

**City University of Hong Kong
Course Syllabus**

**offered by Department of Economics and Finance
with effect from Semester A 2017/18**

Part I Course Overview

Course Title: Fixed Income Securities

Course Code: EF4327

Course Duration: 1 semester (39 hours)

Credit Units: 3

Level: B4

Proposed Area: Arts and Humanities
(for GE courses only) Study of Societies, Social and Business Organisations
 Science and Technology

Medium of Instruction: English

Medium of Assessment: English

Prerequisites: EF3320 Security Analysis and Portfolio Management
(Course Code and Title) EF4321 Derivatives and Risk Management

Precursors: Nil
(Course Code and Title)

Equivalent Courses: Nil
(Course Code and Title)

Exclusive Courses: Nil
(Course Code and Title)

Part II Course Details

1. Abstract

This course aims at introducing to students the analytical techniques, institutions, products, and applications in debt markets.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs [#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Demonstrate a solid understanding of term structure of interest rates, and the various return measures such as yield-to-maturity and total return of a bond investment.	10%	√	√	
2.	Explain and apply the concepts of duration and bond price volatility.	15%		√	√
3.	Explain and apply the relationship between spot rates and forward rates.	10%		√	√
4.	Derive the basic term structure of interest rates from the market and use it as a foundation to price other debt instruments.	15%	√	√	
5.	Describe the processes of mortgage origination and securitization, as well as analyze the investment characteristics of various types of mortgage backed securities.	20%		√	√
6.	Analyze bonds with embedded options, and use the binomial tree method to price convertible bonds.	15%	√	√	
7.	Acquire basic understanding of commonly used interest-rate derivatives, such as interest-rate futures and options, credit derivatives, and structured products.	15%	√	√	√
		100%			

* If weighting is assigned to CILOs, they should add up to 100%.

Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)
(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.							Hours/week (if applicable)
		1	2	3	4	5	6	7	
Lectures, in-class discussions	<p>The course will also develop students' creative and innovative abilities through numerous assessment tasks/activities that involve the discovery and innovative process. Lectures are designed to help students develop their discovery abilities through class discussions and circumstance simulation. Lectures will focus on basic concepts and framework. Students are expected to discover the methodology of interest rate models and applications.</p> <p>The final exam which covers the topics in the lectures and in-class discussion will also reflect students' accomplishments in discovery and innovation.</p>	√	√	√	√		√		3 hours lecture per week
Assignments, Group projects/ case studies	<p>Group projects/case studies and assignments enable students to discover and innovate through the use of applicable interest rate models. Students will learn to use these tools and conduct analyses on interest rate and investment products such as bonds and interest rate derivatives.</p>	√	√	√	√	√	√	√	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.							Weighting*	Remarks
	1	2	3	4	5	6	7		
Continuous Assessment: 50%									
Group projects / case studies					√	√	√	20%	Students will perform in-depth analyses on the interest rate model, followed by the induction of innovative solution towards specific business problems. This is an important step in developing students' abilities and skills to discover and innovate.
Assignments	√	√	√	√				20%	To enhance students' understanding of lecture materials. Students will discover the basics of interest-rate related asset and the stochastic process. With the knowledge, students will be able to deal with the bond market and become prospective quantitative analyst.
In-class discussions, attendance	√	√	√	√		√	√	10%	These activities will motivate students' participation in class and enhance their communication skills, critical thinking, and creative and innovative skills.
Examination: 50% (duration: 2 hours, if applicable)									
Final Examination	√	√	√	√		√		50 %	The final examination which covers topics in lectures and in-class discussions will reveal students' accomplishments in discovery and innovation.
								100%	

* The weightings should add up to 100%.

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Group projects / case studies,	Based on in-class presentation/project write-up.	Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Student who is profiting from the university experience; understanding of the subject; ability to develop solutions to simple problems in the material	Sufficient familiarity with the subject matter to enable the student to progress without repeating the course.	Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature.
Assignments	Based on performance on take-home problem sets					
In-class discussions/ attendance	Based on active participation/class attendance.					
Final Examination	Based on 2-hour final exam.					

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus & Weekly Teaching Plan

Fixed income securities, Bond markets, Yield-to-maturity, Bond duration and convexity, Spot rates, Forward rates, Term-structure of interest rates, Mortgage-backed securities, Prepayment risk, Convertible bonds, Binomial-tree method, Credit derivatives, Structured products.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	<i>Fixed Income Securities: Tools for Today's Markets</i> , 3rd Edition, University Edition, by Bruce Tuckman and Angel Serrat, Wiley
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2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	<i>Options, Futures, and Other Derivatives</i> , 9 th edition, by John C. Hull, Pearson
2.	<i>A Course in Derivative Securities: Introduction to Theory and Computation</i> , by Kerry Back, Springer