

Course unit title:	Management Science II		
Course unit code:	ABSO305		
Type of course unit:	Elective		
Level of course unit:	Bachelor (1st Cycle)		
Year of study:	4		
Semester when the unit is delivered:	8 (Spring)		
Number of ECTS credits allocated :	6		
Name of lecturer(s):	Dr Petroula Mavrikiou		
Learning outcomes of the course unit:	<ol style="list-style-type: none"> 1) Understand and draw network diagrams and apply critical path analysis and project scheduling with fixed or uncertain activity times. 2) Apply crashing activity times using linear programming models for the crashing decisions. 3) Understand and explain decision tree analysis -tree diagrams and payoff tables. Apply and analyse decision making without probabilities (optimistic, pessimistic and minima regret approaches) 4) Apply and interpret decision making with probabilities and perform sensitivity analysis. Calculate and explain the expected value of perfect information. 5) Understand Game theory. Matrix games, strategies, optimum strategies and the value of the game. Strictly determined games. 2X2 matrix games. 2xM and Mx2 games. 6) Understand, apply and interpret Inventory control systems, EOQ model, Economic production lot size, and Inventory models with planned shortages. 7) Apply, analyse and synthesize the above concepts in business related problems. 		
Mode of delivery:	Face-to-face		
Prerequisites:	AMAT106 AMAT210	Co-requisites:	None
Recommended optional program components:	None		
Course contents:	<ul style="list-style-type: none"> • Network diagrams, critical path analysis, project scheduling with certain and uncertain activity times. Economic and time programming. • Considering Time-Cost trade-offs. Crashing activity times. Linear programming models for crashing decisions. • Decision tree analysis -Tree diagrams and payoff tables. Decision making without probabilities (optimistic, pessimistic and minima regret approaches), Decision making with probabilities. Sensitivity analysis. Expected value of perfect information. • Game theory. Matrix games, strategies, optimum strategies and the value of the game. Strictly determined games. 2X2 matrix games. 2xM and Mx2 games. Graphical method, MxM games. • Inventory control systems, EOQ model. Economic production lot size. Inventory models with planned shortages. Quantity discounts for the EOQ model 		
Recommended and/or required reading:			
Textbooks:	Anderson D., Sweeney D. Williams T., An Introduction to Management Science , South-Western Publications.		
References:	Taylor B.W., Introduction to Management Science , Prentice Hall		

Planned learning activities and teaching methods:	The course is delivered to the students by means of lectures, and tutorials. Lecture notes are available through the e-learning platform of the University, and the instructor's webpage. Students are encouraged for class work, problem solving and discussion.
Assessment methods and criteria:	<ul style="list-style-type: none"> • Test 1 20% • Test 2 20% • Final Exam 60%
Language of instruction:	English
Work placement(s):	No