國立東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	計量經濟學(三)-財務計量經濟			學年/學期 Academic Year/Semester	103/2
課程名稱(英文) Course Name in English	Econometrics III-Financial Empirical Economics				
科目代碼 Course Code	BM__78800	系級 Department & Year	博士	開課單位 Course-Offering Department	企業管理學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/林金龍				
先修課程 Prerequisite					

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 discuss volatility modeling. Univariate GARCH and stochastic volatility model and multivariate volatility models.
Extreme values analysis and VaR are the second main topic. For the third topic, I shall focus in copula and factor models.

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

The class of Empirical Financial Economics is designed to provide the student with an introduction to the fields of Empirical Investment and Empirical Behavior Finance. Students pursuing a concentration in finance should view Empirical Financial Economics as an advanced course in Investments, Portfolio Management, financial markets and institutions.
This class assumes no prior education in finance. It develops fundamental models of valuation and investment from first principles and applies them to problems of corporate and individual decision making. Topics covered portfolio theory and the trade-off between risk and return. It presents three asset pricing models, the Capital Asset Pricing Model, the Arbitrage Pricing Theory, the Three-Factor Model, and recent applications to the calculation of the firm’ s cost of capital. Students are introduced to the fundamental concepts of finance: the time value of money, portfolio theory and the determinants of expected security returns.

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	具備企業管理理論的核心專業知識	●
B	具備邏輯思考與企業經營管理問題解決的能力	●
C	具備高階財務金融的分析能力	●

D	具備高階企業財務管理專業能力	●
E	具備英語閱讀溝通協調及教學之能力	○
F	具備前瞻開創新興議題之能力	○
G	具備金融創新之能	○

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	Introduction	
2	Financial data, their properties and R programming	
3	Linear models for financial time series	
4	Case studies of linear time series	
5	Asset volatility and volatility models (I)	
6	Asset volatility and volatility models (II)	
7	Asset volatility and volatility models (III)	
8	Applications of volatility models	
9	Principal component analysis and factor model	
10	Copula methods in finance (I)	
11	Copula methods in finance (II)	
12	Copula methods in finance (III)	
13	Value at Risk (I)	
14	Value at Risk (II)	
15	Value at Risk (III)	
16	Extreme value analysis and VaR (I)	
17	Extreme value analysis and VaR (II)	
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