



UNIVERSITY OF NICOSIA

ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ

University of Nicosia, Cyprus

Course Code IMGT-490	Course Title Analytical Decision Making	ECTS Credits 6
Department Management & MIS	Semester Fall, Spring	Prerequisites IMGT-486
Type of Course Major	Field Management	Language of Instruction English
Level of Course 1 st Cycle	Year of Study 2 nd	Lecturer(s) Harry Kogetsidis
Mode of Delivery face-to-face	Work Placement N/A	Co-requisites None

Objectives of the Course:

The main objectives of the course are:

- to introduce students to the basic principles of optimisation and linear programming
- to introduce students to a number of linear programming algorithms for solving appropriate LP problems
- to develop students' ability to build quantitative models and to use these models to help propose policy alternatives
- to develop students' analytical skills
- to develop students' ability to summarise and present data in a professional way
- to develop students' skills in practical decision making
- to provide a conceptual understanding of the role of the methods of science in decision making
- to develop students' ability to communicate effectively with non-technical managers.

Learning Outcomes:

After completion of the course students are expected to be able to:

1. discuss the importance of analytical decision making methods and tools
2. structure business problems so that these can be solved by quantitative means
3. apply appropriate linear programming methods to solve particular types of business problems
4. discuss how linear programming can help managers make efficient use of organizational resources
5. develop skills in analytical and practical decision making
6. develop a conceptual understanding of the methods of science in decision making
7. summarise and present data in a professional way
8. communicate effectively with non-technical managers.

Course Contents:

1. The graphical solution method for solving linear programming problems with two decision variables revisited.
2. Introduction to the Simplex method (Converting linear programming problems to their standard form. How the Simplex method and the graphical method compare).
3. Using the Simplex method to solve maximisation and minimisation linear programming problems.
4. Using artificial variables in linear programming.
5. Methods for securing a starting feasible solution.
6. Shadow prices and duality in linear programming.
7. The Dual Simplex method.
8. Sensitivity analysis in linear programming.
9. Special applications of linear programming.

Learning Activities and Teaching Methods:

Lectures, seminar activities, computer workshop activities, case studies.

Assessment Methods:

Homework activities, projects, in-class tests, final examination.

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
David Anderson, Dennis Sweeney and Thomas Williams	Quantitative Methods for Business (9 th ed.)	Thomson South- Western	2004	0324184131

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Frederick Hillier and Gerald Lieberman	Introduction to Operations Research (9 th ed.)	McGraw-Hill	2010	0073376299
Hamdy Taha	Operations Research: An Introduction (8 th ed.)	Prentice Hall	2006	0131889230