B8306 CAPITAL MARKETS AND INVESTMENTS

Spring 2023

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Communications from professor and teaching assistants about the course will take place through Canvas. Students should make sure they regularly check for announcements and messaging notifications.

SCHEDULE AND LOCATION
Tues, Thurs 8:30AM-10:00AM
Classroom: TBD

I   COURSE DESCRIPTION

This course has three goals:

1. To understand and apply the principles of investing. The course covers the valuation of bonds, stocks, and options. Key applications include personal and professional portfolio management, risk management, security valuation, and capital structure.

2. To develop the following concepts: risk-return trade-offs, diversification, systematic and idiosyncratic risk, expected returns, market efficiency, performance evaluation, arbitrage, the term structure of interest rates, bond duration, and options.

3. To provide sufficient background knowledge for students seeking an overview of capital markets and an introduction to advanced finance courses.

The main topics can be summarized in the following groups: 3 classes: Intro

to Capital Markets

5 classes: Fixed Income Securities 4 classes:

Portfolio Choice

3 classes: Investment Performance 3 classes:

Behavioral Finance

6 classes: Valuation of Options

Throughout the course, we will address two basic questions:

1. How should we manage and evaluate portfolios of investments?

2. Which methods do we use to value securities?

Connection to other courses

Capital Markets uses and builds upon the basic valuation tools developed in Corporate Finance, such as arbitrage, time value of money, understanding risk-return trade-offs, the CAPM, and asset valuation. Capital Markets uses many concepts from Statistics, such as random variables, probability distributions, regression and hypothesis testing. Particularly in the portfolio choice section, the course uses optimization methods and modeling tools from Business Analytics.

Guest speaker

As in prior years, we will have a guest speaker come give a talk to the class. The guest speaker is a practitioner working in the investing field. Attendance is required.

II   COURSE MATERIALS

Textbook. Recommended textbooks can be purchased at the Columbia University Bookstore and are on reserve in Watson library:

- *Investments* by Bodie, Kane, and Marcus (hereafter BKM), 9th, 10th or 11th edition

- *Investments, Student Solutions Manual* by Bruce Swenson, 9th, 10th or 11th edition.

Course notes. Notes will be distributed in each class and will be available on Canvas.

Additional readings. Relevant articles from industry, academia, and the popular press will be provided throughout the course.

Supplementary material. In the past, students have asked for supplementary references for some of the material covered in the course. The book *Capital Markets and Investments* by Siddhartha Dastidar (an adjunct professor at Columbia) is not as detailed as BKM but closely tracks our course material and may be a useful reference. The following textbooks, which are *not required*, offer more detail on some of the topics we cover in class.

There are 2 textbooks which get into more detail on the fixed income portion of the course:

- *Fixed Income Securities: Tools for Today's Markets*, by Bruce Tuckman

- *Fixed Income Markets and Their Derivatives*, by Suresh Sundaresan

For the options part of the course, take a look at the all-time classic introductory book on options:

- *Options, Futures and Other Derivatives*, by John Hull

All 3 books deal with pretty advanced topics, but the introductory parts are quite good, and they are full of really great institutional detail on how these markets actually work.

III   GRADING, CASES, ASSIGNMENTS, AND EXAMS

The course grade will be based on cases, problem sets, class participation, an in-class midterm and an in-class final exam. The components of the grade are as follows:

Cases (Team of 3)	15%
Problem sets (Team of 3)	25%
Class participation and weekly quizzes (Ind.)	15%
Midterm exam (Individual)	20%
Final exam (Individual)	25%

Assignments

Groups. Cases and problem sets should be done in **groups of 3 members** (MBA assignment type A). Students are responsible for organizing these groups and should add all group members to one of the Assignment Groups on Canvas. Copying of answers from a prior year case, problem set, or another student's work or team is a violation of the Columbia Business School Honor Code. This is a violation of the Columbia Business School honor code and will result in an F for that assignment and for the case.

Cases. There will be four case assignments, though the first is intended as a review and will not be graded. Each case will be distributed at least one class in advance and due by 9:00am on the due date. Cases and solutions will be available on Canvas. Because case solutions are discussed in class, late cases will not be accepted. Violations of the Columbia Business School Honor Code will be given an F for the entire team.

Problem sets. There will be four problem sets, though the first is intended as a review and will not be graded. Each problem set will be distributed one week in advance and will be due by 11:59pm on the due date. Problem sets and solutions will be available on Canvas. Violations of the Columbia Business School Honor Code will be given an F for the entire team.

Grading of cases and problem sets. Cases and problem sets will be graded on a 1–10 scale.

Class participation and core culture. We will have regular class discussions about course material − active participation in these is encouraged and will contribute to your participation grade. You will

also gain points by regularly attending class, by being prepared, and by being a good classmate.

Electronic devices. Please note that you will use cell phones for in-class polls, though should be set to silent. Also it's okay to use laptops to take notes and work through some Excel examples while in class.

Weekly Canvas quizzes. Each week, students must take a short quiz on Canvas between Thursday at 6pm and the following Tuesday at 9:00am. Each quiz consists of no more than three review questions based on the week's lectures and readings. Quizzes must be taken individually. Any books, references, computing or calculating equipment may be used. Quiz scores count toward the participation component of your grade. Solutions will be posted soon after quizzes are due. Quizzes are a great way to make sure you understand the key takeaways from the week's lectures.

Exams

Any books, references, computing or calculating equipment may be used.

- The midterm exam will be electronic and can be taken during the midterm exam week.

- The final exam will be electronic and can be taken during the final exam week.

- **The midterm and final exam are to be done individually. Violations of the Columbia Business School Honor Code will result in an F for the exam and an F for the course.**

The timing of the midterm and final indicated in the syllabus is approximate. The Office of Student Affairs (OSA) will assist with any exam scheduling conflicts.

IV   REVIEW SESSIONS AND QUESTIONS

Optional review sessions, led by the course TAs, to be determined on an as needed basis. Review sessions will cover no new material, and will emphasize working through problems and answering student questions. In addition to review sessions, students should contact the TAs to set up a meeting. You can also schedule a time to see me.

V   COURSE OUTLINE

*** Course and assignment schedule. *SUBJECT TO CHANGE.*   ***

Class	Date	Topic	Chapters in BKM	Assignment (Type)*
1	Jan-24	MARKETS – Overview	1, 2	
2	Jan-26	MARKETS – Investing	2, 3	Case 1 (A) due Feb-3
3	Jan-31	MARKETS - Valuation and Returns	14	
4	Feb-2	FIXED INCOME - Interest Rates	15	
5	Feb-7	FIXED INCOME - Interest Rate Risk (Duration)	16	Case 2 (A) due Feb-21
6	Feb-9	FIXED INCOME - Managing Rate Risk	16	
7	Feb-14	FIXED INCOME - Duration Applications	16	PS 1 (A) due Feb-27
8	Feb-16	FIXED INCOME - Default Risk	16	
9	Feb-21	PORTFOLIO CHOICE - Equity Valuation	5, 18	PS 2 (A) due Mar-2
10	Feb-23	PORTFOLIO CHOICE - Portfolio Optimization	6, 7	
11	Feb-28	PORTFOLIO CHOICE - Applying the CAPM	8, 9	
12	Mar-2	PORTFOLIO CHOICE - CAPM Anomalies	8, 9	
13	Mar-7	**Midterm Exam: Canvas, Mar 6 6PM – Mar 12 11:59PM**		
14	Mar-21	PERFORMANCE EVALUATION – Beyond the CAPM		
15	Mar-23	PERFORMANCE EVALUATION – Skill versus Luck	9, 11	Case 3 (A) due Apr-4
16	Mar-24	BEHAVIORAL FINANCE – Applications**	10, 13	
17	Mar-30	Guest Speaker: SARAH BONESTEEL, CIO, PRUDENTIAL	4,24	PS 3 (A) due Apr-13
18	Apr-4	BEHAVIORAL FINANCE – LIMITS TO ARBITRAGE	12	
19	Apr-6	BEHAVIORAL FINANCE – Behavioral Biases	26, 27	
20	Apr-11	OPTIONS - Payoffs and Arbitrage Relationships	20	PS 4 (A) due Apr-20
21	Apr-13	OPTIONS - Replicating an Option	21	
22	Apr-18	OPTIONS - Options Examples	21	
23	Apr-20	OPTIONS - Black-Scholes Valuation	21	Case 4 (A) due Apr-27
24	Apr-25	OPTIONS – Applications		
25	Apr-27	OPTIONS – Applications		
26	**Apr-29**	**Final Exam: Canvas, Sat. Apr 29 8AM – Fri. May 5 11:59PM**		

- *Cases and problem sets must be submitted to Canvas by 8:30am on their due dates Official MBA assignment types appear in parentheses
- **This class will be held on Friday date indicated from 8:30AM to 10:00AM in TBD unless otherwise noted.
- A = team/team, B = team/individual, C = individual/individual