



## MGB-403AY DATA ANALYSIS FOR MANAGERS

SYLLABUS for Fall 2021

### Instructor Contact Information

Instructor: Joe Chen  
Office: 3216 Gallagher Hall  
Office Hours: Wednesdays 8:00pm-9:00pm (or by appointment)  
e-mail: [chenjs@ucdavis.edu](mailto:chenjs@ucdavis.edu)  
Course website: on Canvas (<http://canvas.ucdavis.edu>)  
Course Zoom: <https://zoom.us/j/91510471460>

### Course Description

Modern technology enables organizations to collect large amounts of data relatively quickly. However, gathering and storing data is meaningless until they are analyzed for trends, relationships, and other useful information. Statistics provides us the tools to perform such analysis. With the exponential growth in data availability over the last few years, it has become imperative today more than ever to obtain skills to interpret this big data. With advances in predictive and prescriptive analytics, the world has transitioned from intuition-based to data-driven decision-making. Modern managerial decision-making involves creating research questions, collecting data from samples, running statistical analysis, making decisions by interpreting the information, and, if necessary, making predictions. This course introduces statistics and data analysis to analyze trends, patterns, and relationships for making data-driven managerial decisions.

This is a core course in your MBA program and is intended to provide you with an understanding of which statistical tools and concepts are available, how to use, why to use, identifying when to use them, and interpreting the results. The concepts covered in the course will be used in upcoming finance, marketing, accounting, and operations courses in your program. The course is not intended to train you to become a statistician, but to use these skills in your personal and professional settings and make better, data-driven decisions.

### Course Objectives

The course will introduce you to descriptive statistics, inferential statistics, and predictive analytics. The course will cover the following major topics:

1. Introduction to descriptive statistics using graphical and numerical techniques.
2. Discussion of the probability concepts and framework, and the probability distributions.
3. Inferential statistics using confidence interval estimation and hypothesis testing.
4. Predictive analytics using simple linear and multiple regression models.

The scope and depth of coverage is best categorized as introductory, meaning that the aim is for you to leave with a solid, thorough non-specialized base in statistical analysis.

## Course Materials

### Textbook

*Statistics for Managers Using Microsoft Excel, 9th edition* (referred to as **LSS** hereafter)

Authors: David M. Levine, David F. Stephan, and Kathryn A. Szabat

Publisher: Pearson

ISBN-13: 9780135970232

There are hard-bound version, loose-leaf binder version and 'eText' version available. Any version is acceptable. Older editions are not recommended.

*MyLab Statistics* is an online education tool that accompanies the textbook. This is a required resource for this class. Use course ID 'chen75299' for MGP-403AY and use course ID 'chen10147' for MGB-403AY.

## Course Assessments

The course grade is based on the following criteria:

Assignments (9)	40%*
Data Case (9)	20%*
In-person Quiz (4)	15%*
Final Exam	25%

\* For the purpose of grading, you are allowed to drop your lowest scoring individual assignment score, data case score, and your lowest quiz score.

- **Assignments:** Problems are assigned on a weekly basis. These are to be completed individually, but you may collaborate with other students. There will be a total of **9 assignments**. All assignments are automatically given one-week grace period, but you should complete them on time to avoid running behind schedule. Assignments are to be completed using the MyLab online learning tool.
- **Data Cases:** Additional spread-sheet based questions and qualitative questions will be assigned – these are also to be done individually, but you are **encouraged** to collaborate with other students.
- **Submissions:** All electronically submitted documents must be **professional and properly formatted** to print. **Creating PDF documents are ideal**. You do not need to submit supporting documents containing data or spreadsheets with computations. Unformatted Word or Excel files will not be accepted.
- **Quizzes and Final Exam:** The quizzes and the final exam are **closed book and closed notes**. You are not allowed to use any notes or "cheat sheets". A "formula sheet" will be provide for the quizzes and the final exam. **We will allow the use of spreadsheets on a computer during quizzes and final exam.**
- **Grading Policy:** All course assessment items are graded based on grade standard and grading distribution consistent with [GSM MBA Program Policy & Procedures](#).

- **Makeup Quizzes:** There will be no makeup quizzes. Any missed quizzes or assignment not turned in will receive a credit of zero in the computation of the final grade. By registering for this class, you are committing, among other things, to take quizzes on the scheduled dates. However, the grading criteria already takes into account the possibility that you might miss a quiz or an assignment due to other conflicting obligations.
- **Office Hours:** If you have any questions about the material covered in class please do not hesitate to see me. If you have problems keeping up with the material, do not wait hoping that things will get better. They will probably get much worse. Remember that the reason why you enrolled in this course is to learn the course material, not to *survive* the course.
- **Tent Cards:** Classroom participation and interaction is an integral part of the learning experience. To facilitate this, students are expected to bring a tent card to every class session and place it visibly.
- **E-mail and Course Discussions:** Open discussion of course materials is an integral component of the learning process – both in the classroom and outside. To facilitate open discussions, responses to questions posted via e-mail may be forwarded to the entire class if it is of appropriate nature.
- **Computers:** The nature of the subject matter requires significant amount of numerical computations. Students are encouraged to bring a computer to quizzes and examinations. Moreover, use of laptop computers in the classroom will be necessary.

## Honor Code and Academic Integrity

Academic integrity exists when students and faculty seek knowledge honestly, fairly, with mutual respect and trust, and accept responsibility for their actions and the consequences of those actions. Without academic integrity, there can be no trust or reliance on the effectiveness, accuracy, or value of a University's teaching, learning, research, or public service activities. It is therefore key that we understand what academic integrity is, why it is important, and how to help it flourish on college campuses.

1. It is expected that all class members will treat each other with respect and dignity.
2. It is not acceptable behavior to insult, harass, or demean any member of the class.
3. Professional business behavior should be modeled in the classroom, including the use of appropriate language, jokes, or stories.

**Code of Academic Conduct:** Students are expected to conform with the code of academic conduct, which can be found here: <http://sja.ucdavis.edu/files/cac.pdf>. In general, students are also expected adhere to the UC Davis Principles of Community. For more information, please review the [Academic Conduct Booklet](#). Academic Affairs, as well as the Academic Director of the MBA Program, will be notified of any violations, and will take appropriate action.

## Course Schedule

### Important Notes

- **In-person meetings are held according to public health protocol guidance.**
- Complete all required readings PRIOR to each week's meeting.
- Homework Assignments are due at the BEGINNING of each session.
- Optional readings are intended for students intending to pursue this topic further.

---

### Session 1: Data and Descriptive Statistics

Wednesday, 22-Sep-2021, 6:00pm-7:50pm (Zoom)

Wednesday, 29-Sep-2021, 6:00pm-7:50pm (Zoom)

- Required Reading: LSS, Chapters 1.1-1.3, 2.1-2.3, 3 (all).
- Optional Reading: LSS, Chapters "First Things First", 1.4-1.6, 2.4-2.9.
- Check access to MyLab

---

### Session 2: Basic Probability

Saturday, 2-Oct-2021, 9:00am-12:30pm (BR-1503)

- Required Reading: LSS, Chapter 4 (all).
- Complete Assignment #1 and Data Case #1.
- Study for Quiz #1.

---

### Session 3: Probability Distributions

Wednesday, 6-Oct-2021, 6:00pm-7:50pm (Zoom)

Wednesday, 13-Oct-2021, 6:00pm-7:50pm (Zoom)

- Required Reading: LSS, Chapters 5.1-5.3, 6.1-6.4.
- Optional Reading: LSS, Chapters 5.4-5.5, 6.5-6.6.
- Complete Assignment #2 and Data Case #2.

---

### Session 4: Sampling Distributions

Saturday, 16-Oct-2021, 9:00am-12:30pm (BR-1503)

- Required Reading: LSS, Chapter 7 (all).
- Complete Assignment #3 and Data Case #3.
- Study for Quiz #2.

---

### Session 5: Confidence Intervals

Wednesday, 20-Oct-2021, 6:00pm-7:50pm (Zoom)

Wednesday, 27-Oct-2021, 6:00pm-7:50pm (Zoom)

- Required Reading: LSS, Chapters 8.1-8.5.
  - Optional Reading: LSS, Chapters 8.6-8.8.
  - Complete Assignment #4 and Data Case #4.
-

---

### **Session 6: Hypothesis Testing**

Saturday, 30-Oct-2021, 9:00am-12:30pm (BR-1503)

- Required Reading: LSS, Chapter 9 (all).
- Complete Assignment #5 and Data Case #5.
- Study for Quiz #3.

---

### **Session 7: Two-Sample Tests**

Wednesday, 3-Nov-2021, 6:00pm-7:50pm (Zoom)

Wednesday, 10-Nov-2021, 6:00pm-7:50pm (Zoom)

- Required Reading: LSS, Chapters 10.1-10.3.
- Optional Reading: LSS, Chapters 10.4-10.5.
- Complete Assignment #6 and Data Case #6.

---

### **Session 8: Simple Linear Regression**

Saturday, 13-Nov-2021, 9:00am-12:30pm (BR-1503)

- Required Reading: LSS, Chapters 13.1-13.5, 13.7-13.9.
- Optional Reading: LSS, Chapter 13.6.
- Complete Assignment #7 and Data Case #7.
- Study for Quiz #4.

---

### **Session 9: Multiple Regressions**

Wednesday, 17-Nov-2021, 6:00pm-7:50pm (Zoom)

Wednesday, 1-Dec-2021, 6:00pm-7:50pm (Zoom)

- Required Reading: LSS, Chapters 14.1-14.6.
- Optional Reading: LSS, Chapters 14.7-14.8.
- Complete Assignment #8 and Data Case #8.

---

### **Session 10: Model Building**

Saturday, 4-Dec-2021, 9:00am-12:30pm (BR-1503)

- Optional Reading: LSS, Chapter 15 (all).
- Complete Assignment #9 and Data Case #9.

---

### **Finals Week: Final Exam**

Saturday, 11-Dec-2021, 9:00am-12:30pm (BR-1503) (*date/time to be confirmed*)