

STA 4210

Regression Analysis

Spring, 2022
Tuesdays, 10.40-12.35, Thursdays 10.40 – 11.30.
FLO 0100

Catalog description: Simple linear regression and multiple linear regression models. Inference about model parameters and predictions, diagnostic and remedial measures about the model, independent variable selection, multicollinearity, autocorrelation and nonlinear regression. SAS implementation of the above topics.

Prerequisite: [STA 3024](#) or [STA 3032](#) or ([STA 4321](#) and [STA 2023](#)) or ([MAS 3114](#) and [STA 2023](#)) or ([MAS 4105](#) and [STA 2023](#)).

Instructor: Dr. David Holmes

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Office: FLO 115-B

Instructor Office Hour for this course: Tuesdays 9.15 – 10.15am and by appointment.

Graduate Teaching Assistant and Office Hour: Lei Yang

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

- (i) A clear understanding of the principles, assumptions, and methods in regression analysis.
- (ii) The skill to know when and how regression might be useful in a variety of application areas.
- (iii) The selection of appropriate statistical models in regression situations and the ability to validate selected models.
- (iv) The skills to analyze data involving several variables.
- (v) The ability to provide correct interpretations of results and to recommend appropriate decisions.
- (vi) The possession of strong computing skills and familiarity with statistical software.
- (vii) 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:

Applied Linear Statistical Models, 5th Edition, Author(s): M. Kutner, C. Nachtsheim, J. Neter and W. Li

A Second Course in Statistics: Regression Analysis by William Mendenhall and Terry Sincich. Eighth Edition. (Pearson)

Computer and Calculator: You will need some type of web-enabled device such as a laptop, smartphone, or tablet to access Canvas. You will need a calculator capable of basic arithmetic operations and taking square roots for exams.

Software: In this course, we will use statistical software to conduct analyses. I will be demonstrating concepts using SAS JMP Pro 16 throughout the semester. JMP Pro is available as a free download or as a UF App. Information on how to download this program is posted on our Canvas course page and is discussed during the first week of class. You are free to use either SAS JMP Pro or R to complete course assignments.

Course Assignments

Your final course grade will be based on exams, homework, 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 at most seven days after a graded IT is posted to question a grade. If you do not notify me of any issues concerning your score within that time, then the posted grade stands.

Homework: This will be set periodically and will be marked on a 1-10 scale. The marks obtained will be recorded and will be taken into account for your final grade (see grading scheme below). Late homework will not be accepted.

Exams: There will be two in-class exams during the course (a mid-term and a final). You will be provided with a packet of formulae and statistical tables to be used on 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.

The seven-day rule detailed above also stands for Homework and 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.

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 information. You must submit this documentation prior to submitting any assignments for which you are requesting accommodation

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 F 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 computer assignments and exams.

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, homework and 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.

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:	Computer Assignment 1	16%
	Mid-term Exam	20%
	Computer Assignment 2	16%
	Computer Assignment 3	16%
	Homework	7%
	Final Exam	25%

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

90 – 100 A 80 – 89 B 70-79 C 60 – 69 D 0 – 59 F

Plusses and minuses will be given but their point values will be determined after the final exam.

Part 2: University Services and Policies

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/>.”

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.