

STA 4210 Regression Analysis Fall 2016
Section 1205 MWF 8th period, 3:00pm-3:50pm, FLO 100

Instructor Deborah Burr, 116C Griffin-Floyd Hall (FLO); Office Hours: MWF 12:45-1:45pm, or by appointment; Email: burrøstat@ufi.edu (put "4210" in the subject line); Phone: 273-2973 (Do not leave a message.) I do not use Canvas email.

Teaching Assistant Tamal Ghosh, FLO 115A, Office Hrs (changed 5 Sept) Mon, Fri 9:35am-11:35am

Required Materials

Textbook Kutner, Nachtsheim, Neter, and Li, *Applied Linear Statistical Models*, 5th ed., Volume I (Chapters 1-14, Appendix A)

E-book on R Peter Dalgaard, *Introductory Statistics with R*, 2nd ed. Available as e-book at UF library.

Course Notes On Canvas. Unit 1 is available now. The course notes are an outline of what I will go over in class and are *not* a substitute for class attendance.

Scientific calculator You need one which will compute the mean and standard deviation automatically. You will use it for tests. A graphing calculator is allowed.

Statistical Software We will use the free statistical computing language R; download it in the first week of the semester from <http://www.r-project.org>. Also download Rstudio from <http://www.rstudio.com> (Desktop free license).

Prerequisite An introductory statistics course such as 2023, 3032, or 4322

Course Description The course is primarily on the linear regression model, for which the main techniques are rooted in the method of least squares. Procedures are motivated by applications. Mathematical results are stated and explained, and occasionally derived. A course in mathematical statistics is helpful but not strictly required. The focus is on doing and explaining the methods. After some review of basic statistics, the course proceeds systematically through the simple regression model, the matrix formulation of this model, the multiple regression model, and a number of related tools such as model diagnostic measures, collinearity statistics, and variable selection procedures. Computations will be carried out in the R statistical programming language. These topics are covered in three units: I. Correlation and simple linear regression, II. Multiple linear regression basics, and III. Multiple regression advanced topics.

Grading Your final course grade will depend on your course score based on the following four components with their respective weights:

Homework/Quizzes:		25%
Exam 1:	Monday September 26 (8:20pm, location TB A)	25%
Exam 2:	Friday October 28 (8:20pm, location TBA)	25%
Exam 3:	Monday December 5 (8:20pm, location TBA)	25%

The assignment of letter grades will be determined as follows (cutoffs will be no stricter than indicated, and may be relaxed): A 93-100; A⁻ 90-92; B⁺ 87-89; B 80-86; B⁻ 77-79; C⁺ 74-76; C 67-73; D 50-66; E < 50

Homework There will be ten homeworks. Homeworks will be posted at least one week before the due date. You may get help with homework problems, but the final write-up of your report must be your own. See [HomeworkInstructions .pdf](#) for more detailed instructions. Some homework questions will require you to carry out a data analysis, and produce a report of the analysis. You are expected to gain proficiency in using R through the homeworks. In Unit 1 of the course, all R code needed for the homeworks will be provided; in Units 2 and 3, you will write some of the code yourself.

Tests There will be three exams. On each exam, there will be several questions which describe a regression scenario, give R output from the analysis, and ask you to interpret the output. There will be some short calculations required; you need a calculator for the exams.

Course Policies

Communication Use email only for administrative matters. Email me only at the UF email address burrøstat.uf1.edu, and put the course number in the subject line; do not use Canvas email. See me or a TA in person for content questions. It's ideal to ask questions right after class.

Homework Homework must be turned in at the beginning of the lecture on the due date. Homework submitted on Canvas will be accepted up until 11:59pm on the due date, with a ten-point penalty for homeworks submitted after class begins. Your homework percentage score will be taken out of 250 points. The total possible points will be around 275 points, giving you approximately a 25-point "cushion" possible on your homework score. Percentage score on homework is capped at 100%.

Exams The exams are closed-book, closed-notes. You may bring one 8.5 x 11 sheet of notes to each exam. Bring a picture ID, your calculator, pencils and erasers. Makeup exams must be approved before the time of the exam and will be given only in case of medical or family emergencies (which must be appropriately documented). All work must be entirely your own.

The exams are unit tests, not cumulative. There is no final exam. The final exam period for the course is Monday December 12 12:30-2:30pm. This will be used for makeup tests.

Disabilities If you need to request accommodation due to a disability, please register with the Dean of Students office. The Dean of Students will provide documentation, which you then bring to me.