

Course Description

Department of Mathematics

Nature of the course <input checked="" type="checkbox"/> required <input type="checkbox"/> elective		Area 麻煩老師勾選類別，或直接填寫_____。 <input type="checkbox"/> Algebra <input type="checkbox"/> Analysis <input type="checkbox"/> Geometry <input type="checkbox"/> Statistics <input checked="" type="checkbox"/> Applied Mathematics <input type="checkbox"/> Discrete Mathematics <input type="checkbox"/> Others			
Calculus <input type="checkbox"/> Calculus A <input type="checkbox"/> Calculus B					
Course number	221 U0990	Section number	免填	Number of credits	3
Course title	課程名稱：應用數學方法二				
Instructor	教授：周謀鴻				

I. *Contents :

Constrained optimization is an important issue in real life, as is seen in various practical applications. In this course we will discuss how this issue is addressed mathematically, through linear programming in particular. It will cover 1) the duality theory of optimization, 2) algorithmic complexity and 3) primal/dual logarithmic barrier approach. These topics are essential to the so-called interior point methods which form a dominant methodology in linear optimization.

II. Course prerequisite :

Accomplished knowledge in Calculus and Linear Algebra is required. Some experience in computer programming such as Matlab or other lower level ones like C is a plus.

III. *Reference material (textbook(s)) :

C. Roos, T. Terlaky and J.P. Vial, Interior Point methods for linear optimization, Springer 2005.

IV. *Grading scheme : 請填寫各項計分之百分比，例如：期中 30% 期末 40% 作業 10% 報告 20%，總計 100%
Performance in class 30%, homework & report 70%.

V. *Course Goal :

To acquaint the audience with some important aspects of constrained linear optimization.

1. *號為必填欄位
2. 大綱內容字數英文最少 200 字以上