University of Connecticut

Introduction to Statistics I (STAT 1000Q)

Winter Intersession 2019 (12/26/2018 - 01/18/2019)

Syllabus for Sec Z19, Class Number 1071

Basic Information about the Course

Course Title: Introduction to Statistics I (STAT 1000Q)
Credits: Four (4)
Recommended Preparation: MATH 1011 or equivalent
Instructor: Dr. Suman Majumdar, suman.majumdar@uconn.edu, WebEx Personal Room, (203)286-5631
TA: Mr. Daniel Kpormegbey, daniel.kpormegbey@uconn.edu, WebEx Personal Room, (928)221-8021

- **E-mail is the best way to reach us.** Please copy Daniel on any e-mail you may send me and vice-versa. You can expect a response in less than 12 hours.
- If your query is time sensitive, please don't hesitate to call Daniel. You can call me as well, but it will be difficult to get hold of me in real time. If you leave us a voicemail, we'll get back to you as soon as possible.
- Click here for details of HuskyCT technical support provided by UConn eCampus.

Course Objectives

By the end of the course, you should be able to:

1. Create and read graphs, charts, and tables for classifying, summarizing, and visualizing data.

2. Calculate and interpret descriptive statistical measures including: mean, median, mode, standard deviation, range, percentile, interquartile range, and standardized score.

3. Turn raw data into usable information.

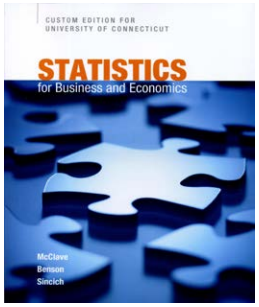
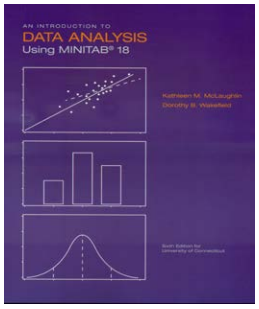
4. Solve elementary probability problems and use random variables for modeling population features.

5. Do calculations involved in the use of inferential statistics, including point and interval estimation and hypothesis testing, and interpret the results of these calculations.

6. Build Regression models for studying relationships between quantitative variables.

Texts required for the Course

You can buy both the textbook and the workbook at any UConn Bookstore, by selecting Stamford as Campus. You can rent the textbook online to lower your cost.

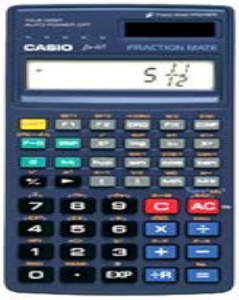
	***Textbook: STATISTICS for Business and Economics,* UCONN Custom Edition** By James T. McClave, P. George Benson and Terry Sincich Pearson Education, Inc. ISBN-13: 978-1-323-75150-3 **Taken from:** ***Statistics for Business and Economics, 13th Edition*** ISBN-13: 978-0-134-50659-3
	***Workbook: An Introduction to DATA ANALYSIS Using Minitab 18*, 6th Edition for UCONN** By Kathleen M. McLaughlin and Dorothy B. Wakefield Pearson Education, Inc. ISBN-13: 978-1-323-92300-9

Course Description

The course is developed around Chapters 1-8 and 11 of the Textbook, **Statistics for Business and Economics**, 13th edition, by James T. McClave, P. George Benson, and Terry Sincich. Please note that these 9 chapters span 561 pages and it is impossible to cover these pages verbatim in one semester. That, and other pedagogical considerations, cause me to substantially reorganize the content into the 13 modules described broadly in the next page. It is important for you to note how each module relates to the Chapters in the Textbook and the Workbook, **An Introduction to Data Analysis using Minitab 18**, 6th edition, by Kathleen McLaughlin and Dorothy Wakefield.

Module 1 - The Science of Statistics This module corresponds very closely to Chapter 1 of the Textbook.
Module 2 - Methods for Describing Data This module is developed around Chapter 2 of the Textbook and Chapters 1-3 of the Workbook, but contains additional material in the Module notes that is covered neither by the Textbook nor by the Workbook.
Module 3 - Probability This module corresponds to Chapter 3 of the Textbook, but there is some divergence between the content of the module and the Textbook Chapter. You should follow the Module notes carefully and use the Textbook as indicated.
Module 4 - Random Variables and Probability Distributions This module is developed around Chapter 4 of the Textbook. We do most of the numerical work using Minitab (as opposed to the Textbook, which uses formulas and calculators). As such, Chapters 5 and 6 of the Workbook play a pivotal role in this module. Again, Module notes will indicate how to use the Textbook.
Module 5 - Sampling Distributions This module is developed around Chapter 5 of the Textbook. It contains additional material that is covered neither by the Textbook nor by the Workbook. It does make substantial use of Chapter 7 of the Workbook. Read the Textbook in conjunction with the Module notes.
Module 6 - Introduction to Estimation with Confidence Intervals This module makes no direct use of the Textbook or the Workbook.
Module 7 - Introduction to Hypotheses Testing This module, like Module 6, makes no direct use of the Textbook or the Workbook.
Module 8 - The One Sample Problem This module is nominally related to Sections 6.1-3 and Sections 7.1-5 of the Textbook, but my pedagogy is radically different from that of the Textbook. I think what the Textbook covers in Chapters 6 and 7 are joined at the hip and separating them impedes the process of learning. I also de-emphasize the many formulas for calculating the values of the various statistical estimators - using Minitab to do the same jobs is a much more efficient process. Chapters 8 and 9 of the Workbook play a pivotal role here.
Module 9 - The One Proportion Problem This module is nominally related to Section 6.4 and Section 7.6 of the Textbook, but pedagogical considerations (similar to the ones shaping my handling of the content of Module 8) cause me to develop it around Chapters 8 and 9 of the Workbook.
Module 10 - The Paired Difference Experiment Problem The Textbook deals with this material in Section 8.3, but we are going to de-emphasize the formulas again and develop it around Chapter 10 of the Workbook.
Module 11 - The Two Sample Problem The Textbook deals with this material in Section 8.2, but continuing with the approach of de-emphasizing formulas and using Minitab to do the numerical work, we are going to develop the module around Chapter 10 of the Workbook.
Module 12 - The Two Proportion Problem The Textbook deals with this material in Section 8.4, and the Workbook does not deal with this material at all. Again, we are going to shun formulas and use Minitab, and I'll post material that will illustrate how to handle this problem using Minitab.
Module 13 - Relationships Between Quantitative Variables, Correlation and Regression This module deals with what is covered in Chapter 11 of the Textbook, but I make very little use of the Textbook. I have a set of lecture notes and use them along with Chapter 11 of the Workbook to deliver the content.

Tools (Hardware and Software) required for the Course

	You will need a scientific calculator.

If you are a Windows PC user (7, 8, or 10), download Microsoft Office and **Minitab 18**.

If you are a Mac user and have access to a Windows PC, I strongly recommend that you download Microsoft Office and **Minitab 18** on that Windows PC, and complete all the course assessments on that Windows PC. You can use your mac to read the notes, view the lectures, and participate in office hours (using Chrome, not Safari) without any glitch.

You may have to connect to the UCONN VPN to launch Minitab 18 on your PC.

If you are a Mac user and do not have access to a Windows PC, you should continue to use your mac to read the notes, view the lectures, and participate in office hours (using Chrome, not Safari). However, for the course assessments, you should use the **SKYBOX** by UCONN. When logging into SKYBOX from off campus, make sure you select UCONN from the drop-down menu (instead of LIBRARY). If the SKYBOX link does not work, connect to the UCONN VPN and try again. If you run into any problem with the SKYBOX, please report it to **helpcenter@uconn.edu** or call (860)486-4357 during normal business hours.

Click here to download the required plug-in **Acrobat Reader** to your computer. Your computer should be able to play this video. If you are using a Mac, the video may not play if the link opens in Safari. In that case, open Chrome on your mac and copy the link from the address bar in Safari to the address bar in Chrome. If you cannot play the video on your computer, please fill out this form.

You will need a microphone and a webcam for participating in virtual office hours.

Course Policy on Technology Related Issues

While I will try to help you resolve any technology related issues you may encounter, you are ultimately responsible for ensuring that your computer and internet connection are equipped to deal with what this online course requires; in particular, **I cannot let you make-up an assessment because of a technology related issue at your end**. Since I am not a specialist in information technology, for many of your issues my role will be confined to putting you in touch with appropriate support personnel within the University. Since I have no control over how quickly your issue will be addressed, please bring your concerns to my attention as soon as they surface.

Course Assessments

Computer Assignments

There will be **5 computer assignments**, for a total of **100 points**. Collaboration among students on these assignments is *strictly* prohibited. Please review the Assignment Details document for more information.

Every assignment will have a **deadline**, followed initially by an **extended deadline** (when it becomes unavailable) and subsequently by an **über extended deadline** (coinciding with the release of the solution to the assignment). Please note that an assignment submitted after its **deadline** is considered late and may not be graded for full credit; ***no matter what*, a submission of an assignment will not be accepted once its solution is released**.

The Course Menu on the left side of the Home Page contains the link to a folder titled **Assignments**. Every assignment and its solution will be placed inside this folder. Click on the **link for an assignment** (*different from the* link for an assignment file) to access and submit it. You can attach the file you intend to submit as your assignment in that page.

Timed Quizzes

You will be quizzed on the material of each ***Learning Module* except 1, 6, and 7**, for a total of **60 points**. Please note that your total score on these quizzes is by far the larger component of what determines your course grade.

I will give you two quizzes on each module, Version A followed by Version B. Each of the two quizzes on a particular module will have the same number of questions and you will get the same amount of time to complete each of the two quizzes. The level of difficulty of the questions on the Version B quiz will be comparable to that of the questions on the Version A quiz, but you should not expect that any question would be repeated. I will post detailed solutions to the Version A quiz. To calculate your quiz score for a module, I will take the higher of your Version A and Version B scores. Please review the Quiz Details document for more information.

The Course Menu on the left side of the Home Page contains the link to a folder titled **Quizzes**. All quizzes and the solutions to the A quizzes will be placed inside this folder. Always read the description carefully before starting a quiz.

By taking these quizzes, you agree to abide by the **Honor Code**: *You will not seek help from anyone to complete the quizzes*. You are allowed to use any inanimate resource while completing the quizzes.

Course Grading

For each of you, I will calculate a **W**(weighted)-score, using the formula **W = C/5+4Q/3**, where **C and Q** stand for the total points you *score* on the computer assignments and the module *quizzes*, rounded up to the next whole number.

W-Score	Letter Grade	W-Score	Letter Grade	W-Score	Letter Grade
0-39	F	52-56	C-	73-80	B
40-43	D-	57-61	C	81-86	B+
44-47	D	62-66	C+	87-91	A-
48-51	D+	67-72	B-	92-100	A

Here is an Excel Template for calculating your **W-score**.

Please note that depending on the **distribution** of the **W-score**, **I may *modify* the scale, i.e., *curve***, but only to make it more *lenient*. What that means is *your **Letter Grade** on a modified scale will **never** be lower than that on the scale above*.

Students with Disabilities

Students with disabilities should contact me and the Center for Students with Disabilities as soon as possible, in order for appropriate accommodations to be provided in a timely manner.

Course Operating Procedures

How to Approach this course (This is IMPORTANT!)

Because you are working in an isolated environment away from other course participants, i.e., other students in the course and yours truly, as opposed to with them in a brick and mortar classroom, **the risk of falling behind is higher in an online course**. This problem is often compounded by a temptation to procrastinate, which is fueled by the asynchronous nature of learning in this format. That said, taking an online course can be a truly rewarding experience (above and beyond the convenience it provides) if you become engaged, follow the instructions to keep up with the assigned work, and communicate regularly with other course participants, including yours truly. To facilitate that, we'll regularly hold virtual office hours.

Since we will be covering 14 weeks of material in 24 days, you will have to devote a substantial amount of time (on the average about 6 hours a day) to the course on each of these 24 days. The **Course Schedule** outlines how you should organize your course related activities over this period. Following the schedule will protect you against falling behind and let you learn with confidence what you need to. It will be very overwhelming (and ineffective) if you procrastinate and then try to make up for the lost time.

Here is the link to the Resources Page of The Academic Achievement Center of UConn.

Discussions

The **Discussion Board** in Husky CT provides a platform to *meet* other course participants and initiate a dialogue on any (obviously, course related) topic of interest. While posting to the **Discussion Board** please write complete sentences and check for spelling and grammar. I strongly encourage you to regularly use the **Discussion Board**.

Please introduce yourself to the rest of the class by submitting a post to **the Discussion Board on Introductions.**

Academic Misconduct

Academic misconduct in any form is in violation of The Student Code, which is **incorporated into this document by reference**, and will not be tolerated. This includes, but is not limited to, copying or sharing answers on quizzess or assignments, plagiarism, and having someone else do your academic work. Depending on the act, a student can receive a score of 0 on the quiz/assignment, F grade for the course, or can be suspended or expelled. In this context, let me emphasize that substantially similar submissions of an assignment from different students will be treated as an instance of academic misconduct by the students involved.

I take plagiarism seriously. If you're not sure how to recognize and avoid plagiarism, click here.

Your Responsibility

For a variety of reasons, I may have to modify the policies and procedures outlined in this document, as well as the various deadlines mentioned in the Assignment Details and the Quiz Details. Such modifications, if any, will be announced on Husky CT. It is **your responsibility** to keep track of these announcements.