to have appropriate accommodations for recordings as established by the Office of Accessibility Services.

Tentative Pacing Schedule:

Week	Monday	Wednesday	Friday	Assessment
1 (Jan 3 – Jan 9)		Syllabus + Introduction	Introduction	
2 (Jan 10 – Jan 16)	Summary Statistics	Summary Statistics	Summary Statistics	Timed Quiz 1
3 (Jan 17 – Jan 23)	MLK Day No Class	Summary Statistics	Normal Distributions	Timed Quiz 2
4 (Jan 24 – Jan 30)	Normal Distributionsee	Normal Distributions	Normal Distributions	Timed Quiz 3
5 (Jan 31 – Feb 6)	Central Limit Theorem	Central Limit Theorem	Central Limit Theorem	Timed Quiz 4
6 (Feb 7 – Feb 13)	One-sample Confidence Intervals	One-sample Confidence Intervals	One-sample Confidence Intervals	
7 (Feb 14 – Feb 20)	One-sample Confidence Intervals	One-sample Confidence Intervals	One-sample Hypothesis Tests	LSQA
8 (Feb 21 – Feb 27)	One-sample Hypothesis Tests	One-sample Hypothesis Tests	One-sample Hypothesis Tests	Timed Quiz 5
9 (Feb 28 – Mar 6)	One-way ANOVA	One-way ANOVA	One-way ANOVA	Timed Quiz 6
10 (Mar 7 – Mar 13)	Simple Linear Regression	Simple Linear Regression	Simple Linear Regression	
Spring Break	No class	No class	No class	
11 (Mar 21 – Mar 27)	Simple Linear Regression	Simple Linear Regression	Chi-Square Tests	Timed Quiz 7
12 (Mar 28 – Apr 3)	Chi-Square Tests	Chi-Square Tests	Multiple Regression	Timed Quiz 8
13 (Apr 4 – Apr 10)	Multiple Regression	Multiple Regression	Two-way ANOVA	
14 (Apr 11 – Apr 17)	Two-way ANOVA	Non-parametric Tests	Non-parametric Tests	Timed Quiz 9
15 (Apr 18 – Apr 24)	Review	Review	Review	
Apr 26	Final Exam			