

STT863 Statistical Methods I

Time: MW 8:30 – 9:50AM

Place: A108 Wells Hall

Instructor: Yuehua Cui

C432 Wells Hall

Tel: 432-7098

Email: cui@stt.msu.edu

Web: <http://www.stt.msu.edu/~cui>

Office Hours: MW 10:00 - 11:00am and by appointment.

Textbook: (Required) *Applied Linear Regression Models 4th Ed.*, by Kutner, Nachtsheim, and Neter. McGraw-Hill, 2004. Available on [Amazon.com](https://www.amazon.com)

(Recommended): *Linear models with R*, 2nd Ed., by Julian J. Faraway. Boca Raton: Chapman & Hall/CRC, 2014.

Lecture notes will be made available through [D2L](#).

Prerequisite: STT 441/442 or STT 861/862, and MTH 415 or equivalent (Calculus, Probability and Statistics, Linear algebra).

Course Objectives

The objective of the course is to teach basic linear regression techniques that are widely used in business, economics, engineering, agriculture, education, social science and biological sciences. While this is basically an applied course, it will have an effective blend of theory and methods.

Course Description

This course will teach the basic theory and practice of linear regression analysis, for both simple and multiple regression, including modeling, estimation, testing, confidence quantification, model diagnostics, collinearity, model selection and validation. Nonlinear regression will also be covered if time permits. We expect extensive use of computer for data analysis.

Grading

20%	Homework
10%	Quiz
30%	Midterm (Wed. Oct. 19, in class)
40%	Final Exam (Tuesday, Dec. 13, 7:45am - 9:45am in A108 Wells Hall)

Homework contains a mix of paper and computer problems. Late homework will receive a grade of zero. To get credit on homework, you must show all work neatly, clearly label each problem, and staple the entire assignment together in correct order with your name printed. You are allowed to discuss with other students on the homework problems, however, verbatim copying of homework is absolutely forbidden.

Any questions regarding homework grading, please contact TA Guiling Shi (shiguili@stt.msu.edu)

Quiz Short quizzes will be randomly distributed in class without prior notification, and will be graded.

Exams There will be one in-class midterm exam, and a final exam. Both of them are closed book and closed notes. There will be no make-up exams. Missed exams will receive a grade of zero. In the midterm exam, you may take one letter size paper (single side) as a cheat sheet. In the final exam, you may take two letter size papers (single side). Non-graphing calculators may be used during the exams. Any questions regarding exam grades should be submitted in writing (a paper briefly stating where is the grading error with your signature and date, along with your exam) within one week of distribution of the graded exam. You must hand in the request to the instructor before or after class.

Attendance: You are expected to attend all meetings of the class. If you miss a class for whatever reason, you are responsible for all materials, assignments and deadlines missed. While office hours provide an opportunity for further clarification of materials covered in class, they will not substitute for classes.

Academic Honesty: The Department of Statistics and Probability adheres to the policies of academic honesty as specified in the General Student Regulations 1.0, Protection of Scholarship and Grades, and in the all-University of Integrity of Scholarship and Grades, which are included in Spartan Life: Student Handbook and Resource Guide. Students who plagiarize may receive a 0.0 on the assignment or fail the course.

ADA: To arrange for accommodation, a student should contact the Resource Center for People with Disabilities at <http://www.rcpd.msu.edu/> or (517)353-9642.

Disclaimer: The instructor reserves the right to make changes and additions that are academically advisable to any part of this syllabus. Such changes, if any, will be announced in class. Please note that it is your responsibility to attend the class and keep track of the proceedings.

Important Dates:

Aug 31	Class begins
Sept 5	Labor Day (no class)
Sept 26	end of 100% refund
Oct. 19	Middle of Semester — Last day to drop with no grade reported
Nov. 24& 25	Thanksgiving Holiday
Dec. 9	Last Day of Classes
Dec. 13	<i>Final Exam</i>