SOCI 600–601
Introduction to Sociological Data Analysis
Fall 2024

Course information

Course number: SOCI 600

Course title: Introduction to Sociological Data Analysis

Section: 601

Time: Monday, 9:00am–12:00pm

Location: Liberal Arts Social Sciences Building (LASB) 317
(https://aggiemap.tamu.edu/?bldg=1609)

Credit hours: 3 (three)

Course website: http://www.ernestoamaral.com/soci600-24fall.html
This website provides this syllabus, slides, details about assessments and grades, videos, extra readings, external links, and other materials, which will be uploaded throughout the semester.

Canvas website: https://canvas.tamu.edu/courses/324848
I will utilize Canvas to write announcements to students, receive quizzes and assignments, and post grades.
If students want to communicate with me, you should email me. I do not check messages sent to my Canvas Inbox.

Instructor details

Instructor: Ernesto F. L. Amaral, Associate Professor, Department of Sociology
(http://www.ernestoamaral.com)

Office: Liberal Arts Social Sciences Building (LASB) 320
(https://aggiemap.tamu.edu/?bldg=1609)

Phone: (979)845–9706

Email: amaral@tamu.edu

Office hours: https://tamu.zoom.us/my/amaral
I will provide office hours by appointment. Students must request appointments by email at least 48 hours in advance. When you enter this Zoom session, you will be placed in a waiting room. I will add you to the chat after I finish talking to the previous student.

Course description

Main contents: This course utilizes methods of social research to critically analyze sociological data. The goal is to:

1. Comprehend a series of statistical methods. We will discuss different methods, presenting their advantages and limitations (evaluated through quizzes). We will cover several topics on social research:

1.1. Descriptive and inferential statistics
    a. Mode, median, mean, and boxplot
    b. Sample weights
    c. Cross tabulations

1.2. Bivariate measures of association
   a. Measure of association for nominal-level variables (Chi Square).
   b. Measure of association for ordinal-level variables (Spearman's Rho).
   c. Measures of association for interval-ratio-level variables (scatterplots, Pearson's r, analysis of variance – ANOVA).

1.3. Multivariate statistical analyses
   a. Ordinary least squares regression

2. Apply those statistical methods to sociological databases. We will conduct step-by-step sociological data management, explaining how to download and organize microdata from the American Community Survey (ACS). We will utilize a series of methods to test sociological hypotheses with the statistical package Stata (evaluated through assignments).

3. Interpret published research papers that used those social statistics methods (evaluated through class presentations).

Approach: I encourage students to apply the knowledge they acquire to analyze aggregated data and survey microdata. I emphasize the interpretation of results obtained using statistical techniques, as opposed to asking my students to memorize or manually calculate multiple statistics. My teaching strategy is to break down the significance of statistical methods and make the topic accessible through the use of diagrams, software, household survey databases, handouts, and interactive lab classes.

Material: Via the course website, I will provide files containing the syllabus, lectures, assignments, databases, Stata codes, external links, and other materials, which will be uploaded throughout the semester. The professor will demonstrate how to download ACS data directly from the Integrated Public Use Microdata Series (IPUMS) portal (https://ipums.org/). However, the database is also available for download directly in the course website.

Computer intensive: Topics learned in this course will be exemplified with databases, Microsoft Excel, and the statistical software Stata.

Course prerequisites

None.

Course learning outcomes

Upon successfully completing this course, students should be able to:

– Identify advanced concepts related to social research methods.
– Apply quantitative techniques to manipulate sociological databases and analyze the results.
– Investigate social issues using research methods, databases, and statistical software.
– Explain limitations of social research using quantitative methods.
– Analyze microdata from social surveys with statistical software.
– Generate, present, and interpret analyses of sociological data with tables and graphs.
– Elaborate reports based on surveys, utilizing statistical methods, and sociological hypotheses.

Textbook and resource materials

There are several options to buy or rent (new, used or digital) copies of the books listed below. As a student at Texas A&M you are not under any obligation to purchase a textbook from a university affiliated bookstore. The same textbook may also be available from independent retailers, including online retailers.

The following textbooks are **<u>recommended</u>** for this course:

(H) Healey, Joseph F. 2015. **Statistics: A Tool for Social Research**. Stamford: Cengage Learning. 10th edition.
(MSC Bookstore)
(Amazon)

Healey, Joseph F.; Donoghue, Christopher. 2021. **Statistics: A Tool for Social Research and Data Analysis**. Stamford: Cengage Learning. 11th edition.
(Amazon)

The material is essentially the same in the 9th, 10th, and 11th editions. I will formally utilize the 10th edition for my lectures. However, if you find a retailer selling the 9th edition with a more affordable price, you can acquire that edition for this course.

(A) Agresti, Alan. 2017. **Statistical Methods for the Social Sciences**. Harlow: Pearson. 5th edition.
(MSC Bookstore)
(Amazon)

(I) Illowsky, Barbara; Dean, Susan. 2018. **Introductory Statistics**. Houston: OpenStax.
(https://openstax.org/details/books/introductory-statistics)

This is an open access textbook, so it is free for downloading.

(HL) Hamilton, Lawrence C. 1992. **Regression with Graphics: A Second Course in Applied Statistics**. Belmont: Duxbury Press.
(Amazon)

(T) Treiman, Donald J. 2009. **Quantitative Data Analysis: Doing Social Research to Test Ideas**. San Francisco: Jossey-Bass.
(Free Access at Texas A&M University Libraries)

(W) Wooldridge, Jeffrey M. 2020. **Introductory Econometrics: A Modern Approach**. Boston: Cengage Learning. 7th edition.
(MSC Bookstore)
(Amazon)

(M) Miller, Jane E. 2015. **The Chicago Guide to Writing About Numbers**. Chicago: The University of Chicago Press. 2nd edition.
(MSC Bookstore)
(Amazon)

This manual for writing about numbers is not required, but I will use it during my lectures to give examples of how to organize, present, and interpret numbers.

We will use **Excel and the statistical software Stata** for applications with real databases. Stata will be made available through the Texas A&M Virtual Open Access Lab (VOAL) (https://voal.tamu.edu/). We will have several in-class activities in order to learn Stata. I invite you to bring your own laptop to class if you have one available.

Research papers for class presentations:

(R.1) Pager D, Quilliam L. 2005. "Walking the talk? What employers say versus what they do." **American Sociological Review**, 70: 355–380.

(R.2) Burr JA, Galle OR, Fossett MA. 1990. "The retrospective construction of metropolitan areas for longitudinal analysis: An application to racial occupational inequality." **Social Science Research**, 19: 250–265.

(R.3) Fossett MA. 1988. "Community-level analyses of racial socioeconomic inequality: A cautionary note." **Sociological Methods & Research**, 16(4): 454–491.

(R.4) Cready CM, Fossett MA. 1998. "The impact of desegregation on white public school enrollment in the U.S. nonmetro South, 1960–1990." **Social Science Quarterly**, 79(3): 664–676.

(R.5) Amaral EFL, Yen SK, Wang-Goodman SX. 2019. "A meta-analysis of the association between income inequality and intergenerational mobility." **Socius: Sociological Research for a Dynamic World**, 5: 1–18.

(R.6) Greenman E, Xie Y. 2008. "Double jeopardy? the interaction of gender and race on earnings in the United States." **Social Forces**, 86(3): 1–28.

(R.7) Amaral EFL, Queiroz BL, Calazans JA. 2015. "Demographic changes, educational improvements, and earnings in Brazil and Mexico." **IZA Journal of Labor & Development**, 4(23): 1–21.

(R.8) Potter JE, Amaral EFL, Woodberry RD. 2014. "The growth of Protestantism in Brazil and its impact on male earnings, 1970–2000." **Social Forces**, 93(1): 125–153.

(R.9) Sakamoto A, Amaral EFL, Wang SX, Nelson C. 2021. "The socioeconomic attainments of second-generation Nigerian and other black Americans: Evidence from the Current Population Survey, 2009 to 2019." **Socius: Sociological Research for a Dynamic World**, 7: 1–18.

Grading policy

Grading scale: The course follows the standard rules of the university regarding the letter grading scale (http://student-rules.tamu.edu/rule10).

Assessment	Percent of final grade	Details	Grading scale	Percent
Assignment 1	12%		A	90–100%
Assignment 2	16%		B	80–89%
Assignment 3	20%		C	70–79%
Assignment 4	24%		D	60–69%
Quizzes	18%	12 quizzes, 3 questions per quiz, 0.5 points per question	F	0–59%
Class presentation	10%			
Total	**100%**			

Do not miss assignments, quizzes, and class presentation. Every point is important to your grade.

All assessments will not be graded on a curve.

Grades will not be rounded up (e.g., 59.9 is an F, 69.9 is a D, 79.9 is a C, 89.9 is a B).

Plagiarism: All students who commit plagiarism are assigned zero for the assessment.

Study groups: You are not competing with others in this class for a grade. Feel free to form study groups to review course materials. However, assignments and quizzes are not group projects. Students should complete all graded activities individually. Students should not prepare or compare their answers to these activities with the work of others before submitting for a grade.

Quizzes will be available on Canvas **(open from 11:54am until 11:59pm of the class day)** and will consist of multiple-choice questions and/or other types of questions. Students will answer the quiz online on Canvas after class hours. The content of the quiz can cover any topic we discussed throughout the course up to the day of the quiz. You will be allowed to look at your notes and class material to answer the questions. Students should read the **following instructions** about online quizzes before starting them on Canvas:
1. The **dates** of quizzes are available in the calendar of activities of this syllabus:
2. **Three multiple-choice questions** at 0.5 points each for a total of 1.5 points.
3. Once you begin each quiz, you will have **six minutes to complete the quiz (two minutes per question)**.
4. Quizzes will be available on **Canvas from 11:54am until 11:59pm** of the class day.
5. **No password** is required.
6. The multiple-choice **questions will be randomly selected** by Canvas from a pool of questions that I created. Thus, these questions will not be the same for all students.
7. The quiz will **shut down once the time limit has been reached**, so pay attention to the clock.
8. The quiz will **close once the deadline has been reached**, even if you only just started it.
9. You will only see **one question at a time**.
10. You **cannot go back to the previous question** once you submit your answer.
11. Choose a **good internet connection** to take the quizzes, such as the wireless connection at Texas A&M University.
12. **If you do lose your internet connection**, I recommend that you close your browser and then sign back into Canvas. You should be able to continue the test where you left off. Please note that the clock will continue to run, so do not assume that you have lots of time to utilize.

Assignments will explore empirical exercises using real databases with Excel and the statistical software Stata. Students will have to present data of statistical analysis and interpret results in technically rigorous reports. Details about each assessment will be provided on the course website.

Class presentation will consist of an in-class presentation by each student of a research paper. Students should select **one article from the list of research papers for class presentations**. Students can use slides, but they are welcome to discuss their readings only using their notes.

Submission: Assignments will be submitted through Turnitin within Canvas. Turnitin is an online database system designed to help instructors **detect plagiarism**, track citations, facilitate peer reviews, and provide paperless grading markup in written assignments.

Due dates: Students will have until 11:59pm of the due dates to turn in assignments through Canvas. Due dates are listed in the calendar of activities of this syllabus.

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Course schedule (tentative)

The tentative calendar of activities below includes dates, course topics, readings, and assessments due dates for this course. Changes will be indicated during classes and will be posted on the course website.

Day	Date	Topic	Reading Author. chapter	Quizzes, assignments	Class presentation
AUGUST					
01	08/19 (Monday)	Syllabus Lecture 1: Introduction	Syllabus H.1, I.1		
—	08/23 (Friday)	Last day to add/drop courses	—		
02	08/26 (Monday)	Statistical software	Stata01.txt	Quiz 1	
SEPTEMBER					
—	09/02 (Monday)	Labor Day	—		
03	09/09 (Monday)	Lecture 2a: Basic descriptive statistics Lecture 2b: Survey weights	H.2, I.2, T.9	Quiz 2	R.1
04	09/16 (Monday)	Statistical software	Stata02.txt	Quiz 3 Assign. 1	
05	09/23 (Monday)	Lecture 3: Measures of central tendency and dispersion	H.3, H.4, I.2	Quiz 4	R.2
06	09/30 (Monday)	Statistical software	Stata03.txt	Quiz 5	
OCTOBER					
—	10/07 (Monday)	Fall Break	—		
07	10/14 (Monday)	Lecture 4: Normal curve	H.5, I.6, HL.1	Quiz 6	R.3
08	10/21 (Monday)	Statistical software	Stata04.txt	Quiz 7 Assign. 2	
09	10/28 (Monday)	Lecture 5: Summary of inferential statistics and hypothesis testing	H.6–9, I.7–10	Quiz 8	R.4
NOVEMBER					
10	11/04 (Monday)	Statistical software	Stata05.txt	Quiz 9	R.5
11	11/11 (Monday)	Lecture 6: Summary of measures of associations	H.10–13, I.11–13	Quiz 10 Assign. 3	R.6
—	11/13 (Wed.)	Last day for all students to drop courses with no penalty (Q-drop)	—		
12	11/18 (Monday)	Statistical software	Stata06a-b.txt, Stata06c-d.txt	Quiz 11	R.7
13	11/25 (Monday)	Lecture 7: Ordinary least squares regression	H.13, H.15, I.12, HL.2–6, T.5,6,7,10	Quiz 12	R.8
DECEMBER					
14	12/02 (Monday)	Statistical software	Stata07.txt		R.9
15	12/06 (Friday)	**Assignment 4**		Assign. 4	

Department of Sociology Civility Statement

The Department of Sociology supports Texas A&M University's commitment to civility and welcomes individuals of all ages, citizenship, abilities, education, ethnicities, family statuses, genders, gender identities, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences (see http://diversity.tamu.edu/). As this is a social science class, discussions are to be research-based and should always be presented in a respectful manner when engaging with fellow students, teaching assistants, and instructors. This applies both inside and outside of the classroom and includes online spaces. The Student Conduct Code Rule 21 regarding appropriate classroom behavior will also be strictly enforced (https://student-rules.tamu.edu/rule21/). If a student is being disruptive or disrespectful (rude, inappropriate, unprofessional, and/or harmful to others) either in the classroom or during class-related communications outside of lecture (online or in-person), the instructor or teaching assistant will address this behavior following the department and university disciplinary guidelines. See (https://liberalarts.tamu.edu/sociology/home-page/civility/) for a more detailed discussion of these principles and the rules of conduct.

Class participation

I will take attendance in each class. You are responsible for your own learning, but your actions affect the entire class. Active participation in class discussion is vital to the shared learning experience. For this to work, everyone must come prepared to class, having done the readings and come prepared to discuss the week's readings in depth. Active participation is premised on respect. Being prepared for class, listening attentively, challenging ideas and not individuals—are all markers of respect in a community of learning. Thus, I expect everyone to attend class and value each other's ideas. **Hate speech will not be tolerated**.

Learning resources

The mission of the University Writing Center (UWC) is to help you develop and refine the communication skills vital to success in college and beyond. You can choose to work with a trained UWC peer consultant in person or via web conference or email. Consultants can help with everything from lab reports to application essays and at any stage of your process, from brainstorming to reviewing the final draft. You can also get help with public speaking, presentations, and group projects. The UWC's main location is on the second floor of Evans Library; there's also a walk-in location on the second floor of West Campus Library. To schedule an appointment or view our helpful handouts and videos, visit http://writingcenter.tamu.edu. Or call (979)458–1455.

Electronic devices

During classes, laptops, tablets, and smartphones should not be used for activities that are not directly related to the course.

Examples of **activities unrelated to class** include: checking and answering email, texting, scheduling appointments, viewing videos, and viewing websites with materials unrelated to the course.

Examples of **activities related to class** include: reviewing documents and course materials posted on the web, and examining websites that are visited as part of the lecture. If the policy is not respected, I will ban all devices for non-laptop required sessions.

Student course evaluation

Students should complete the course evaluation on https://tamu.aefis.net/. Students can see this step-by-step guide on how to access and respond to the student course evaluations.

Office hours

Office hours are intended to assist students who are seeking help understanding course materials (lectures, readings, lab classes, etc.) and to mentor students. Office hours do not substitute for attendance in class. I will not discuss missed classes unless the student missed those classes because of an authorized excuse. University rules related to excused and unexcused absences are located online at Student Rule 7. As Student Rules state: (1) it is the student's responsibility to attend class; and (2) if I used office hours to substitute for attendance in class, it would be a disservice to students who wish to use office hours to enhance their academic success.

Late work policy

Students are not allowed to submit their course work after the due date. Work submitted by a student as makeup work for an excused absence is not considered late work and is exempted from the late work policy (see Student Rule 7).

Extracts from Student Rule 7

I provide below some important information extracted from Texas A&M Student Rule 7. I simply follow the rules established by the university.

From 7.1 Notification of absences
– The student must provide notification of excused absences to the instructor in writing (e-mail is acceptable) prior to the day of absence.

– In cases where advanced notification is not possible, the student must provide notification by the end of the second business day after the last date of the absence. This notification must include an explanation of why notice could not be sent.

From 7.2 Absences
– Only excused absences defined by Texas A&M University are accepted (check the list on Student Rule 7, Section 7.2.2.).

From 7.3 Absence documentation and verification
– The student is responsible for providing documentation substantiating the reason for the excused absence, including the reasons stated in Section 7.2.

– This documentation must be provided within three business days of the last date of the absence, unless otherwise stated in this rule.

From 7.4 Make up work
– Make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

In summary
– *Student must submit explanation about excused absence by email to professor with attached documentation, listing the exact item within Section 7.2.2 of Student Rule 7 that refers to the absence.*

University policies

Attendance policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup work policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" (Student Rule 7, Section 7.4.1).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" (Student Rule 7, Section 7.4.2).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See Student Rule 24.)

Academic integrity statement and policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact the Disability Resources office on your campus (resources listed below) Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Disability Resources is located in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu.

Title IX and statement on limits to confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's Title IX webpage.

Statement on mental health and wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing available resources and services on your campus

Students who need someone to talk to can contact Counseling & Psychological Services (CAPS) or call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

Academic freedom

Academic freedom is a cornerstone of the University. Academic freedom in its teaching aspect is fundamental for the protection of the rights of the teacher in teaching and of the student to freedom in learning.[1] Each faculty member is entitled to full freedom in the classroom discussing the subject which the faculty member teaches.[2] Texas A&M will not penalize or discipline members of the faculty because of their exercise of academic freedom.

Along with this freedom comes responsibility. It is the responsibility of faculty members to ensure that topics discussed are related to the classroom subject. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.[3] It is not the proper role of the university or any outside agency to attempt to shield individuals from ideas and opinions they find unwelcome, disagreeable, or even deeply offensive.[4] Engaging with new ideas and perspectives helps students grow intellectually and is beneficial to the educational process.

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[1] 1940 Statement of Principles on Academic Freedom and Tenure.
[2] Texas A&M System Regulation 12.01: Section 1.2.
[3] American Association of University Professors Joint Statement on Rights and Freedoms of Students.
[4] The Chicago Statement.