STA 6167
Statistical Methods in Research II

Spring, 2026

Tuesdays, 8.30 - 9.20, Leigh 0104
Thursdays 8.30 – 10.25, Leigh 0142

Catalog description: Analysis of covariance and general linear model. Factorial, nested, split-plot, and incomplete block designs. Analysis of count data.

Prerequisite STA 6166 or equivalent.

Instructor: Dr. David Holmes **Email**: david.holmes@ufl.edu

Office: FLO 101C

Instructor Office Hour for this course: Tuesdays 9.30am – 10.30am and by appointment.

Graduate Teaching Assistant and Office Hours:

Learning Outcomes: By the end of the course successful students should have achieved the following learning goals:

1) A clear understanding of the strategy of experimentation.
2) The selection of appropriate techniques in experimentation.
3) The skills to design an experiment, select an appropriate model and analyze experimental data.
4) Assess how well a regression model fits sample data.
5) Use plots to detect violations of model assumptions.
6) Use model building techniques.
7) The selection of appropriate multivariate techniques in given contexts.
8) The skills to apply multivariate statistical procedures to a wide variety of real-life problems.
9) The ability to provide correct interpretations of results and to recommend appropriate decisions.
10) The possession of skills directed to the communication of statistical results to a variety of audiences

Part I: Course Requirements

Recommended (but not required) Textbooks:

An Introduction to Statistical Methods and Data Analysis, 7th Edition, Authors: R. Lyman Ott and Michael T. Longnecker. ISBN-13: 9780495017585

OpenIntro Statistics, 4th Edition Authors: Diez, Cetinkaya-Rundel and Barr. This textbook may be downloaded as a free PDF at: openintro.org/os

Design and Analysis of Experiments, 10th Edition. Author: Douglas Montgomery. Wiley. ISBN 978-1-119-72210-6

Calculator: A calculator capable of basic arithmetic operations and taking square roots will be needed for in-class exams. Internet-enabled electronic devices, such as cell phones or tablets, cannot be used as calculators during exams.

Software: In this course, you will be required to use JMP, a statistical software program, throughout the semester. JMP is available as a free download and UF are now asking faculty and students to use the free "JMP Student Edition" and delete any previous versions.
To access this, go to the website https://www.jmp.com/en_us/academic.html

Once there, scroll down and click on Licensing for Students You will then see the following:

JMP® Student Edition
Free single-user 12-month license
JMP Student Edition is a free, comprehensive statistical analysis and visualization tool designed for classroom instruction. Based on the powerful JMP Pro software, it offers a user-friendly interface and a wide range of capabilities for teaching and learning statistical concepts.

Ideal for both introductory and advanced statistics courses, JMP Student Edition provides access to a variety of statistical techniques and graphical tools. It's perfect for demonstrating statistical principles, analyzing real-world data, and helping students develop critical thinking skills.

Finally, click on the button "Get JMP Student Edition for Free" and follow the steps to register. Note that JMP is a SAS product.

Please feel free to bring a laptop to class.

Course Assignments

Your final course grade will be based on exams and investigative tasks. Due dates are posted on the course schedule in Canvas and announced in class.

Investigative Tasks (IT's):
There will be three sets of investigative tasks and these tasks will be completed using statistical software. Answers must be supported and shown to the proper level of accuracy. Your attractively formatted documents are to be submitted on Canvas. Due dates for all IT's are posted on the Course Schedule on Canvas and you will be reminded of these. There will be a 10% penalty per day for late work and no IT's will be accepted more than one day after the due date.

You have a reasonable time after a graded IT is posted to question a grade. If you do not notify me of any issues concerning your score within that "reasonable" time, then the posted grade stands.

Exams: There will be three in-class exams during the course. You will be provided with a packet of formulae and statistical tables to be used with the exams. A copy of this packet is available for you to print in Canvas so that you will know what information will be provided for you. Cell phones must be turned off and put away during an exam (i.e. they cannot be used as clocks or calculators).
The dates for all exams are posted on the Course Schedule on Canvas and you will be reminded of these. 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.

The "reasonable" time rule detailed above also stands for Exam scores.

There is ***no "extra credit" or forgiven grades*** – you are responsible for all your work done (or left undone). If an exam is scheduled on a religious holiday that you observe, see your instructor to make alternative arrangements.

* 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/

If you have a disability that requires academic accommodation, contact the Disability Resource Center (DRC), https://disability.ufl.edu/. The DRC will provide documentation to the students who must then provide this documentation to the instructor when requesting accommodations.

Honor Code on Investigative Tasks

IT's 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, or (3) use someone else's computer program or output, or a copy of someone else's computer session. ***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. Past sanctions that have been given for an Honor Code Violation on Investigative Tasks (for a student's first offense) include zero for the assignment, 10% reduction in the student's final grade, and an Academic Integrity Seminar. Stronger sanctions are given for a second offense. Even stronger sanctions are given for cheating on an exam. It will begin with an E in the course. Please do not cheat. At the end of the story, you are actually cheating yourself and those students working honestly.

I take the UF Honor Code very seriously and will enforce it. Please see the following website for more information. 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 investigative tasks and exams.

Homework: There will be no graded homework as such, but at the end of most classes practice problems will be suggested and it is strongly advised that you try these problems. *We will learn by doing*. I will go over solutions in the following class

Communication: The Canvas site for this course will be used to provide you with information relevant to the course. So, please check the Canvas course site regularly for updates. Such information includes announcements, lecture notes, IT Task assignments, reading assignments, classwork solutions, data sets, dates of exams, and any changes to posted office hours.

Study Approach: You are to read the lecture slides before class to familiarize yourself with the material and its organization. The lecture notes will be posted on Canvas. The best way to learn is to print out the notes before class, annotate them during the class, then study carefully the notes along with your annotations after the lecture to increase understanding.

Email policy: You must use your UF email account for all email correspondence having anything to do with your work at UF. Federal laws protecting your privacy rights require that we only communicate student information directly to students – and use of the university email system is our only way to validate your identity. You may forward your campus email elsewhere, but we can respond only to a UF email account. *Please do not simply "reply" to a Canvas announcement – use my UF email.*

Help: Remember to ask for help! In addition to my office hour, I can also answer some questions via email. *I will try to answer any student emails received during the working week within 24 hours, however emails received over the weekend may not be answered until Monday morning.*

Grading Scheme:		
	Investigative Tasks 1	14%
	Investigative Tasks 2	14%
	Investigative Tasks 3	14%
	Exam 1	20%
	Exam 2	19%
	Exam 3	19%

Course letter grades are assigned as follows and are not curved:

Numeric Score	Letter Grade
93 – 100	A
88 – 92	A–
83 – 87	B+
70 – 82	B
60 – 69	B–

Your final overall numeric score is rounded to the nearest integer. So, for example, if your weighted mark is 83.4 your grade will be 83. If your weighted mark is 83.5, your grade will be 84. Letter grades will then be assigned according to the table above.

Schedule

The course is split into 3 units, each with its own IT assignment and exam.
Unit 1: Design and Analysis of Experiments
Unit 2: Regression Analysis
Unit 3: Applied Multivariate Analysis

See the Course Schedule for a detailed week-by-week breakdown.

Part 2: University Services and Policies

This course complies with all UF policies. For information on those policies and for a list of campus resources, please see this page:
https://go.ufl.edu/syllabuspolicies

Grading Policies:

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:

- Only extreme situations will warrant a make-up. 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 make-up under such extenuating circumstances.
- If you have an emergency on the day of the assignment/exam, the instructor must be contacted by midnight on the day of the assignment/exam.
- Make-up exams will be scheduled within a week from the assignment deadline. Student is responsible for attending scheduled make-up. Instructor reserves the right to utilize the UF posted final exam day as a make-up date.
- Additional Note: Being on vacation or booking a trip prior to the completion of the semester is not a valid reason to request a make-up. Please reference the most recent Academic Calendar, https://catalog.ufl.edu/UGRD/dates-deadlines/pdfs/.

Classroom Behavior: During class students should silence their cellular phones and refrain from eating, drinking, reading newspapers, doing other work, 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: "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/