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|  | STA2023.0003: Statistical Methods I*Department of Statistics and Data Science, College of Sciences*Credit Hours: 3 |

# Course Syllabus

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| Instructor: | Nathaniel Simone  | Term: | Fall 2023 |
| Office Location: | Technology Commons II (TC2) 211B | Class Meeting Days: | Mon/Wed/Fri |
| Office Hours: | 3:00pm – 5:00pm Tuesday/Thursday | Class Meeting Time: | 10:30am-11:20am |
| Phone: | Department Phone Number: (407) 823-2289 | Class Location: | CB1 121 |
| Email: | nathaniel.simone@ucf.edu (include STA2023 in subject line)  | Course Modality: | Face to Face (P) |
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| GTAs: | Daniel MarkweiMina Akhondzadeh | Emails: | da822026@ucf.edumina.akhondzadeh@ucf.edu |
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Weekly Help Hours:

* Daniel Markwei: Tuesday 2:00pm-4:00pm, Office Location/Number: TC2 209(e)
* Mina Akhondzadeh: Tuesday 3:00pm-4:00pm, Wednesday 1:30pm-2:30pm, Office Location/Number: TC2 209(e)

## Course Description

Undergraduate Catalog Description: First methods course introducing probability and statistical inference, including estimation, hypothesis testing, binomial and normal distributions, sample size.

This is a first course in statistical methods. Students will learn the basics of descriptive statistics, including numerical and visual summaries of data. Probability calculations and different strategies to calculate various probabilities will be taught, including tree diagrams, Venn diagrams, counting rules, and tables. Different discrete and continuous distributions, such as the binomial and normal distribution, will be used for probability calculations. This extends to sampling distributions and the Central Limit Theorem. The Central Limit Theorem is then applied to real world examples, including estimating population means and proportions. Hypothesis testing and confidence intervals for means and proportions will be interpreted. Finally, correlation and simple linear regression will be explored: the strength of the linear relationship between two continuous variables.

## Student Learning Outcomes

By the end of this course, students will be able to demonstrate across homework assignments, quizzes, and exams:

* Create and describe ways to summarize data, both numerically and visually.
* Calculate probabilities using various techniques.
* Understand the difference between discrete and continuous variables, as well as using them to calculate probabilities.
* Describe the Central Limit Theorem and its importance to statistics.
* Create and interpret confidence intervals for means and proportions.
* Conduct hypothesis tests and interpret the results.
* Determine the linear relationship between two continuous variables.
* Understand statistical terms and how statistics may be used and misused in the real world.

## Required Materials

* MyLab Access (see MyLab Access section) – includes an eText.
* Calculator (any calculator will do).
* Computer with a webcam and a reliable internet connection.

## Enrollment Requirements

* Prerequisite: MGF 1106 or any MAC course.
* It is recommended that you have 1 year of high school algebra and knowledge of orders of operation, formula substitutions, solving equations, and how to read mathematical word problems.

## Assessment and Grading Procedures

### Grading Methods

The following grading scheme will be used to convert the overall course percentage to a letter grade. Final grades are rounded to two decimal places that compared to the scheme below.

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| A | A- | B+ | B | B- | C+ | C | D | F |
| >90% | >88%-90% | >86%-88% | >80%-86% | >78%-80% | >76%-78% | >70%-76% | >60%-70% | <60% |

The overall grade will be made up of the following:

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| **Category** | **Description** | **Weight** |
| Homework | * 10 homework assignments, equally weighted
* Lowest score dropped.
* Online through MyLab
 | 25% |
| Chapter Quizzes | * 10 quizzes total, equally weighted
* Lowest score dropped.
* Online through MyLab
 | 15% |
| In-Class Quizzes | * May be announced or unannounced.
* 7 total, 2 will be dropped
 | 10% |
| Exams | * 5 Exams total, plus 1 cumulative final exam.
* Lowest score dropped.
* Online through Webcourses
 | 50% |

Additional Notes:

* Homework:
	+ Each homework problem has unlimited attempts until the due date in MyLab.
	+ Homework can be completed across multiple sessions.
	+ You may receive help and collaborate on your homework, but you must submit your own homework.
	+ You may submit homework late at a penalty of 20% per day. Homework due dates cannot be extended and cannot be made up.
* Chapter Quizzes:
	+ Quizzes must be completed in one session in MyLab.
	+ Please use Google Chrome.
	+ Each quiz only has 1 attempt.
	+ Each quiz is open book and open note (so you may use the textbook, your notes, and your homework), but must be completed completely on your own. You may not receive *or give* assistance to anyone.
	+ It is your responsibility to verify in advance that you are connected to a reliable internet connection and that your computer is functional.
* In-Class Quizzes
	+ Unless otherwise indicated, in-class quizzes must be done individually.
	+ These quizzes are open-note and open-book.
	+ Other sources, such as internet searches, is not allowed.
	+ In general, these quizzes will be short with only 1-2 questions. These questions will be free response.
	+ You may only discuss the quizzes with the instructor or GTA. You may review your quiz with the instructor or GTA.
* Exams:
	+ Each exam will be administered through Webcourses. Use Google Chrome for exams.
	+ It is your responsibility to verify in advance that you are connected to a reliable internet connection and that your computer is functional.
	+ Exams are open book and open note (so you may use the textbook, your notes, and your homework), but must be completed completely on your own. You may not receive *or give* assistance to anyone.
	+ To prepare, use in-class notes, homework questions, chapter exam questions, and study the review quiz. All content covered in notes, homework, and quizzes may appear on the exam.
	+ Each exam is 90 minutes long and has 20-25 questions. You will only have 1 attempt.
	+ Questions may be multiple choice, matching, or fill-in-the-blank (among others).
	+ It is highly recommended that you create a study guide, or a one-page note sheet to do each exam. Since the exam is only 90 minutes long, you cannot look up how to do each question during the exam.
	+ You may only discuss the exam with the instructor or GTA. You may review your exam with the instructor or GTA.
* Breaking any of the rules above may result in an un-droppable 0 for the quiz/exam, as well as being reported to the Student Conduct and Academic Integrity.

Academic Integrity/Breaking of Rules

* Homework
	+ If you are caught breaking any of the rules above, some potential consequences (depending on the severity of the situation) could be:
		- Receiving an un-droppable 0 for the homework assignment.
		- Receiving a 0% for the entire homework weight.
		- Receiving an F for the class.
		- Getting reported to the Office of Student Conduct and Academic Integrity.
* Chapter Quizzes
	+ If you are caught breaking any of the rules above, some potential consequences (depending on the severity of the situation) could be:
		- Receiving an un-droppable 0 for the quiz.
		- Receiving a 0% for the entire quiz weight.
		- Receiving an F for the class.
		- Getting reported to the Office of Student Conduct and Academic Integrity.
* In-Class Quizzes
	+ If you are caught breaking any of the rules above, some potential consequences (depending on the severity of the situation) could be:
		- Receiving an un-droppable 0 for the quiz.
		- Receiving a 0% for the entire quiz weight.
		- Receiving a reduced grade in the course.
		- Getting reported to the Office of Student Conduct and Academic Integrity.
* Exams
	+ If you are caught breaking any of the rules above, some potential consequences (depending on the severity of the situation) could be:
		- Receiving a 0 for the exam.
		- Receiving an F for the class.
		- Getting reported to the Office of Student Conduct and Academic Integrity.

### Make-up Exams and Assignments

* Exams can only be made up for military orders, religious holidays (must indicate at the beginning of the term), or University sponsored events.
* Chapter quizzes, in-class quizzes, and homework cannot be made up (unless the student has a military order).

### Pacing Schedule

* A pacing schedule will be posted to Webcourses.

### Important Dates

* Add/Drop/Swap Deadline – August 25th
* Labor Day (No classes) – September 4th
* Withdrawal Deadline – October 27th
* Thanksgiving Week (No classes) – November 22nd – 24th

### Attendance/Participation

Attendance is always expected. This class is naturally cumulative – the previous topics tend to be used in order to introduce new ideas. Therefore, showing up to class, on time, taking diligent notes, is expected. Those who do tend to perform better in this course.

### Extra Credit

Each exam will have 110 points available but will be graded out of 100 points. This means that up to 105% can be earned in the course.

### Regrades

Any regrades or grade complaints must be made within 48 hours of receiving the feedback. Quiz and exam feedback will be handed out in-class. Homework feedback will be posted online. If this request is not made within 48 hours, then that grade will be treated as final and cannot be changed.

### Communication

While I usually respond faster, please allow a minimum of 1 business day (Monday-Friday, 9am-5pm) for a response via email. Communication outside that timeframe is likely, though not guaranteed.

If you have a question solely about the content of the course (such as not understanding a concept), please address them one of the GTA.

### Grade Dissemination

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To comply with the Family Educational Rights and Privacy Act (FERPA), grades must not be released to third parties, which includes posting grades by name, SSN, or UCFID. This section can indicate how you will return graded assignments to the individual student. To ensure students have prompt feedback, and knowledge of their progress, faculty members must record all grades in Webcourses@UCF and follow student data classification and security standards.

## MyLab Access

* MyLab Homework and Chapter Quizzes
	+ Homework and chapter quizzes will be administered through MyLab. The registration process is briefly described below. You can always access MyLab through the “Modules” tab on Canvas.
* Registration
	+ Go into the course on Canvas. In the left column, select Course Materials.
	+ Select “University of Central Florida” if prompted for a campus.
	+ Select “Opt-In” to opt-in to buying MyLab and the e-book that goes along with the course.
		- If you opt-in before Sunday, August 27th, 2023, you can access the course materials for a discounted price of $69.99. The fee is billed to your student account.
		- You can then use the “modules” tab to get access MyLab.
	+ If you do not opt in before the deadline, or if you do not want to be billed to your student account, you cannot get the discount. You can do this through <https://ucf.bncollege.com/shop/ucf/page/find-textbooks>. This will be at an increased price if you choose to go this route, so it is not recommended.

## Policy Statements

**Academic Integrity**

Students should familiarize themselves with UCF’s Rules of Conduct at <https://scai.sdes.ucf.edu/student-rules-of-conduct/>. According to Section 1, “Academic Misconduct,” students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else’s efforts and used as part of an examination, course assignment, or project.
3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor’s PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student’s own academic work.
5. Plagiarism: Using or appropriating another’s work without any indication of the source, thereby attempting to convey the impression that such work is the student’s own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.
8. Soliciting assistance with academic coursework and/or degree requirements.

**Responses to Academic Dishonesty, Plagiarism, or Cheating**

Students should also familiarize themselves with the procedures for academic misconduct in UCF’s student handbook, The Golden Rule <https://goldenrule.sdes.ucf.edu/>. UCF faculty members have a responsibility for students’ education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an “F” letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a “Z” designation on one’s transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let’s avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

**Course Accessibility Statement**

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need access to course content due to course design limitations should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) <http://sas.sdes.ucf.edu/> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). For students connected with SAS, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential course access and accommodations that might be necessary and reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student. Further conversation with SAS, faculty and the student may be warranted to ensure an accessible course experience.

**Campus Safety Statement**

Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts.

* In case of an emergency, dial 911 for assistance.
* Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide’s physical location and review the online version at <https://centralflorida-prod.modolabs.net/student/safety/index>.
* Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency.
* If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <https://ehs.ucf.edu/automated-external-defibrillator-aed-locations>.
* To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to [www.getrave.com/login/ucf](http://www.getrave.com/login/ucf) and logging in. On the “My Account” tab, fill out the information, including e-mail address and cell phone number.
* Students with special needs related to emergency situations should speak with their instructors outside of class.
* To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (<https://youtu.be/NIKYajEx4pk>).

**Campus Safety Statement for Students in Online-Only Courses (In case we need to pivot to online)**

Though most emergency situations are primarily relevant to courses that meet in person, such incidents can also impact online students, either when they are on or near campus to participate in other courses or activities or when their course work is affected by off-campus emergencies. The following policies apply to courses in online modalities.

* To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to [www.getrave.com/login/ucf](http://www.getrave.com/login/ucf) and logging in. On the “My Account” tab, fill out the information, including e-mail address and cell phone number.
* Students with special needs related to emergency situations should speak with their instructors outside of class.

**Deployed Active Duty Military Students**

Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

**Make-up Assignments for authorized university events or co-curricular activities**

Students who represent the university in an authorized event or activity (for example, student-athletes) and who are unable to meet a course deadline due to a conflict with that event must provide the instructor with documentation in advance to arrange a make-up. No penalty will be applied. For more information, see the UCF policy at <https://policies.ucf.edu/documents/4-401.pdf>

**Religious Observances**

Students must notify their instructor in advance if they intend to miss class for a religious observance. For more information, see the UCF policy at <http://regulations.ucf.edu/chapter5/documents/5.020ReligiousObservancesFINALJan19.pdf>.

**Title IX policy**

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at <https://letsbeclear.ucf.edu> and <http://cares.sdes.ucf.edu/>.

**This syllabus is subject to change and all changes will be announced in class or through Webcourses.**