

## 數學系課程核心教材內容

課程名稱：(中文) 作業研究專題(一) (英文) topics in operations research (I)			開課單位	數學系
			課程代碼	
學分數	3	必/選修	選修	開課年級
<p>教學目標：引導學生對一些特定的作業研究領域的問題做更深入的了解及研究，進而培養學生解決問題的能力。</p> <p>課程概述：複習相關數學方法並透過論文研讀學習新的方法及發展方向。</p> <p>先修科目或先備能力：作業研究 或 最佳化方法</p>				
建議參考書目	<ol style="list-style-type: none"> <li>1. Linear and Nonlinear Optimization, 2<sup>nd</sup> ed., 2009, Igor Griva, Stephen G Nash &amp; Ariela Sofer.</li> <li>2. Linear and Nonlinear Programming, 2008, David G Leunberger &amp; Yinyu Ye.</li> <li>3. Operations Research: Applications and Algorithms, 4<sup>th</sup> ed., 2003, Wayne L. Winston.</li> <li>4. Introduction to Operations Research, 8<sup>th</sup> ed., 2005, Hillier Lieberman.</li> <li>5. Operations Research: Models and Methods, Paul A. Jensen &amp; Jonathan F. Bard.</li> <li>6. Operations Research: An Introduction, 8<sup>th</sup> ed., 2007, Hamdy A. Taha</li> <li>7. Introduction to Mathematical Finance: Discrete Time Models, Stanley R. Pliska, Blackwell Publishers, 1997.</li> <li>8. 相關期刊論文及網站</li> </ol>			

### 課程大綱

單元主題	內容綱要	上課週數
Introduction	General Introduction to Operations Research	2
Modeling	Deterministic Modeling and Stochastic Modeling	2
Optimization techniques	Linear and Nonlinear Optimization Methods	4

Reading and Discussion	Reading Selected Papers in Game Theory, Portfolios Optimization, Network System, Support Vector Machine and Curve Fitting.	10
------------------------	--	----

## 數學系課程核心教材內容

課程名稱：(中文) 作業研究專題(二) (英文) Topics in Operations Research (II)				開課單位	
				課程代碼	
學分數	3	必/選修	選修	開課年級	
<p>教學目標：引導學生對一些特定的作業研究領域的問題做更深入的了解及研究，進而培養學生解決問題的能力。</p> <p>課程概述：複習相關數學方法並透過論文研讀學習新的方法及發展方向。</p> <p>先修科目或先備能力：作業研究 或 最佳化方法</p>					
建議參考書目	<ol style="list-style-type: none"> <li>2. Linear and Nonlinear Optimization, 2<sup>nd</sup> ed., 2009, Igor Griva, Stephen G Nash &amp; Ariela Sofer.</li> <li>2. Linear and Nonlinear Programming, 2008, David G Leunberger &amp; Yinyu Ye.</li> <li>3. Operations Research: Applications and Algorithms, 4<sup>th</sup> ed., 2003, Wayne L. Winston.</li> <li>4. Introduction to Operations Research, 8<sup>th</sup> ed., 2005, Hillier Lieberman.</li> <li>5. Operations Research: Models and Methods, Paul A. Jensen &amp; Jonathan F. Bard.</li> <li>6. Operations Research: An Introduction, 8<sup>th</sup> ed., 2007, Hamdy A. Taha</li> <li>7. Introduction to Mathematical Finance: Discrete Time Models, Stanley R. Pliska, Blackwell Publishers, 1997.</li> <li>8. Nonnegative Matrices and Markov Chains, E. Seneta, 2005, New York, NY, Springer.</li> <li>9. Stochastic Models: An Algorithm Approach, Henk C. Tijms, 1994, John-Wiley &amp; Sons.</li> <li>10. 相關期刊論文及網站</li> </ol>				

### 課程大綱

單元主題	內容綱要	上課週數
Stochastic Process	General Introduction to Stochastic Process	2

Markov Chains	Theorems, Methods and Applications in Discrete-time and Continuous-time Markov Chains	4
Decision Analysis	Theorems and Methods in Decision Problems	2
Reading and Discussion	Reading Selected Papers in Game Theory, Portfolios Optimization, Network System, Support Vector Machine	10