

Statistical Methods II

STAT 5720 – Spring 2015

Instructor: Professor Yali Liu
Office: Gilbreath Hall 308 - H
Office Hours: MW 10:30am-11:30am or by appointment
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Class Time and Place: MW 1:40- 3pm; Gilbreath Hall 205.

Credits: 3

Prerequisites: STAT5710 (Statistical Methods I).

Text: Applied Linear Statistical Models, 5/E by Kutner, Nachtsheim, Neter, and Li, McGraw-Hill/Irwin, 2005.

Computing: A calculator that does basic math is sufficient. We will use the SAS statistical software mainly. Template SAS programs, data sets, and other information will be available through D2L. A useful website is <http://www.ats.ucla.edu/stat/sas/examples/alsm/default.htm>.

Course Objectives: To perform a wide variety of tasks, from the construction of graphical and numerical summaries for a set of data, to more complicated statistical procedures and tests using statistical software (e.g., SAS, R). At the end of this semester students will be able to:

- (a) understand the application of logistic, loglinear model, ANOVA, and other statistical methods
- (b) properly apply these methods to real world problems using SAS/R statistical software and draw valid conclusions
- (c) present (both written and oral) these conclusions in a concise and clear manner.

Course Work:

• **Course Work:**

Course Evaluation:	
	% of grade
Homework	30
Project	15
Midterm Exams	30
Final Exam	25
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Total	100

- Homework problems will be handed out on most Wednesdays and due one week late on Wednesday. No late homework will be accepted but exceptions may be arranged if discussed in advance. When turning in your homework, each problem must be presented in order. This includes all relevant graphs and tables, which must be easily readable and appropriately labeled. You are limited to a maximum of 3 pages per problem. Any graph or figure that is turned in without comments or spans across more than one page will be ignored. Please edit SAS output using a word processor or editor.
- A project will be assigned which involves a written summary and a class presentation the last week of class. Your work must be an original problem (not one already analyzed) and one likely to result in a more elaborate analysis than simple t-tests or simple linear regression. More details will be given later.
- Two mid-term exams (in-class) will be scheduled and the tentative dates are February 25th and April 8th, 2015.
- A comprehensive final exam will be held on Monday at 1:30pm-3:30pm, May 4, 2015.
- Exams are closed-book but you can bring a help sheet (double-sided) written by yourself (no copy or print). There will be no makeup of exams. Request for any exceptional arrangement must be made one week before the exams.

Grading Scale:

The grade will be based on a possible 100 points. The scale follows:

<i>A</i>	93 – 100	<i>A–</i>	89 – 92	<i>B+</i>	84 – 88	<i>B</i>	78 – 83	<i>B–</i>	72 – 77
<i>C+</i>	66 – 71	<i>C</i>	60 – 65						
<i>F</i>	less than 60 or for academic misconduct or less than 40% on the final exam								

Department Attendance Requirements: Attendance is required. The Math Department has this attendance policy: “The limit of absences for MW classes is 5. Should a student exceed the limit, the instructor has the authority to assign a grade of FN or W”.

Attendance: You are expected to attend the lectures. You are responsible for any announcements and the material covered during the lecture.

Tentative Schedule

Chapters	Description	Approx. time
13, 14	Nonlinear Regression	2wks
15	Introduction to the design of studies	2 weeks
16	Single-Factor ANOVA	2 weeks
17, 18	Inference and Diagnostics of ANOVA Model	2 weeks
19	Two-Factor ANOVA	2 weeks
21	Randomized Complete Block Designs	1 week
22	Analysis of Covariance	1 week
24	Multi-Factor ANOVA	1 week
25	Mixed Effects Models	1 week
	Other topics in Part Six	1 week