

IM2005 – Statistics I, Fall 2012

Instructor:

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Office: Room 413, Management Building II

Office hour: 12-2pm, Tuesday or by appointment

Teaching assistants:

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Classroom: Room 104, Management Building I

Meeting time: Lectures: 2:20-5:20pm, Wednesday; Labs: 1:20-2:00pm, Wednesday

Textbook: “Applied Business Statistics: Making Better Business Decisions” by Ken Black, 7th edition.
雙葉書廊; 02-2368-4198 ext 15.

References: “Mathematical Statistics with Applications” by D. Wackerly, W. Mendenhall III, and R. Scheaffer;
“Probability and Statistics” by M. DeGroot and M. Schervish.

On-line: CEIBA, <http://www.ntu.edu.tw/~lckung/courses/StatFa12/>, and “NTUIM-lckung” on PTT.

Course description:

Statistics is one of the most important quantitative tools in the business world. With statistical methods, researchers and practitioners are able to obtain valuable knowledge regarding a large population by just investigating a typically much smaller subgroup. Such ability is essential when one wants to understand consumers (i.e., marketing), control the quality of production (i.e., operations management), find good employers to hire (i.e., human resource management), make correct financial investments (i.e., finance), and almost everything in running a business. That's why Statistics is a required course for any business student.

An introductory business statistics course can be divided into (at least) five parts:

1. Descriptive statistics: the way of summarizing and visualizing a set of data;
2. Fundamental probability: the mathematical tools we need to study the following three parts;
3. Estimation: to estimate the value of an unknown scientifically;
4. Hypothesis testing: to make conclusions on some properties of a population;
5. Forecasting: using past data to forecast the unknown future.

In this semester, we will cover the first three parts and get into the fourth. The next semester is for the remaining.

As this course is mainly for students majoring in Information Management, we will also emphasize on computer techniques for Statistics.

Policies:

Office hour:

You are welcome to my office hour to ask me any question. You may ask me to clarify some concepts, give you hints for homework problems, or even demonstrate how to use statistical software. In fact, discussions not related to Statistics are also welcome. If you don't want to come in the designated time, feel free to send me an e-mail to schedule a meeting.

Class participation:

We do not require one to attend all the lectures and labs. If you have something more important to do, feel free to drop a class. Nevertheless, as **communication skills** are essential for almost everyone, we encourage class participation and include it in evaluating each student. In other words, class participation is not just sitting in the classroom. During lecture time or office hour, you are more than welcome to **ask or answer questions** and **provide comments**. You are also encouraged to use **the course bulletin on PTT**. These will not only give you a good participation grade but also significantly help your learning.

Homework:

- ◆ Weekly homework will be assigned every Wednesday or Thursday and due the following Wednesday

(unless there is a holiday or exam). Please put a hard copy of your work into my mailbox on the first floor of the Management Building II by 1:00pm on the due date. No submission in class or in lab. No late submission. Each student must turn in her/his own homework.

- ◆ The **lowest two** homework grades will be **dropped** (i.e., you may skip two homework if you want). The TAs will grade homework and regrade them upon request. If you have a regrading request, please contact the TAs directly (e.g., in the labs).

Labs:

The TAs will conduct a lab every Wednesday. The solution processes of homework problems, especially the required **computer techniques**, will be demonstrated in the labs. These techniques can also be very helpful in your future career.

Project 1:

Please form a group with no more than three persons. There is no presentation for the first project. The report will due shortly after the midterm exam.

Project 2:

Please form a group with five to eight persons. For the second one, each team will make a 15-minute presentation. All team members must be in class for the team to present. The report will due on the presentation day.

Exams:

Both the two exams will be in-class and open-book. Except a calculator, no electronic device is allowed. No discussion is allowed. Cheating will result in severe penalty.

Grading:

- Homework 15%
- Projects 20% (each project counts for 10%)
- Class participation 5%
- 2 Exams 60% (one of the following two plans will be chosen to maximize your grades)

Plan 1: midterm 25% and final 35%; Plan 2: midterm 20% and final 40%.

The final letter grades will be given according to the following conversion rule:

Letter	Range	Letter	Range	Letter	Range
A+	[90, 100]	B+	[77, 80)	C+	[67, 70)
A	[85, 90)	B	[73, 77)	C	[63, 67)
A-	[80, 85)	B-	[70, 73)	C-	[60, 63)

Tentative plan:

Topics	Chapters	Estimated number of weeks
Overview and introduction	1	1
Descriptive Statistics	2 and 3	2
Basic probability	4, 5, and 6	2
Moment generating functions	N/A	1
Sampling distributions	7	2
Point estimation	N/A	1
Interval estimation	8	2
Hypothesis testing	9	3