

Empirical Methods for the Computer Sciences

Instructor: Ian Mouzon (imouzon@iastate.edu, Snedecor Hall 3220, 1-515-294-7891)

TA: Haijuan Zhang (haijuan@iastate.edu)

Office Hours: TR 9:30-10:30 AM, 3:30-4:30 PM in Snedecor Hall 3220.

TA Office Hours: *TBD*

Web: <https://imouzon.github.io/stat430>, Blackboard (<https://bb.its.iastate.edu/>)

Course Description: (*Prereq: STAT 330 or an equivalent course, MATH 166, knowledge of linear algebra.*) Statistical methods for research involving computers; exploratory data analysis; selected topics from analysis of designed experiments - analysis of variance, hypothesis testing, interaction among variables; linear regression, logistic regression, Poisson regression; parameter estimation, prediction, confidence regions, dimension reduction techniques, model diagnostics and sensitivity analysis; Markov chains and processes; simulation techniques and bootstrap methods; applications to computer science, bioinformatics, computer engineering - programs, models and systems as objects of empirical study; communicating results of empirical studies. Statistical software: R.

Textbook: *Mathematical Statistics and Data Analysis* (ISBN 978-0534399429) by John A. Rice.

Important Dates:

Drop Deadline	October 27th
Thanksgiving break	November 20th - 24th
First Exam (<i>tentative</i>)	September 26th
Second Exam (<i>tentative</i>)	November 6th
Course Final	December 15th, 9:45-11:45 AM (Friday)

Assessment Policy: Grades (include plus/minus) will be determined based on the following:

Exams: There will be two semester exams and a comprehensive final. The semester exams will be given during the lecture period and will be closed book. The final exam is comprehensive and is scheduled for Friday, 12/15 from 9:45 - 11:45 AM.

Homework: Most weeks, homework will be assigned and to be collected the following week in class. To accomodate unexpected events that may impact students ability to complete this assignments on time I will drop the lowest of the homework grades from the overall average. However, deadlines should be on all assignments.

The components have the following weights:

Exam 1	15% (09/26, in class)
Exam 2	15% (11/06, in class)
Homework:	30% (assigned weekly)
Course Project:	20% (details to follow)
Final Exam:	20% (12/15, 9:45-11:45, location TBD)

Attendance: Grades do not directly depend on attendance - still, experience shows that attendance and course performance are significantly related to each other. In order to get the most out of this course and do his or her personal best, it is necessary for a student to treat attendance as if it were mandatory.

Academic Honesty: As an Iowa State University student, you have agreed to abide by the University’s academic honesty policy (<http://www.dso.iastate.edu/ja/academic/misconduct.html>). Academic misconduct is a serious matter and student’s suspected of academic dishonesty will be reported to the Dean of Students Office. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

Extra Help: Do not hesitate to come to my office during office hours or schedule an appointment to discuss a homework problem or any aspect of the course. If you want to hire an outsider tutor (i.e., for a fee), you can find a list of such people through the stat department.

Disability Accommodation: Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact your instructor (in this case, Ian Mouzon) to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Before meeting with the instructor, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email disabilityresources@iastate.edu. Retroactive requests for accommodations will not be honored.

Dead Week: This class follows the Iowa State University Dead Week policy as noted in section 10.6.4 of the Faculty Handbook <http://www.provost.iastate.edu/resources/faculty-handbook> .

Harassment and Discrimination: Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns

about such behavior should contact his/her instructor, Student Assistance at 515-294-1020 or email dso-sas@iastate.edu, or the Office of Equal Opportunity and Compliance at 515-294-7612.

Religious Accommodation: If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the Dean of Students Office or the Office of Equal Opportunity and Compliance.

Contact Information: If you are experiencing, or have experienced, a problem with any of the above issues, email academicissues@iastate.edu.