

STAT 1053.12

INTRO STAT in SOCIAL SCIENCE

Syllabus

Fall 2023

Instructor: Dr. Subrata Kundu

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Phone: 202-994-6355

Meeting Time: TR 6:10p - 7:25p

Location: COR 104

Office Hours: T 4p - 5p (Rome 750)

and R 4p - 5p By Appointment only

TA: Navid Nezamabadi

(navid.nezamabadi@gwu.edu)

Note: This syllabus is subject to change based on the needs of the class.

Instructor Response Time

I will respond to emails by the end of the next business day. I will return assignments within ten days.

Course Description

This course will cover the basics of statistics, probability, and their applications in the social sciences. The main topics to be covered include descriptive statistics for univariate and bivariate data, probability and random variables, binomial and normal distributions, confidence intervals and hypothesis testing, correlation, and regression. Our goal is to develop an appropriate level of statistical literacy and competency.

Course Objectives

By the end of this course, you will be able to:

1. Identify, interpret, calculate, and analyze descriptive and summary statistics using graphical and numerical methods.
2. Calculate probability using various laws.
3. Make statistical inferences about a population based on random samples.
4. Model bivariate data using least-squares method for simple linear regression.
5. Evaluate and analyze statistical findings as they relate to problems in Social Sciences using softwares.
6. Solve for sample characteristics using the sampling distribution for known populations.

Prerequisites

Academic

There are no prerequisites. This is a required course and counts towards the CCAS General Education Curriculum (GPAC). This course does not require a background in calculus. Basic knowledge of algebra and arithmetic are sufficient.

Please note that STAT 1051, 1053, 6104, 1111, and 1127 are related in subject matter, and credit for only one of them may be applied towards a degree.

Technological

As a learner in this course you need to ensure you have the required technology and skills to fully participate. Please consult the [GW Online website](#) for further information.

You should be able to:

- Use a personal computer and its peripherals.
- Download and install any software needed for the course.
- Access your GW email for university-related communications (see [Office of the Registrar website](#)).
- Use word processing and other productivity software to submit assignments.
- Use web conferencing tools to collaborate with other course participants.
- Use your computer to upload documents, recordings, and images.
- Seek technology help by contacting [GW Information Technology](#) (202-994-4948) or ithelp@gwu.edu.

Textbooks & Materials

1. Textbook: McClave, James and Sincich, Terry. Statistics (updated 13th Edition), Pearson, 2017. (E-text Comes with MyStatLab.)
2. Required Softwares:
 - My Stat Lab 18 week access code (ISBN 9780137347667) – Activate it from blackboard. MSL access code can be obtained through online retailers or the GW Bookstore or from the pearson website.
3. Statistical Software: SPSS (Can be downloaded using vpn, CCAS Cloud)
4. Calculator: Any Calculator with Statistical functions.

Methods of Instruction and Assessment

This course uses the following methods of instruction and assessment. Their overarching purpose is to provide opportunities for active learning and skills development, which will support you in achieving course objectives.

Methods of Instruction

- **Direct Lectures:** Weekly lecture (75 minutes each) on Tuesdays and Thursdays. These lectures are designed to introduce key ideas, themes, and concerns.
- **Recitations:** Weekly recitations (50 minutes) on Wednesdays. These sessions are designed for enhancing problem solving skills.
- **Discussions:** Students will be participating in discussion forums that relate statistics to real-world social science issues.
- **Readings:** Each week you will be responsible for various reading assignments.

Methods of Assessment

The following assessments are indicators of your progress in the course and are intended to help you achieve course objectives.

- **Class Participation (5%):** This course is designed to be interactive. Learners are expected to participate in classrooms, discussion board exchanges and respond to at least one peer's post per weekly discussion forum.
- **MyStatLab Homework (15%):** Homeworks will be assigned every week. You will be solving Problems on the MSL platform. These will be graded. Occasionally additional practice problems will be assigned from the book. These will not be collected or graded. You are expected to do the homework problems and maintain a separate notebook for that.
- **Quizzes (20%):** A total of up to eleven quizzes will be given during the semester. Quizzes will cover materials from the current chapter, and may include topics from previous chapters. No make-up quizzes will be given, and learners will receive zero points for any missed quiz, for any reason. Learners will get approximately 10-15 minutes for each quiz. Some of these quizzes will be unannounced. Three lowest quiz scores will be dropped.
- **Midterms (30%):** Two proctored in class closed book midterm exams will be given.
- **SPSS Project (10%):** Learners will be assigned an SPSS project. Learners are required to use the SPSS software to complete the problems. The SPSS project will be due the final exam day. A grading rubric will be provided.
- **Final Exam (20%):** A final exam will be given on the scheduled day. The closed book final exam will be cumulative.

The score you get in relation to the rest of the class will determine your final grade.

Grading

This course uses the following grading schema.

Assignment Type	Point Value Per Assignment	Number of Assignments	Total Percent of Final Grade
Class Participation	varies ¹	5-6	5%
MSL Homework	varies ²	11-12	15%
Quizzes	20	11	20%
Two Midterm Exams (9/28 & 10/31)	60	2	30%
Final Exam	100	1	20%
SPSS Project	10	1	10%

¹Point values differ depending on discussion type

²Point values will vary depending on content covered

Total: 100%

The grading scale below determines your final letter grade.

- 93 - 100 = A
- 90 - 92 = A-
- 87 - 89 = B+
- 83 - 86 = B
- 80 - 82 = B-
- 77 - 79 = C+
- 73 - 76 = C
- 70 - 72 = C-
- 67 - 69 = D+
- 63 - 66 = D
- 60 - 62 = D-
- Less than 60 = F

Credit Hour Policy

Over these 15 weeks, you will spend 2.5 hours per week classroom lectures (37.5 hours for the semester), one hour per week in in person recitations and participating in the weekly online discussion exercises. Homework and other independent work (e.g. readings, homework, exams, project) is estimated at around 5 hours per week (75 hours for the semester) and includes two 2-hour Midterm exams

Lecture Recordings:

This is not a remote learning course. Students are expected to be present in class. However, efforts will be made to record the lectures and share the course material on Blackboard. By taking this course you agree not to share the recordings with anyone and give consent to the class recordings.

Overview & Weekly Schedule

We will cover the following topics.

- Week 1: Introduction to the Subject
- Week 2: Descriptive Statistics
- Week 3: Descriptive Statistics
- Week 4: Correlation and Regression
- Week 5: Probability I & MT 1
- Week 6: Probability II
- Week 7: Discrete Random Variables & Binomial Distribution
- Week 8: Continuous Random Variables & Normal Distribution
- Week 9: Continuous Random Variables & MT II
- Week 10: Sampling Distributions
- Week 11: Confidence Intervals (large sample)
- Week 12: Confidence Intervals (small sample) & Hypothesis Testing
- Week 13: Hypothesis Testing
- Week 14: Two Sample Inference
- Week 15: Final Exam

Academic Integrity

This course will comply with [the University's Code of Student Conduct](#). The Code of Academic Integrity defines academic dishonesty as "cheating of any kind, including misrepresenting one's work, taking credit for work of others without crediting them and without appropriate authorization, and the fabrication of information." Common examples of academic dishonesty include cheating, fabrication, plagiarism, falsification, forgery of University academic documents, and facilitating academic dishonesty by others. Consult GW's [Academic Dishonesty Prevention resource](#) for further information and support.

Late Work

Late submission of coursework will not be accepted. Under extenuating circumstances you can obtain prior approval for extension. If coursework is missed, you will receive zero credit for that part of the grade. No make-up exams will be given. In exceptional circumstances (e.g. well-documented medical problems), a missed midterm exam will not be counted when computing your course grade.

Incomplete Grades

Undergraduate students

Incomplete grades may be given to undergraduate students only if for reasons beyond the student's control (such as medical or family emergency) s/he is unable to complete the final work of the course. Faculty should not assign an Incomplete grade if not asked by the student. [A contract](#) must be signed by the instructor and the student and filed in the department office. A copy should be submitted to the Academic Advising office in Phillips 107. A student has up to a calendar year to finish the coursework for the class, and when completed a grade change form must be submitted to the Academic Advising office to update the grade.

For further policy and contract information for undergraduate students, please consult with your advisor and also visit the website for [Columbian College of Arts and Sciences Academic Advising](#).

Netiquette

Please observe the following rules of netiquette for communicating online:

- Remain professional, respectful, and courteous at all times. Remember that a real human being wrote each post and will read what you write in response. It is easy to misinterpret discussion posts. Let's give the benefit of the doubt.
- If you have a strong opinion on a topic, it is acceptable to express it as long as it is not phrased as an attack. Please be gracious with differing opinions. When upset, wait a day or two prior to posting. Messages posted (or emailed) in anger are often regretted later.
- Proofread and use the spell check tool when you type a post. It makes the post easier to read and helps your readers understand what you are saying.

I reserve the right to delete any post that is deemed inappropriate for the discussion forum, blog, or wiki without prior notification to the student.

Policies

The following are university- and course-related policies that all course participants should read and understand. Please contact me if you have any questions.

Inclement Weather: Please note that we may hold the class online when the University is closed for inclement weather.

Disability Support Services and Accessibility

Any student who may need an accommodation based on the impact of a disability should contact the [Office of Disability Support Services](#) (DSS) to inquire about the documentation necessary to establish eligibility, and to coordinate a plan of reasonable and appropriate accommodations. DSS is

located in Rome Hall, Suite 102. For additional information, please call DSS at 202-994-8250, or consult <https://disabilitysupport.gwu.edu>.

For information about how the course technology is accessible to all learners, see the following resources:

- [Blackboard accessibility policy](#)
- [Kaltura \(video platform\) accessibility policy](#)
- [Microsoft Office accessibility policy](#)
- [Adobe accessibility policy](#)
- YouTube accessibility policy - please consult the [accessibility information site for the Google Suite of products](#).

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

Religious Observances

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 the day(s) of religious observance. Please consult [the university policy on religious holiday observance](#) for further information.

Acceptable Use Policy for Computing Systems and Services

All members of the George Washington University must read and comply with the [Acceptable Use Policy](#) when accessing and using computing systems and services, including email and Blackboard. Please read the [Acceptable Use Policy](#) to familiarize yourself with how GW systems are to be used ethically.

Sharing of Course Content

Unauthorized downloading, distributing, or sharing of any part of a recorded lecture or course materials, as well as using provided information for purposes other than the student's own learning may be deemed a violation of GW's Student Conduct Code.

Use of Student Work (FERPA)

Personal Information

GW complies with FERPA. As such, student personal information from this course will not be disclosed. For more information on FERPA, please consult the GW Office of the Registrar.

Copyright Policy Statement

Copyright Restriction: Materials used in connection with this course may be subject to copyright protection under Title 17 of the United States Code. Under certain Fair Use circumstances specified by law, copies may be made for private study, scholarship, or research. Electronic copies should not be shared with unauthorized users. If a user fails to comply with Fair Use restrictions, he/she may be liable for copyright infringement. For more information, see the [GW Copyright Policy](#) and [Fair Use guidelines](#).

Emergency Preparedness and Response

The University has asked all faculty to inform students of these procedures, prepared by the [GW Office of Public Safety and Emergency Management](#) in collaboration with the Office of the Executive Vice President for Academic Affairs.

To Report an Emergency or Suspicious Activity

Call the University Police Department at 202-994-6111 (Foggy Bottom) or 202-242-6111 (MV).

Shelter in Place - General Guidance

Although it is unlikely that we will ever need to shelter in place, it is helpful to know what to do just in case. No matter where you are, the basic steps of shelter in place will generally remain the same.

- If you are inside, stay where you are unless the building you are in is affected. If it is affected, you should evacuate. If you are outdoors, proceed into the closest building or follow instructions from emergency personnel on the scene.
- Locate an interior room to shelter inside. If possible, it should be above ground level and have the fewest number of windows. If sheltering in a room with windows, move away from the windows. If there is a large group of people inside a particular building, several rooms may be necessary.
- Shut and lock all windows (for a tighter seal) and close exterior doors.
- Turn off air conditioners, heaters, and fans. Close vents to ventilation systems as you are able. (University staff will turn off ventilation systems as quickly as possible).
- Make a list of the people with you and ask someone to call the list into UPD so they know where you are sheltering and who is with you. If only students are present, one of the students should call in the list.

- Await further instructions. If possible, visit GW Campus Advisories for incident updates or call the GW Information Line 202-994-5050.
- Make yourself comfortable and look after one other. You will get word as soon as it is safe to come out.

Title IX Statement:

The George Washington University (GW) and its faculty are committed to creating a safe and open learning environment for all students. If you or someone you know has experienced sexual harassment, including sexual assault, dating or domestic violence, and stalking, please know that help and support are available. GW strongly encourages all members of the community to take action, seek support, and report incidents of sexual harassment to the Title IX Office. You may contact them at 202-994-7434 or at titleix@gwu.edu or learn more by visiting <http://titleix.gwu.edu>.

Evacuation

An evacuation will be considered if the building we are in is affected or we must move to a location of greater safety. We will always evacuate if the fire alarm sounds. In the event of an evacuation, please gather your personal belongings quickly (purse, keys, GWorld card, etc.) and proceed to the nearest exit. Every classroom has a map at the door designating both the shortest egress and an alternate egress. Anyone who is physically unable to walk down the stairs should wait in the stairwell, behind the closed doors. Firemen will check the stairwells upon entering the building.

Once you have evacuated the building, proceed to our primary rendezvous location: the courtyard area between the GW Hospital and Ross Hall. In the event that this location is unavailable, we will meet on the ground level of the Visitors Parking Garage (I Street entrance, at 22nd Street). From our rendezvous location, we will await instructions to re-enter the School.

Alert DC

Alert DC provides free notification by e-mail or text message during an emergency. Visit [GW Campus Advisories](#) for a link and instructions on how to sign up for alerts pertaining to GW. If you receive an Alert DC notification during class, you are encouraged to share the information immediately.

GW Alert

GW Alert provides popup notification to desktop and laptop computers during an emergency. In the event that we receive an alert to the computer in our classroom, we will follow the instructions given. You are also encouraged to download this application to your personal computer. Visit [GW Campus Advisories](#) to learn how.

Additional Information

Additional information about emergency preparedness and response at GW or the University's operating status can be found on [GW Campus Advisories](#) or by calling the GW Information Line at 202-994-5050.