

Elementary Concepts of Statistics

SYLLABUS AND COURSE POLICIES

Instructor:

Austin Menger

Office: Philip E. Austin Building (AUST) 322

email: austin.menger@gmail.com

Office hours: Tuesday and Thursday 1:00pm – 2:00pm or by appointment

Teaching Assistant:

Zhe Wang

email: zhe.4.wang@uconn.edu

Office hours: TBD

Course Information (July 9th to August 10th):

Lectures: Monday through Thursday 11:00am – 1:00pm (AUST 344)

Discussion: Friday 11:00am – 1:00pm (AUST 344)

Course Materials:

Required:

- McLaughlin, Wakefield, An Introduction to Data Analysis Using Minitab 17, 5th Edition (c) 2015, Pearson Education.
- Calculator capable of simple computation – No graphing calculators, no cell phones

Optional:

- Utts and Heckard, Mind on Statistics, 4th edition (Uconn customized, without course notebook)

Prerequisite: Basic Algebra

Course Objectives:

Functional statistical understanding. The course is broken down into three primary parts: Exploratory Data Analysis (EDA), Fundamental Probability

Principles & Distributions, and Statistical Inference. The course will cover standard and nonparametric approaches to statistical analysis; exploratory data analysis, elementary probability, sampling distributions, estimation and hypothesis testing, one- and two-sample procedures, regression and correlation. Learning to do statistical analysis on a personal computer is an integral part of the course. That being said, we will not be spending the time teaching students how to plug numbers into a calculator. Graphing calculators will not be allowed in this course.

Grading Breakdown:

Minitab Homework Assignments – 10%

The purpose of these assignments are for students to gain familiarity with one of the many popular tools for statistical analysis. This part of the course is fundamental to basic statistical computing and will be solely handled by the TA. The lowest score will be dropped from the 11 Minitab submissions ONLY if all 11 are submitted. Failure to submit any Minitab assignment will result in that 0% being averaged into your Minitab score. Minitab assignments will be graded on the scale of 1 – “as expected, satisfactory, some minor errors”, 0.75 – “a weak understanding of the core concepts”, 0.50 – “multiple questions left blank, complete misunderstanding of core concepts”, 0.00 – “late/no submission.” The grading will be up to the discretion of the TA, but is intended to boost your score.

In-Class Participation – 15%

The most effective use of students’ time is to actively engage in class sessions. This means asking questions and speaking up when you know the answer! The classroom is intended to be a safe, judgement free environment for all to participate. No question is unintelligent, and chances are if you have the question, so do 5 other students in the course. There’s no such thing as a job that allows you not to interact with others, so you might as well take advantage of this judgement-free zone to ease your way in. This may consist of both participation and “pop” quizzes. If I don’t know your name by the end of the course, then there’s no way I can give you full marks for participation.

Midterm Exam –25%

The cutoff for coverage for the Midterm is currently to be decided, but will cover everything up to and including concepts covered on Friday, July 20th. The exam will be held Monday, July 23rd during usual course hours. For this exam students will be allowed only 1 single side of a note sheet.

Final Exam – 30%

The final exam will be held the last day of classes, Thursday August 9th. The final exam will be cumulative, covering and explicitly testing all concepts ranging from the first day of the course. For this exam students will be allowed 1 pages of notes, both front and back.

Course Project – 20%

In my opinion, this is the most important part of the course. Especially as the fields of data science/analytics gain momentum, there is almost a guarantee that at some point in your career you will be responsible for either producing, or at least understanding and using statistical output to produce actionable results. This project will consist of using the dataset provided to conduct your own exploratory data analysis. As per any idea within the workplace, you will be responsible for producing an initial proposal, a proof of concept, and a final product. More will be discussed in class as the course unfolds.

Grading Scale:

A: 94 and above
A-: 90-93
B+: 87-89
B: 83-86
B-: 80-82
C+: 77-79
C: 73-76
C-: 70-72
D: 60-69
F: Below 60

Academic Integrity:

The more you collaborate, the better! Statistics is a field in which working in isolation is detrimental to success. That being said, the university policy regarding plagiarism is as always in effect for submitted assignments. You may find the university's policy here: <https://lib.uconn.edu/about/get-help/writing/plagiarism-resources/>. However, I fully support students collaborating and sharing ideas before forming their own responses for submission.

Disabilities:

Disabilities are happily accounted for in this course. If you have any special requirements for lectures, labs, exams, or assignments I will be happy to make the arrangements necessary. However, as per UCONN policy, you must first contact the Center for Students with Disabilities (CSD). Their website can be found here: www.csd.uconn.edu. If you need any special accommodations, I strongly recommend contacting them as soon as possible (read: not the night before an exam) in order to ensure a smooth process. If you do not have the proper documentation from the CSD, then I'm afraid I cannot give any accommodation. Additionally, accommodations will not be made retroactively.

A Note On Success:

This is a 4 credit course crammed into a 5 week period. It will be a lot of work, and as long as you are able to keep up with the deadlines you should do fine. I recommend after each lecture reading over the notes from the day and making sure you understand each problem done in class. Then, complete the recommended review posted after lecture that day. This method will prepare you for exams. The key to the Minitab assignments is focusing for the 2 hours. They are not meant to be difficult, but rather more of an exercise in navigating Minitab and following the instructions. For the course project, just follow the deadlines. There are tight turn-arounds for the project, much as there are in the real world. This will help to develop time management and the idea that perfection can sometimes be the enemy of success. Minimum viable product (MVP) is key.

*****The instructor reserves the right to modify the above mentioned dates, policies, and procedures as he sees fit. Please pay attention and keep a look out for any such changes.*****

JULY/AUGUST 2018 - STAT 1100 SCHEDULE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8	9 <i>Lecture #1 (EDA 1)</i>	10 <i>Lecture #2 (EDA 2)</i>	11 <i>Lecture #3 (EDA 3)</i>	12 <i>Lecture #4 (EDA 4) Project Partner Selection Due by EOD (5:00pm)</i>	13 <i>Lab #1 – Minitab 1 Minitab 2</i>	14
15	16 <i>Lecture #5 (EDA 5)</i>	17 <i>Lecture #6 (Probability 1) Project Meetings 1pm- 2:30pm</i>	18 <i>Lecture #7 (Probability 2)</i>	19 <i>Proposal Presentations</i>	20 <i>Lab #2 – Minitab 3 Minitab 11</i>	21
22	23 <i>Midterm Exam</i>	24 <i>(Guest Speaker & Review Midterm)</i>	25 <i>Lecture #8 (Probability 3)</i>	26 <i>Proof of Concept Presentations</i>	27 <i>Lab #3 – Minitab 4 Minitab 5 Minitab 6</i>	28
29	30 <i>Lecture #9 (Probability 4)</i>	31 <i>Lecture #10 (Probability 5) Project Meetings 1pm- 2:30pm</i>	1 <i>Lecture #11 (Inference 1)</i>	2 <i>Lecture #12 (Inference 2)</i>	3 <i>Lab #4 – Minitab 7 Minitab 8</i>	4
5	6 <i>Lecture #13 (Inference 3)</i>	7 <i>Lecture #14 (Inference 4)</i>	8 <i>Final Presentations</i>	9 <i>Final Exam</i>	10 <i>Lab #5 – Minitab 9 Minitab 10</i>	11