

Time & Place	Monday, Wednesday, Friday 11:30 am–12:20 pm, 30 Schaeffer Hall Labs: Thursday 11:30 am–12:20 pm, 346 Schaeffer Hall
Prerequisites	22S:120 or equivalent, and facility with matrix algebra
Textbook	Weisberg, S. (2005), <i>Applied Linear Regression</i> (Third Edition), Hoboken, NJ: Wiley Inter-science..
Class Web page	http://www.stat.uiowa.edu/~rlenth/s164/ ; Grades will be posted on ICON < http://icon.uiowa.edu/ >
Instructor	Russell Lenth — 271 Schaeffer Hall — 335-0814 — russell-lenth@stat.uiowa.edu
Office Hours	Monday, Wednesday, Thursday 2:00–3:00 pm; and by appointment
Lab instructor	Xiao Yang — 266 Schaeffer Hall — 335-2078 — xiao-yang@uiowa.edu
Statistics office	DEO: Professor Luke Tierney — 241 Schaeffer Hall — 335-0712

About the Course

The main topic of this course is regression analysis, which has to do with fitting equations to data, as well as accompanying diagnostic methods (i.e., seeing if the equation fits well) and statistical inference (seeing to what extent your fitted equation generalizes to the population from which the data are collected). We will cover Chapters 1–10, and topics from Chapters 11 and 12 as time permits. We assume a basic knowledge of applied statistics from previous courses—confidence intervals, t tests, and such. We will review these topics as needed.

This is an applied statistics course, and so some of the work you will do will involve data analysis, computing, and communicating statistical results orally and in writing. This is also a graduate-level statistics course, and so we will cover the materials in some technical depth. If you want a less technical course, 22S:152 is also being offered; it covers similar topics but with less theory. You should not take both courses.

Homework and Lab

You will have a homework assignment almost every week, and those assignments will be due at the beginning of class on the due date (usually Monday). The work done in the Thursday lab will not count in your grade; however, non-attendance will result in a penalty to your homework grade.

Exams

There will be three exams during the semester, each covering about 1/3 of the material. In addition, there will be a comprehensive final exam during Finals Week. There is no opportunity to take the final exam early; if you want a non-zero grade on the final, you need to be

here to take it at the officially scheduled date and time.

Projects

Throughout the semester, you will work with a small group of other students on projects. These will involve analyzing substantive datasets (some of which you may gather yourself) with less direction and structure than in homework questions. Your group will periodically present its work to the class in one of a variety of formats (e.g., talk, poster, or short report). Projects will be “inversely graded”; that is, your team will receive 100% for an adequately prepared presentation, and a zero for an inadequately prepared one (when you bring it up to standard, the grade will be changed to 100). You will also be asked to write comments on other groups’ project presentations.

Timeline and grading

The schedule and grading weights of exams and projects is as follows:

Component	Date	Credit
Exam 1	Wednesday, October 3	15%
Exam 2	Wednesday, November 7	15%
Exam 3	Wednesday, December 5	15%
Final exam	Monday, Dec. 17, 12:00–2:00 pm	20%
Homework	Weekly	20%
Projects	To be announced	15%

The basic cutoffs between whole-letter grades are at 90, 80, 70, . . . , and the determination of minus, unmodified, or plus is based on the ones digit being in the sets $\{0, 1, 2\}$, $\{3, 4, 5, 6\}$, and $\{7, 8, 9\}$. For example, the A –range is 90.00–92.99, and the B range is 83.00–86.99.

Computing

We will emphasize the use of statistical software in exploring and analyzing data. The primary (but possibly not the only) tool will be **R**, a freeware statistical language that is installed on the lab PCs and is also available for download from

<http://cran.us.r-project.org/>. It runs about the same on Windows, Linux, and MacIntosh systems. **R** provides for add-on packages, and a particular one, `a1r3`, will be needed as it includes datasets from the book as well as a number of functions that implement techniques in the textbook. The primary purpose of the lab is to learn **R**. Unless directed otherwise, you are expected to use **R** for data-analysis problems in the homework assignments.

Late work and absences

Barring illness or family emergencies, late work is not accepted. You must *personally* hand-in homework papers; asking a fellow student to turn a paper in is not allowed and if this happens, the paper will not be accepted. If you miss class, try to obtain notes from other students. Most handouts will be available from the website; but lecture notes will not. Attendance in labs is mandatory. Each unexcused lab absence will result in a 5-point penalty in the Homework average. If there is a pattern of excessive absences from the lecture, I will warn you; if the pattern continues, I will drop you from the course.

Academic fraud

Plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. Academic fraud is reported to the departmental DEO and then to the Associate Dean for Academic Programs and Services in the College of Liberal Arts and Sciences. www.clas.uiowa.edu/students/academic_handbook/ix.shtml

Making a suggestion or a complaint

Students have the right to make suggestions or complaints and should first visit with the instructor, then with the course supervisor if appropriate, and next with the departmental DEO. All complaints must be made within six months of the incident. www.clas.uiowa.edu/students/academic_handbook/ix.shtml#5

Accommodations for disabilities

A student seeking academic accommodations first must register with Student Disability Services and then meet with a SDS counselor who determines eligibility for services. A student approved for accommodations should meet privately with the course instructor to arrange particular accommodations.

www.uiowa.edu/~sds/

Understanding sexual harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit www.sexualharassment.uiowa.edu/ for definitions, assistance, and the full policy.

Administrative home of the course

The administrative home of this course is the College of Liberal Arts and Sciences, which governs academic matters relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic fraud or academic probation, and how credits are applied for various CLAS requirements. Please keep in mind that different colleges might have different policies. If you have questions about these or other CLAS policies, visit your academic advisor or 120 Schaeffer Hall and speak with the staff. The CLAS Academic Handbook is another useful source of information on CLAS academic policy:

www.clas.uiowa.edu/students/academic_handbook/index.shtml