

**PLEASE NOTE THAT SOME CHANGES MAY BE MADE TO THIS COURSE OUTLINE
PRIOR TO JANUARY 24, 2022**

**CARLETON UNIVERSITY
DEPARTMENT OF ECONOMICS**

**ECON 4051 A
FINANCIAL ASSET PRICING**

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Office Hours: TBA**

2022 Winter

Lectures: Thursday 11:35 PM – 2:25 PM

Course Objectives: This course is designed to provide students with the knowledge of factors that affect the valuation of cash flows and asset prices. It will focus on several approaches to price cash flows such as the arbitrage pricing model, the capital asset pricing model (CAPM), the factors model and arbitrage pricing and risk neutral valuation.

Prerequisites: ECON 3050 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher. Students who believe they have taken a similar background course or courses from another university must provide appropriate documentation to the Department of Economics Undergraduate Administrator, Renee Lortie.

Course delivery during COVID-19

The course will be delivered ON-LINE. On line lectures will be recorded live on BigBlueButton. The recording of each online lecture will also be available on Brightspace. Students are strongly encouraged to attend the live lecture in order to fully participate and be able to ask questions during the lecture through the CHAT BOX option on BigBlueButton (BBB).

Please note that tests and examinations in this course will use a remote proctoring service provided by Scheduling and Examination Services. You can find more information at <https://carleton.ca/ses/e-proctoring/>. More specifically, for the online mid-term and final exams, CoMas will be used for eproctoring. You will thus be required to have a camera on your computer or other device that you can turn on for monitoring during tests and exams.

Reference Textbooks:

John C. Hull (2017) *Fundamentals of Futures and Options Markets*, 9th Edition, Pearson Prentice-Hall. ISBN-10: 0134083245; ISBN-13: 9780134083247.

Jonathan Berk, Peter Demarzo, Jarrad Harford, David Strangeland and Andras Marosi, *Fundamentals of Corporate Finance: Third Canadian Edition*, Don Mills, Ontario: Pearson Canada, 2020. (abbreviated as BDHSM)

Jonathan Berk, Peter DeMarzo and David Stangeland (2018) *Corporate Finance* (Fourth Canadian Edition), Pearson Addison-Wesley. (Referred to as BDS) ISBN-13: 978-0-321-55704-9

Simon Benninga, *Financial Modeling* Fourth Edition, MIT Press, 2014 Or Third Edition, 2008.

Other reference textbooks:

John C. Hull (2018), *Options, Futures and Other Derivatives*, 10th edition, Pearson Prentice-Hall. ISBN-13: 9780134472089.

Thomas E. Copeland, J. Fred Weston, and Kuldeep Shastri (2005), *Financial Theory and Corporate Policy*, Pearson Addison-Wesley. (Referred to as CWS).

Sheridan Titman and John D. Martin (2016). *Valuation the Art and Science of Corporate Investment Decisions*, 3rd edition, Pearson Addison-Wesley.

G.M. Constandinides, M. Harris and R. Stulz, eds, *Handbook of the Economics of Finance*, (2003). Referred to as HEF.

Readings and assignments:

Specific readings will be assigned in class. Additional readings and topics that are not on this course outline may also be assigned. The order of topics may be changed as the instructor sees it fit. Whenever practice problems will be given during the term, you will be strongly encouraged to do them.

Topics:

1. Introduction

- i) Expected utility, risk, risk aversion and portfolio choice
Lecture Notes
CWS ch 3

- ii) Market efficiency

Lecture Notes

BDS ch 13

CWS, ch 10 and 11

Aswath Damodaran, "Market Efficiency: Definition and Tests,"

<http://people.stern.nyu.edu/adamodar/pdfiles/invphiloh/mktefficiency.pdf>

G. William Schwert, (2003) "Anomalies and Market Efficiency," in HEF.

Alan Timmerman and Clive Granger (2004) "Efficient Market Hypothesis and Forecasting," *International Journal of Forecasting*, 15-27.

Pedro Barroso and Pedro Santa-Clara (2015) "Momentum has its Moments" *Journal of Financial Economics*, 116, 111-20.

2. Mean-variance portfolio choice, the efficient set and the capital market line

Lecture Notes
BDS ch 11
CWS ch 5
BDHSM ch 11

3. The capital asset pricing model (CAPM)

Lecture Notes
BDS ch 11-12
CWS ch 6
BDHSM ch 11

4. The factors approach and arbitrage pricing theory

Lecture Notes
BDS Ch 13
Eugene Fama and Kenneth French (1993) “Common risk factors in the returns on stocks and bonds” *Journal of Financial Economics*, 33, 3-56.
Eugene Fama and Kenneth French (2012) “Size, Value and Momentum in international stock returns” *Journal of Financial Economics*, 33, 3-56.
Eugene Fama and Kenneth French (2015) “A Five Factor Asset Pricing Model” *Journal of Financial Economics*, 116, 1-22.
Eugene Fama and Kenneth French (2017) “International Tests of a Five Factor Asset Pricing Model” *Journal of Financial Economics*, 123, 441-63.

5. Risk neutral valuation, options, futures and derivatives

- a. Futures and forward markets
- b. Hedging strategies using futures
- c. Securitization and the credit risk of 2007
- d. Call and put options
- e. Trading strategies with options
- f. Binomial options pricing and dynamic models
- g. The pricing of options using the Black-Scholes model
- h. Options on stock indices and currencies
- i. Options on futures
- j. Hedging in options and the creation of options synthetically
- k. Valuing options numerically using binomial trees
- l. Jump processes
- m. Real options

Lecture Notes
Hull, ch 3, 5, 8, 9-13, 15-16, 17-18, 23(9th ed)
BDS Ch 20-21-22
CWS, ch 7 and 9
BDHSM, ch 13

6. Valuation

Lecture notes
BDS ch 9, 18-19 (background ch 14-16)

BDHSM, ch 14
Titman and Martin ch 2-3, 8-10

Course evaluation:

The course evaluation will be as follows:

Mid-term exam: 30% March 2, 2022

Assignment(s) to be given during the term: 20%

Final exam formally scheduled during the examination period: 50%.

Re-marking:

Any request for remarking must be submitted in writing within two weeks of that piece of work first being returned to the class. The request should contain a detailed explanation of why you feel you should receive a higher mark. Please note that remarking will apply to the entire work not just the contentious issue. As a result, the revised mark may be higher than, lower than or the same as the original mark.

Course Requirements:

Students who miss a midterm for a valid reason (for example, documented with a doctor's note) will have its weight transferred to the final exam. Otherwise, a grade of 0 will be assigned. Students who do not hand in an assignment but have a valid reason (for example, documented with a doctor's note) will have its weight transferred to the final exam. Otherwise, a grade of 0 for that assignment will be given.

Students must fulfill all course requirements in order to achieve a passing grade (D- or higher). Students who miss the final exam must apply for a deferred examination at the registrar's office. If granted, the deferred exam will take place during the time designated in the calendar. A student who misses the midterms as well as the final exam will be considered to have inadequate term work and may not be eligible for a deferred exam.

BrightSpace and e-mail:

This course will make intensive use of Brightspace. I will post PowerPoint slides, assignments, problem sets, answer keys, lecture notes, additional readings etc. on Brightspace. **It is each student's responsibility to check this website for posted material.** I will also send the class announcements by e-mail using Brightspace. So, **please check your e-mail frequently.** If you do not have a Brightspace account, please visit: <https://carleton.ca/brightspace/>

Intellectual Property Rights Regarding Course Material:

Please note: "Classroom teaching and learning activities, including lectures, discussions, presentations, etc., by both instructors and students, are copy protected and remain the intellectual property of their respective author(s). All course materials, including PowerPoint presentations, outlines, and other materials, are also protected by copyright and remain the intellectual property of their respective author(s). Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for

commercial or non-commercial purposes without express written consent from the copyright holder(s).” (See <https://carleton.ca/provost/2015/calendar-dates-and-course-materials-sharing-website/>)

Tutorials:

There may be informal tutorials held to review the answers to problems that will be assigned for practice. They will be held on BBB and recorded.

Plagiarism:

Please be aware that plagiarism is a serious offence at Carleton and should be recognized and avoided. For further information on how to do so, please see Academic Integrity and Offenses Conduct at <https://carleton.ca/economics/courses/writing-preliminaries/academic-integrity-and-offenses-of-conduct/>

The University Senate defines plagiarism as “*presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.*” This can include:

- reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source;
- submitting a take-home examination, essay, laboratory report or other assignment written, in whole or in part, by someone else;
- using ideas or direct, verbatim quotations, or paraphrased material, concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings;
- failing to acknowledge sources through the use of proper citations when using another’s works and/or failing to use quotation marks;
- handing in "substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the submission occurs."

Plagiarism is a serious offence that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of "F" for the course.

Requests for Academic Accommodation:

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

Pregnancy obligation:

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Religious obligation:

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Academic Accommodations for Students with Disabilities:

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision.

If you have a documented disability requiring academic accommodations in this course, please contact the **Paul Menton Centre for Students with Disabilities (PMC)** at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

Survivors of Sexual Violence:

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Accommodation for Student Activities:

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline .