

STAT:3210 (22S:158) - EXPERIMENTAL DESIGN & ANALYSIS, Spring 2014  
Syllabus

**Instructor:** Dr. Erning Li  
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Phone: 335-0820  
Email: *erning-li@uiowa.edu*  
Office hours: MWF 12:30—1:30pm or by appointment

**Grader:** Mr. Fuli Zhang *fuli-zhang@uiowa.edu*

**Class Meeting:** Lectures 11:30am—12:20pm MWF in 22 Schaeffer Hall

**Department Information:** Department of Statistics and Actuarial Science, 241 Schaeffer Hall,  
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Departmental Executive Officer: Professor Luke Tierney, 241 Schaeffer Hall, Phone 335-0712,  
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**Course Prerequisite:** STAT:2010 (22S:30) and STAT:3200 (22S:152), or equivalent.

**Course Description and Objective:** This course emphasizes practical aspects of experimental design and analysis. Both design and statistical analysis issues are discussed. At the end of the semester, students should understand the models and assumptions commonly used for experimental data, and be comfortable planning and analyzing experiments. Also, students will learn how to utilize standard statistical software packages (primarily R) for computational purposes.

**ICON Course Website:** Course materials such as syllabus, lecture notes, homework assignments, answer keys, etc. will be posted on ICON <http://icon.uiowa.edu/>. All grades will be posted on ICON, too.

Make sure your email address on ICON class roster is valid, since I use ICON to email the class important announcements.

**Textbook:**

Montgomery, D. C. (2013), *Design and Analysis of Experiments* (8th ed.), Wiley, ISBN 978-1-118-14692-7.

The textbook student companion site:

<http://bcs.wiley.com/he-bcs/Books?action=index&itemId=1118146921&bcsId=7219>

**R Software:** R is open-source statistical software and available in Instructional Technology Centers (ITCs) such as 41 SH. It is freely available at <http://www.r-project.org>

Download and install R for Windows: <http://cran.r-project.org/bin/windows/base/>  
Click on Download R 3.0.2 for Windows and save to disk, double-click on R-3.0.2-win.exe, go through install pages.

Download and install R for Mac OSX: <http://cran.r-project.org/bin/macosx/>  
Click on R-3.0.2.pkg and save to disk, double-click on R-3.0.2.pkg, go through install pages.

Use R through Rweb <http://rweb.stat.uiowa.edu/Rweb.general.html>

An R introductory tutorial: <http://cran.r-project.org/doc/manuals/R-intro.html>

**Homework:** Homework will be assigned periodically and posted on the course website. Each assignment will be collected at the beginning of class on the date it is due. Unless prior or prompt arrangements are made for reasons judged to be acceptable by Dr. Li, homework turned in after it is due will receive 0 (zero) credit. No soft (electronic) copies of homework will be accepted.

Homework should be neat and stapled with all key steps shown. Students are allowed to discuss homework assignments, but everyone should do his/her own work and programming and turn in their own homework; no blind “copying” permitted.

**Exams:**

- Midterm Exam 1 50 minutes in class;  
tentative date Friday, February 28, 2014
- Midterm Exam 2 50 minutes in class;  
tentative date Friday, April 11, 2014
- Final Exam see university finals schedule, TBA;  
comprehensive with emphasis on newer materials

Calculators may be used for exams. You can bring *one* standard size (8.5" × 11") sheet of paper with anything you want written on it (both sides) to the first midterm exam, *two* such sheets of paper to the second midterm exam, and *three* such sheets of paper to the final exam. Other than these, they are all closed-book exams.

Students who miss a midterm exam without documented university-approved excuses will receive zero score on that exam. If you have university accepted reasons, *notification and written evidence of the missed midterm exam must be provided to the instructor as soon as possible and no later than one week after the exam.* If the absence for a midterm exam is approved, the final exam grade will be used as the grade for the missed midterm exam. If the final exam is missed, a make-up final will be permitted only if the circumstances of missing the exam satisfy university policies.

**Grading:** A numerical final score on a scale of 0 to 100 will be determined according to the following breakdown

Homework	16%
Midterm 1	27%
Midterm 2	27%
Final	30%

Conversion of these scores into letter grades will be made according to the following scale:

[90, 100]	<i>A</i>
[80, 90)	<i>B</i>
[70, 80)	<i>C</i>
[60, 70)	<i>D</i>
< 60	<i>F</i>

Plus (+) and minus (-) gradings will be given as deemed appropriate. At the discretion of Dr. Li, depending on overall class performance, these ranges may be adjusted (but only downward - criteria would only become easier, not harder).

**Attendance:** Attendance is very vital to your success in the class. Regular attendance at lectures is expected. Students who are absent from class without acceptable excuse should not seek help regarding missed lectures during office hours.

**Integrity of course materials:** I request that you work to preserve the integrity of the textbook and course materials. This means that under no circumstance should you make public (either in print or via web postings, social networks, etc.) any of your solutions of textbook or exam problems; nor may you disseminate handouts and other materials that I prepare. You must also strive to avoid making use of any solutions provided by anyone outside of this class, or any printed or posted solutions to textbook problems or to the same problems in other texts. Compliance with this request will be considered part of the academic honesty requirements discussed further below under Administrative Policies.

### UI and CLAS policies and procedures

**Administrative Home:** The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Student Academic Handbook ([www.clas.uiowa.edu/students/academic\\_handbook/index.shtml](http://www.clas.uiowa.edu/students/academic_handbook/index.shtml)).

**Electronic Communication:** University policy specifies that students are responsible for all official correspondences sent to their University of Iowa email address (@uiowa.edu). Faculty

and students should use this account for correspondences. (Operations Manual, III.15.2. Scroll down to k.11.)

**Accommodations for Disabilities:** A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See *www.uiowa.edu/~sds/* for more information. I would like to hear from anyone who has a disability that may require some modification of seating, testing, or other class requirements so that appropriate arrangements can be made. Please see me about this as soon as possible.

**Academic Honesty:** The College of Liberal Arts and Sciences expects all students to do their own work, as stated in the CLAS Code of Academic Honesty. Instructors fail any assignment that shows evidence of plagiarism or other forms of cheating, also reporting the student's name to the College. A student reported to the College for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled. All forms of plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. All academic fraud is reported first to the departmental DEO and then to the Associate Dean for Academic Programs and Services. See the CLAS Student Academic Handbook for the complete policy.

**CLAS Final Examination Policies:** Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

**Making a Suggestion or a Complaint:** Students with a suggestion or complaint should first visit the instructor, and then the departmental DEO. Complaints must be made as soon as possible within six months of the incident. See the CLAS Student Academic Handbook.

**Understanding Sexual Harassment:** Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy (<http://www.sexualharassment.uiowa.edu/>).

**Reacting Safely to Severe Weather:** In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site.