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Course title	Operations Research			
Course code	MGMT213			
Course type	Theoretical, Elective Course (Required Group A)			
Level	Undergraduate			
Year / Semester	Year 2 Semester 4			
Teacher's name	Dr. Kyriakou Sofia			
ECTS	6	Lectures / week	3	Laboratories / week
Course purpose and objectives	This course aims to provide, the ability to formulate, analyse, and solve mathematical models that represent real-world problems. It is also provides a field for discussion related with the use of spreadsheets for solving optimization problems. Linear programming, network flow problems, integer programs, nonlinear programs, dynamic programming and queueing models are covered.			
Learning outcomes	<p>After the completion of the course students are expected to:</p> <ul style="list-style-type: none"> • Formulate a real-world problem as a mathematical programming model • Implement and solve the model using spreadsheets. • Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand • Understand the relationship between a linear program and its dual, including strong duality and complementary slackness • Perform sensitivity analysis to determine the direction and magnitude of change of a model's optimal solution as the data change • Solve specialized linear programming problems like the transportation and assignment problems • Solve network models like the shortest path, minimum spanning tree, and maximum flow problems • Understand the applications of, basic methods for, and challenges in integer programming • Understand how to model and solve problems using dynamic programming • Model a dynamic system as a queueing model and compute important performance measures • Learn optimality conditions for single- and multiple-variable unconstrained and constrained non-linear optimization problems, and corresponding solution methodologies 			
Prerequisites	ECON102 Introduction to Economics STAT107 Introduction to Statistics	Required	Strategic Operations Management BUSS209	

<p>Course content</p>	<ul style="list-style-type: none"> ● Strategy: Processes and Concepts: Vision Value, Mission and Corporate Goals, The Role of Corporate Governance and Stakeholder Management, Coherence in Strategic Direction. ● Strategic Analysis of External Environment: Porter's Five Forces model, The general environment, The competitive environment, The national environments and the creation of the environmentally aware organisation. ● External Factor Analysis Summary (EFAS) ● Strategic Analysis of the Internal Environment: Value Chain Analysis, Resource-Based View of a Business, Evaluation of Company Performance, Balanced Scorecards ● Internal Factor Analysis Summary (IFAS) ● Nature of competitive advantages and sustainability: Different levels of strategy. Low cost, diversification and focus strategies. ● Factors affecting a nation's competitiveness ● International expansion: International, multi-internal, global and transnational strategies, value creation and differentiation, outsourcing, acquisitions, internal new ventures, international strategic alliances and restructuring, horizontal and vertical integration. ● Implementation: Strategic leadership, creating learning and ethical organisations, strategic control and corporate governance, creating effective organisational plans, managing innovation and promoting corporate entrepreneurship
<p>Teaching methodology</p>	<p>The course content will be taught using:</p> <ul style="list-style-type: none"> ● Power Point presentations ● Guided discussions with the active participation of students ● Examples and case studies that relate to the content of the course ● Question and answer section ● Use of internet and related IT infrastructure ● Use of video projector and whiteboard ● Assignment
<p>Bibliography</p>	<p>Greek Bibliography</p> <ul style="list-style-type: none"> ● Υψηλάντης, Π.(2015), Επιχειρησιακή έρευνα : Λήψη επιχειρηματικών αποφάσεων. Έλλην,ISBN: 978-618-5036-20-1. <p>English Bibliography</p> <ul style="list-style-type: none"> ● <u>Sharma, J. K.</u> (2016),Operations Research : Theory and Applications. New Delhi: Laxmi Publications Pvt Ltd, ISBN 9789385935145 EBSCOhost
<p>Assessment</p>	<ul style="list-style-type: none"> ● Attendance and Class Participation: 10% ● Assignment: 20% ● Intermediate Written Examination: 30% ● Final Written Examination: 40%
<p>Language</p>	<p>English or Greek</p>