The University of Iowa
College of Liberal Arts and Sciences

Department of Statistics and Actuarial Science
Statistics for Business (STAT:1030)
Spring 2025
STAT:1030:0003, 6:30 - 8:20 PM, M&W, 110 MLH

▷ *General Information*

- *Instructor:* Jin Meng, 368 Schaeffer Hall, jin-meng@uiowa.edu
- *Office Hours:* M&W 8:30 - 9:00 PM, and by appointment
- *DEO:* Kung-Sik Chan, 241 SH
- *Required Textbook:* Sharpe, De Veaux, and Velleman. Business Statistics, 4th Edition ISBN: 9780137897629
- *ICON/Web:* This course will use ICON (https://icon.uiowa.edu) for grades, announcements, homework assignments, etc.

▷ **Course Description & Objectives** This is a one semester undergraduate course in business statistics. Lectures will introduce the student to statistical and probabilistic reasoning and will cover introductory topics in descriptive and inferential statistics, with emphasis on business applications. The material will be introduced at a level that should be comfortable to a first-year undergraduate student who has successfully completed high school algebra. This is an approved General Education course (Quantitative and Formal Reasoning).

The students will develop a basic understanding of statistical and probabilistic reasoning. They will be able to (i) explain statistical concepts to colleagues; (ii) measure and understand probabilistic uncertainty; (iii) describe data, both graphically and numerically; (iv) carry out predictions, with uncertainty bounds, using simple linear models; (v) understand statistical associations, and use them to improve predictions; and (vi) correctly apply and understand the results from basic statistical inference procedures.

▷ **Course Organization**

- **Lectures.** The 110-minute in-person meetings on Monday and Wednesday will be used to introduce important concepts, give a running summary of the material, work through examples as a class, and work through examples individually or in small groups. We will cover chapters 1-19 in the textbook. Students will be expected to come prepared and to participate in the worked examples. To be better prepared for lectures, students are strongly encouraged to look over the relevant material before class.

- **Attendance.** Attendance is required. Students must attend all lectures.

- **Quizzes.** Quizzes will be conducted during lectures to serve two purposes: (1) Reinforce material covered in the previous two lectures; (2) Check for attendance, active participation and preparedness of the current lecture. There will be totally 10 - 15 quizzes throughout the semester. The lowest three quiz scores will be dropped. No make-up quizzes will be provided.

- **Homework.** Assignments are due each Monday (except the first day of class on 01/20) by 6:30 PM and will be collected before the lectures in person. Submissions must be neat, correctly ordered, and stapled as a single file. Homework may include textbook problems, instructor-created questions, Excel exercises and two individual projects. Individual project 1 is on the topic simple linear regression covered around week 2. Individual project 2 is on the topic Inference for a proportion p covered around week 10. Students are encouraged to collaborate but must submit their own work. Late or improperly formatted submissions will not be allowed. Late submissions will be penalized by 50% each 24-hour period, for 5 days. After 5 days, no credit can be received on a late submissions. For example, if you scored a 7.6 out of 10 on a homework, but submitted it one hour late, you would receive a score of 3.8 out of 10; and if you submitted it 25 hours late, you would receive a score of 1.9 out of 10.

- **Exams.** There will be two midterm exams and one final exam, all conducted in person. Exams must be submitted by the end of the exam sitting period (8:30 PM on the scheduled exam dates). Late submissions will not be accepted or credited. The midterm exams are scheduled from 6:30 PM to 8:30 PM on February 28 and April 4. The final exam will take place during the designated final exam time (TBD). Details about the exam format and additional instructions will be provided in advance.

▷ **Course Topics and Pace (Tentative)**:

– **Module 1**: Intro, regression, probability and distributions; Weeks 1 - 6; Followed by Exam 1 on 02/28
  * Data collection, summary statistics, and graphical displays
  * Introduction to correlation and simple linear regression
  * Observational studies, surveys and experiments
  * Counting techniques and probability
  * Random variables, expectation, and variance
  * Discrete distributions
  * Continuous distributions

– **Module 2**: Sampling distribution and inference for proportion; Weeks 7 - 10; Followed by Exam 2 on 04/04
  * Linear combinations of random variables
  * Sampling distributions, Central Limit Theorem
  * Inference (confidence intervals and hypothesis testing) for a proportion p

– **Module 3**: Inference for mean, difference and count; Weeks 11 - 15; Followed by Final Exam in the week of 05/12 - 05/16
  * Inference (confidence intervals and hypothesis testing) for mean μ (Z and t)
  * Inference for $\mu_1 - \mu_2$
  * Inference for simple linear regression
  * Chi-square test for independence and chi-square goodness of fit test
  * Focus your readings on the material that was covered in class. Supplementation to the textbook, when needed, will be provided.

▷ **Exams**

There will be two midterm exams (15% each) and a final exam (20%). The exams are in person. Exam dates:

– Exam 1: 6:30 - 8:30 pm, Friday, February 28
– Exam 2: 6:30 - 8:30 pm, Friday, April 4
– Final Exam: TBA, in the week of 05/12 - 05/16

Students are expected to be present for the exams at the *scheduled time*. It is your responsibility to make the appropriate arrangements *beforehand*. The policy for missed exams is the same as the policy outlined by the College of Liberal Arts and Sciences. Exams may be made up for

– illness. Visits to Student Health are free for current UIowa students. A note from Student Health or documentation from MyChart would be helpful to prove an illness occurred on the day of an examination.
– religious holy days.
– military service obligations.
– University-sponsored activities.

▷ **Grading**

– *Exams:* 50% total
  * Exam 1: 15% total
  * Exam 2: 15% total
  * Final Exam: 20% total
– *Quizzes:* 15% total
– *Homework:* 25% total.
– *Attendance and active participation:* 10% total
– Your preparedness, work ethic, etc. will affect your final grade.
– This course uses the $+/-$ grading system (i.e. grades such as A−, B+, and B will be assigned).
– **This course is not curved.** Grade cutoffs will follow the usual 90, 80, 70, 60 breakdown.
– Use of calculators, tables, and pencils is required during assessments. Sharing of materials is not allowed.

– Bonus points may be given at any time. The bonus points may be applied to any part of your grade.
– Once work is returned, students have 7 calendar days to review their scores and discuss any questions or concerns with the instructor.

▷ **Extra Help**

– A list of tutoring resources can be found at

    https://stat.uiowa.edu/undergraduate/tutoring-resources

– Supplemental Instruction TBD

▷ **Academic Misconduct**

– During exams, you may not talk, whisper, pass notes, view other students' work, allow a fellow student to view your own work (cover your paper), communicate with a fellow student in any way, use a cell phone, use class notes, etc.
– Directly copying solutions from online resources (e.g. Chegg, ChatGPT, etc) is considered cheating.
– If you finish all homework problems, you may work with a fellow student to compare methods, answers, etc. *Simply copying a another student's homework will be considered academic misconduct.*
– All academic misconduct will receive the following sanctions:
    * You will receive a 0 on the exam/quiz/homework on which the academic misconduct took place.
    * A report will be filed with the College of Liberal Arts and Sciences and Tippie College.
    * Your final grade will be lowered by 2 full letter grades (e.g. from a B+ to a D+).
– Students are encouraged to contact me about fellow students possibly engaging in academic misconduct. Your identity will remain anonymous.

▷ **General Notes**

– If you decide to communicate via email, make sure you are proper email etiquette. See here for a checklist.
– Do <u>not</u> miss class. Attendance is necessary for success.
– Refrain from talking, eating, using your phone, wearing earbuds, and using other electronic devices in class.
– Work a lot of practice problems. *Frequently quizzing/testing yourself is the best, most efficient way to learn the material.* Don't memorize; try to understand.
– Constructive feedback is welcome at any time.

▷ **Student Complaints**

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor, and finally with the Director or Chair of the school, department, or program offering the course.

Students should contact CLAS Undergraduate Programs for support when the matter is not resolved at the previous level.

▷ **Accommodations for Students with Disabilities**

The University is committed to providing an educational experience that is accessible to all students. If a student has a diagnosed disability or other disabling condition that may impact the student's ability to complete the course requirements as stated in the syllabus, the student may seek accommodations through Student Disability Services (SDS). SDS is responsible for making Letters of Accommodation (LOA) available to the student. The student must provide an LOA to the instructor as early in the semester as possible, but requests not made at least two weeks prior to the scheduled activity for which an accommodation is sought may not be accommodated. The LOA will specify what reasonable course accommodations the student is eligible for and those the instructor should provide.

▷ **Drop Deadline for this Course**

You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the drop deadline for this course here. When you drop a course, a "W" will appear on your transcript. The mark of "W" is a neutral mark that does not affect your GPA. Directions for adding or dropping

a course and other registration changes can be found on the Registrar's website. Undergraduate students can find policies on dropping and withdrawing here. Graduate students should adhere to the academic deadlines and policies set by the Graduate College.

▷ ***The College of Liberal Arts and Sciences Policy and Procedures (Hyperlinks)***

- Basic Needs and Support for Students
- Classroom Expectations
- Exam Make-up Owing to Absence
- Free Speech and Expression
- Mental Health
- Military Service Obligations
- Non-discrimination
- Religious Holy Days
- Sexual Harassment/Misconduct and Supportive Measures
- Class Recordings