QMB 2100 ECONOMIC AND BUSINESS STATISTICS 1 – Live class

Spring Semester 2023– 3 Credits

Instructor: Mark Dummeldinger Office: CIS 2009

Office Hours: All online office hours will be held using MSTeams on Mondays and Wednesday from 2:30-3:15 PM. I will also hold office hours on the nights that projects are due from 7:00-8:00 PM

E-mail: mdummeld@usf.edu - **put QMB 2100 in the subject line**

STAT Lab: Teaching Assistants are available during a variety of times each week to answer questions you have about the class both live and online. Please consult the Spring 2022 TA Office Hour announcement. Both the live and MSTeams online office hours will be posted.

Covid-19 Procedures

All students must comply with university policies and posted signs regarding COVID-19 mitigation measures, including wearing face coverings and maintaining social distancing during in-person classes. Failure to do so may result in dismissal from class, referral to the Office of Student Conduct and Ethical Development, and possible removal from campus.

Additional details are available on the University's Core Syllabus Policy Statements page: https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspxLinks to an external site.

Class Recording

As of the beginning of the semester, no recorded lectures will be made. Should USF alter the way the class is to be presented, online recordings will be made available to students. Student's voice and video may be included in these class recording. It is the student's responsibility to make sure the privacy of their surroundings and background is maintained.

Online Proctoring

Quizzes and examinations may be conducted using online proctoring tools. Keeping the audio and video (microphone and camera) on during such exams and quizzes is required. If the student is not willing to use these, the student is asked not to register for this course. Any student may elect to drop or withdraw from this course before the end of the drop/add period. Online exams and quizzes within this course may require online proctoring. Therefore, students will be required to have a webcam (USB or internal) with a microphone when taking an exam or quiz. Students understand that this remote recording device is purchased and controlled by the student and that recordings from any private residence must be done with the permission of any person residing in the residence. To avoid any concerns in this regard, students should select private spaces for the testing. The University library and other academic sites at the University offer secure private settings for recordings, and students with concerns may discuss the location of an appropriate space for the recordings with their instructor or advisor. Students must ensure that any recordings do not invade any third-party privacy rights and accept all responsibility and liability for violations of any third-party privacy concerns. Setup information will be provided prior to taking the proctored exam. For additional information about online proctoring you can visit the online proctoring student FAQ at http://www.usf.edu/innovative-education/resources/student-services/online-proctoring.aspxLinks to an external site.

TEXTS:

Statistics for Business and Economics; McClave, Benson, and Sincich; Prentice Hall, 14th Edition. You will need either a textbook or electronic version of the text.

Please note that this is the same text used for the QMB 3200 Business and Economics Stat II class you are required to take in the MUMA College of Business.

Statistics for Business and Economics, Student Solutions Manual; Nancy S. Boudreau, Prentice Hall, 14th Edition; **Optional**

STATISTIX for Windows Analytical Software - available at the bookstore for PCs (not Macs) or **free for everyone** (**recommended**) on the USF Application Gateway or on **library computers.**

COURSE OBJECTIVES AND PURPOSE

Catalog Description of the course:

Data description; exploratory data analysis; introduction to probability; binomial and normal distributions; sampling distributions; estimation with confidence intervals; tests of hypotheses; control charts for quality improvement.

Purpose of the course:

The purpose of the course is to prepare students to appreciate the role statistics plays in data analysis and decision making in various business environments. Being the first course, it focuses on Descriptive Statistics, Inferential Statistics, and Quality Control. In particular, this course covers descriptive statistics and then introduces the concepts and methods of probability, probability distributions, sampling distributions, estimation, hypothesis testing, inference, and control charts for quality improvement.

Learning Goals

This course is part of the University of South Florida's Foundations of Knowledge and Learning Core Curriculum. It is certified for Quantitative Reasoning and for the following dimensions: Critical Thinking, Inquiry-based Learning, Scientific Process, and Quantitative Literacy.

The following Learning Goals will be met in this course:

1. The student will understand the concepts of data collection, summary statistics, and statistical inferential techniques and be able to apply these concepts to real data to use sample information to make inferences about populations of interest.
2. The students will be able to differentiate between the two types of statistical techniques and be able to apply each when appropriate.
3. The student will understand the difference between ethical data analysis and using data to distort or mislead.
4. The student will be able to summarize data graphically and perform data analysis to compute measures of central tendency as well as dispersion.
5. The student will be able to make sound decisions based on basic probability techniques.
6. The student will learn discrete and continuous probability distributions and be able to read and utilize statistical tables.
7. The student will become proficient at working with the sampling distributions and the Central Limit Theorem.
8. The student will be able to compute and interpret point and confidence interval estimates.
9. The student will be able to Conduct hypothesis tests, draw inferences, and appreciate the importance of statistical inference.
10. The student will Learn the concepts of process control, the role of statistics, and be able to construct/use control charts for quality improvement

COURSE POLICIES

1. **Weekly Competency Checks:** On select weeks, I will post online competency checks to ensure that you are comprehending the material being presented. Each Competency Check will be completed within Canvas. You will have two attempts to complete the competency checks and they must be completed before the indicated due date (see due dates in Canvas). **Answers are posted after the due date, so no late competency checks are accepted (for any reason).**

2. **Computer Projects:** You will be required to perform statistical analyses on real data using the computer (Statistix software). You will be given (electronically) project assignments in Canvas and you will upload your projects to us (demonstrations of how to compete assignments and how to upload will be provided well before the indicated due date shown below. There will be four projects assigned for the semester**. Late projects are accepted but will receive a 10% deduction for each day late (for any reason).**

3. **Exams:**There will be four multiple choice exams that test the material covered this semester. Exam 1 and Exam 3 will be given online and will be open book and notes but must be completed alone. The instructor reserves the right to use online proctoring software for the online exams. The second exam will be given in class on Monday, February 27th, and the cumulative final exam will be given live on Saturday April 29th from 3-5 pm in BSN 1100. All students must be available to take the exam final exam at that time. You will be allowed to bring one 8-1/2x11 sheet of paper for any notes you wish to use during the second exam and the final exam. All statistical tables used throughout the semester will be furnished with the exams that are given.

4. **Makeup Exams:** Any makeup exams needed will be given the week after the scheduled exam and will be a short-answer exam that will be graded by the instructor. Arrangements for makeup exams must occur before the missed exam.

5. **Grading Values:** The point distribution will be as follows:

Project 1:	**30 points – Must be submitted in Canvas by 11:59 pm on 1/29**
Exam 1:	**40 points – Given online anytime on February 3-4**
Project 2:	**20 points – Must be submitted in Canvas by 11:59 pm on 2/22**
Exam 2:	**40 points – Given live in class on February 27**
Project 3:	**30 points – Must be submitted in Canvas by 11:59 pm on 4/2**
Exam 3:	**50 points – Given online anytime on April 7-8**
Project 4:	**20 points – Must be submitted in Canvas by 11:59 pm on 4/23**
Exam 4:	**100 points – Given in BSN 1100 on April 29 from 3-5 pm**

Online Competency Checks: Due throughout the course, 70 points total.

The total points possible throughout the entire semester is 400 points.

6. **Assigned Grades: Grades will be based on the following grading scale:**

96.50 - 100%	A+
91.50 – 96.49%	A
89.50 – 91.49%	A-
86.50 – 89.49%	B+
81.50 – 86.49%	B
79.50 – 81.49%	B-
76.50 – 79.49%	C+
71.50 – 76.49%	C
69.50 – 71.49%	C-
66.50 – 69.49%	D+
61.50 – 66.49%	D
59.50 – 61.49%	D-
0 – 59.49%	F

7. Assigned Homework Problems: The following is a list of recommended problems the student should attempt to master the necessary skills presented during the class. While not collected, these problems enable the student to test their knowledge of the statistical methods introduced in both the lectures and the text. Other problems should be worked in areas causing difficulty. A solutions manual to the odd numbered problems is available to the student at the bookstore and online and answers to these problems are posted within Canvas.

Note: To reduce confusion. Note that problem 2 in Chapter 1 is listed in the text as Exercise 1.2. Problem 20 will be listed as Exercise 1.20.

CHAPTER	SECTIONS COVERED	ASSIGNED PROBLEMS
1	1.1, 1.2, 1.3, 1.5, 1.6, 1.7	2, 5, 6, 7, 8, 20, 29, 37 a/b/c
2	2.1 - 2.7, 2.10	4, 5, 17, 21, 22, 23, 33, 41, 48, 51, 68, 69, 71, 79, 85, 88, 90, 93, 97, 100, 108, 112, 114
3	Selected Topics	46, 47, 48, 62 (a and b only)
4	4-1 - 4.3, 4-5 - 4.7	1, 3, 13, 14, 21, 22, 45, 49, 50, 51, 52, 189, 85, 89, 92, 94, 99, 101, 111, 120, 123
5	5.1 - 5.3	1, 15, 17, 18, 19, 24, 29, 32
6	6.1 - 6.5, 6.7	1, 2, 5, 6, 7, 10, 12, 18 (a-d only), 24, 25, 26, 29, 33, 41, 45, 47, 51, 60, 62, 64, 66, 67, 70, 98, 133
7	7.1 - 7.7	1-7, 10, 19, 20, 21, 23, 25, 29, 30, 33, 36, 42, 44, 51, 54, 55, 56, 64, 66, 69, 71, 77
8	8.1 - 8.4, 8.6	3, 12, 21, 23, 33, 37, 41, 49, 51, 81, 83
13	Follow Notes	Follow Notes

Exercises designated in red indicate the problem requires extensive computer assistance. Printouts for these problems are posted in Canvas and should be consulted while attempting these problems. As another option, students could attempt to generate the printouts themselves using the Statistix software. Demonstrations on how to use the software are posted online.

Material Covered During Class Lecture: The following is a ***proposed*** outline of the topics. Schedule variations will be announced in class and/or through Canvas

WEEK	CHAPTER(S)	TOPIC(S)
1	1, 2	Syllabus – Introduction, Descriptive Statistics
2	2	Descriptive Statistics
3	2, 3	Descriptive Statistics, Probability
4	4	Random Variables, Online Review (Project 1 and Exam 1 online this week)
5	4	Binomial Random Variable, Normal Random Variable
6	4	Normal Random Variable, Sampling Distributions
7	5	Sampling Distributions, Review (Project 2 this week)
8	6	Live Exam, Confidence Intervals (Exam 2 in class on 2/27 this week)
9	6	Confidence Intervals
10		Spring Break – No Class this week!
11	7	Hypothesis Testing
12	7	Hypothesis Testing
13	8	Chapter 8 Intro., Online Review (Project 3 and Exam 3 online this week)
14	8	Comparing Two Parameters
15	6, 7, 8, 13	Comparing Two Parameters, Working with Variances, Quality Control Material Posted
16		Review (Project 4 and Exam 4 from 3-5 pm on 4/29 this week)

University Policies:

Policies about accessibility, religious observances, academic grievances, academic misconduct, and several other topics are governed by a central set of policies, which apply to all classes at USF: **https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspx**Links to an external site.

Final Examinations Policy - all final examinations are to be scheduled in accordance with the University's final examination policy.

OTHER USF COMMON POLICIES

"I" GRADE: Students who are unable to complete all requirements of the course for circumstances beyond their control may request to receive an "I" grade to allow for completion of the remaining coursework the next semester(s).

USF Undergraduate: **http://ugs.usf.edu/policy/IGradePolicy.pdf**Links to an external site.

FINAL EXAMINATIONS: **USF Policy 10-005** Links to an external site.: All final examinations are to be scheduled in accordance with the University's final examination policy.

EARLY NOTIFICATION REQUIREMENT FOR OBSERVED RELIGIOUS HOLIDAYS:

USF Policy 10-045 Links to an external site.: Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, at the beginning of the term.

GENDER-BASED CRIMES/SEXUAL MISCONDUCT/SEXUAL HARASSMENT (INCLUDING SEXUAL VIOLENCE): **USF Policy 0-004** Links to an external site.. USF has a commitment to the safety and well-being of our students. Please be aware that educators must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence that come to their attention. I am required to report such incidents in order for the Office of Student Rights and Responsibilities or the Office of Diversity, Inclusion, and Equal Opportunity can investigate the incident or situation as a possible violation of the USF Sexual Misconduct/Sexual Harassment Policy and provide assistance to the student making the disclosure. If you disclose in class or to me personally, I must report the disclosure and will assist you in accessing available resources.

The Center for Victim Advocacy and Violence Prevention, the Counseling Center and Student Health Services are confidential resources where you can talk about such situations and receive assistance without the incident being reported.

- Center for Victim Advocacy and Violence Prevention:
  - (813) 974-5757
  - **http://sa.usf.edu/advocacy**Links to an external site.
- Counseling Center
  - (813) 974-2831
  - **http://usf.edu/student-affairs/counseling-center**Links to an external site.
- Student Health Services
  - (813) 974-2331
  - **http://usf.edu/student-affairs/student-health-services**Links to an external site.

GENERAL ATTENDANCE POLICY: USF General Attendance Policy Links to an external site.: Students are expected to attend classes. Faculty must inform students of attendance requirements on syllabi. Instructors should accommodate excused absences by making arrangements with students ahead of time (when possible) or by providing a reasonable amount of time to make up missed work.

ADDITIONAL ACCESSIBILITY ACCOMODATION POLICIES

Accommodated Quizzes, Tests and **Exams:** SAS administers more than 7,000 exams to the USF community each academic year. The student is responsible for scheduling accommodated tests and exams with SAS. Students must schedule with SAS at least one full week before the requested test date. Students who miss this deadline complete a Late Exam Request Form requiring an instructor signature. SAS schedules late exam requests as space allows and as close to the original test date as possible.

Due to the volume of tests and exams SAS manages, SAS cannot provide accommodated testing space for "pop" or unscheduled quizzes. Consult with SAS for information on accommodating unscheduled quizzes.

Make-up Exams: Students who are taking a make-up exam due to disability reasons (medical issues, scheduling conflicts with other courses and extended exam time, disability related appointments etc.) should be allowed to take a make-up exam within 10 business days of the student's return to classes. SAS schedules make-up exams as space allows.

Online Proctoring such as Proctorio: Consult with SAS prior to a student who utilizes accommodations using Proctorio. Some SAS students have atypical testing behaviors. Other SAS students utilize adaptive software that does not collaborate well with Proctorio software.

Laptop or Electronic Device Usage: If prohibiting laptop, phone, or electronic device usage in class, keep in mind that some SAS students utilize such devices for note taking and recording. Still others have medical applications on cell phones that the student cannot turn off (blood sugar monitors, medication alerts etc.) Policies that indicate, "Only those with accommodations may use such devices" inadvertently draw attention to the student with the accommodation. SAS suggests using language that indicates, "Students utilizing laptops, cell phones or other electronic devices for non-academic reasons during class time may be penalized . . . ."

Clicker Accessibility: Consult with SAS about alternatives to clicker points. Many SAS students have disabilities that affect the ability to answer clicker questions.

Attendance/Participation Accommodations Apply to all courses – Even on-line: If a student has attendance or participation accommodations, SAS provides an "Attendance/Participation Accommodation Form" as part of the student's accommodation letter. This form is tool intended to guide a conversation between a student and instructor about missed courses, missed deadlines and the procedures to follow when requesting extensions. The accommodation does not allow a student to miss an indefinite number of classes or deadlines. Instructors may always consult with SAS to determine what is reasonable.

Accessible Materials: USF policy requires that all course materials be accessible to students. Per the USF Caption and Media Access Policy, all media sources must be captioned prior to use. SAS encourages faculty to consider document accessibility. Use the "Style" functions in Microsoft Word and the OCR functions in Adobe to ensure that all course documents are accessible to those who utilize screen reading technology. See the SAS Accessibility Guide for more information: **www.sas.usf.edu** Links to an external site.(under resources).