E822 E1 – FIXED INCOME MARKETS -- Fall 2023

Thursdays 6:30 - 9:15 , HAR 408

Dr. George Tsekov

Phone: 617-513-4417, E-Mail: gtsekov@bu.edu

Office Hours: after class and by appointment

This is a course on debt securities and markets, including fixed-income bonds, floating-rate notes, money market instruments and interest rate derivatives. Emphasis is placed on the factors that determine bond prices and yields, such as the coupon and maturity structure, liquidity, credit risk, and tax status of the security, and on measures of return and risk, statistics such as the yield to maturity, horizon yield, duration, convexity, and value-at-risk. We will cover government debt (Treasuries and municipals), corporate bonds (investment-grade and high-yield), and asset-backed debt created via securitization (CDOs). We will emphasize how interest rate derivatives are used to manage portfolios of fixed-income securities and to reverse engineer structured notes. As part of the course, you will also learn some basic fixed income portfolio management skills and be able to apply them in a bond portfolio management exercise, and a final course project.

The primary texts for the course are:

Bond Math: The Theory behind the Formulas, 2nd Edition (Wiley Finance)

Fixed Income Analysis, 4th Edition (Wiley Finance)

Additional readings will be provided by me throughout the course.

Students will be expected to follow current financial market events by reading the daily financial news with particular attention to macro environment, bond markets, Federal Reserve meetings and policy actions, market rates and the yield curve.

Students are strongly advised to bring to class a laptop computer (with Excel or similar spreadsheet app) or a financial calculator as there will be opportunities for calculations.

Grading in the course will be based on the following:

Mid-term Exam	30 points
Course Final - Fixed Income Portfolio Project	40 points
Homework, Class Participation/Bond Portfolio Management	30 points

Some of the homework exercises will be questions to reinforce material covered in the Bond Math book or the Fixed Income Analysis book readings. Other exercises involve using Excel spreadsheets to produce reports about analyzing and managing a fixed-income portfolio and to value risky debt securities and interest rate derivatives using a binomial tree model.

The bond portfolio management is assigned during the second part of the course to introduce you to building and managing a portfolio to fixed income assets (would require access to a Bloomberg terminal).

The course final project provides an opportunity for a practical implementation of the knowledge and skills acquired during the semester by demonstrating the design of a fixed income strategy, implement a portfolio based on the strategic asset allocation and capital markets expectations, and outlining a plan to manage the portfolio to a specific mandate.

SCHEDULE OF LECTURE TOPICS AND READINGS

BM = Bond Math: The Theory behind the Formulas, reference respective chapter number

FIA = Fixed Income Analysis and respective chapter number

UNIT DATES TOPICS

#1 9/7 Overview to Fixed Income Securities and Markets, Money Market Rates, Periodicity Conversions

BM 1, FIA 1 & 2

#2 9/14 Bond Prices and Yields: Coupon Rate, Quoted Prices, Accrued Interest, Yield to Maturity and Horizon Yield

BM 2,3,4; FIA 3

#3 , 4 9/21 U.S. Treasury and Municipal Bonds, Bond Taxation

Yield Curve Analysis, Bootstrapping Implied Spot and Forward Rates, Theories of the Term Structure

9/28 No Class

BM 5

#5 10/5 Yield Duration and Convexity

BM 6; FIA 5

#6 10/12 Binomial Forward Rate Tree and Credit Risk Models, Valuing Traditional Corporate Bonds, Calculating Effective Duration and Convexity

FIA 7, 8

10/19 Midterm exam

#7 10/27 Corporate Callable Bonds, Floating-Rate Notes, and Inflation- Indexed Bonds

BM 7, FIA 9

#8 11/2, 11/9 Interest Rate Swaps, CDS, Managing Interest Rate Volatility

BM 8,

#9 11/16 Fixed Income Portfolios and Strategies, Value-at-Risk

BM 9, 10; FIA 12

11/23 Thanksgiving - No Class

#10 11/30, Interest Rate Caps and Floors, Structured Notes

FIA 4

12/7 Course Recap and Final Project Requirements