FIN 424 : Fixed Income Investments
School of Business Studies, IBA Karachi

Program:	BSAF, BBA, BS (Econ)
Department Offering:	Finance
Class ERP Number:	
Faculty:	Mr. Ali Asghar, CFA, FDP

Class details	
Class Timing and Room	6:00 pm to 8:45 pm, Room # C6 (City Campus)
Session Days	Only Thursdays
Credit Hours:	3 Credit Hours
Email	aasghar@iba.edu.pk
Contact #	-

Course Description

The course is designed for undergraduate students, with an objective to understand the salient features of fixed-income securities in a theoratial and practical framework. In the first half of the course, we will review pricing of fixed–income securities, along with estimating the risks and expected returns for fixed-income securities. Students will learn risk considerations, by analyzing how sensitive a bond's price is to changes in the yield. Students will also explore the insight that can be gleaned from observing how term structure of interest rates–or, visually, the yield curve–behaves. The local fixed income market will be covered with analysis of the Primary Dealer system and depth of the corporate bond market. Overview regarding SBP regulating the government bond market and SECP regulating the corporate bond markets will be discussed.

In the second half of the course, we will compare the risk-return characteristics of convertible bonds with the risk-return characteristics of a straight bond. Students will learn how to price fixed-income securities with embedded options using the binomial interest rate tree framework. Also, we will learn how a convertible bond is valued in an arbitrage-free framework. We will review structural and reduced-form models of corporate risk. Students will learn the determinants of the term structure of credit spreads and interpret a term structure of credit spread. Overall, the course will have an emphasis on real-world applications of fixed income concepts and case studies. The course will highlight historical financial crisis and what is going on in global financial markets at the moment and how particularly the COVID-19 has impacted hot money flows in emerging fixed income markets.

BSAF Program Learning Goals

1. Communication Skills
Students will become effective speakers, listeners, writers and team members

2. Knowledge of All Business Disciplines

Students will gain a broad based understanding of a range of business disciplines
3. Critical Thinking Students will develop the ability to classify, analyze and evaluate the available data using appropriate techniques for effective decision making.
4. Ethics Students will have an awareness and understanding of ethical issues.
5. Glocal Mindset Students will develop a focus on global connections with local contexts through awareness of diversity across cultures and markets.

Course Learning Outcomes (CLOs)
1. Students will learn pricing of Fixed Income Securities and be able to measure sensivity of bond prices using Duration and principles of Convexity. 2. Students will understand term Structure of Interest Rates, calculation of Spot Rates from Par Curve using Bootstrapping and relationship between Spot Rates and Forward Rates. 3. Students will learn local bond market dynamics with reference to Bloomberg Electronic Trading Platform, SBP/SECP regulations, Primary Dealer System, Interest Rate Outlook and Auction Pricing System. 4. Students will understand securitizations and the fallouts of a global financial crisis. 5. Students will develop the ability to construct a yield curve on the basis of readily available information and interpret its behavior according to different theories. 6. Students should be able to price bonds with embedded options using the arbitrage-free framework and binomial interest rate tree model. 7. Students will understand how interest rate volatility, changes in the level and shape of the yield curve affect the value of bonds with embedded options. 8. Students will recognize credit risk using different models and develop the ability to do credit analysis across various corporate bonds.

AOL Assessment Mapping
Not Applicable

Teaching and Learning Methodology
1. Students are required to read the topic prior to the lecture. 2. The course assignments will be based on excel problem sheets and case studies. 3. Lecture presentations will be uploaded on Learning Management System (LMS). 4. Unannounced quizzes will be taken to gauge student progress. 5. The course project will be based on analysis of a corporate bond.

Course Learning Outcomes mapped to Program Learning Outcomes

Program Learning Goals	Communication Skills	Knowledge of All Business Disciplines	Critical Thinking	Ethics	Glocal Mindset
Course Learning Outcomes					
1	X	X	X		
2	X	X	X		
3	X	X		X	X
4	X	X		X	X
5	X	X	X		
6		X	X		
7		X	X		
8		X	X		X

Reading	Mapping to Course Learning Outcomes	Session Topic
Fixed-Income Securities: Introduction	CL01	• Basic features of a bond and bond indenture • Structure of a bond cashflows and yield measures • Classification of bond markets • Fixed-Income Markets Dynamics: Legal, regulatory and tax considerations for issuing and trading securities • Introduction to bonds with contingency provisions • Local market Bond auction process and overview of local Primary Dealers rules and responsibilities • Impact of COVID-19 on financial markets
Fixed-Income Valuation & Risk	CL01	• Relationship between bond prices and yield-to-maturity • Calculating the price of bond using spot rates • Deriving the flat price, accrued interest and full price of a bond • Yield measures for money market instruments • Measuring interest rate risk using Macaulay, Modified and Effective Duration • Use of key rate durations in measuring sensitivity of bonds • Principles of convexity and convexity application **Assignment: Calculation of Duration and Convexity (Class Presentation)**

Term Structure and Interest Rate Dynamics	CL02	• Traditional theories of the term structure of interest rates and how modern term structure models are used • Relationships among spot rates, forward rates, YTM, return on bonds and shape of yield curve • Calculating spot rates from the par curve by bootstrapping • How to use the Swap Rate Curve to value bonds **Spreadsheet Exercise: Term Structure of Interest Rate and Forward Interest Rate (Class Presentation)**
Fixed-Income Securities Trading and Regulations	CL03	• Classification of fixed-income portfolio as Held-for-Trading, Available for Sale and Held to Maturity • How to short-sell a security • Trading on electronic platforms such as Bloomberg Electronic Bond Trading and PSX Bond Automated Trading platform • Repurchase agreements and risk associated with them • Role of SBP and SECP in regulating the fixed-income market • SBP's Interest Rate Corridor, Target Policy Rate and Primary Dealers' rules • Global interest rates and inflation **Case Study**
Asset-Backed Securities	CL04	• Introduction to Asset-Backed Securities • Process of securitizing securities and the role they play in financial markets • Structures of securitization, including credit tranching and time tranching • Types and charactaristics of residential mortgage loans and residential mortgage-backed securities • Prepayment risk of mortgage-backed securities • Overview of financial crisis related to CMOs and CDSs • Example of a CDO transaction **Case Study: The Demise of AIG**
Yield Curve Strategies	CL05	• Types of yield curve stratagies • Formulating a portfolio positioning strategy • Framework for evaluating yield curve trades • How to price an Interest Rate Swap transaction • Bond strategies executed by fixed income traders **Spreadsheet Exercise: Constructing the Yield Curve**
Valuation and Analysis of Bonds with Embedded Options	CL06	• Interest Rate Trees and Arbitrage-Free Valuation Framework • Overview of Embedded Options

		• Valuation and analysis of Callable, Puttable, Convertible, Capped and Floored Floating Rate Bonds • Effects of Interest Rate volatility • Interest rate risk of bonds with Embedded Options • Bond Analytics
Yield Curve Factor Models	CL07	• Bond exposure to yield curve movement • Factors affecting the shape of the yield curve • Managing yield curve risks • Maturity structure of yield curve volatilities • Framework for evaluating Yield Curve trades
Credit Analysis	CL08	• Fundamentals of credit analysis • Evaluating credit qualities • Structural and Reduced-Form Credit models • Interpreting changes in Credit Spreads • Credit analysis for securitized debt • Credit spread measures and credit strategy approaches • Global examples of securitized debt

Text Book and Pre-Course Reading Material, Important Dates.
Recommended Text: Barbara S. Petitt. Fixed Income Analysis, 4th Edition (2019) CFA curriculum (Readings will be shared prior to each class with the students) **Secondary Texts:** Local and international financial news articles may be recommended to students. Lecture case studies will be provided to students. . **Dates** • Midterm Exams week: 7 -12th October 2024 • Final Exams week: 16- 31th December 2024

Prerequisite Skills and Knowledge to take this Course
FIN 401 Financial Management

Assessments and Grading Scheme		
Assessment	**Due Date**	**Remarks**
Assignments	Ongoing	Assignments will be done individually
Quizzes	Ongoing	The quizzes may be in advance or from the previous topic. There will be a perfect zero if you miss the quiz

Class Participation	Ongoing	Class participation is an important componenet and students are expected to come prepared for class discussion which will include problem sets
Exam Papers	Exam Weeks	There will be a mid-term and final examination covering the course contents cumulatively covered till then

Marks Head	Total Frequency	Total Exempted	Total Marks /Head	
Assignments*	X	0	15/X	Home/class assignments will be given regularly. Practice questions/spreadsheet assignments will be given in some sessions.
Quizzes	X	2	20/(Z-2)	Quizzes maybe unannounced based on advanced class readings
Class Participation*	1		5	
Midterm Exam	1		25	
Final Exam			35	
Total			100	

Class participation

- *Tentative class participation marks will be shared with students prior to the first mid term exam.*
- *Class participation refers to the behaviours that students engage themselves in class. This behaviour can take many formats, such as raising questions, responding to others' questions, participation in discussions, providing feedback, and so on.*
- *The instructors assigned marks for CP will be final and will not be changed and/or compensated with any other assignement*

Assignments

- *No email submissions. Assignments not submitted on LMS by the due date will not be graded.*

Comments and/or Suggestions
• Since subsequent topics build on previously learned material, it is imperative that students keep up with the material. In addition, you should ensure that lectures are understood properly. • A student who misses a class is responsible for obtaining any handouts and information on course content, assignments, due dates, test dates, etc. • **Unethical behavior (cheating, plagiarism, proxy attendance) will be strictly penalized**. • All course materials will be posted on LMS and grades will be posted on ERP. Students are responsible to stay updated on these platforms. For discussions and course related queries, please join the course Whatsapp group created by the CR.

Technology & Innovation
• All course materials will be posted on LMS and grades will be posted on ERP. Students are responsible to stay updated on these platforms. • Students should bring the laptop for the spreadsheet sessions.

Experiential Learning Exposure(s)
Students will get a chance to observe real-time data on interest rates, bond prices, auction profiles, bond spread analysis and yield curve analysis. There will be guest speaker sessions on selected topics.

Social Contribution / Impact
The course will emphasize on the concept of economic sustainability through green bonds.

Academic Conduct
IBA policy
Attendance Policy
Attendance will be taken at the start of both sessions. If a student misses his attendance, he/she will be marked absent. There will no compensation for missed attendances. Students not meeting the required attendance (as per IBA policy) will not be allowed to sit in the final exam.
Plagiarism Policy
IBA policy
Withdrawal Policy
IBA policy
Make-up Exam Policy
Makeup exams are conducted in lieu of the actual scheduled exam. The purpose of any makeup exam is to allow students, with legitimate reasons for missing a scheduled exam, to fulfil the requirements of a course, and hence avoid being penalized for factors beyond their control. A makeup exam maybe conducted in either of the two ways (depending on the Instructor's discretion) Midterms: 1. Re-conduct the exam by ensuring that the set make - up exam is at par with the exam conducted before so that the student does not get an unfair advantage **OR** 2. a project or an assignment as compensation of missing an exam. **Final exams** Final examinations are also subject to a make-up examination request. However, in this instance, only a make- up exam may be taken. The examination department would make necessary arrangements for conducting the make-up exam and inform the applicant.