

STAT 1111.10: Business and Economic Statistics I
Fall 2022 Course Syllabus

Course Information

Course: STAT 1111.10: Business and Economic Statistics I, Fall 2022
Meeting Time: Tuesdays and Thursdays 3:45 – 5:00 PM
Location: [MON](#), room 111

Contact Information

Instructor: Ms. [Jiaqian Yu](#)
Office: Rome Hall 755
E-mail: jiaqian7@gwu.edu
Office Hours: After Class or Fridays 12:00 -1:00 PM in my office

Teaching Assistant: [Yipeng Wei](#)
Office: Rome Hall 766
E-mail: yipeng_wei@gwu.edu
Office hours: Tuesdays 2:30 -3:30 PM and Wednesdays 12:10 -1:10 PM

Course Prerequisites

This is an introductory-level statistics course and does not require any background in calculus or statistics. However, students who enrolled in this course are required to have basic knowledge in Algebra and Arithmetic.

Course Description

The course will cover the basics of Statistics, Probability and their applications to business, economics, biomedical and related sciences. The main topics to be covered include descriptive statistics, probability and random variables, basic distributions (binomial and normal distributions), confidence intervals and hypothesis testing (one sample and two samples), correlation and regression.

Note: Stat 1051,1053, 1111, 1127 are similar courses and credit for only one of these courses can be given. Please be careful to check the requirements for your major/minor/graduation.

Required Materials

Textbook: *Statistics for Business and Economics, 14th Edition* by McClave et al.
ISBN: 9780136855354

Calculator: Texas Instruments (TI) 83 or 84 series calculator recommended

Software: R, R and R studio is free to download and available on all computers at GWU.

Learning Outcomes

As a result of completing this course, students will be able to:

- Apply laws of probability
- Apply descriptive statistics to data
- Use various probability distributions
- Construct and interpret confidence intervals
- Evaluate evidence for and against hypotheses using statistical tests
- Find the least-squares equation for simple linear regression and assess the utility of the model

Student Responsibilities

Please check the course blackboard page regularly, as I will be posting all course materials on Blackboard. This includes lecture notes, homework assignments, quiz answers, announcements, updates, etc.

You will need a calculator to do your assignments. Please bring it to class every day, especially during quizzes and exams. Calculators on cell phones are not allowed during the quizzes and exams.

Feel free to email me about any questions/concerns/needs or provide feedback!

Grading

Final grade will be based on

- Homework: 10%
- Quizzes: 20%, the lowest two quiz scores will be dropped.
- Midterm Exam: 25%
- Project: 20%
- Final Exam: 25%

Final grades will be assigned based on the following scale:

A = 94% to 100%	C = 74% to 76%
A- = 90% to 93%	C- = 70% to 73%
B+ = 87% to 89%	D+ = 67% to 69%
B = 84% to 86%	D = 64% to 66%
B- = 80% to 83%	D- = 60% to 63%
C+ = 77% to 79%	F < 60%

Homework Assignments

Weekly homework problems for self-learning purpose from the textbook will be posted on Blackboard.

You will typically have one week to complete the assignment and will be graded on completion.

Completed assignments should be submitted back to the appropriate area of Blackboard by the due date.

Quizzes

There will be 7 quizzes during the semester. There are no make-up quizzes. Two lowest quiz scores will be dropped. Quizzes will be taken in class and will be returned to you in class after being graded. I may not have time to go over all the quiz questions in class, but the answers will be posted on Blackboard.

Project

Towards the end of the semester, a project will be assigned. You will have to use the statistical software R to analyze a dataset and write a report. An R tutorial will be given before the project is assigned. Details will be posted on Blackboard.

Examinations

There will be an in person midterm and an in person final during the semester. See NOTE for details. The Midterm and the final are closed-book and closed-notes exams (necessary formulas and tables will be given) and must be taken in class. Please do not ask your instructor to change the way the midterm and final are administered.

- Midterm: Thursday, October 20 in class (tentative)
- Final: TBA during final exam period

NOTE: IN ACCORD WITH UNIVERSITY POLICY, THE FINAL EXAM WILL BE GIVEN DURING THE FINAL EXAM PERIOD AND NOT THE LAST WEEK OF THE SEMESTER

NOTE: Possible consideration of make-up exams for student who is absent due to illness and isolation/quarantine or a sufficient and documented reason for the absence. Documented absences may require written third party evidence and notification to the instructor by e-mail. Please inform me in advance.

Average minimum amount of out-of-class or independent learning expected per week

For each credit, students are expected to spend a minimum of 100 minutes in independent learning for every 50 minutes of direct instruction for a minimum total of 2.5 hours per week or 37.5 hours for the semester. A 3-credit course, for example, would include 2.5 hours of direct instruction and a minimum of 5 hours of independent learning per week(assignments, reviewing course materials, preparing for quizzes, doing project for the last few weeks) for a combined minimum total of 7.5 hours per week or 112.5 hours per semester. See [Assignment of Credit Hour Policy](#) for more information.

Attendance Policy

In-person class

The class will be held in person on campus, and you are expected to attend these classes in person on a consistent basis. I will accommodate students who must miss class on a short-term basis due to illness and isolation or quarantine. But there is NO option of participating remotely for the entire semester or any extended portion thereof.

Recording

While class sessions will be held in person, recordings will be available in case you have missed an in-person session. The recordings are only available on an individual basis, upon request (illness and isolation or quarantine)

Please remember that recordings are not a substitute for in-person lectures, as EXPECTATION is you come to class in person and technical issues are always a possibility.

Attendance

Attendance will not be counted, but it is important to be present for all lectures. Also notice that quizzes will be given in class.

Course Schedule

This is the proposed (tentative) schedule for the topics we will cover this semester. Note that this schedule is subject to minor changes throughout the semester based on the needs of the class.

Date	Topic(s) and readings	Quiz and assignment
T 8/30	Syllabus	
R 9/1	Types of statistics and data, Sampling Chapter 1	HW1 release
T 9/6	Graphical methods of describing data Chapter 2	
R 9/8	Numerical methods of describing data Chapter 2 continued	
T 9/13	Use Mean and Std to Describe Data, outliers Chapter 2 continued	HW2 release
R 9/15	Detecting outliers using Box plots and z-Score Chapter 2 continued	
T 9/20	Introduction to probability Chapter 3	Quiz 1 (cover Chapter 1-2) HW3 release
R 9/22	More about probability Chapter 3 continued	
T 9/27	Conditional probability, Independence, Bayes Rule	HW4 release

	Chapter 3 continued	
R 9/29	Discrete random variables Chapter 4	Quiz 2 (cover Chapter 3)
T 10/4	Binomial distribution Chapter 4 continued	
R 10/6	Continuous random variables Chapter 4 continued	HW5 release
T 10/11	Normal distribution Chapter 4 continued	
R 10/13	Normal distribution continued Chapter 4 continued	HW6 release Midterm review (won't collect)
T 10/18	Midterm review	Quiz 3 (cover Chapter 4)
R 10/20	Midterm	
T 10/25	No class -- fall break	
R 10/27	Sampling distributions Chapter 5	
T 11/1	Sampling distributions continued Chapter 5 continued	HW 7 release
R 11/3	Confidence interval Chapter 6	Quiz 4 (cover Chapter 5)
T 11/8	More of confidence intervals Chapter 6 continued	
R 11/10	Hypothesis testing Chapter 7	HW8 release Quiz 5 (cover Chapter 6)
T 11/15	More of hypothesis testing Chapter 7 continued	
R 11/17	More of hypothesis testing Chapter 7 continued	
T 11/22	Introduction to linear regression Chapter 11	HW 9 release Quiz 6 (cover Chapter 7)
R 11/24	No class -- Thanksgiving break	
T 11/29	More of simple linear regression and R tutorial Chapter 11 continued	
R 12/1	More of simple linear regression and R tutorial Chapter 11 continued	Project
T 12/6	Confidence interval on two samples Chapter 8 (optional)	Quiz 7 (cover Chapter 11)
R 12/8	Review for final exam	HW 10 release Final review (won't collect)
T 12/13	Make-up Day -- Review for final exam (optional)	

University Policies

Academic Integrity Code

Academic integrity is an essential part of the educational process, and all members of the GW community take these matters very seriously. As the instructor of record for this course, my role is to provide clear expectations and uphold them in all assessments. Violations of academic integrity occur when students fail to cite research sources properly, engage in unauthorized collaboration, falsify data, and otherwise violate the [Code of Academic Integrity](#). If you have any questions about whether or not particular academic practices or resources are permitted, you should ask me for clarification. If you are reported for an academic integrity violation, you should contact the Office of Student Rights and Responsibilities (SRR) to learn more about your rights and options in the process. Consequences can range from failure of assignment to expulsion from the university and may include a transcript notation. For more information, please refer to the SRR website (<https://studentconduct.gwu.edu/academic-integrity>), email rights@gwu.edu, or call 202-994-6757.

University policy on observance of religious holidays

Students must notify faculty during the first week of the semester in which they are enrolled in the course, or as early as possible, but no later than three weeks prior to the absence, of their intention to be absent from class on their day(s) of religious observance. If the holiday falls within the first three weeks of class, the student must inform faculty in the first week of the semester. For details and policy, see “Religious Holidays” at provost.gwu.edu/policies-procedures-and-guidelines.

Use of Electronic Course Materials and Class Recordings

Students are encouraged to use electronic course materials, including recorded class sessions, for private personal use in connection with their academic program of study. Electronic course materials and recorded class sessions should not be shared or used for non-course related purposes unless express permission has been granted by the instructor. Students who impermissibly share any electronic course materials are subject to discipline under the Student Code of Conduct. Please contact the instructor if you have questions regarding what constitutes permissible or impermissible use of electronic course materials and/or recorded class sessions. Please contact Disability Support Services at disabilitysupport.gwu.edu if you have questions or need assistance in accessing electronic course materials.

Academic support

➤ **Writing Center**

GW’s Writing Center cultivates confident writers in the University community by facilitating collaborative, critical, and inclusive conversations at all stages of the writing process. Working alongside peer mentors, writers develop strategies to write independently in academic and public settings. Appointments can be booked online at gwu.mywconline.

➤ **Academic Commons**

Academic Commons provides tutoring and other academic support resources to students in many courses. Students can schedule virtual one-on-one appointments or attend virtual drop-in sessions. Students may schedule an appointment, review the tutoring schedule, access other academic support resources, or obtain assistance at academiccommons.gwu.edu.

Support for students outside the classroom

➤ **Disability Support Services (DSS) 202-994-8250**

Any student who may need an accommodation based on the potential impact of a disability should contact Disability Support Services at disabilitysupport.gwu.edu to establish eligibility and to coordinate reasonable accommodations.

➤ **Counseling and Psychological Services 202-994-5300**

GW's Colonial Health Center offers counseling and psychological services, supporting mental health and personal development by collaborating directly with students to overcome challenges and difficulties that may interfere with academic, emotional, and personal success. healthcenter.gwu.edu/counseling-and-psychological-services.

Safety and Security

- In an emergency: call GWPD 202-994-6111 or 911
- For situation-specific actions: review the Emergency Response Handbook at: safety.gwu.edu/emergency-response-handbook
- In an active violence situation: Get Out, Hide Out, or Take Out. See go.gwu.edu/shooterpret
- Stay informed: safety.gwu.edu/stay-informed

Student/Instructor Communication Mode

Students are **strongly encouraged** to communicate with the instructor in regarding to any questions or concerns that you may have. Successfully learning requires good communication between students and the instructor. For any reasons that you did not ask question(s) in class, feel free to see me during my office hours or send me an e-mail

Fall COVID-19 Campus Protocols

- [fall COVID-19 Campus Protocols](#)
- *Masking in Classrooms*
Because the indoor mask mandate remains in place students must be masked in class. Students should not eat or drink in classrooms.
- Individuals who test positive for COVID-19 must isolate regardless of their vaccination status. Based on GW's health and safety protocol, **the isolation period will last for at least 5 days** and may last longer if an individual is first asymptomatic and later develops symptoms or symptoms continue past the initial 5 days. Only a GW medical provider can release a GW community member from isolation and provide the individual with the medical clearance needed to resume in-person campus activities.
- GW community members identified as a close contact of someone with a positive case of COVID-19 who are vaccinated and boosted do not need to quarantine and may continue to attend classes and in-person events. Exposed members of the community should wear masks. They will be notified to complete a COVID-19 test 3-5 days after exposure. Those who are exempt from the vaccine and booster mandate and who meet the medical definition of a COVID-19 exposure will be required to quarantine.
- Additional information is available online at the university [COVID website](#).