



DEPARTMENT OF STATISTICS
STA 2023 SPRING 2022
FUNDAMENTAL BUSINESS
STATISTICS



Quantitative and Logical Thinking

Instructor: Benjamin Beaudett
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Office Hours: TBA
Office Location: OSB 331

Semester Duration: 1/5/22-4/29/22
Meeting Times: MWF 12:00-12:50pm
Location: OSB 110
Course Website: <https://canvas.fsu.edu>

This course will be meeting Face-To-Face (F2F). Students will need to follow the University's current health and safety guidelines, including policies regarding masks and vaccinations.

COURSE DESCRIPTION

Credit Hours: 3

Prerequisite: None, but two years of high school algebra are recommended.

Special Note: High school students who earn a "3" or better on the AP Statistics exam will be given credit for STA 2023.

The course covers statistical applications in business, involving graphical and numerical descriptions of data, data collection, correlation and simple linear regression, elementary probability, random variables, Binomial and Normal distributions, sampling distributions, and confidence intervals and hypothesis tests for a single sample.

The purpose of this course is to prepare students for further study and job preparation in the field of Business. It will emphasize understanding of data and interpretation of statistical analyses. It will require students to think of data, and report the results of their analyses, in context.

LEARNING OBJECTIVES

This course has been approved to meet FSU's **Liberal Studies Quantitative and Logical Thinking** requirements and is designed to help you become a critical analyst of quantitative and logical claims. In order to fulfill the State of Florida's College mathematics and computation requirement the student must earn a "C-" or better in the course.

By the end of the course, students will:

- (1) Select and apply appropriate methods (i.e., mathematical, statistical, logical, and/or computational models or principles) to solve real-world problems.
- (2) Use a variety of forms to represent problems and their solutions.

The above two competencies will be assessed in the Liberal Studies Quantitative Assessment for STA 2023, which includes a written summary of results.

- (3) Use descriptive statistics and graphical methods to summarize data accurately.
- (4) Use inferential statistics to make valid judgments based on the data available.

- (5) Describe the goals of various statistical methodologies conceptually.
- (6) Apply statistical techniques in the context of business processes, everyday life, and further studies in their discipline.
- (7) Develop a healthy skepticism toward statistical studies and their results based on a sensible consideration of the techniques employed.

TOPICS COVERED

The course will address the following topics.

1	2	3	4
Prerequisite Math Skills	Introduction	Summary Statistics	Normal Distributions
5	6	7	8
Central Limit Theorem	Simple Linear Regression Basics	Probability	Random Variables
9	10	11	•••••
Binomial Distributions	One-Sample Confidence Intervals	One-Sample Hypothesis Tests	

Expected dates when each topic will be covered can be found in the separate Tentative Pacing Schedule.

COURSE MATERIALS

Required Materials

- Access to a personal computer, reliable internet connection, and Chrome or Firefox browser.
- A TI-84 Plus or equivalent calculator. You will be given instructions on how to use a TI-84 series calculator to complete coursework, but I cannot promise to be able to help with any other type of calculator. An online TI-84 emulator may be an option, and I suggest you wait until after the course begins before purchasing a new calculator. I will give demonstrations of how to use Microsoft Excel for all necessary coursework.
- No textbook is required for this class. Required written materials will be provided as pdfs via the course website.

Lecture Videos

In addition to the in-class lectures, prerecorded lectures made by Radha Bose, a senior lecturer in the Statistics department, will be made available on the online course Canvas. The material covered in these videos closely follows the pdf notes and is similar to what will be covered in the in-person lectures. Watching these videos should be considered as optional and supplementary.

Please note that the recorded lectures are the property of Florida State University and Radha Bose, and are made available only to the students enrolled in this class. Students are not permitted to share the recorded lectures with any other persons outside of this class.

Copyrights of the recorded lectures are reserved by the author and Florida State University.

Additional Resources

For those students looking for additional reading materials and exercises, I am listing the following two optional textbooks. The first is a completely free open-source textbook and the second might be more useful for those specifically interested in Business. I will not be directly using either of these in class and will not be basing any assessments on their contents.

- Introductory Statistics from OpenStax, Print ISBN 1938168208, Digital ISBN 1947172050, <https://openstax.org/details/introductory-statistics>.
- Ronald M. Weiers, Introduction to Business Statistics.

EMAIL & COMMUNICATION

Please turn on the course notifications on Canvas by going to Account -> Notifications and checking options that will give you frequent updates for all of the items under Course Activities. I will communicate with you using the Announcements on the course Canvas and sometimes by sending emails to your @my.fsu.edu account. Please check your @my.fsu.edu email account at least once daily to be aware of any updates.

If you email me, please send it from your @my.fsu.edu account or use the Inbox feature on Canvas. Always include your name and the course number in your emails. Please send assessment-related enquiries at least 24 hours before the assessment is due.

FERPA regulations require that I have student permission before sending any information about grades via email, so if you email about a grade please include words to the effect of "I give you permission to send my grades via email". Questions about grades MUST come from YOUR @my.fsu.edu account or they will not be answered.

You may expect a response to your email within two work days during regular-length semesters, or one work day during compressed Summer sessions. I might sometimes reply to email during the weekend but this should not be expected. Please familiarize yourself with stated course policies. If you email with an enquiry that was previously addressed in the syllabus, in a class email or in a course announcement, you might not get a response. Specific questions about course material are usually better addressed in-person than via email. I plan to set aside some time in class for answering these questions and will also be happy to address them during my office hours.

My replies to your emails might come from a different email address than the one you originally sent it to, but it will always be clear that the response is coming from me. My FSU email addresses include bbeaudett@fsu.edu, beb20bx@fsu.edu, and beb20bx@my.fsu.edu.

ASSESSMENT AND GRADING

The graded assessments in this course consist of regular quizzes and tests, and one test called the Liberal Studies Quantitative Assessment (LSQA).

During the online assessments you are permitted to use most materials obtained from the course Canvas, including lecture videos, calculator videos, notes, exercises, etc., minus a few exceptions detailed below. Many assessments will require use of a TI-84 calculator or similar. You may use a different calculator with similar functionality or computer software such as Microsoft Excel or R as long as its use does not access the internet. However, please ask me beforehand for approval.

The quizzes are meant to be a low-pressure opportunity to develop and practice your knowledge and skills. You will be allowed as many attempts to take the quizzes and improve your score as you care to use. You are welcome to work on and discuss the quizzes with your classmates. We might spend some time looking at and answering quiz questions in class. The lowest two quiz grades will be dropped when calculating your final grade.

The tests are more formal assessments and have a greater weight on your final grade than the quizzes. You are allowed a maximum of two attempts on each test, and the time limit is shorter than what is given for the quizzes. You are not allowed to collaborate on the tests or discuss test questions with anybody other than me until after the semester is over. You are not allowed to use internet resources other than those provided on the course Canvas while taking a test, and you cannot use the Canvas links marked as 'third-party'. The lowest two test grades will be dropped when calculating your final grade.

The LSQA is an assessment that is required in order for this course to satisfy the University's Quantitative and Logical Thinking requirement. It will cover regular course material and is essentially the same as a usual test, but it is weighted a bit more heavily than the others and cannot be dropped from your final grade. You will be allowed a maximum of two attempts and are not allowed to collaborate, discuss, or use internet resources other than those provided on the course Canvas while taking the LSQA, and you cannot use the Canvas links marked as 'third-party'. The LSQA can not be dropped when calculating your final grade.

There are no cumulative midterm or final exams in this class. The final test will be given during Finals week but it will have the same weight as the other tests and will only directly cover material from the most recent unit.

All quizzes and tests will be administered online through the course Canvas website. You may take them at any time from when they are made available until their due dates. There will be two assessments, a quiz and a test, for each of the eleven topics covered in the course. You will be allowed unlimited attempts on each quiz and two attempts on each test and the LSQA; only the highest score from your multiple attempts will be used in calculating your grade. Allowing for some exceptions, the usual timeframe for quizzes/tests will be as follows: Each quiz and test will be available for two days. The second quiz day will overlap with the first test day for a combined three-day period for each pair. The answers to the quizzes will be available on Canvas after the second day to those who have completed it. I will announce the dates as the course progresses. I will not be using Honorlock in this class.

A few notes:

- Quiz 1 and test 1 are on general-knowledge material that you are expected to be familiar with before beginning the course. They will be available during the first week of class. The material in them will not be addressed in class unless specific questions are asked.

- The LSQA will take the place of the test for unit 6. It will be assigned and formatted as a usual test, but its weight on your grade will be slightly greater and it cannot be dropped from your final grade.
- The quiz for unit 11 will take place during the final week of classes. The corresponding test 11 will take place on Monday 4/25 and will only be available on that day. (The University Final Exam time for this course is 4/25 from 3:00-5:00pm).
- The assessments will assume knowledge of the downloadable materials in the Canvas modules. You will be responsible for all of it, even if there is some detail I miss in class (although I do intend to hit all the points you will be expected to know). I will try to make time in class for questions before each set of quizzes/tests is due, and I recommend you complete the readings before then so you can ask me about anything I might have missed.

Grade Structure

ASSESSMENT	NOTES	WEIGHT
Quizzes	Collaboration allowed. Unlimited attempts. Lowest two scores dropped from final grade.	25%
Tests	Collaboration is NOT allowed. Resources available on the course Canvas may be used. Other internet resources are NOT permitted. Two attempts. Lowest two scores dropped from final grade.	65%
Liberal Studies Quantitative Assessment (LSQA)	Collaboration is NOT allowed. Resources available on the course Canvas may be used. Other internet resources are NOT permitted. Two attempts. Grade cannot be dropped.	10%
Attendance/Participation	I will let you know if this will be included.	<=10%

At present, I do not intend to make attendance/participation part of your grade. However, it is possible that this could change. I will make a formal announcement in class and on Canvas if any change is made. I do not plan to assign any extra-credit assignments.

Final letter grades based on numerical grades are in the table below. All final numerical grades will be rounded up to the nearest whole number. For example, a final grade of 82.1 would be rounded up to 83.

F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A
≤59	60-62	63-66	67-69	70-72	73-76	77-79	80-82	83-86	87-89	90-92	≥93

PLEASE NOTE: If you see any automatically-calculated 'average' grades on Canvas, these grades are NOT correct and should be ignored entirely. If you want to get a better idea of your current

grade, you can start by taking separate averages for your quiz grades and test grades (leaving out the two lowest grades from each) and then calculate your grade using the formula:

$$\text{Overall grade} = (0.25) * (\text{quiz average}) + (0.65) * (\text{test average}) + (0.1) * (\text{LSQA score}).$$

Submitting Assessments and Penalties for Late Assessments

Access to quizzes and tests will remain open for one day beyond their due dates. However, you must submit the assessment before the due date passes in order to receive full credit.

Assessments submitted during the first day after the due date will receive a 30% late penalty (but this penalty will not reduce your grade below 50%). Assessments will not be accepted more than one day late without a valid excuse and formal extension, and assessments not submitted by 24 hours after the due date will receive a grade of zero.

You are expected to adhere to all assessment deadlines. Lack of planning, mismanagement of time and other resources, or conflicts with other personal commitments are not acceptable reasons for missing assessment deadlines. Lack of access to technology for avoidable reasons such as forgetting to bring a laptop or calculator with you while traveling will not be accepted as an excuse for missed assessment deadlines.

If you miss an assessment deadline due to a documentable cause, please send me an email to let me know within two days of the assignment due date. Requests for extensions for any reason made more than two days after the assignment due date will generally not be granted. Any required documentation for a missed assignment should be submitted within one week of the assignment due date, and all documentation should be submitted no later than the last day of the semester on 4/29.

There will be absolutely no make-ups, no extra credit assignments, and in general no opportunities for grade improvement, after the end of the semester, so please do your best during the term. Assessments that are not submitted will receive a grade of zero. When a makeup is submitted, the zero will be replaced with the earned grade.

If you miss a deadline for a graded assignment due to illness and would like an extension, please get documentation from a medical provider WHILE YOU ARE STILL ILL. I might not always require documentation to grant an extension but I reserve the right to do so. University Health Services (UHS) will only provide documentation if you seek medical attention while you are ill, and not afterwards. Also, please be sure to notify me of an illness BEFORE the assessment is due. If you do not notify me until after the deadline has passed I will most likely require documentation to grant an extension.

Medical extensions will only be given for students who are sick. The materials required to earn a good grade on assessments will be available online and students who are isolating or in quarantine for precautionary reasons will still be expected to meet assignment deadlines.

Excepting documentable extenuating circumstances such as medical emergencies, NO EXTENSION WILL BE GRANTED FOR ANY TEST, QUIZ, OR THE LSQA BEYOND THE LAST DAY OF THE SEMESTER ON FRIDAY, APRIL 29. In the rare case than an exception is made, it will almost certainly require a more-involved process including formal documentation. All other questions regarding the class or your grade should also be posed to me either in-person or via email by this date. Questions regarding the class sent to me after this date might not receive a response.

Final Exam Rescheduling Policy:

You may not take the final exam before final exams week. Individual students who need to reschedule the final exam for a different time during final exams week will need to

- (i) talk to me about it first and get my permission to reschedule,
- (ii) fill out the “Request to Reschedule Final Examination” form at

https://artsandsciences.fsu.edu/sites/g/files/upcbnu321/files/2020-09/Request_to_Reschedule_revised.pdf and get it approved by the Dean of Arts and Sciences

office, and

- (iii) let me have the approved form by the last day of classes.

If you experience a documented emergency that prevents you from observing the above deadline, contact me as soon as you are able to and we’ll take it from there.

Appealing Assessment Grades

If you feel that an assessment was graded incorrectly, please email me about the grade within two days of the due date of the assessment. If no objection is made within that time frame then it is assumed the grade is accepted and subsequent requests for a grade review might not be granted. This time frame will remain fixed for assessments taken after the due date – if you submit an assessment late you might not be granted any opportunity for a grade review.

Note on Technology-Dependent Assessments

The assessments in this course are heavily technology-dependent. While I will do my best to work with you on technology issues, please be aware that if you take an assessment but I can find no record of the fact, I will not be able to give you credit for it. Please use the Chrome or Firefox browsers when you take assignments on Canvas; the content sometimes does not function properly using Safari. Additional assessment attempts or extensions will NOT be given due to quiz malfunctions using browsers other than Chrome or Firefox. Lack of access to technology for avoidable reasons such as forgetting to bring a laptop or calculator with you while traveling will not be accepted as an excuse for missed assessment deadlines.

ATTENDANCE, ABSENCE, AND DROP/WITHDRAWAL

Drop and withdrawal deadlines are given in the University’s academic calendar at <https://registrar.fsu.edu/calendar/>.

A First-day Attendance Quiz will be given via the course Canvas on the first day of class Wednesday 1/5 from 12:00pm-8:00pm. All students are required to submit this quiz, and students who do not complete it will be dropped from the class.

UNIVERSITY ATTENDANCE POLICY

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

ACADEMIC HONOR POLICY

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>)

ACADEMIC SUCCESS:

Your academic success is a top priority for Florida State University. University resources to help you succeed include tutoring centers, computer labs, counseling and health services, and services for designated groups, such as veterans and students with disabilities. The following information is not exhaustive, so please check with your advisor or the Dean of Students office to learn more.

AMERICANS WITH DISABILITIES ACT

Florida State University (FSU) values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive, and welcoming. FSU is committed to providing reasonable accommodations for all persons with disabilities in a manner that is consistent with academic standards of the course while empowering the student to meet integral requirements of the course.

To receive academic accommodations, a student:

- (1) must register with and provide documentation to the Office of Accessibility Services (OAS);
- (2) must provide a letter from OAS to the instructor indicating the need for accommodation and what type; and,
- (3) should communicate with the instructor, as needed, to discuss recommended accommodations. A request for a meeting may be initiated by the student or the instructor.

Please note that instructors are not allowed to provide classroom accommodations to a student until appropriate verification from the Office of Accessibility Services has been provided. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the

Office of Accessibility Services

874 Traditions Way
 108 Student Services Building
 Florida State University
 Tallahassee, FL 32306-4167
 (850) 644-9566 (voice)
 (850) 644-8504 (TDD)
 oas@fsu.edu
<https://dsst.fsu.edu/oas>

CONFIDENTIAL CAMPUS RESOURCES

Various centers and programs are available to assist students with navigating stressors that might impact academic success. These include the following:

<p>Victim Advocate Program University Center A, Rm. 4100 (850) 644-7161 Available 24/7/365 Office Hours: M-F 8-5 https://dsst.fsu.edu/vap</p>	<p>Counseling and Psychological Services Askew Student Life Center, 2nd floor 942 Learning Way (850) 644-8255 https://counseling.fsu.edu/</p>	<p>University Health Services Health and Wellness Center (850) 644-6230 https://uhs.fsu.edu/</p>
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SYLLABUS CHANGE POLICY

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

Sexual Misconduct and Title IX Reporting

As an instructor, I am obliged to report all instances of sexual misconduct that I become aware of to the University’s Title IX Director; I cannot hold such information confidential. If you would like to discuss your situation in confidence, you may contact the Victim Advocate Program (<https://dos.fsu.edu/vap/>), Counseling & Psychological Services (<https://counseling.fsu.edu/>), the Employee Assistance Program (<https://eap.fsu.edu/>), University Health Services (<https://uhs.fsu.edu/>), or pastoral counselors.

Office of Faculty Development and Advancement

<https://fda.fsu.edu/academic-resources>

Flowchart for Resolving Academic Problems

https://fda.fsu.edu/sites/g/files/upcbnu636/files/Media/Files/General%20Academic%20Appeals/Academic_Problem-Solving_Flowchart_Binder_Oct-2020.pdf