



課 綱 Course Outline
資訊工程學系國際組

中文課程名稱 Course Name in Chinese		最佳化方法與應用				
英文課程名稱 Course Name in English		Optimization methods and applications				
科目代碼 Course Code		CSIEM0380	班 別 Degree	碩士班 Master' s		
修別 Type		選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite						
課程目標 Course Objectives						
建立最佳化知識概念，並培養建立模式與解題的能力。Build the essential concepts of optimization. Develop the ability of optimization modelling and problem-solving.						
系教育目標 Dept.' s Education Objectives						
1	探究學科知識，善用專業技能 Explore academic knowledge, utilize professional skills.					
2	訓練評析思考，創新解決問題 Exercise analytical thinking, enhance creative problem solving skills.					
3	學習團隊分工，強化溝通表達 Participate in teamwork, strengthen communication skills.					
系專業能力 Basic Learning Outcomes				課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.' s Education Objectives		
A	統合資工知識技術之能力 Ability to integrate knowledge and technologies of computer science and information engineering.				○	
B	設計技術理論驗證實驗之能力 Ability to design and conduct science experiments and to validate hypotheses.				●	
C	資訊軟硬體設計開發之能力 Ability to design and develop computer software and hardware.				○	
D	團隊專案開發之能力 Ability to design and develop team projects.				○	

E	批判性思考與創新研發之能力 Ability of analytical thinking, creative research planning, and innovative development.	●
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated		
課程大綱 Course Outline		
1. 模式建立簡介 2. 線性規劃 3. 單形法與目標規劃法 4. 線性規劃之應用 5. 整數規劃 6. 非線性規劃 7. 萬用啟發式演算法 8. 考慮不確定性之決策 --- 1. Introduction to model building 2. Introduction to linear programming 3. The simplex algorithm and goal programming 4. Applications of linear programming 5. Introduction to integer programming 6. Introduction to nonlinear programming 7. Introduction to metaheuristics 8. Decision making under uncertainty		
資源需求評估（師資專長之聘任、儀器設備的配合．．．等） Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)		
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods		
講課、模式實作、論文研討;Class lectures, lab sessions and case study		
其他 Miscellaneous		