Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Year and Semester	2025 Spring					
Course Name	Operations Research					
Course Code	MAT 333					
Course Type	☐ General Education (Required) ☐ General Education (Elective) ☑ Basic Disciplinary Course ☐ Professional Course (Required) ☐Professional Course (Elective) ☐Professional Course (Expanded) ☐Professional Course (Advanced)					
Course Credits	3					
Course Hours	Total Class Hours	48	Lecture Hours	48	Experiment (Computer) Hours	0
Applicable object	☐ Freshman ☐ Sophomore ☑Junior ☐ Senior					
	☐ Business Administration (Accounting)					
	☑Information Management and Information Systems (Finance)					
Prerequisites	MAT111, MAT112, MAT221, MAT231					
Instructor	Li Ling					
Contact Information	Office: C217					
	Tele: (010)83951082					
	Email: liling@cueb.edu.cn					
Office Hour	TBA					
Learning Centre	TBA					
Grade/Section	2022CFA					
Course Time/Place	TBA					
Textbook	David Anderson. *An Introduction to Management Science Quantitative Approaches to Decision Making, 12th Edition*. China Machine Press, ISBN: 9-787-111-290353					

Reference Book

Frederick S. Hillier, Gerald J. Lieberman. *Introduction to Operations Research, 9th Edition.* Courier Westford Inc., ISBN: 978-0-07-337629-5

Course Description

Operations research (OR) is concerned with optimal decision making in, and modeling of, deterministic and probabilistic system that originate from real life. It is useful to structure the real life situation into a mathematical model, abstracting the essential elements so that a solution relevant to the decision maker's objective can be sought. Developing a solution, including the mathematical theory that yields on optimal value of the system measure of desirability. This course will cover the deterministic models in OR and the mathematical foundation of the solution techniques for OR models will be emphasized.

Student Learning Outcomes

On successful completion of this course, candidates should be able to:

Knowledge	• solve LP problems using the Simplex Method. • develop a basic understanding of project scheduling techniques, inventory models and waiting line models. • grasp basic decision-making strategies.
Capability	• apply LP theory to solve transportation, assignment and transshipment problems • use decision analysis to develop reasonable decision-making strategies • demonstrate effective professional communication skills
Mindset	• be logical, ethical, methodical, consistent and accurate • apply critical thinking in the process of decision making

Website Source

1. http://en.wikipedia.org/wiki/Operations research
2. http://nptel.iitm.ac.in/video.php?courseId=1110

Teaching Methods

This course consists of lectures, discussions and student presentations. Students will be divided into small groups with a group leader helping others in the group. Students must be prepared to finish some small questions and small quizzes during the class.

Grade Criterion

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. The exam paper maybe composed of computer operation questions and case analysis questions. Students should rely primarily on homework assignments to give them a sense of what they may see for material on exams.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents that have been taught in class. The test paper may be mainly composed of multiple-choice questions and it should be completed in class.
Homework	15%	Most of the assigned homework is taken from the Exercises in the textbook. Assignments will be collected at the clearly stated date. Late assignments will not be accepted. The graded assignments may be kept by the tutor for reference and won't be returned to students.
Quizzes	15%	There will be at least 2 quizzes during the semester. Quizzes may or may not be announced in advance. It may also be used as a way to check the attendance. Quizzes will test your knowledge of both concepts and the application of those concepts.
Presentation	10%	The students will be divided into several groups to prepare a presentation. Each student is required to be involved in the presentation. The topics can be selected from the textbook or lectures. Each group need to finish

		a PPT related to the topic which is given and hand in the related resources to the teacher before the presentation.
Participation	10%	Individuals will be asked to participate individually in a question and answer at least 5 times during the semester. The performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	Before Midterm	After Midterm
Attendance	5%	5%
Participation	5%	5%
Homework	5%	10%
Quizzes	5%	10%
Presentation		10%
Midterm test	20%	
Final exam		20%
Total	40%	60%

Assessment of Student Performance

Week	Date	Topics	Homework
1		● Introduction ● Chapter 1 Introduction to Operations Research	____
2		● Chapter 2 Introduction to linear programming, graphical approach II ● Chapter 3 Sensitivity Analysis I	____
3		● Chapter 3 Linear programming: Sensitivity Analysis II ● Chapter 4 Linear programming application	____
4		● Chapter 5 Linear programming: Simplex Method I	____
5		● Chapter 5 Simplex Method II	____
6		● Chapter 6 Duality Theory and Sensitivity Analysis	____
7		● Chapter 7 The transportation and Assignment Problems	____
8		● Chapter 9 Network models ● Quiz	____
9		● Review and Midterm	____
10		● Chapter 10 Project Scheduling	____
11		● Chapter 11	____

		Inventory Models	
12		● Students' presentation	——
13		● Chapter 12 Queuing Theory	——
14		● Chapter 14 Decision Analysis	——
15		● Review and Quiz	——
16		● Chinese Review	——

☛***Self-Study and Reading ability Practice***

Instructor will give out the chapters or the reference books to read and use class hours to have discussion; students should be able to show a proactive attitude and ability for self-study and reading. Knowledge and oral English will be elements of homework or presentation score.

☛***Homework***

Students should finish their homework by themselves. Copying from others will be treated as cheating and the homework scores will be lowered. Students should hand in all assignments on time. Late assignments will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Late assignments without reasonable proof will be reduced in score by 50%.

☛***Attendance***

Because the course covers a great deal of material, attending every class session is very important for performing well.

- ◆ Being late for 15 minutes or more is considered an absence.
- ◆ Five hours or above of unexcused absences will result in the lower level of the final grade by one grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.
- ◆ Absence which is more than 1/3 of the total teaching hours will cause an F (afailing grade) directly. but students are welcome to continue attending classes.
- ◆ An incomplete grade (I) will be considered in case of medical or family emergencies.

☛***Participation***

- ◆ Students should participate in classes actively. Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates.
- ◆ Students should also use office hours to ask questions or talk with the instructor for good communication and effective learning.
- ◆ Frequent visiting the instructor and chatting in English during office hours is highly recommended.
- ◆ Any misbehavior and non-class related activities in class will result in the lower level of the participation grade, including ringing cellphones.
- ◆ All above behaviors will be solely evaluated by the instructor for scoring.

☛ ***Textbook***

Students must bring the textbook to class.

Note:*Some chapters or sections may leavefor self-study, this is the students' duty to learn and understand, they may also be included in the quizzes or exams.A review in Chinese maybe held during L.C. and O.H. in the semester.*

Teacher's Office Hour

- The instructor's office hour is shown in the front of the office door.
- Students are suggested to use the instructor's office hour and learning center to ask questions or talk with the instructor once at least per week for good communication and effective learning, which is recorded in the students 'participation.
- The time can be scheduled by instructors or students, or both.

Cheating and Plagiarism

Cheating is not tolerated. Any student caught cheating on a quiz; test or exam will be given a mark of zero (0) for the particular work. At the beginning of the semester the definition of plagiarism will be carefully explained, when any thoughts or writings of another person are used, they must be clearly identified (usually one uses quotation marks) and the source notes. **If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".**

Important Dates

Midterm Test	**Week 9 or 10**
Final Exam	**Week 17（Refer to the notice of the Academic Affairs Office）**

Note: *This syllabus is tentative and may be changed or modified throughout the semester. All students will be notified and a new syllabus will be given.*

Instructor: Li Ling **Department Head: Jingning Li**