



課 綱 Course Outline
應用數學系博士班

中文課程名稱 Course Name in Chinese	時間序列分析				
英文課程名稱 Course Name in English	Time Series Analysis				
科目代碼 Course Code	AM_75220	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	高等統計學 Advanced statistics				
課程目標 Course Objectives					
介紹時間序列分析方法及其理論推展 Introduction of time series models and their mathematical basis.					
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. Stationary time series
2. Stationary ARMA processes
3. The spectral representation of a stationary process
4. Estimation and Prediction of a stationary process
5. Asymptotic theory
6. ARIMA models for nonstationary time series
7. Multivariate time series
8. Further topics

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
Faculties of applied math department.

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

課堂講授；討論；作業
Lectures; discussions; assignments.

其他
Miscellaneous

撰寫人：應用數學系 朱至剛
撰寫日：101年10月修訂