朝陽科技大學 096學年度第1學期教學大綱
Advanced Operations Research 高等作業研究

當期課號	7381	Course Number	7381
授課教師	陳宏益	Instructor	CHEN,HUNG YI
中文課名	高等作業研究	Course Name	Advanced Operations Research
開課單位	資訊管理系碩士班一A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	從應用的角度著眼, 作業研究涵蓋管理學當中許多資源分配最佳化的問題。 從技術的角度著眼, 作業研究涵蓋線性規劃, 非線性規劃, 整數規劃, 動態規劃, 網路, 隨機模式, 等候理論等等問題。 本課程延續詳述 大學部作業研究課程未及介紹的課題。	Objectives	Operations research is concerned with resource allocation and optimization problems in management. Its techniques include linear programming, non-linear programming, integer programming, dynamic programming, network, stochastic processes, queuing theory, etc. This course picks up where undergraduate OR class leaves.
教材	Hiller, F.S. and Liberman, G.J., Introduction to Operation Research, McGraw-Hill. Lecture notes.	Teaching Materials	Hiller, F.S. and Liberman, G.J., Introduction to Operation Research, McGraw-Hill. Lecture notes.
成績評量方式	學生行爲舞弊者, 期末成績以不及格計請準時繳交作業 課堂參與 10% 作業 20% 研究計劃 30% 小考 40%	Grading	Important: Cheating will make you fail in this course. No late homework will be accepted. No plagiarised homework will be accepted. Grading: Participating: 10%. Assignment: 20%. Research project : 30%. Exam: 40%.
教師網頁	http:\\163.17.17.66\Teaching		
教學內容	本課程將教授決策與最佳化問題的相關理論與演算法. 這些演算法大致分爲決定性模式與機率模式. 在決定性模式中的演算法包括: the linear and integer programming problem, heuristic algorithms for the combinatorial optimization problem. 在機率模式中的演算法包括 Markov chain, queuing theory. 學生須具備基礎線性代數及機率理論的基本知識.	Syllabus	The course will introduce the algorithms and theories for optimization problems and the decision making. Algorithms to solve the linear and integer programming are introduced. Heuristic algorithms for the combinatorial optimization problem are also included. In addition to these deterministic models, Markov chain and queuing theory in the stochastic models are introduced. Students should familiar the linear algebra and basic probability concepts in order to understand the material. Topics include: Deterministic model: Linear programming; Simplex algorithm; Duality theory and sensitivity analysis; Integer programming; Genetic algorithm; Simulate annealing algorithm; Tabu search; Markov chain; Queuing theory;

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