



課 綱 Course Outline

應用數學系博士班

中文課程名稱 Course Name in Chinese	實變函數論(一)				
英文課程名稱 Course Name in English	Real Analysis (I)				
科目代碼 Course Code	AM__70700	班 別 Degree	博士班 Ph. D.		
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite	無 None				
課程目標 Course Objectives					
本課程目標為介紹一般測度空間及其積分。 The purpose of this course is to introduce general measure spaces and integration over these spaces					
系教育目標 Dept.'s Education Objectives					
1	訓練嚴謹思考與推理能力。 To provide a solid training in rigorous thinking and reasoning ability.				
2	奠定理論與應用數學的基礎知識。 To establish well-founded background knowledge in pure and applied mathematics.				
3	具備跨領域學習能力。 To prepare the students for interdisciplinary study in the future.				
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	具備專業知識及邏輯推理能力。 Have well-founded expertise and be capable of logical reasoning.			●	
B	具備學習其它學科的能力，以期能邁向跨領域研究。 Be able to study other fields of science so as to conduct interdisciplinary research in the future.			○	
C	具備獨立思考與解決問題的能力。 Be capable of independent thinking and have the problem-solving skills.			●	
圖示說明Illustration：● 高度相關 Highly correlated ○中度相關 Moderately correlated					

課程大綱
Course Outline

1. Algebras of sets
2. Lebesgue measure theory
3. General measurable spaces
4. The Caratheodory measure induced by an outer measure
5. The constructions of outer measures
6. Lebesgue integration
7. Integration over general measure spaces

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.)

本系專任教師與助教
The faculties of Applied Mathematics Department

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

演講、習題、考試
Lecture, homework and exams

其他
Miscellaneous

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