

National Tsing Hua University
College of Technology Management
Course Syllabus

科號 Course Number		學分 Credit		人數限制 Size of Limit	
中文名稱 Course Title	固定收益證券交易分析				
英文名稱 Course English Title	Fixed Income Securities Trading Analysis				
任課教師 Instructor	胡國琳 & 張焯然				
教師聯絡方式 Contact Information	Jordan.Hu@riskval.com , jrchang@mx.nthu.edu.tw				
上課時間 Time	T234	上課教室 Room	735		
先修科目 Prerequisite(s)	財務管理、微積分、統計學				
本課程對應之學習目標與核心能力 Aligned Learning Goals and Learning Objectives					
此科目對應之系所課程規畫所欲培養之核心能力 Core capability to be cultivated by this course				權重（百分比） Percentage	
以堅實理論為基礎，理解財金體系運作機制，應用財金分析技術，實際解決財金問題。 To understand the mechanism of the finance system through solid theoretical foundation and to apply quantitative financial analysis to solve real-world financial issues.				25%	
具備厚實財金基礎知識，包括財務管理與公司理財、衍生性商品訂價與風險管理 To learn the knowledge of financial management, corporate finance, financial derivatives, and risk management.				25%	
具備創新管理，開發新領域的能力 To acquire the ability to innovate, integrate, and develop new research areas.				10%	
培養跨領域工作的能力 To develop the ability to work across different disciplines.				20%	
具備團隊合作的精神，有效溝通的能力，以及人文素養與國際觀。 To develop teamwork spirit, to acquire the ability to communicate effectively, and to have broad knowledge across humanities, social science and natural science with international perspective.				20%	

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課程目標 Course Objectives

本課程探討固定收益證券的理論知識，透過 RiskVal 軟體搭配彭博終端機，做實務固定收益證券交易策略分析。希望學生可以透過這些教學，學取國外主要固定利率交易員的思維。

課程說明 Course Description

課程將從債券市場談起，探討債券價格與利率的關係、殖利率曲線、存續期間與利率彈性、期限結構模型與固定收益相關證券。搭配華爾街講師，介紹 RiskVal 軟體與彭博終端機，做實務固定收益證券交易策略分析。

指定用書 Textbooks

Fixed Income Securities: Tools for Today's Markets By Dr. Bruce Tuckman

參考書籍 References

The Handbook of Fixed income securities by Frank J. Fabozzi

Options, Futures, and Other Derivatives by John C. Hull

教學方式 Teaching Approach

演講與授課

評分標準 Grading

- | | |
|-----------|-----|
| 1. 期中考 | 30% |
| 2. 期末考 | 30% |
| 3. 期末上台報告 | 40% |

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教學進度 Course Schedule

PART ONE: The Relative Pricing of Fixed Income Securities with Fixed Cash Flow

- CH1 Bond Prices, Discount Factors, and Arbitrage
- CH2 Bond Prices, Spot Rates, and Forward Rates
- CH3 Yield-to-Maturity
- CH4 Generalizations and Curve Fitting

PART TWO: Measures of Price Sensitivity and Hedging

- CH5 One-Factor Measures of Price Sensitivity
- CH6 Measures of Price Sensitivity Based on Parallel Yield Shifts
- CH7 Key Rate and Bucket Exposures
- CH8 Regression-Based Hedging

PART THREE: Term Structure Models

- CH9 The Science of Term Structure Models
- CH10 The Short-Rate Process and the Shape of the Term Structure
- CH11 The Art of Term Structure Models: Drift
- CH12 The Art of Term Structure Models: Volatility and Distribution
- CH13 Multi-Factor Term Structure Models
- CH14 Trading with Term Structure Models

PART FOUR: Selected Securities

- CH15 Repo
- CH16 Forward Contracts
- CH17 Eurodollar and Fed Funds Futures
- CH18 Interest Rate Swaps
- CH19 Fixed Income Options
- CH20 Note and Bond Futures
- CH21 Mortgage-Backed Securities

課程相關連接 Course Related Links