Graduate School of Management — Winter Quarter 2021
University of California, Davis — Chih-Ling Tsai

This syllabus is subject to change.

MGP/B 203B - Forecasting & Managerial Research Methods (II)

PREREQUISITE: MGP/B-203A

LECTURES: Wednesday 6:00 p.m.-8:50 p.m.

INSTRUCTOR:
Chih-Ling Tsai
3210 Gallagher Hall

cltucd@gmail.com

OFFICE HOURS:
Monday 5:00 p.m. -7:00 p.m.
or by appointment

TEXT:
Statistics for Management and Economics, **Eleventh** Edition, by Gerald Keller.

APPROXIMATE MATERIAL TO BE COVERED: GK: Chapters 14-21 (see the last page for details)

IMPORTANT DATES:

Wednesday, 1/6/21	First day of class
Wednesday, 2/10/21	Midterm
Wednesday, 3/17/21	Final Exam

NOTES and HANDOUTS:
Please purchase MGT/P/B 203B Notes and MGT/P/B 203B Numerical Handouts online from the UCD bookstore online (http://ucdavisstores.com/SelectTermDept.aspx) via the CRN option.

COMPUTER PACKAGE:
MINITAB (version 19) is used for the class.
You can rent it from the website:
http://www.onthehub.com/minitab/
You may use Excel or R to do homework, but some problems are needed to be done by Minitab

HOMEWORK: Homework problems will be assigned on a weekly basis.

GRADING:

Midterm	30%
Final	40%
Homework	30%

Course Objectives:

1. Exhibit the GSM principle: Be able to explain Statistics (S) to your Grand Mother (GM); hence GSM. In other words, explain concepts and convey data analytic results to your classmates, boss, colleagues, staff or customers in layman's terms while applying statistical concepts and techniques.

2. Be able to use what you have learned from this course to conduct data analysis and to evaluate results by yourself.

3. Build a solid foundation for business analytics, and prepare you for other analytics-related courses.

Additional Information:

1. I will discuss upcoming homework during my lecture so you can better prepare for it.

2. Based on my 30 years' teaching experience, I have prepared MGT/P/B-203B Notes and MGT/P/B-203B Numerical Handouts, which you can purchase them online from the UCD bookstore. This will help you to learn materials effectively.

3. Following are some helpful suggestions as well as important notes that past students consider useful. Please pay particular attention to the dates and times of the midterms, homework assignments, and the final exam in the syllabus. With your effort and cooperation, Winter Quarter will be a success.

Suggestions:

- The **class number** will be assigned at the first day of my lecture. If you could not find your class number, please let me know as soon as you can.
- If you **fear** statistics or your performance in MGP-203A was not **satisfactory**, please set up an appointment with me in the **first** week.
- Please review lecture notes and the textbook after **each** lecture. Homework should also be done as soon as possible.
- If you have any problems in understanding the material, please **DO NOT HESITATE TO ASK ME FOR HELP**. However, I encourage you to study first before you come to see me.
- After you finish each Chapter, please **review** the material again and **summarize** what you have learned. Ask yourself, what is the relationship between each Chapter? Do some practice problems to help you **understand** the material rather than just **memorize** the material.

- Please write your homework **clearly** and **print** your name and the **class number** at the top of the right hand corner on the first page of your homework assignment. In addition, please **staple** your homework.

Notes:

- Assignments may be done in groups of no more than **three** students; only **one** copy of a group assignment need be handed in. However, **each** student is responsible for the content of **all** assignments.
- The **formats** of exams may be varied. However, the **purpose** of each exam is the same. That is, to test whether you understand the materials or not.
- Homework turned in late will **not** be graded.
- Makeup exam will **not** be given. (Exception to the rule: only if instructor agrees you have just cause to make up the exam).
- Incomplete grades will **only** be given when an emergency situation exists and verified by the instructor.
- Please **do not** come late. The lecture begins at 6:00 pm.
- If you plan to miss more than **one** lecture, then I suggest that you take this class later.
- **I do not tolerate cheating. In addition, please visit the website http://sja.ucdavis.edu/files/cac.pdf to study the "the Code of Academic Conduct"** and **visit participate.ucdavis.edu to understand participation requirements.**
- Statement on Accommodation

  UC Davis is committed to educational equity in the academic setting, and in serving a diverse student body. All students who are interested in learning about how disabilities are accommodated can visit the Student Disability Center (SDC). If you are a student who requires academic accommodations, please contact the SDC directly at sdc@ucdavis.edu or 530-752-3184. If you receive an SDC Letter of Accommodation, submit it to your instructor for each course as soon as possible, at least within the first two weeks of a course.

- Safety and Emergency Preparedness

  UC Davis has many resources to help in case of emergency or crisis. While reviewing campus Emergency Information, you may want to register for UC Davis Warn Me and Aggie Alert, which will give you timely information and instructions about emergencies and situations on campus that affect your safety. If there is an emergency in the classroom or in non-Davis locations, follow the instructions of your instructor.

Chapter Contents

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14 Analysis of Variance

- One-way analysis of variance
- Randomized block design

19 Nonparametric Statistics

-Wilcoxon rank test
-Kruskall-Wallis test for the completely randomized design
-Friedman test for randomized block design

15 Chi-Squared Tests

- Chi-squared goodness of fit test
- Chi-squared test of a contingency Table

16 Simple Linear Regression and Correlation

- Model fitting
- Parameter estimates and interpretations
- Statistical inference and forecasting

17 & 18 Multiple Regression Model

- Regression Diagnostics (Check the appropriateness of model assumptions)
- Transformations and regression model with autocorrelated errors
- Polynomial regression and nonlinear regression models
- Regression models with dummy variables
- Partial F-test to assess the adequacy of model fitting
- variable selections

20 Time Series Analysis and Forecasting

- Trend analysis
- Measuring cyclical and seasonal effects
- Times series forecasting with smoothing techniques

21 Statistical Process Control