

# ECONOMICS / BUSINESS: 222

## STATISTICS

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**Instructor:** Dr. Michael A. Miner

**Contact:** mminer2@sjcny.edu

**\*Response Time:** Allow 24-48 hours

**Office Hours:** by appointment

***Department of Social Sciences***

**Class:** Mondays, 6:15-9:00pm

**Lab:** TBD

**Classrooms:** TBD

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### Teaching and Learning during COVID-19:

Face Coverings **MUST** be worn at all times in the classroom (and on campus).

Everyone **MUST** maintain social distance.

Everyone **MUST** complete the health questionnaire prior to coming on campus.

These **RULES** are non-negotiable.

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### Course Description

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This course introduces students to statistical concepts and tools needed to analyze the social world. The purpose of using statistics in social science is to support claims about human behavior and social interaction. We cannot always directly observe everything we wish to study. Often, social scientists collect information from samples of people to learn about the population at large. In this course, you will learn how to perform statistical calculations and how to understand and communicate the results and implications of these calculations. This course is based as much on logic and application as it is mathematics. *A minimal understanding of elementary algebra is necessary.*

This course is a core curriculum outcome (Integrated Learning Areas). It is required for the BA in Sociology, Economics and Business. It is also applicable to the liberal arts requirements of the curriculum.

### Course Goals

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The ultimate goal of this course is to assist students in becoming critically informed consumers and practitioners of statistics and research. Throughout this course, students will acquire statistical literacy, have hands-on experience calculating statistics and employing statistical software that assists in examining data. After successfully completing this class, students shall be able to:

- Examine and summarize data visually using tables and figures
- Summarize data numerically using descriptive statistics
- Understand characteristics of theoretical distributions that are the foundation of statistical analyses
- Test research questions using inferential statistics
- Communicate the rationale for and results of statistical analyses

### Prerequisites

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A satisfactory grade in a previous Mathematics course is required (such as MAT-111 or MAT-113 or MAT-200 or MAT-205). Sociology 101 OR sophomore standing is required. The course involves a significant amount of arithmetic and symbols as well as some algebra, so knowledge of finite math is required.

## Required Textbook, Software and Tools

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Pencil and paper and handheld calculator problems dominate the work in this course. However, a laboratory component will also be included, relying on Statistical Package for the Social Sciences (SPSS) software. Lab assignments will incrementally build a set of basic skills necessary to program and interpret statistical analyses. Additional readings will be assigned throughout the semester.

- **Book:** Frankfort-Nachmias, Chava and Anna Leon-Guerro. 2017. Social Statistics for a Diverse Society 8<sup>th</sup> Edition. Sage. (the 9<sup>th</sup> edition recently came out – but the older version will suit our needs with used options around \$20).
- **Online Resources for Students:** <https://edge.sagepub.com/frankfort8e/student-resources>  
These online resources compliment the text and include flashcards, quizzes, videos and datasets for students to study and review material.
- **Software:** We will use SPSS software. Students must have access to SPSS for the completion of lab assignments. Students do not have to purchase their own copy. Computer lab locations on campus can be found here:  
<https://mysjc.sjcny.edu/itservices/itshome/Pages/ClassroomsandLabs.aspx>. In McEntegart Hall, rooms 203\*, 204\*, 300\*, 402\*, 405\*, 407\* can be used when rooms are not occupied by classes.
- Access to SPSS is also available through Virtual Application Lab, a private cloud solution for SJC's academic applications.  
<https://mysjc.sjcny.edu/itservices/student/Pages/VAL.aspx>
- **Calculator:** Homework assignments and exams will require a scientific calculator. Please bring one to every class (and especially to exams). Students will not be permitted to use a cellphone/tablet/computer.

## Course Requirements

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- **Participation:** Students must attend class sessions. Students are required to participate regularly in class discussions and activities. I strongly encourage students to ask questions during lectures, labs, discussions and other activities.
  - **Readings:** It is expected that students will complete all assigned readings before class in order to facilitate discussion of the material.
- **Pop quizzes (10%):** During many weeks there will be a pop quiz, during the last few minutes of class based on the readings and lectures. These are designed to check-in on your understanding of the material prior to a larger exam. It is essential that you attend all classes as there will be **no** make-up pop quizzes.

- **Lecture assignments (25%):** There will be 5 lecture assignments assigned in lecture that are due at the start of the following class. These will be problem sets and must be done by hand, showing all your work. I will not accept late lecture assignments. Each is worth 5 points. These will be relatively short assignments that will allow students to apply the concepts and skills covered in class. Solutions will be provided on Canvas.
- **Lab Assignments (15%):** There will be 3 lab assignments assigned with due dates posted online. You will have at least one week to submit these assignments. I will not accept late lab assignments. Each is worth 5 points. There is no separate letter grade for lab – students overall course grade will apply to all 3 credits. Instructions, examples and solutions will be provided on Canvas.
- **Exams (50%):** There will be 3 exams throughout the semester and are graded as follows:

1<sup>st</sup> Exam: 15%

2<sup>nd</sup> Exam: 15 %

3<sup>rd</sup> Exam: 20%

### Course Schedule and Assignments<sup>1</sup>

Week	Day	Date	Topic	Reading/Assignments Due
1	M	9/14	Course Introduction/Introduction Lecture/Overview of Research Methods	Best, Joel. 2001. <a href="#">“Damned Lies and Statistics” University of California Press. Book Excerpt.</a> (Canvas)
2	M	9/21	Proportions/Percentages and Organizing the Graphic Presentation of Data	Chapter 1 and Chapter 2
3	M	9/28	Measures of Central Tendency	Chapter 3 / Lecture assignment #1 due
4	M	10/5	Measures of Variability	Chapter 4 / Lecture assignment #2 due
5	M	10/12	Exam #1	
6	M	10/19	Probability, Probability Tree and Discrete Probability Distribution	Chapter 6, 151-157 and Chapter 3 of OpenStax (Canvas)
7	M	10/26	Standard Normal Distribution	Chapter 5/ Lab assignment #1 due

<sup>1</sup> \*Scheduling and assignments are subject to change **with** notice as we progress through the material and the semester. Additional readings will be assigned throughout the semester.

8	M	11/2	Sampling and Sampling Distributions and Review	Chapter 6, 158-end/Lecture assignment #3 due
9	M	11/9	Exam #2	
10	M	11/16	Hypothesis Testing	Chapter 8 / Lab assignment #2 due
11	M	11/23	Contingency Tables, $\chi^2$ and Calculating Cramer's V	Chapter 9 and Chapter 10
12	M	11/30	Bivariate Associations and Calculation Correlation	Chapter 12 / Lecture assignment #4 due
13	M	12/7	Spurious, Confounding Effects, Introduction to Multiple Regression	Chapter 12 / Lecture assignment #5 due
14	M	12/14	Review	Lab Assignment #3 due
15	M	12/21	Exam #3	

Summary of Key Dates		Tally Your Points and Calculate Your Class Grade
Lecture Assignment #1	Week 3	/5
Lecture Assignment #2	Week 4	/5
Lecture Assignment #3	Week 8	/5
Lecture Assignment #4	Week 12	/5
Lecture Assignment #5	Week 13	/5
Lab Assignment #1	Week 7	/5
Lab Assignment #2	Week 10	/5
Lab Assignment #3	Week 14	/5
Exam #1	Week 5	/15
Exam #2	Week 9	/15
Exam #3	Week 15	/20
Pop Quizzes	...	/10
Total	End	/100

### Grading Criteria

A = 93-100 A- = 90-92 B+ = 87-89 B = 83-86 B- = 80-82 C+ = 77-79

C = 73-76 C- = 70 -72 D+ = 67-69 D = 63-66 D- = 60-62 F = <60

### Time Commitment

- **3 credit course:** The University provides a time commitment for students: on average, students should spend 48 hours per credit per semester on in-class activities and activities outside of the classroom (i.e., approx. 144 hours for a 3-credit course).

- Total Hours: 3 credits x 48 hours = 144 hours
- In Class: 150 minutes' x 15 weeks = 37.5 hours
- Reading/Viewing Course Materials: 2x class time = 75 hours
- Taking Quizzes: 5 minutes' x 30 periods = 2.5 hours
- Working on Presentations/Assignments = 29 hours

## Course Policies and Expectations

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- **Civility in the classroom:** Throughout the semester we will discuss topics that may be difficult for some students. University students come from diverse backgrounds. As such, it is necessary to frame contributions to class respectfully; disagreeing with another perspective does not mean that we cannot learn from it.
  - **Cellphones and other various gadgets:** This class requires your full attention. I expect that students will not use electronic devices, especially cell phones, during class lecture and lab. If I notice a student who is off task, I will invite them to get back on task. I encourage student peers to do the same. If student's behavior interferes with another student's learning or the class as a whole, I will ask you to put the device away. Emergencies happen. If you need to make a call or send important messages, step out of the class.
- **Accessibility Policy and Academic Support:** St. Joseph's College, in accordance with the Americans with Disabilities Act, provides assistance and resources to students with disabilities. If you have a documented physical, psychological, cognitive, and/or medical disability and require accommodations, please contact the Office of Student Accessibility Services at (718) 940-5859 or email [kpercival@sjcny.edu](mailto:kpercival@sjcny.edu). Please be advised that it is the student's responsibility to communicate with faculty members. All information will be kept confidential.
- **Academic Integrity:** The College expects students to observe academic integrity in all aspects of their academic life, including the conduct of their examinations, assignments, and research. All members of the college community share the responsibility of creating a climate of academic integrity, based on fairness to others and respect for oneself. Violations of academic integrity are treated very seriously. Plagiarism (the act of copying, stealing, or representing the ideas or words of another as one's own without giving credit to the source), cheating on examinations, and all forms of academic dishonesty are forbidden. Students found guilty of such behavior are subject to appropriate disciplinary action, which may include a reduction in grade, a failure in the course, suspension, or expulsion. Student academic misconduct procedures are specified in Chapter III section B and can be found at: <https://mysjc.sjcny.edu/references/handbook/Documents/St.%20Joseph's%20Code%20of%20Conduct%20-%20Brooklyn%20and%20Long%20Island.pdf>