

The University of Iowa
College of Liberal Arts and Sciences
Department of Statistics and Actuarial Science
Probability & Statistics for Engineers (STAT:2020)
Spring 2013
STAT:2020:AAA, 12:30-1:20 PM, MWF, C20 PC
STAT:2020:BBB, 3:30-4:20 PM, MWF, W290 CB
<http://www.stat.uiowa.edu/~mbognar>

▷ **General Information**

- *Instructor:* Matt Bognar, 358 SH, 335-0799, matthew-bognar@uiowa.edu
- *Office Hours:* 12:00-1:30 Tuesday, 10:30-12:00 Friday, and by appointment
- *DEO:* Luke Tierney, 241 SH, 335-0712
- *Textbook:* Montgomery and Runger (2011). *Applied Statistics and Probability for Engineers (5th edition)*, Wiley.
- *ICON/Web:* This course will use ICON (<http://icon.uiowa.edu>) and our course website (<http://www.stat.uiowa.edu/~mbognar>) for announcements, homework assignments, etc.

▷ **Course Objectives**

- In this course we will cover the following topics (in roughly this order):
 - * Probability, conditional probability, Bayes Theorem
 - * Random variables
 - * Uniform, Bernoulli, binomial, geometric, hypergeometric, negative binomial, Poisson, normal, t, and chi-square distributions
 - * Joint, marginal, and conditional distributions; conditional expectation
 - * Sampling distributions, Central Limit Theorem
 - * Data collection, summary statistics, graphical displays
 - * Confidence intervals and hypothesis testing (one and two sample inference for means and proportions, chi-square test for independence)
 - * Correlation and simple regression
 - * Type I and Type II errors, statistical power
- We will learn how to do many of the statistical analyses described in class using the statistical software package *Minitab*. *Minitab* is available in the campus computer labs. There is a free online version as well; go to <http://virtualdesktop.uiowa.edu>. Hand computation will be stressed, however.
- Supplementation to the textbook, when needed, will be provided.
- We will *not* cover all parts of each chapter listed above. Focus your readings on the material that was covered in class.

▷ **Grading**

- *Exams:* There will be 2 midterms (17.5% each) and a final exam (25%). Exam dates:
 - * Exam 1: Thursday, February 28, 6:30-8:30 PM, LR1 and LR2 VAN
 - * Exam 2: Thursday, April 11, 6:30-8:30 PM, LR1 and LR2 VAN
 - * Final Exam: TBA

Students are expected to be present for the exams at the *scheduled time*. It is your responsibility to make the appropriate arrangements *beforehand*.

- *Quizzes:* (25% total) A quiz will be given in lecture each Friday (except on exam days). *Make-up quizzes will not be allowed under any circumstances*. The lowest two quiz scores will be dropped. Unannounced quizzes may be given at any time.
- *Homework:* (10% total) Homework will be due each Friday. A subset of the assigned problems will likely be graded. *Late homework will not be accepted under any circumstances*. The lowest two homework scores will be dropped. Homework must be stapled, defuzzed, be neatly written in *pencil*, and look professional (points will be deducted for failing to do so). Excessively sloppy homework will receive a score of 0. Print your name in the upper right corner of your homework before handing-in.

- *Discussion:* (5% total) Your TA will evaluate you via attendance, unannounced quizzes, preparedness, participation, etc. in your discussion sections. *Make sure you are clear about your TA's policies and expectations regarding the discussion grade.*
- Your attendance, participation, preparedness, work ethic, etc. may affect your final grade.
- This course uses the +/– grading system (i.e. grades such as A–, B+, and B will be assigned).
- Grades cutoffs will be no higher than the usual 90, 80, 70, 60 breakdown.
- Bonus points may be given at any time. The bonus points may be applied to any part of your grade.
- *Statistics Tutorial Lab:* There is a *free* statistics tutorial lab in room 202 Communications Center. During available times, a knowledgeable person will be present to assist students. Hours for the lab can be found at

<http://www.stat.uiowa.edu/courses/tutorial-lab.html>
- A list of *non-free* tutors can be found at <http://www.stat.uiowa.edu/courses/tutors.html>

▷ ***The College of Liberal Arts and Sciences Policy and Procedures***

- *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 to 120 Schaeffer Hall, or see the CLAS Student Academic Handbook

<http://www.clas.uiowa.edu/students/handbook/>
- *Electronic Communication:* University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (Operations Manual, III.15.2. Scroll down to k.11.)

<http://www.uiowa.edu/our/opmanual/iii/15.htm#152>
- *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.

<http://www.uiowa.edu/~sds>
- *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.

<http://clas.uiowa.edu/students/handbook/academic-fraud-honor-code>
- *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, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS Student Academic Handbook.

<http://www.clas.uiowa.edu/students/handbook/x/#5>
- *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.uiowa.edu/~eod/policies/sexual-harassment-guide/index.html>
- *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,

<http://police.uiowa.edu/stay-informed/emergency-communication/>