Graduate School of Management
University of California, Davis

Spring Quarter 2018
Chih-Ling Tsai

MGB 203B–Forecasting & Managerial Research Methods (II)

PREREQUISITE: MGB 203A

LECTURES: Saturday: 9:00 a.m. -11:50 a.m.
1:00 p.m. – 3:50 p.m.
(Rm: BR1502)

INSTRUCTOR:
Chih-Ling Tsai
3210 Gallagher Hall
752-8565
cltsai@ucdavis.edu

OFFICE HOURS: By appointments

TEXT: Statistics for Management and Economics, **Eleventh** Edition, by Gerald Keller. If you use the **Tenth** Edition, please pay attention on the homework assignments.

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

NOTES and HANDOUTS: They are available in the UCD bookstore.
Please fill out the order form from the GSM website.

COMPUTER PACKAGE: EXCEL or MINITAB
I strongly suggest using Minitab to do your homework.
You can rent Minitab (version 18) from the website:
http://www.onthehub.com/minitab/

IMPORTANT DATES:

Saturday, 3/31/18	First day of class
Saturday, 4/28/18 (9:00 a.m. -11:50 a.m.)	Midterm (close book)
Saturday, 6/9/18 (1:00 p.m. to 4:00 p.m.)	Final Exam (open book)

GRADING:

Midterm	30%
Final Exam	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.

ADDITIONAL INFORMATION:

Following are some helpful suggestions as well as a few notes that I use when I conduct my classes. 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, Spring 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 see me as soon as you can.
- If you fear statistics or your performance in MGB 203A was not **satisfactory**, please see me after the **first** week's lecture.
- Please review lecture notes and the textbook **immediately** after **each** lecture. Homework should also be done as soon as possible.
- I will stay in the classroom **from 3:50 pm to 4:10 pm**. I suggest that you stay in the classroom after the class and understand your assignments immediately. Thus, I can answer your questions face-to-face.
- 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** you name and the **class number** at the top of the right hand corner on the first page of you homework assignment, also, please **staple** your homework.

Notes:

- Assignments may be done in groups of no more than **three** students; only **one** copy of a group assignment needs to 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. Furthermore, I believe that learning the material is more important than obtaining the good grade.

- Homework turned in late will **not** be graded.

- Makeup exams 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 9:00 am (**not 9:01 am**).

- Please **do not** talk, sleep, or eat in the class. If you want to drink, please do quietly so you don't disturb your classmates.

- Please **do not** turn on any electronic devices, including your laptop, cell phone, iPhone, iPad, and iPod.

- If you plan to miss more than **one** lecture, then I strongly suggest that you take this class later. In case you miss a lecture, you have to work **very** hard to pick up the missing materials.

Chapter Contents

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14 Analysis of Variance

- One-way analysis of variance
- Randomized block design
- Two factorial 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