

Syllabus

Course: STAT 3187W, Introduction to Sampling, Fall 2024
Class Time: TR, 2:20-3:35 pm.
Classroom: Monroe Hall, Room 350

Instructor: Tapan Nayak
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Office hours: Tue., 1:00 – 2:00 pm, Thurs., 3:45 – 4:45 pm. Additional times are available by appointment.

Course description

This course introduces some basic concepts and tools that are used in the design and analysis of sample surveys. Topics include simple random, stratified, systematic, cluster, and multistage sampling; sample size calculation; calculation of estimates, standard errors and confidence intervals; control of sampling and non-sampling errors. This Writing in the Disciplines (WID) course will engage with several forms of writing in the field of Statistics.

Course prerequisite: Stat 1051 or equivalent (one stat course).

Textbook: *Elementary Survey Sampling* (7th edition) by R.L. Scheaffer, W. Mendenhall III, R. L. Ott and K. G. Gerow.

Learning Focus: Disciplined logical thinking and understanding relevant concepts and arguments.

Learning Approach: Engaged, active learning. Think, write and talk in complete sentences. Describe the context clearly. Arguments should be coherent and make good sense. Take ownership of what you write or say. Avoid mechanical “plug-in numbers in formulas” mode. Explain relevance of all calculations and draw appropriate conclusions.

CLASS POLICIES: Students are expected to

1. Attend all classes and engage in class discussion.
2. Review and revise class notes after every class.
3. Keep cell phones away during classes, and use laptops only for classwork.

Learning outcomes:

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

1. Describe and explain key concepts and methods in survey sampling.
2. Design surveys, including sample size calculations.
3. Analyze survey data to calculate estimates, standard errors and confidence intervals.
4. Evaluate and compare survey designs.
5. Write statistical arguments, survey designs and data analytic results and conclusions both technically, and for general people.

Average minimum amount of work expected per week:

Students are expected to spend a minimum of 7.5 hours per week, including 2.5 hours of classroom instruction and a minimum of 5 hours of out-of-class work.

GRADING: HW 35%; Quizzes 10%; Midterm Exam 23%; Final Exam 32%.

- Notes:**
1. This is a Writing in the Disciplines (WID) course. The quality of writing will carry much weight in the grading of all works.
 2. Late HW will be accepted only with a valid excuse. Some HW will involve teamwork.
 3. All quizzes will be unannounced. Quizzes may cover material discussed in the same class. No make-up quiz will be given. The lowest quiz grade will be discarded.
 4. The midterm exam will be given on **Tue., Oct. 15, 2024 (tentative)**.
 5. The final exam will be given as per the University's final exam schedule.

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 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 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, refer to the SRR website at 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 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 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 is the central location for academic support resources for GW students. To schedule a peer tutoring session for a variety of courses visit go.gwu.edu/tutoring. Visit academiccommons.gwu.edu for study skills tips, finding help with research, and connecting with other campus resources. For questions email 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.

Student Health Center 202-994-5300, 24/7

The Student Health Center (SHC) offers [medical](#), [counseling/psychological](#), and [psychiatric](#) services to GW students. More information about the SHC is available at healthcenter.gwu.edu. Students experiencing a medical or mental health emergency on campus should contact GW Emergency Services at 202-994-6111, or off campus at 911.

GW Campus Emergency Information

GW Emergency Services: 202-994-6111

For situation-specific instructions, refer to [GW's Emergency Procedures guide](#).

GW Alert

GW Alert is an emergency notification system that sends alerts to the GW community. GW requests students, faculty, and staff maintain current contact information by logging on to alert.gwu.edu. Alerts are sent via email, text, social media, and other means, including the Guardian app. The Guardian app is a safety app that allows you to communicate quickly with GW Emergency Services, 911, and other resources. Learn more at safety.gwu.edu.

Protective Actions

GW prescribes four protective actions that can be issued by university officials depending on the type of emergency. All GW community members are expected to follow directions according to the specified protective action. The protective actions are Shelter, Evacuate, Secure, and Lockdown (details below). Learn more at safety.gwu.edu/gw-standard-emergency-statuses.

Shelter

- Protection from a specific hazard

- The hazard could be a tornado, earthquake, hazardous material spill, or other environmental emergency.
- Specific safety guidance will be shared on a case-by-case basis.

Action:

- Follow safety guidance for the hazard.

Evacuate

- Need to move people from one location to another.
- Students and staff should be prepared to follow specific instructions given by first responders and University officials.

Action:

- Evacuate to a designated location.
- Leave belongings behind.
- Follow additional instructions from first responders.

Secure

- Threat or hazard outside of buildings or around campus.
- Increased security, secured building perimeter, increased situational awareness, and restricted access to entry doors.

Action:

- Go inside and stay inside.
- Activities inside may continue.

Lockdown

- Threat or hazard with the potential to impact individuals inside buildings.
- Room-based protocol that requires locking interior doors, turning off lights, and staying out of sight of corridor window.

Action:

- Locks, lights, out of sight
- Consider Run, Hide, Fight