



BUSINESS SCHOOL
Te Kura Pakihi

FINC 202
Investment Analysis and Portfolio Management

COURSE OUTLINE

Semester Two, 2023

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Paper Description and Aims

This course introduces students to the principals of valuation of financial securities and their uses in a portfolio of assets. We look at equity (stock/shares), debt (fixed income/interest) and derivatives. We analyze asset pricing models and financial markets. Occasionally, ethical issues will be raised from time to time.

This paper aims to set the foundations of future finance studies, and is a pre-requisite for further finance studies. The class is purposefully designed to expose the student to a large range of challenging core financial concepts.

The class has a significant increase in difficulty compared to level 100 papers and thus only students with a genuine interest in finance should enroll. Nearly 50% of the learning will be **independent**, and the majority of **assessments will be mostly problem based** in nature – underlying theory and mathematics is your responsibility to learn.

The course assessment will be based on assignments, a midterm exam and a final exam.

In order to pass the course, you need to meet **ALL** of the requirements below.

1) You need to score at least 50% - 25 out of 50 – in the final exam.

2) You need to score a total of least 50% - 50 out of 100 - in the entire course.

The course will also rely heavily on mathematics and quantitative methods as it is expected that students will have attended prior courses on these topics.

Material from the pre-requisite course FINC102 is especially important, as is knowledge of probability, random variables and basic statistics.

Learning Outcomes

Upon successful completion of this paper, you should be able to

Miscellaneous

1. Basic understanding of financial instruments, products and trading platforms
2. Distinguish between a price weighted and value weighted index
3. Calculate the level and returns of value and price weighted indices
4. Discuss the three forms of market efficiency and their implications
5. Explain why it is important to have efficient markets

Equities

1. Estimate the price of a share using the dividend discount model
2. Understand and use the Gordon Growth Model for pricing equities
2. Describe the limitations of the dividend discount model

Portfolio Theory

1. Derive the efficient frontier for the two asset case
2. Explain how having a riskless asset affects portfolio choice
3. Derive the minimum variance set when all assets are risky

4. Understand the efficient frontier with multiple risky and one riskless asset
5. Derive and understand the implications of CAPM and the Capital Market Line
7. Compute the expected return on a security using CAPM
8. Determine if a security is over- or under-priced using CAPM

Fixed Income

1. Compute the price of a bond and yield
2. Calculate the duration of a bond
3. Explain how duration measures interest rate risk
5. Compute forward rates given the current spot rates
6. Study basics of Immunization (subject to student interest)

Derivatives

1. Introduction to derivatives and payoff diagrams
2. The pricing question and basic pricing principles
3. Trading strategies using derivatives (especially options and futures)
4. Pricing derivatives by replication – Single Period Model
5. Price derivatives by replication – Binomial Trees
6. Derivatives Pricing – Black Scholes Model and formulas (subject to student interest)

Teaching Staff

Course Coordinator and Lecturer

Name: Dr. Anindya Sen

Office: OBS 410

Email: anindya.sen@otago.ac.nz

Office Hours: Tuesday 9 am to 10 am and Friday 9 am to 10 am

Tutors

Name: Anthony Zhou

Email: zhoan483@student.otago.ac.nz

Name: Abrar Hussein

Email: abrar.hussain@postgrad.otago.ac.nz

You should contact the Course Coordinator regarding academic content and assignment submission issues. For administrative enquiries, please contact Margaret Grundy – margaret.grundy@otago.ac.nz

Course Delivery

Lecture Day/Time: **Wednesday: 15:00 – 16:50 (BURN2) and Friday: 11:00 – 12:50 (ARCH3)**

Room: **BURN2 (Wednesday) and ARCH3 (Friday)**

Tutorials Day/Time: **Weekly, starting week 2 (See eVision for streaming details and timetable)**

Students are expected to attend **ALL** lectures and their designated tutorial stream.

If you fail to attend lectures, you are solely responsible for making up the material covered from your fellow students.

Tutorials begin in the **second week** of semester.

Tutorial times and locations will be posted on eVision.

If you haven't been allocated a tutorial stream by **Week 2**, please look at the tutorial schedule and attend one which suits your times until the university makes an allocation.

If you require a tutorial stream change due to clashes or late enrolment after formal Course Approval, you can do this **in the first two weeks** of the semester.

A series of Practice Problems will be posted periodically on Blackboard and will be solved in the tutorials.

However, it is expected that you will have made a sincere effort to solve the problems yourself before you attend the tutorials.

Solutions to the Practice Problems will not be posted – it is expected that you will attend the tutorials or solve them yourself.

Course Calendar The course calendar (in this outline) details scheduling information. Note that this calendar may change as the course proceeds. Any changes will be announced at lectures and be detailed on Blackboard.

These activities should be prepared for by reviewing information detailed on Blackboard and completing any assigned readings. Students unable to attend a lecture are expected to catch up on missed material. Unless stated otherwise, all aspects of the course are examinable.

Expectations and Workload

Below outlines the expected workload for FINC 202 in 2016. This acts as a guideline only, depending on your level of finance knowledge you may need additional hours.

Category	Activity	Time (hours)
Class	Lectures (26 lectures x 2 hours)	52
Class	Tutorials (12 x 1 hour)	12

Assessments	Assignments (4 assignments)	30
Assessments	Mid-Term Examination	2
Assessments	Final Exam	2
Private Study	Pre-Reading	40
Private Study	Independent Research	42
Total		180

Note that *Class contact* (lectures & tutorials) accounts for 64 hours [35.56%], *Assessments* (Mid-term, Assignments, & Finals) accounts for 34 hours [18.89%], while your **Private Study** (pre-reading & consolidating concepts) accounts for 82 hours [45.56%]. As we accept students of varying financial knowledge, there is a very large emphasis on your ability to learn what is necessary.

Course Learning Resources

There is no required textbook for the course.

However, the following textbooks are *highly recommended*.

1) *Investment Science* – David Luenberger (available in Library and bookstore).

This textbook is a useful reference for material on Portfolio Theory and CAPM, which will be covered in Weeks 1 to 7

2) *Essentials of Investments*, 11th edition - Bodie, Kane and Marcus (BKM). McGraw-Hill Irwin (available in Library and bookstore).

This is a helpful reference for material that will be covered in Weeks 1 to 7.

An additional reference which may help for the material on Futures and Options is

3) *Options, Futures and Other Derivatives* – John Hull (available in Library)

A useful Library website is dedicated to Finance topics and is found here:

<http://www.library.otago.ac.nz/databases/results.php?code=finc&dept=Finance>

Blackboard <https://blackboard.otago.ac.nz/> provides you with access to course materials, class notices, and resources. Lecture slides will be posted on Blackboard. Blackboard is used to email the whole class so it is important that you check your student email and *Blackboard* regularly. Alternatively, use PIMS to re-direct all your Otago emails to your personal email account, shown below:

Communication and Social Media:

All communication between lecturers and students will be conducted via Blackboard and University e-mail.

The lecturers will not respond to any student mails sent to personal accounts or via any form of social media.

Any information about the course obtained via sources other than the University of Otago website, Blackboard or e-mails sent from the lecturer's university e-mail is unofficial and we cannot be responsible for any decisions you may make based on them.

Student Webmail

IMPORTANT - DO THIS NOW:

Forward your University email address to an email address that you use regularly as follows:

1. [Log into your StudentMail account](#) using your student username and password
2. Click **Options** > **See All Options**
3. Under **Account**, select either the **Forward your email** shortcut or the **Connected Accounts** tab.
4. At the bottom of the screen, type in the email address you want your email to be forwarded to. You can also choose to have a copy of these emails kept on your StudentMail account, so please check the box if you would like this.
5. Click the **Start forwarding** link at the bottom of the page.

Assessment

All material presented is examinable (except where stated otherwise) by assignments and the final examination. All important assessment information such as due dates and times, content, guidelines and so on will be discussed at lectures and, where appropriate, detailed on Blackboard. *Students are responsible for ensuring that they are aware of this information, keeping track of their own progress, and catching up on any missed classes.*

Assessment	Due date	% of final grade
Assignments	Weeks 4, 7, 10, and 13	30% (4 assignments)
Mid-Term Exam	6 th September, 2023	20%
Final Exam	To Be Announced	50%

Pass Requirements

1. **You need to score at least 50% - 25 out of 50 – on the final exam .**
2. **You need to score a total of least 50% - 50 out of 100 - in the entire course.**

Assignments

There are 4 assignments in the course, worth a total of 30%

Due Dates:

Assignment 1 – 3rd August, 2 pm

Assignment 2 – 24th August, 2 pm

Assignment 3 – 21st September, 2 pm

Assignment 4 – 12th October, 2 pm

All assignments need to be submitted **online** by the due date and time or earlier.

- Please write out your assignment **by hand** and clearly write your name and student ID
- Then scan your assignment and upload as a pdf file to the portal on Blackboard

- Make sure that all pages have been properly scanned. This is your sole responsibility, and no regrading will be done if you did not scan your assignment properly
- You are also responsible for uploading within the due time. I strongly recommend starting the upload process *at least 2 hours before the due time.* Once the portal closes, late submissions will not be accepted under any circumstances. **In particular, please DO NOT email your assignments to me or any of the tutors. Those will simply be ignored.**

Mid-Term Exam

The mid-term exam covers all material up to, and including, the week of the exam.

The test will consist of a set of problems.

The test will be held in class and under examination conditions.

No extra time will be granted for lateness.

Final Exam

The Final Exam will be based on **all the material taught in the course.**

Grading System

The grading scheme used at Otago is:

A+	90-100	C+	60-64
A	85-89	C	55-59
A-	80-84	C-	50-54
B+	75-79	D	40-49
B	70-74	E	<40
B-	65-69		

Academic Integrity

Academic integrity means being honest in your studying and assessments. It is the basis for ethical decision-making and behaviour in an academic context. Academic integrity is informed by the values of honesty, trust, responsibility, fairness, respect and courage. Students are expected to be aware of, and act in accordance with, the University's Academic Integrity Policy.

Academic Misconduct, such as plagiarism or cheating, is a breach of Academic Integrity and is taken very seriously by the University. Types of misconduct include plagiarism, copying, unauthorised collaboration, taking unauthorised material into a test or exam, impersonation, and assisting someone else's misconduct. A more extensive list of the types of academic misconduct and associated processes and penalties is available in the University's Student Academic Misconduct Procedures.

It is your responsibility to be aware of and use acceptable academic practices when completing your assessments. To access the information in the Academic Integrity Policy and learn more, please visit the University's Academic Integrity website at www.otago.ac.nz/study/academicintegrity or ask at the Student Learning Centre or Library. If you have any questions, ask your lecturer.

Further information about the Academic Integrity Policy, the Student Academic Misconduct Procedures and the Academic Integrity can be found through the links below. The Academic Integrity website in particular has a number of useful links and suggestions as to where students can get help with referencing issues.

<http://www.otago.ac.nz/administration/policies/otago116838.html>

<http://www.otago.ac.nz/administration/policies/otago116850.html>

www.otago.ac.nz/study/academicintegrity

Student Learning Support and Information

Student Charter

<http://www.otago.ac.nz/about/otago005275.html>

Guidelines for Learning at Otago

<http://hedc.otago.ac.nz/hedc/wp-content/uploads/2012/12/Guidelines-for-Learning.pdf>

<http://hedc.otago.ac.nz/hedc/learning/>

Student Learning Centre

The Student Learning Centre, which is part of the Higher Education Development Centre, provides learning support, free of charge, to ALL enrolled students. Their services include:

- a workshop programme designed to help students to improve their learning strategies and their generic skills;
- individual assistance with learning issues;
- on-line study skills advice;
- a student leadership programme
- a student-led peer support programme for students of all ages and backgrounds.
- conversational English groups for students from a non-English speaking background

The Centre also provides two very helpful study guides, "Guidelines for Writing and Editing" and "Writing University Assignments" and these are available on the SLC website.

<http://hedc.otago.ac.nz/hedc/learning/>

Library Support

The University Library provides online resources for students. These include subject guides, and other research resources, and citation styles. Check it out at:

<http://www.otago.ac.nz/library/for/undergraduates/index.html>

The Library website <http://www.library.otago.ac.nz/index.php> provides online access to resources and services, including the catalogue, group room bookings, library hours and locations, past exam papers, subjects guides and more.

From your mobile: <http://m.otago.ac.nz/library/>



Māori Student Support

Tēnā koutou katoa,

Ko Corey Bragg tōku ingoa

Ko Ngāi Tahu, Kāti Mamoe, Waitaha me Ngāti Kahungunu öku iwi

Kia ora, my name is Corey Bragg and I am the Māori student support person in the Business School. My role is to help link Māori students with the various support networks throughout the university and the community. Kua e whakamā, don't be shy - come in for a chat. Mauri ora mai.

Tel 479 5342 **Email** corey.bragg@otago.ac.nz **Room** CO 3.21

Pacific Islands' Student Academic Advisor

Warm Pacific Greetings

Talofa lava, my name is Esmay Eteuati and my role is to liaise with Academic Departments and Student Services relating to Pacific students' and their course of study. I support both staff and students in the Business School and have a network of Pacific contacts in other Divisions around the University.

Tel +64 3 479 4756 **Email:** esmay.eteuati@otago.ac.nz

Disability Information and Support

Students are encouraged to seek support if they are having difficulty with their studies due to disability, temporary or permanent impairment, injury or chronic illness. It is important to seek help early, through one of the contacts below:

Mr. Dyna Seng 547 Commerce

dyna.seng@otago.ac.nz

International Students

The Otago Business School encourages international students to seek support if they are having difficulties with their studies or meeting other challenges while they are students at the University of Otago. In such instances, international students should feel free to contact International Student Support:

Telephone: 479 8344

Email: international.support@otago.ac.nz

Website: www.otago.ac.nz/international

Location: Archway West Building

Student Feedback

We encourage your feedback. This can be in the form of contacting staff, participating in course evaluation surveys and communicating with class representatives. Continual improvements will be made to this course based in part on student feedback.

Class Representatives

The class (or student) representative system is an avenue for encouraging communication and consultation between staff and students. It provides you with a vehicle for communicating your views on the teaching and delivery of the paper and provides staff with an opportunity to communicate information and gain constructive feedback from students. It contributes to the development of a sense of community within a department and it adds a further dimension to the range of support services offered to students.

Volunteers for the role of class representatives will be called early in the semester. The OUSA invites all class representatives to a training session, conducted by OUSA, about what it means to be a class representative and some of the possible procedures for dealing with issues that arise. They also provide information on the services that OUSA offers and the role OUSA can play in solving problems that may occur. The OUSA provides support to class representatives during the semester. Departmental staff will also meet with class representatives during the semester to discuss general issues or matters they wish to have considered.

Your class representative's name and contact details will be posted on Blackboard early in the semester.

Course Calendar

The course calendar in this outline details scheduling information, but the calendar may change as the course proceeds.

Any changes to the schedule will be posted on Blackboard.

All official information about the course, including any changes, will be announced on Blackboard by the Course Coordinator. Students are encouraged to check Blackboard regularly. It is the student's responsibility to be informed.

Disclaimer

Please note that all information provided in this outline is subject to the assumption that the course will be taught "under usual conditions". Everything mentioned here – including assignments, exams, marking schemes – is liable to change under unexpected circumstances such as another Covid lockdown phase (though we don't anticipate this).

Week	Date	Topic	Assessment
1	12-Jul	Introduction to Investments	
	14-Jul	No class	
2	19-Jul	Equity Valuation Dividend Discount Models	
	21-Jul	Portfolio Return and Indices	
3	26-Jul	Portfolio Theory - Risk and Return, Two Asset Case	
	28-Jul		
4	2-Aug	Portfolio Theory - Multiple Assets and Optimization	Assignment 1 due Thursday at 2 pm
	4-Aug		
5	9-Aug	Portfolio Theory - Multiple Assets and the Efficient Frontier	
	11-Aug		
6	16-Aug	CAPM and Applications	
	18-Aug		
7	23-Aug	CAPM (contd)	Assignment 2 due Thursday at 2 pm
	25-Aug	Introduction to bonds	
	30-Aug	BREAK	
	1-Sep		
8	6-Sep	Midterm Test in Class	
	8-Sep	Term Structure of Interest Rates	
9	13-Sep	Bond Pricing and Replication	
	15-Sep	Bond Duration and Covexity	
10	20-Sep	Forwards and Futures	Assignment 3 due Thursday at 2 pm
	22-Sep	Options Introduction	
11	27-Sep	Options Strategies	
	29-Sep	Payoff Replication and Pricing	
12	4-Oct	Option Pricing – Two Period Model	
	6-Oct	Option Pricing – Binomial Trees	
13	11-Oct	Revision for Final Exam	Assignment 4 due Thursday at 2 pm
	13-Oct	Revision for Final Exam	