



National University of Singapore NUS Business School

ACC3614 – Valuation (Semester 1, 2019/2020) Course Outline

Overall learning objectives

- To equip students with the key concepts and understanding in valuation of major asset classes: bonds, other fixed Income instruments, financial derivatives, real estate, equity instruments as well as valuation for M&A and assessing impairment of intangible assets.
- To equip students with the key concepts and understanding in using fair value measurements for assets as required by the Singapore Financial Reporting Standards (International) (“SFRS(I)”) and Financial Reporting Standards (“FRS”) of Singapore.

For ease of reference, we will use the abbreviation FRS to refer to both Financial Reporting Standards of Singapore and its international equivalents, SFRS(I).

Pre-requisites

FIN2004 or FIN2704 (or equivalent).

Please do your own revision if you do not remember well what you have learned in FIN2004. The lectures for ACC3614 will assume that you understand the key concepts taught in FIN2004 and will move at a reasonably fast pace.

Module coverage

Broadly, this module will cover the following:

- Valuation requirements of IFRS(I) 1-32, 1-36, 1-38, 9, 1-40, 2, 3, 7 and 13
- Basics in valuations (models, inputs and applications)
- Various valuation models
- Valuation of different asset classes: bonds, other fixed income instruments, financial derivatives, real estate and equity instruments as well as valuation for M&A and assessing impairment of intangible assets.

Learning outcomes

Upon successful completion of this module, students will be able to:

- Understand the basic economic theory that drives valuation
- Understand the requirements of fair value accounting
- Understand the major valuation models for the various asset classes
- Apply the valuation methods to the requirements of the various SFRS(I)'s for accounting purposes.

Textbooks and readings

The prescribed textbooks are as follows:

1. **Damodaran**, Aswath, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, University Edition, 3rd Edition, John Wiley & Sons, 2012.
2. ACC3614 Custom Book incorporating the relevant chapters (see page 7 of this document) of the following:
 - a. **Fabozzi**, Frank J., *Bond Markets, Analysis and Strategies*, 9th Edition, Pearson Publishing, 2016.
 - b. **Hull**, John C., *Options, Futures and Other Derivatives*, 10th Edition, Pearson Publishing, 2018.

Please refer to the detailed syllabus for the relevant chapters of the textbooks.

An excellent reference book for learning beyond the first textbook above is as follows:

Penman, Stephen H, *Financial Statement Analysis and Security Valuation*, 5th Edition, McGraw-Hill Irving, 2013.

You are encouraged to do a general reading of Penman's Chapters 5 and 6, both of which are on accrual accounting and valuation, with Chapter 5 on Price to Book ratio and Chapter 6 on Price to Earnings ratio. They will give you a good appreciation of the relevance of accounting information to valuation.

Instructors

| Name | Role | Email | Room | Phone |
|--------------------------------|---------------------------------|-----------------------|--------------|-----------|
| Professor Kim Chiu CHUA | Coordinator, lecturer and tutor | kcchua@nus.edu.sg | BIZ 1, 07-18 | 6516 8227 |
| Adj Assoc Professor Kelvin TAN | Lecturer and tutor | Kt88389698@nus.edu.sg | BIZ 2, 03-42 | 8838 9698 |

Please email the instructors for consultation or make other arrangements if you need their help or advice.

Classes

There are three classes as follows: [Pending confirmation for information shaded in colour]

| | | | |
|----|-----|---------|-----|
| A1 | Mon | 3-6 pm | TBA |
| A2 | Tue | 12-3 pm | TBA |
| A3 | Tue | 3-6 pm | TBA |

You are expected to strictly attend the class to which you have been assigned. For the group project, you will be working in small groups with students from the same class.

If due to exigencies you need to attend a class other than your own for any particular week, you need to get advance clearance from the instructor.

Lecture will start promptly at the stated time and your attendance on time will be monitored accordingly. Please do not miss classes as there will be no video recording of the lectures. You will also receive a poor score for participation if you miss the class more than once.

Expectations

Slide packs will be uploaded to IVLE before the start of class each week. Students are advised to read the contents of the slide packs and the chapters of the recommended textbook (refer to the detailed syllabus below) before class each week. Additional readings assigned will also be uploaded to IVLE before each lecture. No physical handouts will be given in class. Students are expected to download and print the materials if they wish to have a hard copy.

Since you are training to become accounting professionals, ethics and professionalism are extremely important. Please take note of the NUS Code of Conduct. If any student is found violating the code of conduct or cheating in quizzes, exercises, tests or projects, he or she will be dealt with seriously and may end up obtaining zero for the relevant assessment or failing the entire module. **We take compliance with ethical conduct very seriously.**

Assessment

| | Allocation % |
|---|------------------------------|
| a. Class assignments and participation | |
| ▪ Class participation and discussion | 10% |
| ▪ Individual exercise A | 5% |
| ▪ Individual exercise B | 5% |
| ▪ Group project | 20% |
| b. Mid-term test (Mon, 30 Sep 2019, 6.00pm to 8.30pm) | 30 |
| c. Final examination (Wed, xx Nov 2019, 5:00pm to 7:30pm) | (Pending confirmation) 30 |
| Total | 100 |

Class participation and discussion (10%)

Your participation mark will be dependent on your discussions in class and how your interactions would add value for the class. If you hardly speak up in class throughout the semester, you should expect a low mark for your class participation.

Individual exercises (10% or 5% each)

Information relating to two individual exercises with practice questions will be provided in class and/or on IVLE.

Group project (20%)

The instructors will assign you to small working groups for the purposes of group projects in line with the thinking explained below.

In your future professional career, you will often find yourself working as a team with people you do not know or do not know well. This is particularly so if you work in a large auditing or advisory practice where you are usually assigned centrally to various engagements. Also, in most executive development programmes, the participants are deliberately assigned to different groups for different projects so as to allow them maximum networking opportunities. You should use this opportunity to get to know more fellow students.

You may or may not get the “dream team” that you had hoped for but it is your responsibility to think and act positively to make the team work effectively. Your instructors expect all team members to help each other to ensure no member is left behind. Please do your best to contribute as a good team player and not be detested by your team members as a freeloader.

In awarding marks, the instructors will take into consideration how you collaborate or handle tension within your working group. All members of the same working group will get the same mark. In exceptional circumstances, the instructors may moderate the marks to deal seriously with the freeloader.

Information about the group project will be provided in class and/or on IVLE. The requirements of the group project are expected to be issued in **Week 7** and the report is due for submission at the end of **Week 11 (1 Nov 2019 (Fri) noon)**.

Mid-term test (30%)

There is a mid-term test in addition to a final examination. It is your responsibility to be present for the mid-term test. Absence without a valid reason from the mid-term test will be given a score of zero. Excused absence with a make-up test will be given only in **EXCEPTIONAL CIRCUMSTANCES** as allowed by NUS policies. You **must** inform the instructors in writing prior to the mid-term test as soon as you know you may have difficulty attending the mid-term test.

All materials covered during the semester in **Week 1 to 6** in lectures, presentations, assignments, and assigned readings are examinable. All University-approved calculators are permitted. Any other electronic and mobile devices e.g. laptop, smartphones and mobile phones are not allowed.

This is a closed book mid-term test and students are allowed to bring in **one (1) SHEET** of A4 size paper with hand-written or typewritten notes on both sides.

Final examination (30%)

It is your responsibility to be present for the final examination as it is a general policy not to hold a make-up examination.

All materials covered during the semester from Week 7 to 12 in lectures, presentations, assignments, and assigned readings are examinable. In setting the final examination questions, it is assumed that you have internalised the knowledge acquired in Week 1 to 6.

All University-approved calculators are permitted. Any other electronic and mobile devices e.g. laptop, smartphones and mobile phones are not allowed.

This is a closed-book final examination and students are allowed to bring in **1 SHEET** of A4 size paper with hand-written or type-written notes on both sides.

ACC3614

Detailed syllabus

| Week beginning (2019) | Topic | Instructor | Text book and additional materials |
|-----------------------|---|------------|--|
| Week 1 12 Aug | Introduction to fair value accounting and overview of valuation <ul style="list-style-type: none"> ▪ Purposes of valuation ▪ Requirements of SFRS(I) 9 and 3 ▪ Fundamentals of valuation | Chua | Damodaran Chapters 1, 2 and 3 SFRS(I) 9 and 3 |
| Week 2 19 Aug | Bonds and other fixed income instruments <ul style="list-style-type: none"> ▪ Valuation of fixed rate bonds ▪ Valuation of floating rate notes ▪ Valuation of bonds with embedded equity options (SFRS(I) 1-32) | Chua | Fabozzi Chapters 2, 3, 5, 18 and 20 SFRS(I) 1-32 |
| Week 3 26 Aug | Equity valuation 1 <ul style="list-style-type: none"> ▪ CAPM, equity risk premium, beta ▪ Cost of equity ▪ Cost of debt ▪ Weighted average cost of capital (WACC) | Chua | Damodaran Chapters 4, 6, 7 and 8 |
| Week 4 2 Sep | Equity valuation 2 <ul style="list-style-type: none"> ▪ DCF valuation models ▪ Quantifying the parameters: discount rates, time horizon, terminal value, growth, cash flows etc. | Chua | Damodaran Chapters 4, 6, 7 and 8 |
| Week 5 9 Sep | Equity valuation 3 <ul style="list-style-type: none"> ▪ DCF valuation models ▪ Dividend discount model ▪ FCFE discount model ▪ FCFE discount model | Chua | Damodaran Chapters 9-15 |
| Week 6 16 Sep | Equity valuation 4 <ul style="list-style-type: none"> ▪ Residual earnings valuation model ▪ Relative valuation: P/B, P/E | Chua | Damodaran Chapters 17-19 |
| | Recess week, 21 Sep to 29 Sep 2019 | | |
| | Mid-term test Mon, 30 Sep 2019, 6.00pm to 8.30pm Venue to be announced in IVLE | | |

| | | | |
|-------------------|---|------|---|
| Week 7 30 Sep | M&A valuation <ul style="list-style-type: none"> ▪ Rationale for M&A ▪ Synergies in M&A ▪ Valuation of target | Tan | Damodaran Chapter 25 |
| Week 8 7 Oct | Real estate valuation <ul style="list-style-type: none"> ▪ FRS 16 and FRS 40 ▪ Market approach ▪ Cost approach ▪ Hedonic valuation | Tan | Damodaran Chapter 26 |
| Week 9 14 Oct | Valuation challenges <ul style="list-style-type: none"> ▪ Negative or abnormal earnings ▪ Young or start-up firms ▪ Private firms | Tan | Damodaran Chapters 22, 23 and 24 |
| Week 10 21 Oct | Impairment of goodwill and other intangible assets <ul style="list-style-type: none"> ▪ SFRS(I) 1-36, SFRS(I) 1-38 and SFRS(I) 3 ▪ Types of intangible assets ▪ Impairment of intangible assets ▪ Accounting for impairment | Tan | SFRS(I) 1-36, SFRS(I) 1-38 and SFRS(I) 3 |
| Week 11 28 Oct | Financial derivatives 1 <ul style="list-style-type: none"> ▪ Types of financial derivatives ▪ Valuation of Forward Rate Agreement (FRA) ▪ Valuation of swaps | Chua | Hull Chapters 1, 4 and 7 |
| Week 12 4 Nov | Financial derivatives 2 <ul style="list-style-type: none"> ▪ Basic option features ▪ Valuation of stock options ▪ Black-Scholes option pricing model ▪ Cox, Ross and Rubinstein binomial model ▪ Employee stock options (SFRS(I) 2) (Part of this topic will be covered in Week 13) | Chua | Hull Chapters 10, 11, 13, 15, 16, 21 |
| Week 13 11 Nov | Overview and revision | Chua | |
| | Final examination xx Nov 2019, 5:00pm to 7:30pm (Pending confirmation) Venue to be announced in IVLE | | |

ACC3614 Valuation of Fixed Income Instruments and Financial Derivatives
(Custom book published by Pierson)

Contents

PART 1 — *Bond Markets, Analysis, and Strategies*, 9th Edition
by Frank J. Fabozzi 1*

| | |
|-------------------|---|
| Chapter 1 | Introduction 3* |
| Chapter 2 | Pricing of Bonds 16 |
| Chapter 3 | Measuring Yield 36 |
| Chapter 5 | Factors Affecting Bond Yields and the Term Structure of Interest Rates 60 |
| Chapter 18 | Analysis of Bonds with Embedded Options 94 |
| Chapter 20 | Analysis of Convertible Bonds 122 |

PART 2 — *Options, Futures, and Other Derivatives*, 10th Edition
by John C. Hull 141*

| | |
|-------------------|------------------------------------|
| Chapter 1 | Introduction 143* |
| Chapter 4 | Interest Rates 167 |
| Chapter 7 | Swaps 197 |
| Chapter 10 | Mechanics of Options Markets 227 |
| Chapter 11 | Properties of Stock Options 249 |
| Chapter 13 | Binomial Trees 270 |
| Chapter 15 | The Black-Scholes-Merton Model 299 |
| Chapter 16 | Employee Stock Options 332 |
| Chapter 21 | Basic Numerical Procedures 345 |

*The numbers refer to the page numbers of the custom book.

CODE OF CONDUCT (ABSTRACT)

You are being trained as an accountant and it is imperative that you acquire good ethical and professional values. NUS expects students to behave in a most honorable manner. Actions will be taken for any violation of ethical or professional conduct and this includes the award of a fail grade or zero for any assignment, test or even the whole module.

NUS Code of Student Conduct

As a widely respected institution of higher learning, the National University of Singapore (NUS) is dedicated to cultivating academic and personal excellence in a way that is inclusive and supportive, where communal values as well as the dignity and rights of each person are respected.

NUS students are expected to maintain and uphold the highest standards of integrity and honesty at all times, as well as embrace community standards, diversity and mutual respect for one another, both within the University and the wider Singapore community.

This Code of Student Conduct is intended to guide students' conduct in both the academic and non-academic aspects of their University life by providing an overview of the behaviour generally expected of them as members of the University community. It is meant to serve as a broad framework, and should not be treated as an exhaustive list.

In line with the above, the University expects students to uphold both the spirit and letter of this Code of Student Conduct at all times.

Academic, Professional, and Personal Integrity

The University is committed to nurturing an environment conducive for the exchange of ideas, advancement of knowledge and intellectual development. Academic honesty and integrity are essential conditions for the pursuit and acquisition of knowledge, and the University expects each student to maintain and uphold the highest standards of integrity and academic honesty at all times.

The University takes a strict view of cheating in any form, deceptive fabrication, plagiarism and violation of intellectual property and copyright laws. Any student who is found to have engaged in such misconduct will be subject to disciplinary action by the University.

It is important to note that all students share the responsibility of protecting the academic standards and reputation of the University. This responsibility can extend beyond each student's own conduct, and can include reporting incidents of suspected academic dishonesty through the appropriate channels. Students who have reasonable grounds to suspect academic dishonesty should raise their concerns directly to the relevant Head of Department, Dean of Faculty, Registrar, Vice Provost or Provost.