

**Regression Analysis**  
STA 4210/9631 Class 16274  
**Class Periods:** M,W,F| Period 3 (9:35 AM -10:25 AM)  
**Location:** Griffin-Floyd Hall 100  
**Academic Term:** Fall 2024

**Instructor:**

Zhaoyan Song

Email: [zhaoyan.song@ufl.edu](mailto:zhaoyan.song@ufl.edu) (Preferred)

Phone: 352-392-1941

Office Hours: Wednesday 10:30 am - 12:30pm, Griffin-Floyd Hall 234

**Teaching Assistants:**

Jithendra Sai Veeresh Addala

Email: [jithendra.addala@ufl.edu](mailto:jithendra.addala@ufl.edu)

Office Hours: Monday 2:30 pm – 4:30 pm, Griffin-Floyd Hall 234

**Course Description:**

This course will cover the following: 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.

R language will be implemented across all the topics above.

**Course Pre-Requisites:**

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

**Course Objectives:**

Students will be able to investigate the purposes, methods and applications of regression.

**Recommended Textbook:**

- Applied Linear Statistical Models, 5th Ed. By Kutner, Nachtsheim, Neter, and Li

**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:**

The main software used in class will be **R**. R is a free software environment for statistical computing and graphics. You can download it here (<https://www.r-project.org/>). **RStudio** is an integrated development environment (IDE) for R. It includes a console, syntax-highlighting editor that supports direct code execution, and tools for plotting, history, debugging, and workspace management. It is highly recommended you use Rstudio for the programming. You can download Rstudio here (<https://posit.co/products/open-source/rstudio/>).

**Attendance Policy**

Requirements for class attendance and make-up exams, assignments, and other work in the course are consistent with university policies. [See UF Academic Regulations and Policies for more information regarding the University Attendance Policies.](#)

### ***Tentative Course Outline:***

<i>Week</i>	<i>Topics</i>
1	Review on Probability and Statistics
2	Review & Intro to Least Squares for Simple Linear Regression
3	Inference in Simple Linear Regression
4	Diagnostics
5	Remedial Measures
6	Simultaneous Inference, Etc.
7	Multiple Linear Regression
8	Multiple Linear Regression
9	General Linear Test
10	Model Selection/Diagnostics
11	Remedial Measures
12	Quantitative and Qualitative Predictors
13	Autocorrelation in Time Series
14	Nonlinear Regression, Logistic Regression
15	Thanksgiving Holiday
16	Exam 3

### ***Assignments***

There are about 3-5 assignments, which will be posted on Canvas at least one week prior to the deadline. Questions including concepts and applications. When submitting coding work, students should be able to provide both ***R scripts*** and ***R markdown***. You may not use ChatGPT to answer any questions, but you are free to use other online resources, such as public available notes and forums. It is essential that you write programs yourself since it is good for advanced study and careers. A 50% penalty will be deducted on ChatGPT use.

All assignment deadlines are at 23:59 of the due date. These are ***hard*** deadlines meaning that any open or ongoing assignments will automatically be submitted at the deadline. Unless emergency, no late assignments will be accepted under any circumstances.

Students are encouraged to discuss assignments amongst peers/TA/instructor, but are expected to work independently. Offering and accepting solutions from others is an act of plagiarism, which is a serious offense and all involved parties will be penalized according to the UF Student Honor and Conduct Code.

### ***Quizzes and Exams***

There will be about 3-5 in-class quizzes during the course. Each will take 10 minutes.

There will be three (3) in-class exams during the course. Students will be provided with ***exam formula sheets***. They are available in Canvas before the exam so that students will know what information will be provided for you. Students are required to bring ***calculators*** to the exam. Cellphones, open notes, and communication are ***prohibited*** during the exam. Make-up exams will only be considered with documented medical event or conference attendance. Early exams will be not given under any circumstances.

### ***Evaluation of Grades***

<b>Assignment</b>	<b>Total Points</b>	<b>Percentage</b>
Homework Sets	100	20%
In-Class Quizzes (About 3-5)	100	5%
1 <sup>st</sup> Exam - Friday, Sep 20	100	25%
2 <sup>nd</sup> Exam - Friday, Oct 25	100	25%
3 <sup>rd</sup> Exam – Wednesday, Dec 4	100	25%

### ***Tentative Grading Policy***

<b>Percent</b>	<b>Grade</b>	<b>Grade Points</b>
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 - 83.9	B	3.00
78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33
72.0 - 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

For more information regarding grading policy, [see the website for university grades and grading policies](#).

### ***Students Requiring Accommodations***

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. [See the “Get Started With the DRC” webpage on the Disability Resource Center site](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### ***Course Evaluation***

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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. [See the UF Conduct Code website for more information](#). If you have any questions or concerns, please consult with the instructor or TAs in this class.

### ***Software Use***

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

### ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>.

## ***Campus Resources:***

### **Health and Wellness**

**U Matter, We Care:** If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) , 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

**Counseling and Wellness Center:** [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

**Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

**University Police Department:** [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

**UF Health Shands Emergency Room / Trauma Center:** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

**GatorWell Health Promotion Services:** For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, [visit the GatorWell website](#) or call 352-273- 4450

### **Academic Resources**

**E-learning technical support:** Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu) .

**[Career Connections Center](#):** Reitz Union Suite 1300, 352-392- 1601. Career assistance and counseling services.

**[Library Support](#):** Various ways to receive assistance with respect to using the libraries or finding resources. Call 866-281-6309 or email [ask@ufl.libanswers.com](mailto:ask@ufl.libanswers.com) for more information.

**[Teaching Center](#):** 1317 Turlington Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

**[Writing Studio](#):** Daytime (9:30am-3:30pm): 2215 Turlington Hall, 352-846-1138 | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers.