

# STAT:5201 (22s:165) Applied Statistics II

**Time & Place:** MWF 12:30-1:20pm 60 Schaeffer Hall

**Prerequisites:** STAT:5200 (22s:164)

**Text:** Oehlert, G.W.(2000), *A First Course in Design and Analysis of Experiments*, New York: W.H. Freeman and Company.

NOTE: This book is out of print, but used copies may be available online. It is also available as a free download via: <http://www.stat.umn.edu/~gary/Book.html> (c) 2010 under Creative Commons license. It's a good idea to get it printed and spiral-bound. If you take it to a copy shop, also take a printout of the above web page that includes the language that says you may print it, etc.

## Other Reading Material:

Some reading materials may be placed on the class ICON website.

**Class website:** <http://homepage.stat.uiowa.edu/~rdecook/stat5201.html>

**Instructor:** Rhonda DeCook, 211 Schaeffer Hall, 335-3249, [rhonda-decook@uiowa.edu](mailto:rhonda-decook@uiowa.edu)

**Office Hours:** Wednesday 9:30 - 10:30am, and Thursday 10am - noon, or by appointment.

## Department:

Statistics and Actuarial Science

Joseph B. Lang, Chair, 241 SH

[joseph-lang@uiowa.edu](mailto:joseph-lang@uiowa.edu)

335-0712

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## Course Goals and Objectives:

This is the second course in the graduate applied statistics sequence, emphasizing design and analysis. In this course we will learn the basics of experimental design and statistical analysis of data obtained from a number of experimental designs using SAS.

*How* the data is collected affects how the data should be analyzed.

When designing an experiment, one considers the *sources of variation* involved. Some sources of variation are of interest (e.g. treatment), while others can be considered a nuisance (e.g. subject-to-subject variation in some cases).

In designed experiments, we try to minimize the error in estimating the parameters (or effects) of greatest interest.

**Topics:** The earlier part of the course emphasizes intuitive ideas in experimental design. The later part of the course goes into more detail in modeling and analysis, and covers much of the Oehlert book.

**Computer Software:** We will use SAS as the primary tool for data analysis. We may also use some web-based Java applets provided by Professor Emeritus Russell Lenth that are used for simulations and sample-size determination.

**Coursework:** There will be weekly assignments (so about 14 altogether), three midterm exams, and a comprehensive final. Tentative dates for the midterm exams are in the next section. No late homework will be accepted (unless you have an excused university absence).

Some of the homework *may* be mini-projects, like maybe you will have to design an experiment and collect the data using software (presently depends on the availability of such software). Most homework questions will be from the Oehlert book, but some will come from other sources.

**Grading Policy:** Assessment in this course will be based on the following components:

Homework	.....	20%
Exam 1	Wednesday February 26 (week 6)	20%
Exam 2	Wednesday April 2 (week 10)	20%
Exam 3	Friday April 25 (week 13)	20%
Final Exam	TBD (week 16)	20%

Any formulas deemed necessary for exams will be provided to you (and given to you beforehand for prior knowledge), so no handwritten notes will be used for exams. But, I plan to give you very few formulas because you will not have a formula sheet when taking the MS comprehensive.

As an approximate guide, grades will be given as:	90-100	A
	80-90	B
	70-80	C
	60-70	D
	Below 60	F

Plus and minus grades will be given as deemed appropriate.

\*No make-up exams will be given unless there is an absence due to unavoidable circumstances as stated by University policy (documentation will be required in such a case). Missed exams will receive a score of 0.

**Administrative Home of the Course:**

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 in 120 Schaeffer Hall or see the CLAS Student Academic Handbook:  
<http://clas.uiowa.edu/students/handbook>

**Electronic Communication :**

University policy specifies that students are responsible for all official correspondences sent to their standard University of Iowa e-mail address (@uiowa.edu). Students should check this account frequently. (Operations Manual, III.15.2. Scroll down to k.11.)

**Making a Suggestion or a Complaint :**

Students with a suggestion or complaint should first visit the instructor (and the course supervisor), and then the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic Policies Handbook).

**Academic Honesty:**

All CLAS students have, in essence, agreed to the College's Code of Academic Honesty: "I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (CLAS Academic Policies Handbook).

**Accommodations for Disabilities :**

A student seeking academic accommodations should first register with SDS and then meet privately with the course instructor to make particular arrangements. [www.uiowa.edu/~sds/](http://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. 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.

**CLAS Final Examination Policies:**

The final examination schedule for each class is announced around the fifth week of the semester by the Registrar. Final exams are offered only during the official final examination period. No exams of any kind are allowed during the last week of classes. All students should plan on being at the UI through the final examination period. Once the Registrar has announced the dates and times of each final exam, the complete schedule will be published on the Registrar's web site.

**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 Department of Public Safety website.