

STA 2023: Introduction to Statistics I
Spring 2022

UF Course Catalog: Graphical and numerical descriptive measures. Simple linear regression. Basic probability concepts, random variables, sampling distributions, central limit theorem. Large and small sample confidence intervals and significance tests for parameters associated with a single population and for comparison of two populations. Use of statistical computer software and computer applets to analyze data and explore new concepts.

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Instructor Office Hours: TBD, zoom link will be posted on Canvas course page
Graduate Teaching Assistants: TBD
GTA Office Hours/Location: TBD

Course Description and Objectives

Lecture Days and Time: MTWR from 9:35- 10:25 am
Location: WEIL 0279

Lab Day and Time: Occasional Wednesdays from 8:30 am – 9:20 am (see dates on Schedule)
Location: WEIL 408E

Course Description

STA2023 is an introductory course that assumes no prior knowledge of statistics but does assume some knowledge of high school algebra. Basic statistical concepts and methods are presented in a manner that emphasizes understanding the principles of data collection and analysis rather than theory. Much of the course will be devoted to discussions of how statistics is commonly used in the real world. There are two major parts to this course:

I Data – which includes *graphical and numerical summaries* to describe the distribution of a variable, or the relationship between two variables, and *data production* to learn how to design good surveys and experiments, collect data from samples that are representative of the whole population, and avoid common sources of biases.

II Probability and Inference – using the language of probability and the properties of numerical summaries computed from random samples, we learn to draw conclusions about the population of interest, based on our random samples, and attach a measure of reliability to them.

Required Course Materials

Lecture Notes: These are needed to follow along with the lectures. You can print them from the link on the Canvas course home page.

Scientific Calculator (around \$10 to \$15): You will need a calculator capable of basic arithmetic operations and taking square roots. This will be needed for in-class exams. Internet-enabled electronic devices, such as cell phones or tablets, cannot be used as calculators during exams.

Web-enabled device: You will need some type of web-enabled device such as a laptop, smartphone, or tablet to use in-class to access Canvas as needed.

Optional Course Materials

Textbook: *Statistics: The Art and Science of Learning from Data* by Agresti, Franklin and Klingenberg. Fifth edition, Pearson. To get the textbook you can:

- Opt-in to UF All Access for around \$70. See posted directions on how to do this.
- Purchase or rent, hardbound new or used ISBN13: 9780321997838

Course Resources

The Canvas course website will be used extensively throughout the semester to post notes and make course announcements. You must log on using your Gatorlink username and password and access the course webpages from there. Important information about the course will be posted here including this syllabus, announcements, notes, assignments and your grades throughout the semester along with computer output to supplement the examples done in class.

Course Computer Program and Applets

Some lab assignments will require you to use statistical applets or a statistical software package to analyze and visualize data. One statistical software program that you will be required to use throughout the semester is **JMP**. JMP is available as a free download (recommended) or is available as a UF app. Information on how to download this program will be posted on Canvas and discussed during the first week of class. A list of other statistical applets will be posted on Canvas.

Course Delivery

All course material will be maintained on CANVAS including lecture notes, assignments, and the course schedule. You are expected to develop proficiency in navigating through CANVAS to access all course material. Any changes in the course schedule will be posted as an updated schedule file and announced via CANVAS. You must keep up with the schedule to be successful in this course.

Help

Remember to ask for help! You can come by during my scheduled office hours or make an appointment to see me. I can also answer some questions via email. *Emails received during the working week will be answered within 24 hours however emails received over the weekend may not be answered until Monday morning.*

Grading Structure

Current UF grading policies for assigning grade points can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

For this class the methods by which you will be evaluated, and your grade determined are given below.

Course Assignments

Your final course grade will be based on a combination of assessment types including homework, labs, and in-class exams. Due dates will be posted on the course schedule, on the Canvas course page and announced in class.

Homework: Homework will be assigned on most weeks. There will be about twelve homework assignments. The best eight homework grades will be used toward your final grade. Homework will be accepted up to two days late with a 10% late penalty per day and not accepted after the third day. Copying another student's homework is considered cheating and the minimal punishment will be to receive a grade of 0 on the assignment.

Labs: The Labs will be conducted on *occasional Wednesdays* of each week in WEIL 408D – see posted dates. There will be about nine Labs. The lowest Lab grade will be dropped.

Students must arrive within 5 minutes of the start of the Lab to participate. Students who miss a Lab must contact the instructor after missing it. Labs should be made up as soon as possible. They cannot be made up after the exam for that material has been covered. Please note that documentation may be required to makeup up a missed Lab.

Exams: There will be four in-class exams which will contain multiple choice, short answer, and matching items. All students must bring to the exam: their student ID number, picture ID, a calculator, and pencils. In case of conflict or illness, if a student is unable to take an exam at the scheduled time, they must get in touch with the instructor prior to the exam time for any arrangements to be made for a makeup. Each case will be reviewed individually. **Valid and detailed documentation is a prerequisite under such extenuating circumstances.** Makeup exams may not be multiple choice. A grade of zero is the minimum punishment of any type of dishonesty on an exam.

You will be provided with a packet of formulas and statistical tables to be used on the exams, if needed. A copy of this packet will be available in Canvas so that you will know what information will be provided to you on each exam.

Grading Scheme:

Exams (4@15% each) 60%
 Labs (8@3% each) 24%
 Homework (8@2% each) 16%

Numeric Score	Letter Grade
91 – 100	A
88 – 90	A-
86 – 87	B+
81 – 85	B
78 – 80	B-
76– 77	C+
71 – 75	C
65 – 70	C-
60 – 64	D
0 – 59	E

Your final overall numeric score is rounded to the nearest integer.

So, for example, if your average is 76.4 your grade will be 76. If your grade is 76.5, your grade will be 77.

Letter grades will be assigned according to the table shown.

Course Policies

Class Attendance:

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

In addition, I expect you to:

- Attend all lectures
- Arrive on time and review your notes after each class
- Do not use electronic devices during class unless asked to do so for a class assignment
- Ask questions if you do not understand something
- Inform the Instructor of a problem in a timely manner

Grading Policies:

*You have at most seven days after a graded assignment is posted to question the grade. If you do not notify me in writing of any issues with your grade within that time, then the posted score stands.

*Requirements for class attendance and make-up exams, assignments, and other work in this course as well as policies regarding absences, religious holidays, illness, and student athletes are consistent with UF Attendance Policies.

Additional make-up policy requirements:

- Every effort should be made to complete the assignment/exam during the open period. Only extreme situations will warrant a makeup. Contact the instructor prior to the exam - as soon as you realize you will be unable to take the assignment/exam at the scheduled time. Each case will be reviewed individually. Valid and detailed documentation is a prerequisite for scheduling a makeup under such extenuating circumstances.
- If you have an emergency on the day of the assignment/exam, the instructor must be contacted by midnight of the day of the assignment/exam.
- Make-ups need to be scheduled within a week from the assignment deadline. Student is responsible for scheduling.
- Additional Note: Being on vacation or booking a trip prior to the completion of the semester is not a valid reason to request a makeup. Please reference the most recent Academic Calendar, <https://catalog.ufl.edu/UGRD/dates-deadlines/pdfs/>.

*If you have a disability that requires academic accommodation, contact the Disability Resource Center (DRC). The DRC will provide documentation to the students who must then provide this documentation to the instructor when requesting information. You must submit this

documentation prior to submitting any assignments for which you are requesting accommodation.

* Incompletes are only assigned when extraordinary circumstances (such as an accident, or extended hospitalization), arising after the date for dropping the course, prevent the student from completing the course requirements. Having a failing grade in the course is not a valid reason for requesting an Incomplete. Information on Medical Withdrawal can be found at <https://umatter.ufl.edu/> . Information on how to Drop a class can be found in UF's Academic Catalog <https://catalog.ufl.edu/> and <https://catalog.ufl.edu/UGRD/academic-regulations/dropping-courses-withdrawals/>

*There is no "extra credit" or forgiven grades – you are responsible for all your work done (or left undone).

Honor Code on Homework and Exams: You are required to abide by the University of Florida Student Honor Code. Any violation of the academic integrity expected of you will result in a minimum academic sanction of **a failing grade on the assignment or assessment**. Any alleged violations of the Student Honor Code will result in a referral to Student Conduct and Conflict Resolution. Please review the Student Honor Code and Student Conduct Code at sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/

The Honor Code will be enforced for **all homework and exams**.

Homeworks are to be undertaken independently; all graded work is expected to be your original and independent work. It is not appropriate to: (1) give your work on the assignment to someone else to copy, (2) copy directly from someone else's solutions (either present or past students), (3) use someone else's computer program or output, or a copy of someone else's computer session, or (4) use solutions posted in previous semesters. ***You are responsible for making sure that there is no reason to doubt that the work you hand in is your own.*** As only your name appears on an assignment, my expectation and assumptions are that you have done the work yourself, fully and independently.

Classroom Behavior: During class students should turn off their cellular phones and refrain from eating, drinking, reading newspapers, doing homework, listening to music, excessive talking and all other behaviors that are distracting and disrespectful to the instructor and their fellow students.

Privacy Policy: Student records are confidential. Only information designated "UF directory information" may be released without your written consent. This applies to parents or anyone else who contacts me about your grades.

Faculty Course Evaluations: Student feedback is welcomed by the instructor and beneficial to future students in the course. Students are requested to provide feedback on the quality of instruction in this course by completing a brief confidential evaluation towards the end of the semester at <https://evaluations.ufl.edu>. Summaries of the evaluation results can be found at <https://evaluations.ufl.edu/results>.

Other University Services

U Matter, We Care: Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

***Sexual Assault Recovery Services (SARS): Student Health Center, 392-1161**

***University Police Department, 392-1111 (or 9-1-1 for emergencies), <http://www.police.ufl.edu>**

Covid Policy

In response to COVID-19, the following practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: <https://coronavirus.ufhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.

You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.

- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
- Hand sanitizing stations will be located in every classroom.

If you sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the [UF Health Screen, Test & Protect website](#) for more information.

- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.
 - If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- Continue to regularly visit coronavirus.UFHealth.org and coronavirus.ufl.edu for up-to-date information about COVID-19 and vaccination.

TENTATIVE Spring 2022 Schedule			
Date	Day	Topic	Homework
5-Jan	W	Syllabus	
6-Jan	R	Module 2: What is Statistics?	
10-Jan	M	Module 3: Exploring Data with Graphs	
11-Jan	T	Module 3: Exploring Data with Graphs	
12-Jan	W	Lab 1: Histogram	
13-Jan	R	Module 4: Measures of Center, Variability, and Position	HW1
17-Jan	M	Holiday - No Class	
18-Jan	T	Module 4: Measures of Center, Variability, and Position	
19-Jan	W	Module 4: Measures of Center, Variability, and Position	
20-Jan	R	Module 5: Introduction to Regression	HW2
24-Jan	M	Module 5: Introduction to Regression	
25-Jan	T	Module 6: Cautions in Regression	
26-Jan	W	Lab 2: Regression	
27-Jan	R	Exam 1 Review	HW3
31-Jan	M	Exam 1	
1-Feb	T	Module 6: Categorical Data	
2-Feb	W	Module 7: Gathering Data	
3-Feb	R	Module 8: Understanding Probability	HW4
7-Feb	M	Module 8: Understanding Probability	
8-Feb	T	Module 9: Continuous Probability Distributions	
9-Feb	W	Lab 3: Probability	
10-Feb	R	Module 9: Continuous Probability Distributions	HW5
14-Feb	M	Module 10: Discrete Random Variables	
15-Feb	T	Module 10: Discrete Random Variables	
16-Feb	W	Lab 4: Contingency Tables	
17-Feb	R	Exam 2 Review	HW6
21-Feb	M	Exam 2	
22-Feb	T	Module 11: Sampling Distribution of Sample Proportions	
23-Feb	W	Lab 5: Sampling Distribution of Sample Proportions	
24-Feb	R	Module 12: Sampling Distribution of Sample Means	HW7
28-Feb	M	Module 13: More Sampling Distribution Problems	
1-Mar	T	Module 14: Confidence Interval for Proportions	
2-Mar	W	Lab 6: Confidence Interval for Proportion	
3-Mar	R	Module 14: Confidence Interval for Means	HW8
March 7-11 Spring Break - No Class			
14-Mar	M	Module 15: Confidence Interval for Means	
15-Mar	T	Module 15: Confidence Interval for Means	
16-Mar	W	Lab 7: Confidence Interval for Mean	
17-Mar	R	Module 16: Review of Confidence Interval	HW9
21-Mar	M	Module 17: Significance Test for Proportions	
22-Mar	T	Module 17: Significance Test for Proportions	
23-Mar	W	Module 17: Significance Test for Proportions	
24-Mar	R	Module 18: Significance Test for Mean	HW10
28-Mar	M	Module 18: Significance Test for Mean	
29-Mar	T	Module 18: Significance Test for Mean	
30-Mar	W	Lab 8: Significance Test for Mean	
31-Mar	R	Module 19: Additional Concepts about Significance Tests	
4-Apr	M	Exam 3	
5-Apr	T	Module 20: Comparing Two Sample Proportions	
6-Apr	W	Module 20: Comparing Two Sample Proportions	
7-Apr	R	Module 21: Comparing Two Independent Means	HW11
11-Apr	M	Module 21: Comparing Two Independent Means	
12-Apr	T	Module 22: Matched Pairs	
13-Apr	W	Lab 9: Matched Pairs	
14-Apr	R	Module 23: McNemar's and Permutation Tests	HW12
18-Apr	M	Module 24: Review	
19-Apr	T	Module 24: Review	
20-Apr	W	Exam 4	