

## **FOUNDATIONAL FINANCE FOR STRATEGIC DECISION MAKING: ADVANCED UNDERSTANDING OF STOCKS AND BONDS**

### **COURSE GOALS AND AUDIENCE**

This course contains a deeper treatment of bonds and stocks and how they are valued using the principles of time value of money covered in the three preceding courses in this specialization. Since individuals and households typically lend money to governments and businesses, this course will also serve useful for personal financial decision-making. It will also serve very useful if you are keen to hone your finance skills to make you more effective and successful at work and make good personal decisions. This course is part of a Specialization titled “Foundational Finance for Strategic Decision Making” that is designed for individual decision-making.

The focus in this specialization will be on individual/personal decisions because of two reasons: (a) we learn when we see value to us as individuals and (b) the beauty of finance is that the building blocks of finance are applicable to any decision, personal or corporate. Financial literacy is important for us all to make smart decisions, again, both personal and professional.

### **BACKGROUND**

The specialization and this course are based on numerous years of teaching experience by the faculty member in programs ranging from undergraduate to PhD courses and to audiences ranging from pre-college students to senior executives. Importantly, the specialization has been motivated in large part by the enriching experience offering several MOOCs to more than 2.20 million students worldwide over the past six years. The detailed assessments of this course, which are foundational to the learning, are an ongoing collaboration between Professors Gautam Kaul and Qin Lei.

### **COURSE DESCRIPTION**

This final course will cover more advanced aspects of bonds and stocks that will help you to make smart personal decisions and develop a keen understanding of how governments and companies borrow from us. You will better understand stocks and bonds valuation and take a deeper dive using real-world problems. For Stocks: you will review what you have already learned and understand valuation. You will learn about growth, different types of growth both bad and good. You will also get an opportunity to apply these concepts with practice assignments. For Bonds: you will review what you have already learned. You will learn about different sources of risk in bonds. Lastly you will get an opportunity to apply these concepts with practice assignments.

Following feedback from thousands of learners, I have deliberately pitched this course at an introductory level with an emphasis on understanding what finance is about, yet with a focus on practical applications. To achieve these dual objectives, this course is focused on **problem solving** and, consequently, I will make a conscious attempt to introduce each topic with real-life examples. I strongly encourage you to attempt every problem in the videos before we do it together. You will also be required to submit assignments that involve multiple problem-solving exercises. Some of these problems by design are more complex than the examples we will do in “class” (the videos) because class time needs to be devoted to understanding the issues and concepts. In my view, doing problems soon after the relevant material is covered in class is the best way to learn.

We have carefully coordinated both the content and the pace of the course. Since it is important to acquire the basic concepts and skills of a subject matter before applying them, we will introduce you to several tools. You will learn to apply them within carefully constructed (but realistic) situations presented in the videos and in “number-crunching” oriented assignments.

## COURSE STRUCTURE

The course comprises four modules of content - videos, readings, and assignments. The structure of this course is based on our estimate of the time needed by a typical learner: around three-to-five hours a week for four weeks. Since this is a self-paced learning opportunity, you may finish the course faster or slower than others enrolled in the course.

## PREREQUISITES

This is a tough issue. I do not believe in prerequisites, except for a sense of curiosity and an attitude. For this course, a comfort level with algebra and numbers is important. And given that we have designed this course as part of a Specialization, the first three courses of the specialization will serve very useful and are therefore strongly recommended.

## COURSE MATERIALS

### VIDEOS

The main resources provided by me for this online class are the videos, organized into four modules. The length of each module depends on the topic and is broken up into bite size pieces. I have worked with professionals to edit the videos, but I encourage you to pace yourself according to your style and background. Most importantly, there are numerous examples/problems in all the videos, and please try and take every opportunity to attempt an exercise before you see me analyze it. We have tried to create breaks wherever possible to facilitate this process, but I do not want the videos to become like TV advertisements: short and exciting but with no real content.

It is important for you to know that I will provide minimal notes to accompany the videos because I want you to create your own notes as you watch and listen to the presentation. The best part about this online class is that you can pause, rewind or fast forward the videos at will. You can play any video at faster speeds whenever needed. But it is also very easy for you to become a passive participant. I want you to be active listeners and I encourage you to make your own notes as you go along. This will help you to understand and learn the material well, assuming of course that you find me engaging. If you do that, you will not be dependent on textbooks or other materials for the basics, except of course to review and/or read additional stuff.

## **ADDITIONAL RESOURCES**

We have provided you with several other resources. First, we have prepared some brief **notes** that cover: Use of Spreadsheets, and a Note on Formulae. More importantly, we have constructed assignments/assessments that will be critical to the learning process.

## **TEXTBOOKS**

In addition, I provide below references of a couple of textbooks that are all high quality. To help you with your reading, we have also provided you chapters from the books as examples of references. Please note that the videos do not follow any specific book and the book chapters are only references; they do not perfectly match the material we cover and may sometimes contain material that we will not cover. My goal is to expose you to the fundamentals of finance, not to every detail in every textbook.

Please see the Class Schedule at the end of this syllabus, and provided as a link on the main page, to refer to the specific chapters from two of these books. You are not required to purchase any of these books.

- (1) Corporate Finance, 4<sup>th</sup> Edition, by Ivo Welch.

A PDF version of the book can be downloaded without charge at <http://book.ivo-welch.info/home/>. You can also purchase a paperback version at the site. The material is copyrighted, however, and you are not permitted to distribute or posted it elsewhere. If this URL malfunctions, you can access the site by searching Ivo Welch on the web.

This book is referenced as **IV** in the detailed schedule. If you cannot access the above URL, just search the web using the author's name.

- (2) Corporate Finance, 10<sup>th</sup> Edition, by Ross, Westerfield & Jaffee.

I have also referenced chapters of this book as suggested readings in the detailed class schedule. The book is referenced as **RWJ**.

There are several other books on finance, and I encourage you to browse through a few

before settling on one or two as references. Note again that the idea is to provide you with resources and not to match each class/video with specific books or chapters within them.

Finally, since many of you may have had limited exposure to finance, it is important to read institutional material at your own convenience. Please read business and financial news regularly. Cruise the web as often as possible not only to uncover the wealth of information at your disposal, but to also learn how things work. A good web site to begin your search is <http://finance.yahoo.com>.

## **SPREADSHEETS**

The purpose of the class is to introduce you to concepts and applications, with an emphasis on the “why” of things. So, figuring out the nature of a problem, and what concepts and tools to bring to bear on addressing it, is much more important than “solving” a problem. Having said that, knowing how to execute an analysis has a lot of practical value. After setting up a problem, it will help you to use spreadsheets. I will introduce you to some of the functions built into spreadsheets, but again you can create your own formulae as well. You are, however, ultimately responsible for learning how to use spreadsheets. The video problems and the assignments are a great way to do so as virtually all questions will require you to do calculations using either a spreadsheet or an alternative method.

## **ASSIGNMENTS**

All the videos have problems in them, and therefore all learning is focused to enhance your ability to apply concepts. Importantly, we provide Practice Assignments for you to gauge your knowledge. You have unlimited attempts at the Practice Assignments.

We will have **two graded assignments, each with TEN questions**, and crafted to help reinforce the learning of concepts and problems covered in class and also to challenge you to think through some more complex issues. By design, a few problems are therefore more difficult than those presented in class. I believe you will better understand the concepts by thinking through the issues involved in solving the assignment problems and you will learn Excel in the process. You will have an adequate number of attempts at these assignments.

You need to obtain 70% on each Graded Assignment within a course to qualify for a course certificate. Certificates for the Specialization will be issued to all learners who pass all four courses.

Since all grading will be conducted using technology, all questions will take a True/False, fill in the blank, or multiple-choice form. The questions will almost always be word problems, like the ones covered in class, but there will be one specific answer to each question. We have set up the grading process so that you get feedback, regardless of

whether you get the answer right or wrong, that is supposed to make you think in the right way about the issues. We are constantly working on enriching the grading process to provide you feedback, hopefully eventually directed at each learner.

## **VERIFIED COURSE CERTIFICATES**

If you choose to acquire a Course Certificate, your performance will be evaluated using a pass/fail grading system. The philosophy behind our grading is to make sure you gain adequate competency to be granted a certificate. To pass the course and qualify for a certificate, you will need to fulfill the following requirements:

A minimum of 70% on **each of the two assignments**.

Although we provide an estimate of the time needed to complete the assignments, none of the assignments is timed.

You may of course attend the whole class regardless of your performance on assignments, but a passing grade is necessary to receive a certificate.

## **SOME CONVENTIONS AND IMPORTANT GUIDELINES**

Finance is so cool because it makes sense; there is very little to memorize. The real issue in life is to understand the problem you are faced with. But there is one convention that is built into almost every formula and in spreadsheet functions. This convention is related to the fact that all decisions can be placed on a timeline. All flows (cash out or cash in) occur at points in time, while interest rates apply to periods of time. Unless otherwise specified, all flows occur at the end of a period. Therefore, if someone says that Maria received \$10 in year 1, it means the end of year 1. (Of course, most decisions involve an outflow/investment today; the beginning of the first period. But it will be obvious to you when that happens.) Do not worry about this; you will quickly get used to the convention once we start the class and we do problems together and, fortunately, every textbook uses the same convention.

To help you attempt the Assignments without making some common errors, I suggest that you always draw a timeline corresponding to a problem, until you are completely comfortable with doing your own analysis.

Some things to remember:

(a) Since an overwhelming majority of the questions involve numbers, DO NOT enter any symbol in your answers, just the number. For example, do not enter "\$" before the number; or "%" after it, even though the questions will have these expressions;

- (b) Do not use commas;
- (c) For simplicity, we will use dollars as the currency. Unless specified otherwise, round off all answers involving dollars to the closest integer. For example, round \$30.49 down to \$30 rather than \$31; round \$30.50 up to \$31 rather than \$30. **Sometimes the numbers are small, and we will request that you enter the number with up to two decimals;**
- (d) Finance involves interest rates. We will express all interest rates in percentages. Allow two decimals in your answers but do not enter the % sign;

***Also, please read instructions for the questions/problems very carefully before you attempt to answer them.***

## **TEACHING ASSISTANCE**

Staff from Center of Academic Innovation will serve as the course advocates and will monitor the forums. They have taken this course before, performed exceptionally well and have served admirably in facilitating past offerings. Professor Qin Lei and I are also helped by a team of graduates from University of Michigan. All the individuals helping in the creation and management of the course are very dedicated and knowledgeable people and I am grateful for their help. **The Syllabus contains a lot of information about the class; when in doubt about something, refer to it.** And, again, use each other as resources to clarify issues ranging from how to use a browser to what is life really all about.

Consistent with our philosophy that you will learn from each other, our hope is that you will resolve most/all issues on your own by reviewing the videos, doing problems, reading chapters, and discussing among yourselves. But we will monitor the forums and post comments if there is an error, especially in an assignment or in the evaluation of your submissions.. I will attempt to expose you to the beauty of finance, but you are expected to learn from each other, or use outside resources, more so than in previous incarnations of this course. **We expect most issues to be resolved in the forums by you working with other learners. Our course advocates (see below) will monitor the forums and try to respond to any ongoing concerns.**

We are also supported by the work of the Center of Academic Innovation. There is a team of dedicated Coursera professionals helping us with all technical aspects of the course and specialization. All technical issues will be addressed by them.

### **Contact with Course Advocates and Instructors**

Given the large number of students in the class, **the course advocates or instructors should not be contacted directly with any questions.** While we love all of you, responding to questions will be virtually impossible. But the advocates will monitor the

forums and keep the instructors informed on a regular basis. This has worked quite well for the past three years and I am sure we will do fine in this course as well.

## **IMPORTANT ISSUES TO CONSIDER**

### **Assignments**

The assignments are meant to be challenging, though we have tried hard to increase the difficulty level gradually within each assignment. More importantly, the assignments reflect my belief about learning. No one can really make you learn; you must be willing to work hard and struggle. The teacher's role is to expose us to the fundamental building blocks, and we need to learn by applying them to challenging problems. The reason I love finance is its applicability to all types of real-world situations. I strongly encourage you to help each other understand the concepts. Please make sure not to give answers out right to each other in the discussion forum.

### **Solutions to Assignments**

This is a seemingly reasonable request but very difficult to accommodate. Creating questions for the videos and the assignments has been, and continues to be, the most challenging part of high-quality digital education. It has taken us several months, with the help of advanced graduate students, to create assessments, test them, and then modify them to fit the grading structure imposed by technology. We believe our assignments are well thought out and reflect a good balance of conceptual and applied stuff. Due to copyright issues, we cannot simply give you questions from existing books, and I would not want to do that anyway. It will therefore be very difficult for us to offer this class multiple times if we must keep preparing new sets of questions with multiple versions to allow you to attempt each one more than once. Handing out answers will force us to do that. We have instead chosen to provide a lot of hints about the main issue in each question and you can always revisit the videos, go back to the questions, work in teams, etc., to learn the content. Over time, we hope to create richer ways of grading and providing feedback depending on the type of errors that you may make. Professor Qin Lei and I spend a significant amount of our time on creating and improving assessments.

## Honor Code

While learning from each other is very important, we all recognize the difference between collaboration and simply copying and pasting work done by others. I strongly encourage you to work collaboratively using proper judgment. Similarly, please respect all copyright rules of all materials, including books, articles, etc. While we ultimately cannot monitor everything, Coursera and my team will monitor the forums for any activity that violates such codes of conduct and basic civility to each other.

CLASS SCHEDULE: TOPICS AND READINGS				
WEEKS	TOPICS	VIDEO CHAPTERS	BOOK CHAPTERS	ASSIGNMENTS AND NOTES
1	Bond Valuation – Advanced Issues	1	IV(3,5), RWJ(8)	<b><i>Background Note: Formulae.</i></b>
2	Bond Valuation – Advanced Applications	2	IV(3,5), RWJ(8)	<b><i>Background Note: Spreadsheets.</i></b> <b><i>Assignment 1.</i></b>
3	Stock Valuation – Advanced Issues	3	IV(3), RWJ(9)	<b><i>Background Note: Formulae.</i></b>
4	Stock Valuation – Advanced Applications	4	IV(3), RWJ(9)	<b><i>Assignment 2.</i></b>