

# 個別課程英文授課大綱

表單編號：QP-T02-07-11

保存年限：10 年

課程名稱 Course Title	(中文) “固定收益證券:分析與創新” for Graduate Students (科目代號 351792-001)		
	(英文) Fixed Income Securities: Analytics and Derivatives		
授課教師 Instructor	傅冶天	開課單位 Departments	國貿系
學分數 Credit(s)	3	修課對象 Target Students	Graduate Students or Upper-Level Undergraduates
課程目標 Course Objectives	The aim of this course is to provide you with an introduction to the valuation of fixed income securities and the management of fixed income investment portfolios.		
課程大綱 Course Description	<p>In their simplest form, fixed income securities are characterized by pre-determined cash-flows that occur at fixed points in time, thus the term "fixed income". Coupon bonds are the most widely recognized fixed income securities.</p> <p>We will start with the basics of bond pricing - the relationship between the price of a bond, measures of return on the bond and measures of risk. Next, we will discuss the various sectors of the bond market, the types of securities traded and the risks involved in each sector. The typical fixed income security can be thought of as a portfolio of a simple fixed coupon bond and interest rate derivatives. The tools for the valuation of bonds, fixed income derivatives and credit derivatives will be the focus of the third segment of the course. With the building blocks in place, we will discuss portfolio management strategies and risk management.</p>		
上課進度 Weekly Course Schedule	<p>Weekly Topics</p> <p><b>Introduction –</b> Week 1 Chapter 1</p> <p><b>Bond Mathematics –</b> Weeks 2 and 3 Chapter 2, 3 and 4</p> <p>We will examine the relationship between the price and yield of a bond. Measures of risk such as duration and convexity will also be discussed.</p> <p><b>Term Structure of Interest Rates –</b> Weeks 4 and 5 Chapter 5, Note on Federal Reserve Policy Procedures</p> <p>We will examine the relationship between yields on bonds of different maturities. We will also attempt to understand the link between interest rates and other economic variables.</p> <p><b>Market Sectors –</b> Week 6 Default-free Bonds (Chapter 6) Week 6 Corporate and Municipal Bonds (Chapter 7 and 8)</p>		

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	<p>Week 6 Foreign Bonds (Chapter 9)</p> <p>Week 7 Mortgage- and Asset-Backed Securities (Chapters 10, 11, 12 and 13)</p> <p>The various segments of the market and the characteristics of the securities and the risk of each type of security will be the focus.</p> <p><b>Valuation: Bonds with Embedded Options + Fixed Income Derivatives –</b></p> <p>Weeks 8 and 9 Callable Bonds, Convertible Bonds and Prepayment (Chapters 14, 15 and 16)</p> <p>Weeks 10 and 11 Fixed Income Derivatives (Chapters 21, 22 and 23)</p> <p>Week 12 Credit Risk and Credit Derivatives</p> <p>Most corporate bonds are callable bonds. Mortgages contain a prepayment option. What do these statements mean? How does one evaluate the risks involved?</p> <p>Interest rate derivatives are often used to manage the risk inherent in fixed income portfolios. What are the types of derivative securities available? How are they priced?</p> <p><b>Portfolio Management Strategies –</b></p> <p>Week 13 Chapters 17, 18, 19 and 20</p> <p>What are the typical objectives of portfolio management? What are the risks involved? How are portfolios formed to achieve the objectives? How is performance evaluated?</p> <p><b>Risk Management –</b></p> <p>Week 14 Notes on VaR, and Risk Management at LTCM</p> <p>Financial institutions can greatly increase the level of business that can be supported by a given amount of capital if they can accurately quantify and manage risk.</p> <p>Class Presentation of Project will start on Week Fifteen for three weeks.</p> <p>Each group will have 15/20 minutes to describe their project, after which we will have 5 minutes for questions from the rest of the class - three/four group presentations per session.</p> <p>Review/Final Exam</p> <p>The final will be handed out two weeks before the last class and will be due in the last class.</p>
<p>教學方式 Instructional Method</p>	<p>Lecture</p>
<p>課程要求 Course Requirements</p>	<p>The analysis of fixed income securities is a quantitative discipline. We will focus on the intuition, but there will still be a fair amount of math/numerical computation involved. The course will assume an expertise with basic statistical analysis and with a spreadsheet package (Microsoft Excel, etc.) or a programming language.</p>

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<p>評量方式 Evaluation</p>	<p>Your grade for the class will be determined as follows:</p> <ul style="list-style-type: none"> <li>(i) 30% of your grade will be based on assignments.</li> <li>(ii) 40% of your grade will be based on four in-class quizzes.</li> <li>(ii) 20% may be based on a group project, a possible substitute of the take-home final exam.</li> <li>(iii) 10% of your grade will be based on class participation.</li> <li>(iv) The final 20% will be based on a take-home exam, which may be substituted by a group project.</li> </ul> <p>There will be two types of assignments. The purpose of the first type will be to help you to learn how to do the basic calculations involving bonds. The second type will attempt to expose you to the bond markets. You may collaborate with your classmates on the assignments.</p> <p>The aim of the group project is to allow you to develop a deeper understanding of a segment of the fixed income market. The project is to be undertaken in self-selected groups of 2-3 people and you will be responsible for determining the topic (this will allow you to form groups and pick topics based on common interests). For the purpose of evaluation, you need to turn in a 10-15 page (plus appendixes) report and present your work at the end of the semester.</p> <p>Class participation will be determined based on your contribution to discussions in class, the quality of questions asked and issues raised during the regular class sessions and the project presentations.</p> <p>The final exam will be handed out two weeks before the last day of class and will be due in the last class. You have to work on your own - no collaboration of any sort is permitted on the final.</p>
<p>教材及參考書目 Textbooks &amp; Suggested Materials</p>	<p>The textbook for this class is titled "Bond Markets, Analysis and Strategies" by Frank J. Fabozzi. There will also be some material posted on course url.</p> <p>Fabozzi has written several other books on the fixed income markets. Each book focuses on a sector of the market - these books will be useful references.</p> <p>You will find it useful to read the Wall Street Journal or the Financial Times regularly. Familiarity with Bloomberg will also help.</p>
<p>課程相關 連結網址 Course Website</p>	<p><a href="#">None</a></p>
<p>備註 Remarks</p>	<p>None</p>