

Course Description

Department of Mathematics

Nature of the course <input type="checkbox"/> required <input type="checkbox"/> elective		Area 麻煩老師勾選類別，或直接填寫_____。 <input type="checkbox"/> 代數與數論 <input type="checkbox"/> 分析 <input checked="" type="checkbox"/> 幾何與拓撲 <input type="checkbox"/> 計算與應用數學 <input type="checkbox"/> 機率 <input type="checkbox"/> 統計 <input type="checkbox"/> 離散數學 <input type="checkbox"/> 其他 <input type="checkbox"/> 論文研討、獨立研究		
Calculus <input type="checkbox"/> Calculus A		<input type="checkbox"/> Calculus B		
Course number		Section number	免填	Number of credits
Course title	課程名稱：幾何分析(工.數)			
Instructor	教授：張樹斌			

I. *Contents :

- (I) Bochner Formula
- (II) First and Second Variational Formulas for Area
- (III) Laplacian and Volume Comparison Theorems

II. *Course prerequisite :

- (IV) Splitting Theorem
- (V) Gradient Estimate and Harnack Inequality

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

1. Jiaping Wang, Lecture on Geometric Analysis.
2. R. Schoen, S.-T. Yau, Lecture on Differential Geometry.

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%

- 1. 期中作業 = 50%
- 2. 期末報告 = 50%

V. *Course Goal :

Basic tool for Geometric Analysis.

- (VI) Green function and parabolicity
- (VII) Function Theory - Harmonic functions and maps.
- (VIII) Heat kernel Estimates
- (IX) Eigenvalue estimate for complete manifolds.
- (X) Polynomial Growth harmonic functions.

1. *號為必填欄位

2. 大綱內容字數英文最少 200 字以上

- (XI) Stability of Minimal hypersurfaces