The University of Iowa  
College of Liberal Arts and Sciences  
Department of Statistics and Actuarial Science  

Probability & Statistics for Engineering and Physical Sciences (STAT:2020)  
Summer 2019  
8:30-11:15 AM, MTWTh, 140 SH (May 14 to June 6, final exam June 7)  
http://www.stat.uiowa.edu/~mbognar

▷ General Information

– Instructor: Matt Bognar, 358 SH, 335-0799, matthew-bognar@uiowa.edu
– Office Hours: To be announced, and by appointment
– DEO: Joe Lang, 241 SH, 335-0712
– 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 (discrete, continuous), cdf, expectation, variance
  * Special random variables: discrete uniform, Bernoulli, binomial, geometric, hypergeometric, negative binomial, Poisson, exponential, normal, t, and chi-square distributions
  * Joint, marginal, and conditional pmf’s and pdf’s, conditional expectation
  * Univariate transformations via change of variable (Jacobian) and distribution function (cdf) methods
  * 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); assessing significance using critical values, \( p \)-values, and confidence intervals
  * Chi-square test for independence, chi-square goodness of fit test
  * Correlation and simple regression (including inference for regression parameters)
– 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 a midterm (30%) and a final exam (30%). Exam dates:
  * Midterm Exam: Tuesday, May 28
  * Final Exam: Friday, June 7
Students are expected to be present for the exams at the scheduled time. It is your responsibility to make the appropriate arrangements beforehand.
– Quizzes: (30% total) Quiz dates:
  * Quiz 1: Thursday, May 16
  * Quiz 2: Tuesday, May 21
  * Quiz 3: Thursday, May 30
  * Quiz 4: Tuesday, June 4
Make-up quizzes will not be allowed under any circumstances. Unannounced quizzes may be given at any time.
- **Homework**: (10% total) Homework will be due each Monday and Thursday (including the Tuesday after Memorial Day). Only a subset of the assigned problems may be graded. Late homework will not be accepted under any circumstances. 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.

- 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.

> **The College of Liberal Arts and Sciences Policy 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 Academic Policies Handbook at [https://clas.uiowa.edu/students/handbook](https://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, k.11, [https://opsmanual.uiowa.edu/human-resources/professional-ethics-and-academic-responsibility#15.2](https://opsmanual.uiowa.edu/human-resources/professional-ethics-and-academic-responsibility#15.2)).

- **Accommodations for Disabilities**: UI is committed to an educational experience that is accessible to all students. A student may request academic accommodations for a disability (such as mental health, attention, learning, vision, and physical or health-related condition) by registering with Student Disability Services (SDS). The student should then discuss accommodations with the course instructor ([https://sds.studentlife.uiowa.edu/](https://sds.studentlife.uiowa.edu/)).

- **Academic Honesty**: All CLAS students or students taking classes offered by CLAS have, in essence, agreed to the College’s Code of Academic Honesty ([https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code](https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code)): “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, [https://clas.uiowa.edu/students/handbook](https://clas.uiowa.edu/students/handbook)).

- **CLAS Final Examination Policies**: The final examination schedule for each class is announced by the Registrar generally by the fifth week of classes. 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 date, time, and location of each final exam, the complete schedule will be published on the Registrar’s web site and will be shared with instructors and students. It is the student’s responsibility to know the date, time, and place of a final exam.

- **Making a Suggestion or a Complaint**: Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic Policies Handbook, [https://clas.uiowa.edu/students/handbook](https://clas.uiowa.edu/students/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 Office of the Sexual Misconduct Response Coordinator ([https://osmrc.uiowa.edu/](https://osmrc.uiowa.edu/)) for assistance, definitions, and the full University policy.

- **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 ([https://police.uiowa.edu/emergency-communications](https://police.uiowa.edu/emergency-communications)).

- **Nondiscrimination in the Classroom**: UI is committed to making the classroom a respectful and inclusive space for all people irrespective of their gender, sexual, racial, religious or other identities. Toward this
goal, students are invited to optionally share their preferred names and pronouns with their instructors and classmates. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, class, gender, sexual orientation, national origin, and other identity categories set forth in the University’s Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity at diversity@uiowa.edu or https://diversity.uiowa.edu.