



課 綱 Course Outline

應用數學系統計科學組

中文課程名稱 Course Name in Chinese	時間序列				
英文課程名稱 Course Name in English	Time Series				
科目代碼 Course Code	AM__32600	班 別 Degree	學士班 Bachelor' s		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite	微積分、統計學 Calculus; Statistics				
課程目標 Course Objectives					
介紹時間序列統計分析方法及相關應用 Introduction of the linear time series models and their applications to the modeling and prediction of data collected sequentially in time.					
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	具備基本數學知識及邏輯推理能力。 Have well-founded background in mathematics and be capable of logical reasoning.			●	
B	具備機率、統計及相關領域的知識與應用能力。 Have the knowledge of probability and statistics and the related field, and the corresponding application ability.			●	
C	具備軟體應用與統計計算能力。 Be able to use computer software for statistical computation in real applications.			●	
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated					

課程大綱
Course Outline

1. Examples of time series
2. Estimation and elimination of trend and seasonal components
3. The autocorrelation function of a time series
4. Autoregressive, moving average, ARMA, and ARIMA processes
5. Estimation and prediction
6. Box-Jenkins model building process
7. Model checking

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：100年4月