The University of Iowa
College of Liberal Arts and Sciences

Department of Statistics and Actuarial Science
Statistics for Business (STAT:1030)
Spring 2025
STAT:1030:0001, 6:30-8:20 PM, T/Th, 118 MLH

▷ ***General Information***

– *Instructor:* Dr. Subhashish Chakravarty, subchak@gmail.com

– *Office Hours:* ICON chat, and by appointment

– *DEO:* Kung-Sik Chan, 241 SH

– *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, home work assignments, etc.

▷ ***Course Description & Objectives*** This is a one semester undergraduate course in business statistics. All the course material including the required textbook will be made available on ICON. Lectures will introduce the student to data driven reasoning and will cover introductory topics in descriptive and inferential statistics, with emphasis on business applications. Lectures will demonstrate the usage of Excel, enabling data driven reasoning. The material is pitched 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 successful student will leave this course with a basic understanding of many of the fundamentally important ideas of data driven reasoning incorporating uncertainty (using probabilities) in Business. As examples, they will be able to (i) explain statistical concepts, paradoxes, and fallacies to colleagues; (ii) explain the importance of identifying the data production method; (iii) use basic probability rules to measure uncertainty; (iv) carry out predictions, with uncertainty bounds, in the straight-line regression setting; (v) describe univariate and multivariate data, both graphically and numerically; (vi) understand how to describe statistical association and use it to improve prediction; and they will be able to (vii) carry out a variety of statistical inference procedures, after deeming them applicable. They will also be comfortable using Excel to carry out a variety of descriptive and inferential tasks and they will understand how Monte Carlo simulation can be useful for making inferences (with a stretch goal of carrying out what-if analysis when appropriate). *Most importantly, the successful student will learn what questions can be asked (and how to frame them) to improve*

decision making and predictions when confronted with data and uncertainty.

▷ ***Course Organization***

– **Lectures**. The 110-minute in-person meetings on Tuesday and Thursday 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 and in small groups. We will cover chapters 1-17 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. A more detailed description of what we will cover week to week can be found on ICON, which should be used to guide where we are throughout the semester.

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

– **Quizzes**. Students should expect to take short ICON quizzes each week, which will be due on Friday at 5:00PM. The quizzes are meant to reinforce the ideas introduced in the lectures that week. The lowest 2 quiz scores will be dropped. There are no make-ups for quizzes.

– **Homework**. Students should expect to turn in homework assignments on ICON before each lecture on Thursday at 6:30PM. Homework must be written neatly, sized appropriately, and solutions must appear in the order assigned. Only one file containing all the work and solutions should be submitted. No credit will be given for homework not in this format. The homework assignments can consist of textbook problems, problems written by me, and Excel problems. The lowest 2 homework scores will be dropped. There are no make-ups or late assignments accepted. Students are encouraged to work together on homework but work submitted must be your own.

– **Exams**. There will be two midterm exams (**tentatively February 27 and April 3, 2025**) and one final exam. All exams will be in person, the first two will take place during the normal lecture time. The final exam will take place during our scheduled final exam time (TBD). More information about the format of the exams will be given leading up to the exams.

▷ ***Course Topics*** A detailed weekly guide for the course can be found on ICON. In this course we will cover the following topics (in roughly this order):

– Data collection, Variables, describing, summarizing and interpreting patterns of variables, generating data in Excel

– Finding relationships between variables (correlation and simple regression)

– Measuring uncertainty (counting techniques and probability)

– Random variables, describing random variables (expectation, and variance)

– Patterns in random variables, modeling uncertain phenomena (Discrete distributions,

Continuous distributions, Linear combinations of random variables)

– Population, Samples, describing patterns of sample summaries (Sampling distributions, Central Limit Theorem)

– Inferring population characteristics from samples

– Inference relatedness in populations from sample summaries (inference in 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. Multiple business related examples will be provided.

▷ ***Exams***

There will be two in class midterm exams (17.5% each) and a final exam (25%). Exam dates:

– Exam 1: Thursday, February 27 (Tentative)

– Exam 2: Thursday, April 3 (Tentative)

– 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*.

– *It is your responsibility* to bring a calculator, pencils, and statistical tables to the exams.

– If you must miss an exam, you must directly inform me before the exam begins. You will be required to provide full, detailed, irrefutable documentation.

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:* 60% total

  ∗ Exam 1: Thursday, February 27 (Tentative; 17.5%)

  ∗ Exam 2: Thursday, April 3 (Tentative; 17.5%)

  ∗ Final Exam: TBA (25%)

– *ICON Quizzes:* 15% total

– *Homework:* 25% total

– Your attendance, participation, 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.

– It is your responsibility to bring a calculator, tables, and pencils to class. No extra calculators, tables, or pencils will be available for quizzes or exams.

– You may not share calculators, tables, etc. during quizzes and exams.

– Bonus points, where available, will be communicated as part of the instructions associated with the deliverable.

▷ ***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:

https://drexel.edu/graduatecollege/professional-development/blog/2018/October/12-tips-for-writing-

– Do not miss class. Attendance is necessary for success.

– Refrain from talking, eating, using your phone, wearing earbuds, and using irrelevant 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)***

Classroom Expectations

Free Speech and Expression
Non-discrimination
Absences for Religious Holy Days
Sexual Harassment/Misconduct and Supportive Measures
Sharing of Class Recordings (if appropriate)