

STA 4210 Regression Analysis Spring 2018
Section 17FA FLO 100 MWF 6th period, 12:50–1:40pm

Instructor Deborah Burr, 116C Griffin-Floyd Hall; Office Hours: M 7th period (1:55–2:35pm) WF 4th period (10:40–11:30am), Email: burr@stat.ufl.edu (put “4210” in the subject line); Phone: 273-2973 (do not leave a message).

Teaching Assistant Chun-Hao Yang, FLO 115A, chunhaoyang@ufl.edu, Tues 2:00–4:00pm

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.

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 carrying out 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.

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

Homework/Quizzes:		20%
Exam 1:	Monday February 12 (8:20pm, location TBA)	25%
Exam 2:	Wednesday March 21 (8:20pm, location TBA)	27%
Exam 3:	Tuesday April 24 (8:20pm, location TBA)	28%

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

The calculation of your final average will be done outside of Canvas; the formula used by Canvas will not necessarily produce the final average according to the course grading scheme. Information on current UF policy for assigning grade points may be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Homework There will be about eight homeworks to be submitted on Canvas. Some but not all of the problems on each homework will be graded. A crucial part of homework assignments is to show your work and explain your reasoning. It is not sufficient to simply give a numerical or one-word answer. Some homeworks will require you to use R and to produce a written report of a data analysis. You need to earn a total of 200 points for a perfect homework score; there will be at least 220 points possible. (If

you earn a total score over 200, this will not count extra.) There will be some announced in-class quizzes based on the homeworks; quiz scores will be added to your homework score.

Exams There will be three exams. On each exam, there will be some short-answer questions, both multiple-choice and fill-in-the-blank types. Other questions will require a written response; for these questions, it is not sufficient to simply give a numerical or one-word answer. There will be short calculations required; you need a calculator for the exams. On each exam, there will be at least one question which describes a regression scenario, gives R output from the analysis, and asks you to interpret the output. The exams are closed-book, closed-notes. You may bring one 8.5×11 sheet of notes to each exam. Bring a picture ID, your calculator, pencils and erasers.

Course Policies

Use email only for administrative matters. Email me at the UF email address burr@stat.ufl.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.

You are allowed to get help with homework problems, but your final write-up must be your own. Homework must be submitted on Canvas by the posted due date and time. Late homework will not be accepted.

Makeup exams must be approved before the time of the exam and will generally be given only in case of medical or family emergencies, which must be appropriately documented. More detailed policy for granting a makeup exam may be found in the undergraduate catalog under Attendance Policies (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>).

For cases of illness, a doctor's signed note will be required.

All work on quizzes and exams must be entirely your own. Refer to the UF Honor Code at <http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>.

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, 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. Students with disabilities should follow this procedure as early as possible in the semester.