

Management Science

Course Name	Course type (credit/hours)	전선(3/3)			Course code	1091
	Target students Division/major/grade	Business Admin./2nd year			Opening semester	2019 1ST SEMESTER
	Class time and classroom	월B(다B106) 목B(다B106)(다B106)			English Grade	A(100%English)
Reference to this course	Prerequisite courses	Quantitative business analysis				
	Related basic courses	Calculus				
	Recommended concurrent courses	Introduction to Business probability models				
	Related advanced courses	Linear algebra				
Instructor	Name (title/division)	김선교 (교수/경영대학 경영학과)				
	Office Room Number	다528	Office phone Number	2841	e-mail	
	Office hours		Homepage address	ajou.ac.kr/~sunkyo		
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

1. Introduction

As a sequel to the Quantitative Business Analysis, this course covers advanced topics of deterministic mathematical programming. During the first half, the duality in linear programming will be discussed with many related issues. Integer programming, dynamic programming, and non-linear programming problems will be discussed during the second half. Students interested in this course may also consider taking 'Introduction to business probability models' in which uncertainties and probabilistic nature of various business problems will be discussed.

2. Course Objectives

Students will learn how to mathematically formulate and solve various business and economic problem.

3. Class types and activities

4. Teaching Method

<input checked="" type="checkbox"/> lecture	<input type="checkbox"/> discussion and debate
<input checked="" type="checkbox"/> team project(presentation and case studies)	<input type="checkbox"/> experiments(role-playing,etc)
<input type="checkbox"/> designing and production	<input type="checkbox"/> on-site learning(on-site training)
<input type="checkbox"/> others	

5. Support Systems in Use

<input checked="" type="checkbox"/> e-class	<input type="checkbox"/> automatic recording system	<input type="checkbox"/> web-based assignment
<input type="checkbox"/> cyber lecture	<input type="checkbox"/> blended learning(combination of online and offline teaching)	
<input type="checkbox"/> class behavior analyzing system	<input type="checkbox"/> others	

6. Teaching Tools

<input checked="" type="checkbox"/> PBL(Problem Based Learning)	<input type="checkbox"/> CBL(Case Based Learning)
<input type="checkbox"/> TBL(Team Based Learning)	<input type="checkbox"/> others

7. Knowledge and ability required for taking this course

Matrix algebra at the level of quantitative business analysis.
Excel spreadsheet.

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance			
midterm exam	1	45	
final exam	1	45	
quiz	6	10	수업 참여도 포함
presentation			
discussion			
homework			
etc			
study hours	6		

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	Introduction to Operations Research (9th ed.)	Hillier and Lieberman,	McGraw-Hill	2009
Ref.	경영과학	김선교외 4인 역	McGraw-Hill Korea	2007

10. Class system and Class shedule

<p>Preliminaries: matrix algebra</p> <p>-> Examples and applications of linear programming</p> <p>-> Solution procedures for linear programming</p> <p>-> Duality theory and sensitivity analysis</p> <p>-> Special categories of linear programming</p> <p>-> Network flows, dynamic programming, integer programming</p> <p>-> Non-linear programming</p>

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Preliminaries: Linear algebra	E	김선교			

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
2	Preliminaries: Linear algebra	E	김선교			
3	Linear Programming	E	김선교			
4	The Theory of the simplex Method	E	김선교			
5	Duality Theory and Sensitivity Analysis	E	김선교			
6	Duality Theory and Sensitivity Analysis	E	김선교			
7	Duality Theory and Sensitivity Analysis	E	김선교			
8	Mid-term Exam	E	김선교			
9	Network Optimization	E	김선교			
10	Dynamic Programming	E	김선교			
11	Integer Programming	E	김선교			
12	Integer Programming	E	김선교			
13	Non-linear Programming	E	김선교			
14	Non-linear Programming	E	김선교			
15	Non-linear Programming	E	김선교			
16	Final Exam	E	김선교			

11. Other items of notification