STA2023 - Introduction to Statistics I
Summer B 2020
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Course Website: https://elearning.ufl.edu

Online Office Hours/Tutoring:
Zoom Monday-Friday 1-3pm or by appointment

Course Information:

Course Objective:
The primary goal of the course is to understand how the process of posing a question, collecting data relevant to that question, analyzing the data, and interpreting the data can help find answers to real world problems.

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:

1. **Data** – which includes graphical and numerical summaries to describe the distribution of a variable, or the relationship between two variables (chapters 1, 2 and 3, approximately 1 week), 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 (chapter 4, 1 day.)
2. **Probability and Inference** – using the language of probability and the properties of numerical summaries computed from a random sample (chapters 5, 6 and 7, approximately 2 weeks), we learn to draw conclusions about the population of interest, based on our random sample, and attach a measure of reliability to them (chapters 8, 9, 10 approximately 3 weeks).

Course Material by Week

Week	Sections in Textbook	Description
Week 1	1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3	Exploring Data with Graphs; Measures of Center, Spread and Position; Regression
Week 2	3.4, 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.3	Regression; Data from Surveys/Experiments; Probability
Week 3	5.4, 6.1, 6.2, 6.3, Exam 1 Review	Probability in our Daily Lives; Probability Distributions
Week 4	7.1, 7.2, 8.1, 8.2	Sampling Distributions; Confidence Intervals for the Population Proportion
Week 5	8.3, 9.1, 9.2, 9.3, 9.4, 10.1	Confidence Intervals for the Population Mean; Significance Tests
Week 6	10.1, 10.2, 10.4, Exam 2 Review	Comparison of Two Proportions and Two Means

Course Assessment

Coursework	**Percent of Grade**	**Dates (Tentative)**
Exam 1	30%	July 27
Exam 2	30%	August 14
Quizzes	30%	Weekly
Project	10%	August 7

Required Materials

1. Lecture Notes – these are needed to follow along with the lectures.
    - Either print them from the course home page in Canvas under the "Lecture Notes" link.
    - Or buy the *Student Laboratory Workbook for Statistics: The Art and Science of Learning from Data*, 4th Edition by Mocko and Ripol. You will also need to print out a small supplement from Canvas to go with the Workbook.
2. **Scientific Calculator** – you will need a calculator with some basic statistical functions including mean and standard deviation. Many inexpensive calculators (around $16) have these functions; check the manual or look for the following symbols: x-bar and either s or σn-1. **Graphing calculators are NOT ALLOWED on exams.**
3. Reliable Computer with internet access.
4. Statistical Software Packages – for the Mini Projects you will need to use a statistical software package. You can choose between three packages: artofstat.com (free online, accompanies the textbook), Minitab (free in UF Apps, see https://info.apps.ufl.edu/) or StatCrunch.com ($13.00 for 6 months). Some of the quizzes will also ask you to access artofstat.com.

Optional Materials

1. Textbook – *Statistics: The Art and Science of Learning* from Data by Agresti, Franklin, Klingenberg, 4th Edition, Pearson, 2017. To access the textbook you can:
    - Purchase or rent the textbook hardbound new or used ISBN13: 9780321997838 or purchase etext

Exams
Two multiple choice exams. Exam 1 will cover Chapters 1-6 and Exam 2 will cover Chapters 7-10. It is your responsibility to have an approved calculator, pencil, and ID during each exam. If a student is unable to take an exam at the scheduled time, they must notify the instructor, Deborah Rozum, one week prior to the exam for any arrangements to be made for a makeup. Each case will be reviewed individually. Documentation is a prerequisite under such extenuating circumstances. In case of illness, the instructor must be notified by 12:00 pm on the day of the exam and must receive a medical excuse. The makeup exam may not be in a multiple choice format. A grade of zero is the minimum punishment of any type of dishonesty on an exam. There are no retakes on exams for any reasons. If you are feeling poorly, you need to contact the instructor before taking the exam and provide a doctor's note.

Quizzes
There will be a total of 6 quizzes due each Sunday at 11:59pm ET, giving you the maximum amount of time to complete the quizzes before starting new material the next day. The lowest quiz score will be dropped: only the highest 5 scores will be used to calculate the Quiz grade. Quizzes will be composed of about 5 questions that are similar to the homework and problems done in class.

Homework
Homework will be assigned but not graded. A list of recommended homework problems will be posted on the class website each week, and it is your responsibility to work on these problems. It is highly suggested that you do the homework, as students that do the homework tend to perform well in the class.

Grading Scale

Letter Grade	Grade in Class
A	92+
A-	88.5-91.99
B+	84.5-88.49
B	80-84.99
B-	78.5-79.99
C+	74.5-78.49
C	67.5-74.49
D	60-67.49
E	Below 60

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/UGRD/academicregulations/attendance-policies/

Students with Disabilities
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Policies

Academic Dishonesty: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Extensions: Because it is possible to complete the lessons and quizzes early and that there are three drops, no extensions will be given on assignments unless there is prolonged hospitalization. All quizzes are open from the beginning of the semester so students can work ahead if they need to, since all the material is also available as online interactive lessons posted from the start. Please complete the quizzes early if you have travel plans, religious observances, sports or club events, or any other conflict whether approved by the university or not.

Extenuating Circumstances: Sometimes students may be unable to complete their quizzes due to extended hospitalization or illness, or some catastrophic event. In these cases the student must meet with the Course Coordinator in person with all the appropriate documentation to discuss the situation. Each case will be reviewed individually.

Privacy Policies: Student records are confidential. Only information designated "UF directory information" may be released without your written consent. UF views each student as the primary contact for all communication. If your parents contact me about your grade, attendance or other information that is not "UF directory information", I will ask them to contact you.

email: email relating to information about the class should be sent to the instructor at s.stine@ufl.edu or through the course management system. If your questions are about your grade or of a personnel nature, please email me, Stephanie Stine, directly. Your message will be answered within one to two working days, in most cases. However, I ask you to please refer to this Syllabus and the course website to try to find the answers for yourself. Questions regarding the material covered should be asked on the Canvas discussion board. This way everyone can benefit from your questions.

Grading: Grades will be changed only when an error has been made; negotiation is not appropriate.

Incomplete: Incomplete grades are only assigned when extraordinary circumstances (such as an accident, or extended hospitalization), after more than 2/3rds of the course has been completed and prevent the student from completing the course requirements. Having a failing grade in the course is not a valid reason for requesting an Incomplete.

General Course Information

This course satisfies general education credits in the mathematical sciences. Students learn how to summarize data and how to make appropriate decisions based on data. (This course is the general education category of M.)

General Education Objective (Mathematics)
Courses in mathematics provide instruction in computational strategies in fundamental mathematics including at least one of the following: solving equations and inequalities, logic, statistics, algebra, trigonometry, inductive and deductive reasoning. These courses include reasoning in abstract mathematical systems, formulating mathematical models and arguments, using mathematical models to solve problems and applying mathematical concepts effectively to real-world situations.

In this course, this objective will be met by . . .
During the semester the students will be given an introduction to the three main aspects of statistics: design (of experiments/surveys), description (of data collected) and inference (the extension of conclusions from the data gathered in the sample to the larger population). These concepts will be presented through lectures two times a week and three mini projects. They will also learn about the normal and binomial distributions as well as the methodology of confidence intervals and significance tests. From the methods that they learn in class they will be able to critique real world surveys and experiments, interpret graphs in newspapers and magazines as well as conduct basic statistical inference for one or two groups.

General Education Student Learning Outcomes (SLOs)

Content: Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.

Communication: Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.

Critical Thinking: Students analyze information carefully and logically from multiple perspectives, using discipline specific methods and develop reasoned solutions to the problems.

In this course, these SLOs will be met by . . .

Content: Students will learn critical terminology, concepts, methods, and theories during lecture. These concepts will include terminology to describe one and two samples, discuss surveys/experiments, basic probability theory, sampling distributions, and one and two group inference. The students will be assessed on these terms and concepts during the lessons, quizzes and the three exams. Students will also demonstrate their competence in identifying the appropriate formulas to use for each situation and using those formulas correctly.

Communication: The students will use verbal and written communication to discuss central statistical concepts in the mini projects. These concepts include description of data sets, sampling methods and interpretations of inference methodology.

Critical Thinking: The students will be asked to critically think about trustworthiness of surveys and experiments presented in the media. Additionally, students will learn how to conduct significance tests, a statistical method to logically determine if there is enough evidence for a hypothesis. Students will learn how to state the null and alternative hypotheses (different perspectives) and then to use the data collected to determine if there is enough evidence to support the alternative hypothesis using methods central to the field of statistics. **The students will be tested on these concepts in their lessons, quizzes and on the exams.**

Instructor Course/Evaluations
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/
Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/

Campus Resources

Health and Wellness
U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392- 1575 so that a team member can reach out to the student.
Counseling and Wellness Center: https://counseling.ufl.edu/, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
Sexual Assault Recovery Services (SARS): Student Health Care Center, 392-1161.
University Police Department: 392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

Academic Resources
E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learningsupport@ufl.edu. https://lss.at.ufl.edu/help.shtml.
Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling. https://career.ufl.edu/
Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.
Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. http://teachingcenter.ufl.edu/
Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. http://writing.ufl.edu/writing-studio/
Student Complaints On-Campus: https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/

The syllabus is subject to change. You will be notified if there is a change.