



## STA 4210 – Regression Analysis (15055)

Fall 2025

Period 4: Monday, Wednesday, Friday 10:40am – 11:30am

Room: Griffin-Floyd Hall (FLO 0100)

### **Instructor:**

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Office Hours:

M & W 12:00pm - 2:00pm

### **Teaching Assistant:**

Wangxing Zhang

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Office Hours:

T & R 12:00pm - 1:00 pm

**eLearning Course Webpage on Canvas:** <http://elearning.ufl.edu/>

### **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(s)**

STA 3100 and (STA 3024 or STA 3032 or STA 4321 or MAS 3114 or MAS 4105).

### **Credit Hours**

This is a 3 credit hour class

### **Course Objectives and Goals**

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, and (vii) the possession of skills directed to the communication of statistical results to a variety of audiences.

## Required Text(s)

None

## Optional Text(s)

1. *Applied Linear Statistical Models* by M. Kutner, C. Nachtsheim, J. Neter and W. Li, 5th Edition [This textbook is what the class notes are based off of]
2. *A Second Course in Statistics: Regression Analysis* by W. Mendenhall and T. Sincich, 8th Edition.

## Calculator(s)

Any scientific or graphing calculator may be used for homework, quizzes, and exams. Internet-enabled electronic devices, such as cell phones or tablets, cannot be used as calculators during exams.

## Software

You will need a statistical software program for homework assignments and practice. The software used in class will be R <http://www.r-project.org> although you can use any other software you wish that yields similar results. We encourage the use of R Studio <https://posit.co/download/rstudio-desktop/>.

## Tentative Schedule of Course Topics

Week(s)	Chapters from Notes	Description
1-2	1	Simple Linear Regression
3-4	2	Inference in Simple Linear Regression
5	3	Diagnostics, Remedial Measures
<b>Exam 1</b>		
6	4	Simultaneous Inferences
7	5	Matrix Algebra
8-9	6	Multiple Linear Regression I
10	7	Multiple Linear Regression II
<b>Exam 2</b>		
11	8	Polynomial Regression and Qualitative Predictors
12	9-10	Model Building, Diagnostics
13	11-12	Remedial Measures, Time Series
14	14	Logistic Regression
<b>Exam 3</b>		

## Course Assignments

The course assignments will be three (3) exams and six (6) homework assignments.

### (A) Exams

Three (3) exams will be held in class will be administered tentatively scheduled as follows:

- Exam 1: Monday, September 29
- Exam 2: Wednesday, October 29
- Exam 3: Wednesday, December 10

Exam 1 will cover Chapters 1-3 from the notes, Exam 2 will cover Chapters 4-7, and Exam 3 will cover Chapters 8-12 and 14. Each exam will carry equal weight.

For the exam, you may bring a calculator and writing utensil. A formula sheet will be provided.

If a student knows they are unable to take an exam at the scheduled time, they must notify the instructor seven days prior to the exam date. Each case will be reviewed individually. Valid and detailed documentation is a prerequisite under such extenuating circumstances. A makeup exam may not be guaranteed. In case of an illness, the instructor must be notified by 11:00am on the day of the exam and the student must provide a medical excuse. A grade of zero is the minimum punishment of any type of dishonesty on an exam.

### (B) Homework

A total of 6 homework assignments will be given throughout the semester, each worth 25 points. Homework assignments will be posted on the e-Learning course page. Each homework assignment will be given after every two weeks, starting from the third week. The homework is to be turned in to the eLearning system on the due date. Any homework assignment received after 11:59 pm on the due date is subject to a 5-point penalty out of 25 points for each day after the due date (for example the maximum score for homework turned in one day late would be 20 points).

The homework must be typed. You may use any document editing software to type up your solutions. All code must be included that was used to produce results to answer the questions. It is suggested to use R Markdown to type the solutions.

Homework is assigned to help reinforce the material learned in class—not just to get the right answer and improve your course grade. Homework solutions must show all formulas and steps used to arrive at the answer and be the sole work of each individual student.

### Total Course Points and Grades

Grades will be posted on the e-Learning course page at <http://elearning.ufl.edu/>. The current UF grading policies for assigning grade points is available at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Assignment	Percentage
Exam 1	20%
Exam 2	20%
Exam 3	20%
Homework Assignments	40%
Total	100 %

### Letter Grade Distribution:

Letter	Points
A	92 to 100
A-	89 to 91.9
B+	86 to 88.9
B	82 to 85.9
B-	79 to 81.9
C+	76 to 78.9
C	69 to 75.9
C-	66 to 68.9
D	62 to 65.9
E	61.9 and below

## Statistics Major, Data Science Major, and Statistics Minor

STA 4210 is a 3 credit-hour course that satisfies a requirement for the Statistics Major and Minor and the Data Science Major. Dr. Demetris Athienitis is the academic advisor for undergraduate statistics majors and minors and data science majors. For more information on advising, see <https://stat.ufl.edu/academics/undergraduate/>

## 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 e-Learning webpage.

## Course Policies

The instructor reserves the right to update parts of this syllabus in the event of extenuating circumstances (such as changing the due dates for homework and quizzes or exam dates, eliminating or modifying course material, etc.). Students will promptly be notified of any changes.

## 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”, they will be directed to contact you. More information can be found at <https://catalog.ufl.edu/UGRD/academic-regulations/ferpa-confidentiality-student-records/>

## **E-mail**

E-mail relating to information about the class should be sent to the instructor at [ab.sudip@ufl.edu](mailto:ab.sudip@ufl.edu) or through the course management system. Your message will be answered within one working day, in most cases. However, we ask that you refer to this syllabus and the course website to try to find the answers yourself. Questions regarding the material covered should be asked before, during, or after class, at the instructor's office hours, or at the teaching assistant's office hours. It is often difficult to answer questions regarding material through e-mail. Questions about quizzes should be sent to the instructor and it should include the quiz number and question number.

## **Make-up Policy**

The requirements of this course for class attendance, exams, assignments, and other work are consistent with university policies. See UF Academic Regulations and Policies for more information on university attendance policies.

## **University Honor Code**

University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Student Honor Code and Conduct Code (Regulation 4.040) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course.

## **Students with Disabilities**

Students who require special accommodations in class or during exams should first register with the Disability Resource Center at 352-392-8565, <https://disability.ufl.edu/> by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation for an exam or quiz. The instructor must be emailed the form at least 7 days before an exam or quiz for accommodations to be arranged.

## **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), 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.

## **Materials and Supplies Fee**

N/A

## Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://gatorevals.aa.ufl.edu/>. Evaluations are typically open during the few 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://gatorevals.aa.ufl.edu/instructors/instructor-reports/>.

Finally, this course complies with all UF policies. For information on those policies and for a list of campus resources, please see this page: <https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>.