

# Foundations of Finance

Fall 2020

FINC-UB 2.005

FINC-UB. 2.006

## 1. Instructor

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Online office hours    by appointment

## 2. Course Structure and Instructors

This course will be taught fully remote. The class will meet online via Zoom during regular class times. Students will be expected to attend class meetings and to complete an online lesson prior to each class meeting.

The online lessons prior to each class will be posted on NYU Classes. It introduces students to key concepts via short videos, readings and exercises. Students are required to complete the lessons prior to each online class meeting and may be asked to prepare exercises for class meetings.

Class meetings take place during regularly scheduled class times. The first 10 minutes of each class will be devoted to welcoming students and informal discussions. We will start class activities 10 minutes after the official class time. During class meetings, we will build on the material covered in the online lesson. We will usually start with a quick review of the material for the day and an opportunity for students to ask questions about the pre-class online lesson. The class meetings will focus on interactive learning such as exercises, interactive lectures and group discussions. The exact class meeting activities will vary from week to week depending on the material covered. Each class meeting will end with a Q&A session.

## 3. Class Time

The class meets twice a week on Tuesday and Thursday. There are two sections meeting at the following times

- FINC-UB 2.005: 9:30–10:45am
- FINC-UB 2.006: 11:00–12:15am

The first class is on Thursday 9/3 and the last class is on Thursday 12/13. There are is no class on Thanksgiving Day.

**Class meetings civility:** Respect your classmates and do your best to contribute to a good learning environment for everyone. During Zoom class meetings, please do the following:

- Arrive on time.
- Turn on you video, so we can see each other.
- Mute your microphone if not speaking.
- Log in through your NYU Zoom account.
- Set your screen name to your preferred name and include your last name. If your preferred name differs from the name you are registered under, please include that name in parenthesis, so I can match you to your records for grading. This should be automatic if you use your NYU Zoom account.
- Do not share the Zoom link with students not registered for the class.

#### 4. Reading materials

All materials used in class meetings and for pre-class lessons will be made available to students on NYU Classes. Everything students will be expected to know will be covered by these materials.

In addition, the text books listed below are an additional source to review the material. Especially the book by Bodie, Kane and Marcus is often very good and tightly linked to what we will cover, but at other times the link is weaker. That said, it is currently the best book on the market for our purposes. Many students will likely find the textbook useful to prepare before class and to go over the material after class. Others will find the material posted on NYU Classes sufficient.

The textbooks for the course are

- 1 “Essentials of Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, 10th or 9th edition;
- 2 “Student Solutions Manual to accompany Essentials of Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, Alan Marcus, 10th or 9th edition;
- 3 Selected material from “Essentials of Corporate Finance” by Stephen A. Ross, Randolph W. Westerfeld, Bradford D. Jordan, 6th edition.

Most of the class material is covered in [1], abbreviated BKM below (BKM(9) denotes the 9th edition and BKM(10) the tenth edition in case sections vary). If you have an earlier, but relatively recent edition of BKM you are fine, there are only minor changes between recent editions. However, page and chapter numbers may vary. If you use an older edition, it is your responsibility to find out the differences with the latest edition. The solution manual [2] will come in handy when doing practice problems. The material in book [3], abbreviated RWJ, is covered only in classes 3 and 4, and we will only use chapters 5 and 6. These two chapters are included with the course materials available from the NYU bookstore. If you did not buy your course materials through the bookstore, you can purchase [3] separately on the publisher's web site (Go to <https://create.mcgraw-hill.com/shop/#/catalog/details/?isbn=9780390169501>. The booklet can be found under Prof. Stijn van Nieuwerburgh's name. Item [3], ISBN: 9780390169501, price: \$14.63.)

## 5. Calculator and Excel

You need a calculator for this class. Your calculator only needs to be able to do the basics (addition, subtraction, division, multiplication, taking to power of, logarithm). A financial calculator can be used but is not required. Most importantly, you are expected to know how to operate the calculator you chose on your own. In addition, students are expected to be comfortable with EXCEL tools and use them for class assignments.

## 6. NYU Classes

The class website is on NYU Classes. This is the central location containing all teaching materials such as online lessons, materials used in class and additional optional materials.

## 7. Exams, Assignments, and Grades

**Grading components** Grades will be based on the following:

Two equally weighted exams	65%
In-class quick tests after each topic	30%
Participation	5%

There will be 2 exams on the following days:

Exam 1 Thursday, 10/22

Exam 2 Final exam week, time announced by the registrar

The quick tests will take place during class meetings after completion of each topic and will take about 15 minutes.

**Grading guidelines** At NYU Stern, we strive to create courses that challenge students intellectually and that meet the Stern standards of academic excellence. To ensure fairness

and clarity of grading, the Stern faculty have adopted a grading guideline for core courses with enrollments of more than 25 students (such as this class) in which approximately 35% of students will receive an A or A- grade.

## **8. Academic Integrity**

Our undergraduate Academics Pillar states that we take pride in our well-rounded education and approach our academics with honesty and integrity. Indeed, integrity is critical to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes a commitment to:

- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and all other course requirements by not engaging in any method or means that provides an unfair advantage.
- Clearly acknowledge the work and efforts of others when submitting written work as ones own. Ideas, data, direct quotations (which should be designated with quotation marks), paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to adversely affect the NYU Stern community.

The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and can be found here: [www.stern.nyu.edu/uc/codeofconduct](http://www.stern.nyu.edu/uc/codeofconduct)

To help ensure the integrity of our learning community, prose assignments you submit to NYU Classes will be submitted to Turnitin. Turnitin will compare your submission to a database of prior submissions to Turnitin, current and archived Web pages, periodicals, journals, and publications. Additionally, your document will become part of the Turnitin database.

## **9. General Conduct and Behavior**

Students are also expected to maintain and abide by the highest standards of professional conduct and behavior. Please familiarize yourself with [Stern's Policy in Regard to In-Class Behavior & Expectations](#) and the [NYU Student Conduct Policy](#).

## **10. Student Accessibility**

If you will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Student

Accessibility (212-998-4980, [mosescsa@nyu.edu](mailto:mosescsa@nyu.edu)) verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the Moses Center for Student Accessibility, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation. For more information, visit the [CSA website](#).

## 11. Course Content and Class Schedule

**Content Overview:** The course is a rigorous, quantitative introduction to financial market structure and financial asset valuation. The main topics of the course are the time value of money, portfolio selection, equilibrium asset pricing (CAPM), arbitrage pricing, fixed income securities and derivatives.

**Prerequisites:** It is necessary for this class to be comfortable with statistics, calculus, and microeconomics. You are strongly encouraged to study the review handout on statistics at the beginning of the semester (handout H0 available on NYU Classes). Alternatively or additionally, the Quantitative Review in Appendix A of BKM will help you refresh the statistics material.

**Topics** The first part of the class will cover the following topics:

- Financial instruments and financial markets
- Performance of securities
- Portfolio choice
- The CAPM
- Beyond the CAPM

The second part of the class will cover the following topics:

- Arbitrage
- Equity valuation
- Fixed income securities
- Options

## 12. Readings by Topic

- Financial Instruments and Financial Markets
  - Financial instruments
    - \* Main: BKM 1.1-4, secondary: BKM 1.5-1.7, 2

- Financial Markets/ How securities are traded
  - \* Main: BKM 3.1-3, 3.5, 3.7, secondary: BKM 3.4, 3.6, 3.8, 3.9
- Performance of securities
  - Present and future value, annuities and perpetuities
    - \* Main: RWJ 4, 5.1-5.2; handouts 1-2
  - Compounding and measuring returns
    - \* Main: RWJ 5.3-4; BKM(9) 5.1-5.2,5.4; BKM(10) 5.1-5.3; handouts 3-7, secondary: BKM(9) 5.3, BKM(10) 5.4
- Portfolio Choice
  - Portfolio returns; efficient portfolios with two risky assets
    - \* Main: Handouts 8-11, statistics review, BKM 5.5, 6.1-6.2
  - Investor preferences and optimal portfolios
    - \* Main: BKM(9) 5.2, 6.1-6.2; BKM(10) 5.3, 6.1-6.2; handout 11
  - Efficient and optimal portfolios with a riskless asset
    - \* Main: BKM 5.5-6, 6.3-6.4
  - Efficient and optimal portfolios with multiple risky assets
    - \* Main: BKM 6.4-5, 7.1, handouts 12-13, secondary: BKM 6.6
- The CAPM
  - The CAPM
    - \* Main: BKM 7.1-2, handout 14, secondary: BKM 6.6
  - Applications of the CAPM
    - \* Main: BKM 7.4, secondary: BKM 6.6
- Beyond the CAPM
  - Market efficiency and return anomalies
    - \* Main: BKM 8, secondary: BKM 9
  - Beyond the CAPM
    - \* Main: BKM 7.4-5, handouts 13-14
- Arbitrage
  - Main: handout 17
- Equity Valuation

- Dividend discount models, valuation ratios and application
  - \* Main: BKM 13.1-4, handouts 15-16, secondary: BKM 15.5-6
- Fixed Income Securities
  - Bond prices and yields
    - \* Main: BKM 10.1-4, handouts 18-19, secondary: BKM 10.5
  - Bond returns, forward rates and the yield curve
    - \* Main: BKM 10.6, handouts 20-22
  - The yield curve, duration
    - \* Main: BKM 10.6, 11.1-3, handout 23
  - Duration and immunization / interest rate management
    - \* Main: BKM 11.1-3, handouts 23-24
- Options
  - Option basics and strategies
    - \* Main: BKM 15.1-2, handouts 25-26
  - Option pricing, Black-Scholes-Merton option pricing formula
    - \* Main: BKM 15.2, 16.1-4, handout 26, secondary: BKM 15.3
  - Put options and American options
    - \* Main: BKM 16.1-4, handout 26, secondary: BKM 16.5
  - Futures and swaps
    - \* Main: BKM 17.1, 17.3-6, handout 28, secondary: BKM 17.2