

Syllabus for STA 2023 - Introduction to Statistics

Summer A 2017 - ONLINE

Instructor Information

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Teaching Assistant Information

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Online Free Tutoring (Office Hours)

MTWRF noon - 1pm and 4 - 5pm (Conducted by me and the TAs) See Canvas for the schedule

- Where: Canvas conferences.
- We will work out three or four problems on the material related to the module and then take questions from those in attendance.
- You can also send me (mmeece@stat.ufl.edu) questions prior to the session to be included. This will be recorded for later viewing.
- After we finish going over the three to four problems, if there is no one in attendance I will close the session.

Layout of Course:

The course is setup on a modular system.

- A modules will be due each day - except for the first Wednesday. There will be two due on the same day do to the lag caused by drop/add. A total of 24 modules in the course.
- Each MODULE will have the following components.
 - OVERVIEW page. This explains what material is covered in that module.

- LESSON. The lesson includes several 5 - 10 minutes videos with questions that reinforce the material. For these questions, you can re-do the questions until you get them correct up until the due date. This is worth 20 points,
- QUIZ. For each quiz, you will have three attempts, the highest attempt counts. This is worth 10 points,
- EXTRA EXAMPLES OR EXTRA RESOURCES. This is a list of additional support videos and handouts or instructions.

Who to contact for Help

Who do you contact if you have a problem?

Problem	Contact
Questions about grades or questions about actual exam questions	Megan Mocko through email or through Canvas messaging
Course Material - any questions from lessons, practice material, projects, etc. (any course material questions that you have about material in which you are not proctored)	Please post your question in Piazza. Your question can be answered by other students, teaching assistants or the instructor. (Note you can post anonymously.)
Technical problem with videos or with quiz functions or other Canvas functionality	UF help desk at 352-392-HELP
Questions about lessons and other technical questions	Post in Piazza under the technical questions page

1 Course Material By Week

Week 1	Introduction to the field of statistics; Exploring Data with Graphs, Measures of Center, Spread and Position;
Week 2	Exploring Relationships Between Two Variables; Simple Linear Regression; Experimental and Survey Design, Probability Rules; Normal Distributions
Week 3	Binomial Distribution. <u>Exam 1</u> . Sampling Distribution of the Sample Mean and Sample Proportion
Week 4	More Sampling Distributions, Confidence Intervals for the Population Proportion and Mean
Week 5	Significance Test about the Population Proportion; Significance Test about the Population Mean; Comparing Two Ind. Proportions and Two Ind. Means
Week 6	Means of Dependent Samples, McNemar's Test, Permutation Tests, <u>Exam 2</u>

Required Materials

For the course, you need to have the

- Student Lab Workbook, **Student Lab Workbook for Statistics: The Art and Science of Learning from Data—4th edition** by Megan Mocko and Maria Ripol

- *Scientific calculator: that has some basic statistical functions: mean and standard deviation. Many inexpensive calculators (around \$10 to \$15) have these functions; check the manual or look for the following symbols: \bar{x} and either s or σ_{n-1} .*
- *One of three statistical software packages)Minitab, Staterunch or ArtofStat. com)*
- *You also need access to a textbook to do suggested homework problems (not graded). This textbook can be online through Mystatlab or through the textbook.*
- *Reliable computer that meets the requirements for online proctored exams by ProctorU.*

There are **two options** for purchasing material for the course. You can use the textbook (*The Art and Science of Learning from Data, Agresti, Franklin, Klingenberg*) **or** the Mystatlab package.

<i>Materials needed for course</i>	
<i>Option 1</i>	<i>Option 2</i>
Student Lab workbook	Student Lab Workbook
Scientific Calculator	Scientific Calculator
<p><i>Hardback textbook - (old, used, rented ebook or new)</i> <i>(Statistics: The Art and Science of Learning From Data by Agresti, Franklin and Klingenberg)</i></p> <ul style="list-style-type: none"> • <i>Includes Text</i> • <i>Includes suggested homework problems in the text with answers for odd problems in the back of the book</i> • <i>DOES NOT include StatCrunch</i> 	<p><i>Mystatlab Package - MyStatLab New Design with eText for Statistics: The Art & Science of Learning from Data for University of Florida - Standalone Access Card with ISBN: 9781323475454.</i></p> <ul style="list-style-type: none"> • <i>Includes Etext</i> • <i>Includes Automated Suggested Homework</i> • <i>Includes Statcrunch at no additional cost)</i> • <i>Must be purchased through the UF bookstore or through the Canvas course at the start of the semester. Here is a link with instructions on how to purchase this within the Canvas shell:</i> http://www.stat.ufl.edu/~mmeece/2023/IncludedAccess.pdf Video Link: https://www.youtube.com/watch?v=Lc9za5YWh0w
<p><i>Statistical Software Packages</i></p> <ul style="list-style-type: none"> • <i>Artostat.com (free)</i> • <i>Minitab (using UF APPS)</i> • <i>Statcrunch.com (13.75 for 6 months)</i> 	<p><i>Statistical Software Packages</i></p> <ul style="list-style-type: none"> • <i>Artostat.com (free)</i> • <i>Minitab (using UF APPS)</i> • <i>StatCrunch (included with Mystatlab package)</i>

i Course Assessment

<i>Assessment</i>	<i>Percent of Grade</i>
Exam 1	30%
Exam 2	30%
Mini Projects	12%
Lessons	8%
Quizzes	20%

Possible Grades for the Course

Letter Grade	Grade Points	Percentage of Points Needed
A	4.00	90 to 100%
A-	3.67	88.5 to 89.99%
B+	3.33	84.5 to 88.49%
B	3.00	80 to 84.49%
B-	2.67	78.5 to 79.99%
C+	2.33	74.5 to 78.49%
C	2.00	67.5 to 74.49%
D	1.00	60 to 67.49%
E	0.00	Below 60%

Please see the following webpage for UF grading policies for assigning grade points:

<https://catalog.ufl.edu/uarad/current/reaulations/info/arades.aspx>.

You must have a grade of a C to get general education credit for this course.

Course Website

We will be using the course management system, Canvas. For those using, Mystatlab the link is on the leftside bar.

In Canvas you will be able to: complete the lessons in the course, find any updates to the Syllabus, watch the lectures as streaming video as you complete the lessons, take the online quizzes, turn in portions of the project using the assignment tool, ask questions in the "Piazza", and check your grade. For any technical problems with E-Learning, please contact 392-FIELP or [learnina-support\(5\)ufl.edu](mailto:learnina-support(5)ufl.edu).

Lessons (similar to the idea of lectures with clicker questions)

- You will be completing about one lesson per day except for the first Wednesday. There are two lessons due that day due to two days of drop/add. This lesson will include text and video about the day's assigned material. As you work through the material, you will be filling in the lab workbook. You should expect this lesson and the practice assignment to take you about 2 to 3 hours per lesson; however, this time may vary from student to student.
- The lesson scores are automatically sent to the aradebook. There is an unlimited number of tries for each lesson up until the due date. If you miss the assignment or if you would like to review the material, you can see this information under the Exam modules, under the link title expired lessons.
- After you have finished the lesson, you will want to submit your scores to the gradebook by hitting the Finish button at the bottom of the last page. You will be asked if you would like to send an email of your results. It is a good idea to send this to yourself as a backup of your lesson score.

- After you finish the assessment, the grade should appear in the gradebook. Please check the calendar posted in the course management system for a more up to date list of deadlines. Please check your scores in a timely manner. There are 24 lessons and the three lowest lesson scores will be dropped. To get your grade for this section, total up your points from each lesson and divide by the total number of points. Take this number and multiple by 100 to get your grade for this part.
- Lessons are worth 20 points each.
- It is recommended that you work through problems on a laptop or desktop machine rather than on a tablet or cell phone.

Quizzes

It is important to practice statistics in order to learn it. In this course, there are many different types of assignments available for you to practice learning statistics.

- You should complete an online quiz in each module.
- Some of these quizzes will have questions around a theme whereas others will have more independent questions.
- There are a total of about 26 assignments available. The three lowest quizzes scores will be dropped. There is a quiz for each module (24 total modules) and the midterm and final course evaluation will also count as a quiz.
- Quizzes are worth 10 points each.

Mini Projects

In this course, there will be three individual mini projects. The Island mini project brings together all aspects of the course: data collection, experimental design and data analysis. More information and rubrics are provided in the course management system. The Island Project is worth 12% of your grade. There will be a 25% late penalty per day and not accepted after the 4th day.

Exams

There will be two online proctored exams. The exam will be multiple choice, drop down box and matching. Exams will cover a larger amount of material than the quizzes and will also place more emphasis in the understanding of concepts and ideas behind the formulas. **Academic dishonesty** on any exam will result in a grade of zero on that exam. For the exam, you will be allowed to have one blank sheet of paper and a scientific calculator. Using a cell phone during the exam is considered an honor code violation and will be reported to the honor court. Formula Sheets, and appropriate tables (z and t tables) will also be available as a link in the instructions of the exam. You can find a link to the formula sheets under module 1: Important Resource Formula Sheets for Exam.

Online Exam Dates

Exams	Date	Time	Chapters in Book	Handbook Pages

Exam 1	Wednesday, May 24th (7 am to 9pm) (start time)	Exam length: 2 hrs.	Ch. 1 - Ch. 6 Sec. 3	1 - 48
Exam 2	Friday, June 16 th (7am to 9pm) (start time)	Exam length: 2 hrs.	Ch. 7 - Ch.10	78 -121



Makeup Exam Policy

- Every effort should be made to take the exam during the open exam period. Only extreme situations will warrant a makeup exam. Contact the instructor prior to the exam - as soon as you realize you will be unable to take the test at the scheduled time. Each case will be reviewed individually. Valid and detailed documentation is a prerequisite for scheduling a makeup exam under such extenuating circumstances. The makeup exams will be mostly multiple choice with some short answer.
- If you have an emergency on the day of the exam, the instructor must be contacted by midnight of the day of the exam via email.
- **To make arrangements for a makeup exam:** Contact the instructor at [mmeece \(3>sta t. ufl. ed u\)](mailto:mmeece@staf.ufl.edu). Makeup exams will cover the same material as the regularly scheduled exam, but will not necessarily be in multiple choice formats.

Pre-Exam Checklist

- Go to ProctorU's FAQ: <http://proctoru.com/faa.php>
- Test out your equipment: <http://www.proctoru.com/testitout/>
- Be sure that you are in a well lit room - must be daylight quality.
- Be sure to have your photo id ready.
- Be sure to bring a reflective surface such as a mirror, CD or DVD.

ProctorU Information Handout

You will be taking your exam through an online proctoring company. I have posted their information here for your convenience.

What We Do

ProctorU is a revolutionary new service that allows students to complete their assessment at any location while still ensuring the academic integrity of the exam for the institution. Using almost any web cam and computer, you can take exams at home, at work, or anywhere you have internet access.

Preparing for Your Exam

You will be connected to a live person during your exam that will be there to guide you through the process and assist with any technical problems. If you have any questions, please call our proctor line at 205-870-8122.

Appointments

Appointments are required to use ProctorU and all appointments need to be made at least 72 hours in advance. If you register prior to 72 hours before the exam, there will not be an additional fee. Reservations made within 72 hours of your exam are subject to a \$5 late reservation fee. There is also a "Take it Now" option that does not require prior reservation. However, it will cost you \$8.75. To make an appointment, simply create an account at <http://go.proctoru.com>, log in, click on the "new exam" link and select the exam, date, and time you desire. You will receive a confirmation email of your reservations at the email address that you provided to ProctorU.

Procedure

- Plan ahead for your session.
- Make sure you have a quiet, private location in which to take the test.
- The area and room around your computer will be scanned using a web cam prior to your exam, so all non-authorized materials should be put away and the area should be clutter-free. If you are using a public computer lab, you must have a web cam connection and use headphones, so you won't disturb others.
- You will also be required to show picture identification to your proctor at the time of your exam. Approved forms of identification include, but are not limited to, a driver's license, military identification card, passport, or school-issued identification card.
- No breaks are allowed during your testing session and cell phones and other devices will not be permitted in the testing area.
- No other people are allowed in the area in which the test is being taken.
- Any unauthorized notes or other attempts to cheat will abort the test session and will be reported to your instructor.
- At the date and time of your appointment, return to <http://go.proctoru.com>, log in, and a message will appear saying, "You have an exam. Click here to begin. " Click on this button and it will automatically take you to the proctor page. Fill out your personal information and hit submit. You will then be directed to a screen which will connect you to your proctor. Just follow the steps on the screen and a proctor will be connected with you shortly. Once connected, your designated proctor will walk you through the set up process and you will log into your testing portal. Your proctor will also supply the password for your examination. Your exam time will begin when the proctor enters the examination password on your screen. If you have any problems connecting, please call ProctorU at 205-870-8122. Should you not be able to reach ProctorU via telephone you can email help@proctoru.com If you have scheduled an exam and you are late, your proctor will attempt to call you at the phone number you provided when you scheduled your exam. Should there be any UF login issues at the time of your scheduled exam your proctor will contact the course instructor or course coordinator and you will be able to reschedule your exam if necessary.
- You may not take the exam at a café, on a plane, train or other public place.
- Make sure that your laptop is plugged in before starting the exam.

Lecture Notes

The notes in the Student Laboratory Workbook will be used in class. When you are following the lectures, you should always have the lecture notes in front of you. The instructor will go over the definitions and theory, and work out the examples on the spaces provided.

| Suggested Homework

Suggested homework problems from the hardback textbook can be found listed under each module page. There are also suggested homework problems listed in the Mystatlab link on the course homepage.

| Statistical Software Packages

- **StatCrunch** is an online statistical software package that comes with the MyStatLab access code. You can also purchase it through the website - Statcrunch.com for 6 months for 13.50. The data sets from the textbook are automatically entered.
- **Artostat.com** is also an online statistical software package that accompanies our book. It is not required that you have Mystatlab.com to use it. It is free to use.
- **Minitab** is a statistical software package available through U F APPS. See more information here: <https://info.apps.ufl.edu/>.

| Online Free Tutoring

- Where: Canvas conferences - on the left sidebar of the course.
- Two Times a Day
- The TA or the instructor will work out three or four problems on the material related to the module and then take questions from those in attendance.
- You can also send the instructor or TA questions prior to the session to be included. This will be recorded for later viewing.
- After the TA or instructor has finished going over the three to four problems, if there is no one in attendance they will close the session.

| Question and Answer Discussion Board (Piazza)

All students will have access to a Piazza in Canvas. Piazza is a great tool that will allow us to organize questions so that it is easier to find answers. Please try to post questions under the correct chapter or assignment heading. You are able to ask questions about lessons, videos, lesson quizzes, and homework questions.

The students should have limited expectations of data privacy, so don't post personnel information or information about grades. Please ask grade questions directly of the instructor. It is also recommended that students opt out of Piazza Careers.

DO NOT POST QUESTIONS ABOUT THE ACTUAL EXAM QUESTIONS in Piazza. An easy way to think about it is this, if you are not being proctored by ProctorU you are free to post your question in Piazza at any time. If you are asking a question about a question while you are being proctored please email me privately through email when you have finished the exam.

Students who post Exam questions or answers on Piazza will be penalized. It will be considered an honor violation.

Please send an email to the instructor to discuss private matters such as grades, medical excuses and DRC letters.

Piazza is a positive learning environment to ask questions. Please be respectful of other students at all times. Do not use profanity or use this as a place to complain.

Textbook Chapters Covered

Chapter 1 *Statistics: The Art and Science of Learning From Data*

1.1 *Using Data to Answer Statistical Questions*

1.2 *Sample versus Population*

Chapter 2 *Exploring Data with Graphs and Numerical Summaries*

2.1 *Different Types of Data*

2.2 *Graphical Summaries of Data*

2.3 *Measuring Center of Quantitative Data*

2.4 *Measuring the Variability of Quantitative Data*

2.5 *Using Measures of Position to Describe Variability*

Chapter 3 *Association: Contingency, Correlation, and Regression*

3.1 *The Association Between Two Categorical Variables*

3.2 *The Association Between Two Quantitative Variables*

3.3 *Predicting the Outcome of a Variable*

3.4 *Cautions in Analyzing Associations*

Chapter 4 *Gathering Data*

4.1 *Experimental and Observational Studies*

4.2 *Good and Poor Ways to Sample*

4.3 *Good and Poor Ways to Experiment*

4.4 *Other Ways to Conduct Experimental and Non-experimental Studies*

Chapter 5 *Probability in Our Daily Lives*

5.1 *How Probability Quantifies Randomness*

5.2 *Finding Probabilities*

	<i>5.3 Conditional Probability: The Probability of A Given B</i>
	<i>5.4 Applying Probability Rules</i>
Chapter 6	<i>Probability Distributions</i>
	<i>6.1 Summarizing Possible Outcomes and Their Probabilities</i>
	<i>6.2 Probabilities for Bell-Shaped Distributions</i>
	<i>6.3 Probabilities When Each Observation Has Two Possible Outcomes</i>
Chapter 7	<i>Sampling Distributions</i>
	<i>7.1 How Sample Proportions Vary Around the Population Proportion</i>
	<i>7.2 How Sample Means Vary Around the Population Mean</i>
Chapter 8	<i>Statistical Inference</i>
	<i>8.1 Point Estimates of Population Parameters</i>
	<i>8.2 Constructing a Confidence Interval to Estimate the Population Proportion</i>
	<i>8.3 Constructing a Confidence Interval to Estimate the Population Mean</i>
	<i>8.4 Choosing a Sample Size for a Study</i>
	<i>8.5 How Do Computers Make New Estimation Methods Possible?</i>
Chapter 9	<i>Statistical Inference: Significance Test About Hypotheses</i>
	<i>9.1 Steps for Performing a Significance Test</i>
	<i>9.2 Significance Tests about Proportions</i>
	<i>9.3 Significance Tests about Means</i>
	<i>9.4 Decisions and Types of Errors in Significance Tests</i>
	<i>9.5 Limitations of Significance Tests</i>
Chapter 10	<i>Comparing Two Groups</i>
	<i>10.1 Categorical Response: Comparing Two Proportions</i>
	<i>10.2 Quantitative Response: Comparing Two Means</i>
	<i>10.3 Other Ways of Comparing Means and Comparing Proportions</i>
	<i>10.4 Analyzing Dependent Samples</i>

School Closures

If classes at the University of Florida are canceled, the course will be suspended until the university re-opens. The University will announce this closure on the University of Florida homepage. Any announcements about the course will be posted at the course website.

Course Policies

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.

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 [mmeece \(3>sta.t.ufl.edu\)](mailto:mmeece@sta.t.ufl.edu) or through the course management system. If your questions are about your grade or of a personnel nature, please email Megan Mocko directly. Your message will be answered within one working day, in most cases. Two working days at the extreme. However, we 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 Piazza board. This way everyone can benefit from your questions.

Instructor's Honor Code: We the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

Academic Dishonesty: We adhere to the University of Florida rules and guidelines for handling instances of academic dishonesty. Please refer to the Office for Student Services for detailed information about the current policies.

Students with Disabilities: Students with disabilities requesting accommodations should first register with the Disability Resources Center (<http://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

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.

Instructor Course/Evaluations : Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu/>

Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

Where to Get Help for this course:

- During Online Office Hours (Free Tutoring)
- Piazza in Canvas
- Via Emails to the instructor at mmeece@stat.ufl.edu

How to do well in the course

- Keep up with the lessons. Set a schedule for yourself and stick with it.
- Visit the course website regularly to read announcements on the course homepage
- Do well on the lessons and quizzes.
- Visit the free tutoring sessions to get help from the TA and your instructor. Our job is to answer any questions that you may have, and to help you understand the material and learn to do the problems.
- Get to know other students in the class and get together regularly to work on homework problems, and to study for quizzes and exams. Please remember to be professional in your conversations. Please respect each other and refrain from profanity.
- Prepare carefully for exams by going over the lessons, doing your suggested homework problems, studying your quizzes and reading the book. Pay special attention to the understanding of concepts and ideas behind the formulas.

How to get the most out of the online course

- Set aside time each day to complete the lessons
- You should watch and read the lessons on a regular schedule
- Complete the lessons and then do practice assignment.
- Actively involve yourself in the lesson. Be inquisitive. Work out the problems presented in the videos. Learning is not a spectator sport. Jump in and work on the problems.
- Watch the lecture videos and complete the lessons in a low disruption environment. In addition, to watching the lecture, you should not be also texting, instant messaging, emailing, reading a website, watching TV, etc. Your attention should be focused on the lesson.
- I have carefully considered what needs to be discussed in the lessons. Make sure that you are paying attention to all of it.

Problems

Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://distance.ufl.edu/student-complaints> for more details.

- First, please contact the instructor first via email at mmeece@stat.ufl.edu first.
- If necessary after that, please contact the chair of the Statistics department at 392-1941.

- If necessary after that, should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

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.)

Course Description

STA 2023 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 (chapters 1, 2 and 3, approximately **1J> weeks**), 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).

II Probability and Inference - using the language of probability and the properties of numerical summaries computed from a random samples (chapters 5, 6 and 7, 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 2 weeks).

Course Objective

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

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 three times a week and lab once a week. 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 two 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.

Course Objective

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

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\(5\)ufl.edu](mailto:umatter(5)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.

Counseling Services and Mental Health Services

- <http://www.counselina.ufl.edu/cwc/Default.aspx>
- 392-1575

University Police Department

- 392-1111 or 9-1-1 foremergencies