

FE 822 – FIXED INCOME MARKETS -- Fall 2018
Mondays, 6:30-9:15, HAR 211

Professor Don Smith

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Office Hours: Mondays, 4:30-5:30, and by appointment

This is a course primarily 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, factors 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.

The primary books for the course are **Bond Math: The Theory behind the Formulas, 2nd Edition** (Wiley Finance, 2014) and **Valuation in a World of CVA, DVA, and FVA: A Tutorial on Debt Securities and Interest Rate Derivatives** (World Scientific, 2017). Additional readings, which will be posted on QuestromTools, include two CFA[®] Level I readings, “**Introduction to Fixed-Income Valuation**” and “**Understanding Fixed-Income Risk and Return**”, a Level II reading, “**Credit Risk Models**”, and a Level III reading, “**Liability-Driven and Index-Based Strategies.**” [As the co-author of these readings I am allowed to use them in our course.] Extra readings and notes will be posted regularly on QuestromTools. Students will be expected to follow current financial market events by reading the daily financial news with particular attention to bond markets, Federal Reserve meetings, and the yield curve.

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

Grading in the course will be based on the following:

Mid-term Exam	20 points
Final Exam	40 points
Homework Exercises	40 points

Exams will be open-book/open-computer and will be based on the material covered in lectures and the homework exercises. Some of the homework exercises will be questions to reinforce material covered in the Bond Math book, the CFA[®] readings, and the CVA/DVA/FVA tutorial. 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.

SCHEDULE OF LECTURE TOPICS AND READINGS

BM = Bond Math: The Theory behind the Formulas

CFA 54 = “Introduction to Fixed Income Valuation”

CFA 55 = “Understanding Fixed Income Risk and Return”

CFA 37 = “Credit Risk Models”

CVA/DVA/FVA = Valuation in a World of CVA, DVA and FVA

CFA 22 = “Liability-Driven and Index-Based Strategies”

UNIT	DATES	TOPICS
#1	9/10	Overview to Fixed Income Securities and Markets, Money Market Rates, Periodicity Conversions BM 1
#2	9/17	Bond Prices and Yields: Coupon Rate, Quoted Prices, Accrued Interest, Yield to Maturity and Horizon Yield BM 2, 3; CFA 54
#3	9/24	U.S. Treasury and Municipal Bonds, Bond Taxation BM 4
#4	10/1	Yield Curve Analysis, Bootstrapping Implied Spot and Forward Rates, Theories of the Term Structure BM 5
#5	10/9*	Yield Duration and Convexity BM 6; CFA 55
#6	10/15	Binomial Forward Rate Tree and Credit Risk Models, Valuing Traditional Corporate Bonds, Calculating Effective Duration and Convexity CVA/DVA/FVA Chapters I, II and Appendix CFA 37
	10/22	Midterm Exam
#7	10/29	Corporate Callable Bonds, Floating-Rate Notes, and Inflation-Indexed Bonds BM 7, CVA/DVA/FVA Chapters III, IV
#8	11/5, 11/12	Interest Rate Swaps, Managing Interest Rate Volatility BM 8, CVA/DVA/FVA Chapters V, VI
#9	11/19, 11/26	Fixed Income Portfolios and Strategies, Value-at-Risk BM 9, 10; CFA 22
#10	12/3, 12/10	Interest Rate Caps and Floors, Structured Notes CVA/DVA/FVA Chapters III, VII
	12/18	Final Exam