



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		
<ol style="list-style-type: none"> <li>1. 模式建立簡介</li> <li>2. 線性規劃</li> <li>3. 單形法與目標規劃法</li> <li>4. 線性規劃之應用</li> <li>5. 整數規劃</li> <li>6. 非線性規劃</li> <li>7. 萬用啟發式演算法</li> <li>8. 考慮不確定性之決策</li> </ol> <p style="text-align: center;">---</p> <ol style="list-style-type: none"> <li>1. Introduction to model building</li> <li>2. Introduction to linear programming</li> <li>3. The simplex algorithm and goal programming</li> <li>4. Applications of linear programming</li> <li>5. Introduction to integer programming</li> <li>6. Introduction to nonlinear programming</li> <li>7. Introduction to metaheuristics</li> <li>8. Decision making under uncertainty</li> </ol>		
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		