國立東華大學

教學計劃表　Syllabus

<table>
<tr><td>課程名稱(中文)
Course Name in Chinese</td><td colspan="3">計量經濟分析（三）</td><td colspan="2">學年/學期
Academic Year/Semester</td><td>101/2</td></tr>
<tr><td>課程名稱(英文)
Course Name in English</td><td colspan="6">Econometric Analysis（III）</td></tr>
<tr><td>科目代碼
Course Code</td><td>IIE_57800</td><td>系級
Department
& Year</td><td>碩士</td><td>開課單位
Course-Offering
Department</td><td colspan="2">經濟學系</td></tr>
<tr><td>修別
Type</td><td>選修 Elective</td><td colspan="2">學分數/時間
Credit(s)/Hour(s)</td><td colspan="3">3.0/3.0</td></tr>
<tr><td>授課教師
Instructor</td><td colspan="6">/林金龍</td></tr>
<tr><td>先修課程
Prerequisite</td><td colspan="6"></td></tr>
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課程描述　Course Description

This course focuses exclusively on financial time series analysis or financial econometrics. I am aiming at equipping the students with proper tools for advanced empirical work and lay the foundation for future theoretical research in this area.
I shall cover closely the contents of the recently published new book, An introduction to financial time series with R written by Ruey Tsay. After a quick review of linear time series modeling, I shall start the econometric analysis with volatility modeling. Univariate GARCH and stochastic volatility comes first, followed by multivariate volatility models. Extreme values analysis and VaR are the second main topic. High frequency financial econometrics comprises the third.
useful.

In additional to econometric analysis, I also emphasize computational aspects of these complicated econometric techniques. R, is the statistical packages used in this course.

課程目標　Course Objectives

課程設計除介紹計量經濟學理論與觀念外，並強調與經濟理論之結合應用
以及各項統計軟體之實務操作，俾使修課同學具備從事實證分析研究之能
力與經驗，以作為未來從事學術研究及就業之基礎

圖示說明Illustration ：● 高度相關 Highly correlated ○中度相關 Moderately correlated

授 課 進 度 表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	Financial data, their properties and R programming	
2	Linear models for financial time series (I	
3	Linear models for financial time series (II)	
4	Case studies of linear time series (I)	
5	Case studies of linear time series (II	
6	Asset volatility and volatility models (I)	
7	Asset volatility and volatility models (II	
8	Asset volatility and volatility models (III)	

9	期中考試週 Midterm Exam	
10	Applications of volatility models	
11	High frequency financial data (I)	
12	High frequency financial data (II	
13	High frequency financial data (III)	
14	Value at Risk (I)	
15	Value at Risk (II)	
16	Value at Risk (III)	
17	Value at Risk (IV)	
18	期末考試週 Final Exam	

教 學 策 略 Teaching Strategies

☑ 課堂講授 Lecture　☐ 分組討論Group Discussion　☐ 參觀實習 Field Trip

☐ 其他Miscellaneous:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗會考	實作觀察	口頭發表	專題研究	創作展演	卷宗評量	證照檢定	其他
平時成績 General Performance	30%		✓						
期中考成績 Midterm Exam	30%	✓							
期末考成績 Final Exam	40%				✓				
作業成績 Homework and/or Assignments									
其他 Miscellaneous (__________)									

評量方式補充說明 Grading & Assessments Supplemental instructions

教科書與參考書目（書名、作者、書局、代理商、說明） Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)
Textbook: Ruey S. Tsay, An Introduction to Analysis of Financial Data with R, John Wiley & Sons, 2013. Reference books: Ruey S. Tsay, Analysis of Financial Time Series, 3rd , JohnWiley & Sons, 2010 Andersen, T.G.; Davis, R.A.; Kreib, J.-P.; Mikosch, Th. (Eds.) Handbook of Financial Time Series, 2009, Springer-Verlag John Y. Campbell, Andrew W. Lo, and A. Craig MacKinlay: The Econometrics of Financial Markets, 1996, Princeton University Press Alexander J. McNeil (Author), Rudiger Frey (Author), Paul Embrechts (Author) (2005), Quantitative Risk Management: Concepts, Techniques, and Tools Princeton University Press
課程教材網址（教師個人網址請列在本校內之網址） Teaching Aids & Teacher's Website (Personal website can be listed here.)
facultu.ndhu.edu.tw/~jlin
其他補充說明 (Supplemental instructions)
Students must buy or borrow the main textbook.