STA 4210 – Regression Analysis

Summer A 2019
MTWRF 2:00pm - 3:15pm
Room: Griffin Floyd 100

Instructor:	**Teaching Assistant:**
Tamal Ghosh	Xiao Fang
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Office: Griffin-Floyd 115A	Office: Griffin-Floyd 117A
Office Hours:	Office Hours:
Mon, Wed 11:00am - 2:00pm or by appointment	Tue, Thurs 9:30am - 12:00pm

Course Webpage on Canvas: http://elearning.ufl.edu/

General Course Information

This 3 credit hour course is a required class for the statistics major, statistics minor, and actuarial science minor.

Course Objectives and Goals

Investigate the purposes, methods and applications of regression. Inference about model parameters and predictions, diagnostic and remedial measures about the model, independent variable selection, multicolinearity and autocorrelation. This course includes a chapter devoted to regression on time series data and forecasting based on the fitted model. The goal is to make students functional in the use of the important scientific tool of regression.

Prerequisites

STA 3024 or STA 3032 or (STA 4321 and STA 2023) or (MAS 3114 and STA 2023) or (MAS 4105 and STA 2023) (It is suggested if possible that a linear algebra and programming class be taken prior.)

Software

You will need a statistical software program for the homework assignments and practice. There will be limited in-class instruction on how to use software, but questions are welcomed especially during office hours. The main software used in class will be R http://www.r-project.org although you can use any other software you wish that yield similar results. R instructions and tutorials will be posted on the course webpage.

Course Materials

1. Course Notes posted on eLearning course webpage.

2. *Applied Linear Statistical Models* by M. Kutner, C. Nachtsheim, J. Neter and W. Li, 5th edition, ISBN-13: 9780073108742

3. **Calculator** You need one which will compute the mean and standard deviation automatically. You will use it for quizzes and tests. A graphing calculator is allowed. Check the manual or look for the following symbols: $\overline{x}$ and either s or σ_{n-1}.

4. **Statistical Software** We will use the free statistical computing language R; download it in the first few days of the semester from http://www.r-project.org. It is suggested that you also use R-Studio from https://www.rstudio.com.

Tentative Schedule of Course Topics

Week	Chapters from Notes	Description
1	1 and 2	Simple Linear Regression; Inference in Regression Analysis
2	3 and 4	Diagnostics, Remedial Measures; Simultaneous Inferences
3	5 and 6	Matrix Algebra; Multiple Linear Regression I
4	7 and 8	Multiple Regression II; Polynomial Regression and Qualitative Predictors
5	9, 10, and 11	Model Building; Diagnostics; Additional Remedial Measures
6	12 and 14	Time Series; Logistic Regression

Course Assessment

Assessment	Percent of Total	Tentative Date(s)
Exam 1 (Chapters 1-5)	35% for higher score	Monday, June 3 at 7.00 PM - 8.15 PM
Exam 2 (Chapters 6-12 and 14)	25% for lower score	Friday, June 21 at 7.00 PM - 8.15 PM
Quizzes (Best 4 of 5)	20%	Dates Below
Homework (4 Total)	20%	Dates Below

Exams

Two exams will be held tentatively scheduled at 7.00 PM - 8.15 PM on Monday, June 3 and Friday and June 21 in the classroom Griffin Floyd 100 . Exam 1 will cover Chapters 1-5 and Exam 2 will tentatively cover Chapters 6-12 and chapter 14. The higher exam score will count 35% of the grade and the lower exam score will count 25%. It is your responsibility to bring a calculator and pencil to each exam. If a student is unable to take an exam at the scheduled time, they must notify the instructor one week prior to the exam. 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 illness, the instructor must be notified by 12:00pm on the day of the exam and must receive a medical excuse. A grade of zero is the minimum punishment of any type of dishonesty on an exam.

Quizzes

A total of five quizzes will be held in class every week. The highest four quiz scores will be used to calculate the total quiz score. There will not be any makeup quizzes. The total quiz score will make up 20% of the final grade. The sections covered for each quiz are subject to change. All notifications of section coverage will be made at least 1 week prior to the quiz.

Quiz	Date	Sections Covered (Subject to Change)
1	Friday, May 17	Review Material and Chapter 1
2	Friday, May 24	Chapters 2 and 3
3	Thursday, June 6	Chapters 4, 5, and 6
4	Wednesday, June 12	Chapters 7 and 8
5	Wednesday, June 19	Chapters 9, 10 and 11

Homework

A total of 4 homework assignments will be given throughout the semester. Homework assignments will be posted on the e-Learning course page: http://elearning.ufl.edu/. The homework due dates are below.

Homework	Due Date
1	Tuesday, May 21
2	Wednesday, May 29
3	Tuesday, June 11
4	Tuesday, June 18

Letter Grade Distribution:

Letter	Percent
A	91% to 100%
A-	87% to < 91%
B+	84% to < 87%
B	80% to < 84%
B-	77% to < 80%
C+	74% to < 77%
C	67% to < 74%
D	55% to < 67%
E	below 55%

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

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/ugrad/current/regulations/info/student-ferpa-rights.aspx

E-mail

E-mail relating to information about the class should be sent to the instructor at tamalg@ufl.edu or through the course management system. Your message will be answered within one working day, in most cases. However, we ask you to please refer to this syllabus and the course website to try to find the answers for 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.

Attendance

If you miss class for any reason it is your responsibility to get any notes and information you might have missed from another student. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx. Additionally, please turn your cellular phones off and refrain from eating and excessive talking while in attendance.

Instructor's Honor Code

We the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

Academic Honesty

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 Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

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, http://www.dso.ufl.edu/drc/ 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 2 days before a quiz and at least 7 days before an exam for accommodations to be arranged.

Grading

Grades will be changed only when an error has been made; negotiation is not appropriate. 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.

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.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.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://evaluations.ufl.edu/results/.

The syllabus is subject to change. You will be notified if there is a change.