

國立中正大學企業管理學系學士班教學大綱

109 學年度第 2 學期 (Class A, Spring 2021)

科目編號：5201007 (Class A)

科目名稱：線性代數

英文譯名：Linear Algebra

修別/學分數：必修/3

Office hour: 9:10-10:00 Wed. and Fri. (or by appointment)

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Course Objectives [Learning goal: problem solving and logical thinking]

To introduce basic concepts and applications of Linear Algebra; in particular, those related to studying Operations Research/Management Science (OR/MS). In fact, this course is a basic course of **business analytics**, and is one of prerequisites of the advanced course "Introduction to Management Science". It is intended to be interesting and informative. Logical thinking will be emphasized.

Textbooks

1. Kolman, B. and D.R. Hill, 2013, Introductory Linear Algebra: An Applied First Course, 8th ed., Hwa Tai Publishing, Taipei, Taiwan.
2. Supplementary materials compiled by the instructor.

Course Outline

Week (Date)	Topic	Text
1 (2/24, 2/26)	Course description/Introduction to Linear Algebra	Chap 1
2 (3/3, 3/5)	Linear equations and matrices and their applications # Markov chain	Chap 1, 2, 8, 10
3 (3/10, 3/12)		
4 (3/17, 3/19)		
5 (3/24, 3/26)	Linear equations and matrices and their applications # Cryptology	
6 (3/31, 4/2)	Spring Holiday	
7 (4/7, 4/9)	4/7 First Midterm Exam , 4/9 Determinants	Chap 3
8 (4/14, 4/16)	Determinants	
9 (4/21, 4/23)	Vector in R^n	Chap 4, 5, 10
10 (4/28, 4/30)		
11 (5/5, 5/7)		
12 (5/12, 5/14)	5/12 Second Midterm Exam 5/14 Vector in R^n , Applications of Vectors in R^2 and R^3	
13 (5/19, 5/21)	Real vector spaces and its applications # Linear independent and linear dependent # Basis # Least squares: regression analysis	Chap 6, 7
14 (5/26, 5/28)		
15 (6/2, 6/4)		
16 (6/9, 6/11)		
17 (6/16, 6/18)	Eigenvalue and eigenvector/Linear programming	Chap 8, 11
18 (6/23)	Final Exam	

Grading

Learning attitude and Participation/Homework	24%
- HW1: group discussion assignment 10%	
Two Midterm exams (4/7, 5/12)	46%
Final exam (6/23)	30%

Notes

1. How to learn Linear Algebra well
 - **Concentrate in class**, take notes industriously, and try to logical thinking.
 - Study the textbook carefully and completely.
 - Learning by doing (enjoy doing exercises mentioned in class and homework).
 - Review the textbook.
 - Ask questions if any.
 - Carefully review your problems when correcting the answers to exercises and exams.
2. **Any dishonesty, or violation of university rules, or absence from exams without valid reasons must result in fail grade on this course.**
3. Learning by doing. Study hard, play hard. As you sow, so will you reap. No pains, no gains.
4. Learning attitude is everything.
5. The instructor reserves the right to adjust the grades. However, you are guaranteed that your grade will not be adjusted down. Learning attitude and participation will be decisive factors.
6. **Please follow the intellectual property instruction and no illegal copy.**
7. A useful way to contact is my e-mail.
8. Other information can be found on the Internet at my website:
http://busadm.ccu.edu.tw/include/show_teacher.php?id=68