

**The George Washington University
Department of Statistics**

STAT 1051-13

Introduction to Business and Economics Statistics

Fall 2024

Lectures: Stat-1051-13 (lectures):
Tuesday and Thursday 11:10 a.m. - 12:25p.m. 221 (Funger Hall)

Recitation: Stat-1051-40: Tuesday 09:35 a.m. - 10:25 a.m. (302 Tompkins Hall)
Stat-1051-39: Tuesday 12:45 p.m. - 01:35 p.m. (221 Funger Hall)

Instructors: Hosam Mahmoud, Professor (lectures)
TBA (grader)

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Office hours: 2:00-3:15 Tuesday, also available by appointment

Textbooks:

Statistics for Business and Economics, 14th Edition
Pearson, London, UK
James T. McClave, P. George and Benson and Terry Sincich

Scope:

Probability and statistics are presented at an introductory level. We start with descriptive statistics (ways to present, summarize and visualize data). Then, axiomatic probability is introduced with some fun scenarios, such as poker, urn schemes, and the World Cup. Some standard discrete and continuous probability distributions are presented. We then move to statistical concepts: estimation, confidence interval, hypothesis testing. The course concludes with touching on statistical regression.

Topics:

Week 1:	Motivation, descriptive statistics (may extend into the second week)
Week 2:	Laws of probability
Week 3:	Quiz 1, conditional probability, Bayes' rule
Week 4:	Combinatorial probability
Week 5:	Quiz 2, discrete distributions: uniform, binomial
Week 6:	Quiz 3, more on discrete distributions: hypergeometric
Week 7:	Midterm, Continuous distributions: uniform, normal
Week 8:	Review of all distributions
Week 9:	Quiz 4, concepts of statistical inference, point estimation
Week 10:	Interval estimation
Week 11:	Quiz 5, hypothesis testing (Z-tests)
Week 12:	Hypothesis testing (T-tests)
Week 13:	Quiz 6, regression
Week 14:	review

Prerequisites:

High school algebra and precalculus. Competence in basic algebra is expected, for example, extraction of roots of quadratic equations and accurate manipulation of algebraic expressions are assumed to be in your background.

Learning outcomes

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

1. Make probabilistic arguments.
2. Formulate stochastic models for business and economics.
3. Develop appreciation for statistical thinking.
4. Approach business and economics from a statistical perspective.

Grading Policy

1 Midterm (20%)

1 Final (35%)

6 Quizzes (we take the best four, 5% each)

about 6-8 homework assignments (30%)

Note that these add up to a total of 105 percentage points!

The midterm will be given in class on February 27, 2024.

Quizzes will be given in the recitation sessions and are graded by the teaching assistant.

According to the university policy, the final will be given during the finals week, as scheduled by the university.

Here is an example of what constitutes an A grade in this class. You score 95% or above: all homework and tests are solid and well done. You can miss a couple of problems here and there and still get an A.

Courtesy

Please turn off your cell phones and other electronic devices during the lecture.

Please do not talk with your neighbors during the lecture.

Please bring a copy of the book to the class. There will be numerous references to examples, tables, diagrams and the like during the lectures.

Please bring your own calculator during the quizzes and in-class tests.

Grading scheme

A	95-100
A-	90-94
B+	85-89
B	80-84
B-	75-79
C+	70-74
C	65-69
C-	60-64
D+	56-59
D	53-55
D-	50-52

F Less than 50

Class Policy

The instructor's style is to present a concept, illustrate it with one or two examples, then move on. If you feel I am going too fast, ask for additional examples. Judging time and class progress, such requests may be considered.

Late work: Will not be accepted.

Makeup exams: Except for medical cases (with proper documentation), there will be no makeups. Compensation for missing quizzes is built in the schedule. There is no makeup for missed quizzes. If you missed one or two quizzes, you still have a decent chance for scoring well on the quizzes---six quizzes will be given and we shall take the best four.

Blackboard

Please check Blackboard frequently, as there may be assignments, announcements, and material passed to the class via this electronic medium during the week. You can find it at

<http://blackboard.gwu.edu/webapps/portal/frameset.jsp>

You need to login, using your GW user ID and password.

For university policies on teaching, see

<http://www.gwu.edu/~academic/Teaching/main.htm>

Academic Integrity

I support the GW Code of Academic Integrity. It states: "Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information." For the remainder of the code, see:

<http://www.gwu.edu/~ntegrity/code.html>

Any case of the slightest hint of cheating will be prosecuted to the fullest extent of the university Academic Integrity Policy. You will receive an automatic F, and the case will be taken to the proper administrative channels.

Support for students outside the classroom

DISABILITY SUPPORT SERVICES (DSS)

Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information, please refer to

<http://gwired.gwu.edu/dss/>

UNIVERSITY COUNSELING CENTER (UCC) 202-994-5300

The University Counseling Center (UCC) offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include:

- crisis and emergency mental health consultations
- confidential assessment, counseling services (individual and small group), and referrals

See

<http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices>

University policy on observance of religious holidays

In accordance with University policy, students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance. For details and policy, see:

provost.gwu.edu/policies-procedures-and-guidelines

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 in Rome Hall, 801 22nd Street, NW, Suite 102, to

establish eligibility and to coordinate reasonable accommodations. For additional information see:

disabilitysupport.gwu.edu

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. For additional information see

healthcenter.gwu.edu/counseling-and-psychological-services.

In an emergency: call GWPD 202-994-6111 or 911. For situation-specific actions: review the Emergency Response Handbook:

safety.gwu.edu/emergencyresponse-handbook