

**3.0 credit hours****Instructor:** Yajun Liu (pronounced as /Ya-'June Lyu/)**Course Time:** Tuesday/Thursday 12:30PM-1:45PM**Course Location:** DuSable 480**Office:** DU 361B      **Phone:** 753-6796      **e-mail:** yliu@math.niu.edu**Office Hours:** TR 10:30-11:30AM, W 8:30-10:00AM, and appointment**Textbook:** Applied Regression Analysis and Other Multivariable Methods, 4th Edition  
by Kleinbaum, Kupper, Nizam and Muller.**TA:** Lu, Chenshuang, DU 374**References:**

- Applied Linear Statistical Models 5<sup>th</sup> edition by Kutner, Nachtsheim, Neter, Li
- Statistics and Data Analysis by Tamhane and Dunlop, 2000

**STAT 473/573 COURSE DESCRIPTION:**

A first course in statistical methods and models including exploratory data analysis and graphical techniques, regression analysis, experimental design, and basic sampling techniques. Extensive use of statistical computer packages.

**Prerequisites & Notes:** PRQ: MATH 211 and STAT 301, or STAT 350, or consent of division. CRQ: STAT 573A.

**STAT 473/573 LEARNING OUTCOMES:**

- Basic descriptive statistics: measures of central tendency and dispersion; skewness; kurtosis; assessing normality (graphical, summary statistics)
- Basic inference: estimation; hypothesis testing; power and sample size
- Simple linear regression: basic regression model and assumption; least squares estimation; normal error regression model and inference;
- Multiple Regression: Matrix notation; relationship to regression analysis; regression diagnostics; testing hypotheses in regression; dummy variables; polynomial regression; model selection
- Statistical software result interpretation

**STUDENT ASSESSMENT:****Grading:**

- Your final grade will be based on the following components:

	<u>Total Worth</u>
Homeworks/Assignments	200points
2 Midterms (2 x 100)	230points
<u>Final</u>	<u>170points</u>
Total	600 points

**Homework**

$$HW1[35]+(HW2[60]+HW3[60]+HW4[60]+HW5[60]+HW6[60]+HW7[30])/2$$
**Tentative grading scale:**

- 530-600 points → A
- 518-529 points → A-
- 500-517 points → B+
- 470-499 points → B
- 458-469 points → B-
- 440-457 points → C+
- 410-439 points → C
- 398-409 points → C-

- 350-397 points → D
- Below 350 points → F

The actual grading scale will be determined after the final exam. The final grading scale can be lower, but will not be higher, than the above tentative scale.

- The schedule and the grading scale may be changed at any time. If any change is made, it will be announced in class.
- Please try to attend lectures regularly. You will be responsible for materials covered in missed lectures.
- Only documented medical emergencies will be grounds for make-up exams. All arrangements must be made within 5 days of the missed examination.

### Exams

- The midterm exams will be given during regular class time.
- All exams are closed-book, but you are allowed to bring one A4 page for a cheat sheet at the exam. You may use a hand-held calculator at the exams. Sharing of calculators is not allowed. You cannot use calculators in cell phones, PDAs, or laptops. Cell phones are to be turned off (not just muted) and kept away during exams.
- Make-up exams will only be given when a student has a planned, documentable, and excusable absence on a test date and personally negotiates the make-up in advance. For sudden, documentable, and excusable absences (illness, death, etc), the points from the missed exam will be added to the final exam. Unexcused absences (oversleeping, forgetting, etc) will result in a score of zero.

### Homework

- Homework's approx. every two weeks. Due in a week. No credit will be given to late submissions.
- Assignments are to be neat and presented logically on loose-leaf paper. If more than one sheet of paper is used, the assignment must be stapled together. Paper from spiral notebooks is unacceptable. You are to show all your work. If your assignments are messy, disorganized or do not follow the stated instructions, they will be returned and you will not receive credit for the assignments.
- Students are allowed to discuss homework assignments, but you should not look at another student's paper. Each student must write his/her solutions in their own way, using their own words.
- Please note that because of the quick pace of this course it is unlikely that all of your homeworks will be graded and returned to you before the exams. You may want to make copies of your homeworks before turning them in.

### **ACCESSIBILITY:**

- If you have a disability, please make arrangements with the Disability Resource Center (DRC) early in the semester, and let me know. See <http://www.math.niu.edu/courses/CAAR.html> for details.
- Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not done so already. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 (V) or [drc@niu.edu](mailto:drc@niu.edu).
- NIU's updated policies on Academic Integrity, Attendance and Accommodations for Students with Disabilities are now available at:  
[http://www.niu.edu/stat/courses/pdfs/Accessibility\\_Statement.pdf](http://www.niu.edu/stat/courses/pdfs/Accessibility_Statement.pdf).

### **ACADEMIC INTEGRITY STATEMENT:**

- The Statement of Academic Integrity in the graduate catalog will be strictly enforced with regard to homework assignments, quizzes, and exams.
- Please see:

[http://www.niu.edu/stat/courses/pdfs/Accessibility\\_statement.pdf](http://www.niu.edu/stat/courses/pdfs/Accessibility_statement.pdf)  
for policies on academic integrity, attendance and accommodations for students with disabilities.

#### GUIDELINES AND GENERAL INFORMATION:

- You are encouraged to ask questions and to participate in class discussions, however talking in class while the instructor is lecturing is highly frowned upon.
- Cell phones are to be muted or turned off during lectures, recitations and visits to office hours and kept away during exams. Violations will be considered as class disruptions, or worse, and will be treated accordingly.
- Texting during class is not allowed. If you are caught, your phone will be confiscated for the remainder of the class period. If you are caught texting a second time, you will be asked to leave the class for that day.
- It is your responsibility to be sure that your work is turned in and that you receive the notes and announcements (all announcements are made at the beginning of class). Missing an announcement will not be accepted as a valid excuse for missing an event (exam, quiz etc.). If you frequently miss class the instructor reserves the right to deny office hour privileges to you.
- Late arrivals and early departures from class are strongly discouraged, except in cases of emergency.
- Students are to remain for the entire session unless excused by the instructor beforehand or confronted with a serious personal emergency. For instance, it is not acceptable for students to walk in and out of class to answer cell phones, take casual bathroom and smoking breaks, or attend to other personal matters.
- It is not acceptable to use an iPod, read a newspaper, use a laptop for anything other than taking class notes, study for other classes, or engage in other behavior that distracts one from the class proceedings once the session has started
- The syllabus may be changed at any time. Changes will be announced in lecture.
- Suggestions
  - **DO NOT WAIT UNTIL THE LAST MINUTES.**
  - To do well in this course, you should attend class regularly.
  - Please try to keep up with the class. If you fall behind, then you will have to work much harder to catch up.
  - Please feel free to talk to your TA or instructor. If you are falling behind or getting lost, then do not wait; act on it as soon as possible. Get help, spend more time studying, form study groups, go to your instructor's office hours - do whatever works for you.

#### OTHER USEFUL RESOURCES:

You may get some other useful resources through <http://www.niu.edu/stat/courses/index.shtml>

#### IMPORTANT DATES:

Date	
August 28, Sunday	Last day to add or drop via self-service in MyNIU
September 2, Friday	Last day to add or drop with approval of course department or major college
<b>October 1, Tuesday</b>	<b>Exam 1</b>
October 18, Friday	Last date to withdraw from a course or the university
<b>November 5, Tuesday</b>	<b>Exam 2</b>
<b>December 10, Tuesday, Noon-1:50 p.m.</b>	<b>Final Exam</b>