

**CAPITAL MARKETS AND INVESTMENTS  
SUMMER 2022**

INSTRUCTOR: Suresh Sundaresan

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Office Hours: Fridays 12:30 to 1:30 PM and via email and zoom

Bio of Instructor (see the link below):

<https://www.dropbox.com/s/5nwyk96u33vp7h0/Suresh%20Sundaresan%20Bio%202022May.docx?dl=0>

TEACHING ASSISTANTS:

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Office Hours: Via email and zoom (room TBA)

**REQUIRED COURSE MATERIAL**

- Copies of slides/course readings/articles that will be distributed in class and posted in Canvas.
- *Investments*, by Bodie, Kane and Marcus, 11<sup>th</sup> Edition, Irwin/McGraw Hill.

**RECOMMENDED COURSE MATERIAL**

- The following are recommended textbooks. I will provide you with detailed slide decks, and reference material in the course.
- “Fixed-Income Markets and Their Derivatives”, Academic press, Third Edition, by Suresh Sundaresan.
- *Fundamentals of Futures and Options Markets* by John Hull

**REQUIRED PREREQUISITES AND CONNECTION TO THE CORE**

The learning in this course will utilize, build on and extend concepts covered in the following courses: *Corporate Finance*, *Managerial Statistics and Business Analytics*. Students will be expected to have mastered concepts developed in these courses and be able to apply them to key policy, corporate and day-to-day questions in capital markets and investments. Our discussions of global capital markets and central banks will draw on concepts learnt in the Global Economic Environment course.

**COURSE DESCRIPTION**

The course will describe the major players in Capital Markets, key institutions, broad empirical regularities, and analytical tools that are used for pricing securities/portfolios, portfolio management, and risk management. Some parts of the course will be analytical while others will be largely institutional. Each session will be organized around one or two key topics. In addition, class notes will be used to supplement and clarify issues. Some selected papers will also be kept in Canvas to serve as background reading for class discussions.

I give below 10 broad topics that will be presented and discussed over the 12 meeting that we will have in our course.

**TOPICS:**

Topic Number	Broad Topic	Issues to be addressed
Topic 1	CAPITAL MARKETS, ARCHITECTURE AND INSTITUTIONS (Introduction and Overview)	<ul style="list-style-type: none"> <li>a. Size and diversity of equity and debt capital markets.</li> <li>b. OTC VERSUS EXCHANGE-TRADED MARKETS</li> <li>c. PLAYERS: <ul style="list-style-type: none"> <li>a. Sell side;</li> <li>b. Buy side;</li> <li>c. Issuers;</li> <li>d. Regulators;</li> <li>e. Other intermediaries.</li> </ul> </li> <li>d. Examples of Key capital market decisions/transactions and network of players: <ul style="list-style-type: none"> <li>a. Corporate Bond Issuance; (Apple and Verizon)</li> <li>b. Delegated Portfolio Management; (Pension Sponsors and funds such as Calpers)</li> </ul> </li> </ul>
Topic 2	CENTRAL BANKS, MONEY MARKETS & SHADOW BANKING	<ul style="list-style-type: none"> <li>a. Central Banks (CB) set interest rates;</li> <li>b. Tools of CBs</li> <li>c. Policy rates (overnight)</li> <li>d. Repo rates;(how to take long or short positions)</li> <li>e. LIBOR &amp; SOFR;</li> <li>f. Commercial Paper and ABCP;</li> <li>g. Forward Rate Agreements (FRA)</li> <li>h. Equity returns &amp; FOMC</li> </ul>
Topic 3	BOND ANALYTICS & Term Structure of interest rates.	<ul style="list-style-type: none"> <li>a. Price, Yield calculations;</li> <li>b. Yield to Maturity; Yield to Call;</li> <li>c. Real and Nominal yields;</li> <li>d. Break-even yields;</li> <li>e. Stripping coupon bonds;</li> <li>f. Spot and forward rates;</li> <li>g. Duration measures;</li> <li>h. Convexity and negative convexity;</li> <li>i. Bullet and barbell portfolios;</li> </ul>
Topic 4	SOVEREIGN BOND MARKETS	<ul style="list-style-type: none"> <li>a. Overview of global sovereign bond markets;</li> <li>b. Fiscal and current account deficits;</li> <li>c. Book building in Primary Markets;</li> <li>d. Bidding in Sovereign bond Auctions (Dutch and Discriminatory Auctions);</li> <li>e. Sovereign Yield Curve;</li> <li>f. Safety Premium in Sovereign Debt of US and Germany;</li> <li>g. Negative yields;</li> <li>h. Fiscal capacity;</li> </ul>

Topic 5	MORTGAGES, GSEs, AND SECURITIZATION	<ol style="list-style-type: none"> <li>1. Fixed and variable rate mortgages;</li> <li>2. Prepayment option;</li> <li>3. Government Sponsored Enterprises (Fannie Mae, Freddie Mac and FHLBs)</li> <li>4. Securitization</li> <li>5. Mortgage Backed Securities (MBS)</li> </ol>
Topic 6	INVESTMENTS-1	<ol style="list-style-type: none"> <li>1. Expected returns and risk;</li> <li>2. Benefits of diversification;</li> <li>3. Capital Market Line;</li> <li>4. Portfolio choice;</li> <li>5. Performance of different asset classes;</li> <li>6. Market cap weighted index;</li> <li>7. Macro-indexes;</li> </ol>
Topic 7	INVESTMENTS-2	<ol style="list-style-type: none"> <li>1. Capital Asset Pricing Model;</li> <li>2. Systematic risk;</li> <li>3. Arbitrage Pricing Theory;</li> <li>4. Factor models;</li> <li>5. Factors influencing asset returns;</li> <li>6. Empirical evidence;</li> </ol>
Topic 8	INVESTMENTS-3	<ol style="list-style-type: none"> <li>1. Portfolio choice with liabilities;</li> <li>2. LDI-strategies;</li> <li>3. Indexation and passive portfolio strategies;</li> <li>4. Portfolio immunization and duration gap;</li> <li>5. Active versus passive portfolio strategies.</li> </ol>
Topic 9	SWAPS AND THEIR APPLICATIONS	<ol style="list-style-type: none"> <li>a. Domestic and FX bond issuance decisions;</li> <li>b. Cross Currency Basis Swaps;</li> <li>c. Covered Interest Rate Parity;</li> <li>d. Interest Rate Swaps;</li> <li>e. Swap Spreads;</li> <li>f. Limits to Arbitrage;</li> <li>g. Credit Default Swaps; <ol style="list-style-type: none"> <li>a. Single-Name Swaps (CDS)</li> <li>b. Index Swaps (CDX);</li> </ol> </li> </ol>
Topic 10	OPTIONS CONCEPTS AND APPLICATIONS (Coverage will depend on time constraints)	<ol style="list-style-type: none"> <li>1. Types of options</li> <li>2. Put-call parity;</li> <li>3. High-level description of pricing options: <ol style="list-style-type: none"> <li>a. Binomial model</li> <li>b. Black-Scholes model;</li> </ol> </li> <li>4. Applications in Finance.</li> </ol>

## COURSE OBJECTIVES

The purpose of this course is to provide a sound and comprehensive working knowledge of capital markets and their institutions. In addition to providing the students with a clear

knowledge of institutions, pricing relationships, applications and analytics, the course will help the students to think through major issues facing institutional investors, market makers, issuers, and policy makers.

## ASSIGNMENTS

- There will be two quizzes, (take home) which will be assigned as follows:
  - At the end of session 4.
  - At the end of session 8.

Quizzes can be taken by student groups not exceeding 3 members. The groups will get a weekend to work through and hand back the quizzes in canvas by the deadline that will be posted ahead of time.

Students will be expected to participate responsibly in class. Class participation, punctual attendance and responsible conduct in the course will carry 20% weight.

There will be a final examination, which will be take home. The final exam (cumulative) will carry 40% weight.

## METHOD OF EVALUATION

Attendance & Class participation	20%
Quiz 1	20%
Quiz 2	20%
Final Exam	40%

## CLASSROOM NORMS AND EXPECTATIONS

- Attendance is mandatory for each class session. The TA will record student attendance at the commencement of class; students who arrive 5 minutes after the scheduled commencement time will not be recorded as having attended the session. In addition, informed class participation is expected. Together, as mentioned earlier, they carry 20% of the course grade.
- Students who have a medical or other emergency reason for not attending class should contact the professor in advance of the session. Once in the classroom, students are expected not to leave the room until the session is completed.
- There will be a seating chart. Students must bring their name cards and occupy the same seat in each class.
- **I would expect you NOT to use mobile phones or laptops or digital aids during class hours.**