

課程名稱	作業研究與應用		課程編號	IEEM 1120203	學分數	3																																	
上課時間	每週三晚上 6:30~9:20		教室	工程一館 R829、R901	人數上限	30 位																																	
授課教師	張國浩 教授	學歷	美國普渡大學工業工程博士																																				
		專長	隨機最佳化、應用機率與統計、蒙地卡羅模擬、財務工程																																				
課程大綱	<p><b>一、 課程說明</b></p> <p>作業研究應用主要讓學生們學習數量方法以及如何透過建立適當數學模型來分析並產生許多實務問題的最佳(優化)決策。本課程將透過觀念講解以及現場實作,讓即使是沒有作業研究背景的學生亦能習得數量方法的精髓以及其實務上之應用。本課程強調整合數據分析以及優化方法,每周將聚焦於一主題,由教師教授觀念以及助教協助展示軟體操作,並透過案例研究、分組討論以及課堂發表的方式學習。</p> <p><b>二、 課程進度</b></p> <table border="1"> <thead> <tr> <th>課程進度/內容</th> <th>課程 video</th> <th>Case study 報告</th> </tr> </thead> <tbody> <tr> <td>Chapter 1: Linear Programming: Basic Concepts</td> <td>-</td> <td>-</td> </tr> <tr> <td>Chapter 2: Linear Programming</td> <td>Episode 1</td> <td>-</td> </tr> <tr> <td>Chapter 3: The Art of Modeling with Spreadsheets</td> <td>Episode 2</td> <td>Case 2-1, 2-2</td> </tr> <tr> <td>Chapter 5: What-If Analysis for Linear Programming</td> <td>Episode 3</td> <td>Case 2-3, 3-1</td> </tr> <tr> <td>Chapter 6: Transportation and Assignment Problems</td> <td>Episode 4</td> <td>Case 5-2, 5-3</td> </tr> <tr> <td>Chapter 8: PERT/CPM Models for Project Management</td> <td>Episode 5</td> <td>Case 6-2, 6-3</td> </tr> <tr> <td>Chapter 11: Forecasting</td> <td>Episode 6</td> <td>Case 8-1, 8-2</td> </tr> <tr> <td>Chapter 12: Queueing Models (1)</td> <td>Episode 7</td> <td>Case 11-1</td> </tr> <tr> <td>Chapter 12: Queueing Models (2)</td> <td>Episode 8</td> <td>-</td> </tr> <tr> <td>Midterm Exam</td> <td>-</td> <td>-</td> </tr> </tbody> </table>						課程進度/內容	課程 video	Case study 報告	Chapter 1: Linear Programming: Basic Concepts	-	-	Chapter 2: Linear Programming	Episode 1	-	Chapter 3: The Art of Modeling with Spreadsheets	Episode 2	Case 2-1, 2-2	Chapter 5: What-If Analysis for Linear Programming	Episode 3	Case 2-3, 3-1	Chapter 6: Transportation and Assignment Problems	Episode 4	Case 5-2, 5-3	Chapter 8: PERT/CPM Models for Project Management	Episode 5	Case 6-2, 6-3	Chapter 11: Forecasting	Episode 6	Case 8-1, 8-2	Chapter 12: Queueing Models (1)	Episode 7	Case 11-1	Chapter 12: Queueing Models (2)	Episode 8	-	Midterm Exam	-	-
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Simulation A Refresher on Probability and Statistics	Episode 9	Case 12-2
Simulation (1)	Episode 10	-
Simulation (2)	Episode 11	-
Simulation (3)	Episode 12	-
期末報告	-	-

### 三、 成績考核 (Evaluation)

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|---------------|-----|--------|
| 1. 課堂練習與作業    | 20% |        |
| 2. 期中考        | 20% |        |
| 3. Case study | 30% | (小組報告) |
| 4. 期末報告       | 30% | (小組報告) |