



# 課 綱 Course Outline

## 應用數學系博士班

中文課程名稱 Course Name in Chinese		代數導論			
英文課程名稱 Course Name in English		Introduction to Algebra			
科目代碼 Course Code		AM__75120	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		大學部線性代數。 College Linear Algebra.			
課程目標 Course Objectives					
本課程主要目標以為高等代數課程或是相關課程之基礎。 Provide a foundation for higher study of algebra and related courses.					
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
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| 1. 群：同構定理、排列群、Sylow定理、可解群。<br>2. 環：多項式環、同構定理。<br>3. 體：體擴張、有限體、Galois理論。 |
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| 1.Groups: Isomorphic Theorems, Symmetric Groups, Sylow theorem, Solvable Groups.<br>2.Rings: Polynomial Rings, Isomorphic Theorems<br>3.Fields: Extension fields, Finite fields, Galois Theory. |
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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.)
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本系專任教師(尤以具代數或相關領域專長為佳)。 Faculties of applied math department, expertise in algebra or related areas preferred.
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課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods
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課堂講授。 Lecture
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其他 Miscellaneous
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撰寫人：應用數學系 王立中 撰寫日：100年4
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