朝陽科技大學 096學年度第1學期教學大綱
Time Series Analysis 時間序列分析

當期課號	7024	Course Number	7024
授課教師	張健邦	Instructor	JANG,JIAHN BANG
中文課名	時間序列分析	Course Name	Time Series Analysis
開課單位	財務金融系碩士班二A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	本課程主要介紹分析時間序列資料的基本理論與應用方法。內容有穩定序列的自相關函數(ACF)、偏自相關函數(PACF)與ARMA模型的選模方法，至於非穩定序列，其數學性質也將有所討論。同時，對於非線性的時間序列，如ARCH，GARCH等，也將一併介紹。最後，將所學方法應用在分析實際財金資料。	Objectives	This course would give the basic theory and methods for application about analyzing time series data. The content include auto-correlation function , partial auto-correlation function and model selection problem of ARMA model, of stationary process. As non-stationary series, its mathematical properties would also be discussed. The option part is about nonlinear time series model, like ARCH and GARCH models. Finally, real financial data sets are analyzed by using our methods.
教材	1. 時間序列有關之各類資源 2. Java爲基礎之時間序列軟體(無須撰寫任何程式)	Teaching Materials	1. Various sources from Time Series topics 2. Java based time series software(Code writing is not required.)
成績評量方式	1. 使用Java爲基礎之時間序列軟體分析財金時間序列資料(無須撰寫任何程式)，並據以撰寫一篇學期報告:60% 2. 作業、課程參與:40%	Grading	1. Analyze financial time series data with Java based time series software(Code writing is not required.) and write a term paper:60% 2. Homeworks, Participation:40%
教師網頁			
教學內容	時間序列方法是財務金融上一項極重要的分析工具。 本課程以實例爲導向會教同學如何應用時間序列方法分析財金時間序列資料，對於研究生在撰寫論文階段或其他應用方面有極大助益。 全部財金時間序列例子都使用以Java爲基礎之時間序列軟體完成。時間序列繪圖、參數估計、模型診斷及預測逐一演練。 無須撰寫任何程式，同學可以在自己家中的電腦上隨時練習。 歡迎有興趣的同學修習本課程。 教學內容包括ARIMA, VAR(向量自我迴歸分析), ARCH, GARCH, VEC(向量誤差修正模型), SVAR, SVEC 及無母數時間序列模型。	Syllabus	Time series analysis is a very important analyzing tool for finance research. This course will teach you how to apply time series methods to analyze financial time series data. This will be very helpful for graduate students to finish their theses. All financial time series examples will be implemented using Java based time series software. You will practice plotting time series, estimating parameters, checking models and forecasting. Code writing is not required. You may practice on your home computer at any time. Welcome to take this course. The topics include ARIMA, VAR, ARCH, GARCH, VEC, SVAR, SVEC and nonparametric time series