



**Carleton**  
UNIVERSITY

**SPROTT**  
SCHOOL OF BUSINESS

**CARLETON UNIVERSITY  
BUSI 3512 C  
WINTER 2021  
DERIVATIVES**

**Instructor:** Dr. Radomir Todorov  
**Office Hours:** Friday, 12:30 pm – 1:30 pm on Zoom,  
or by appointment  
**Email:** [Radomir.Todorov@carleton.ca](mailto:Radomir.Todorov@carleton.ca)  
**Class times:** Tuesday, 2:35 pm – 5:25 pm

**Class format:** (Modality) The class will be delivered online. Each 3-hour weekly class will consist of two parts: (i) a asynchronous (pre-recorded) lecture (max. 1-hour), and (ii) a 2-hour synchronous (live) online Zoom class (approx.).

In order to participate in synchronous Zoom sessions, you will need a computer equipped with web camera, microphone, and broadband internet connection. You also need to create a free Zoom account. Zoom meeting details will be posted on cuLearn.

**Pre-requisites & precluded Courses:** BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each. BUSI3512 precludes additional credit for BUSI 4512 (no longer offered).

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**Calendar Description:** Derivative instruments and their use for speculation and hedging. Analysis of different markets where instruments trade, and their characteristics. Pricing models highlighted to determine how individuals and corporations can better manage risk; exotics and newer innovations.

**Course Description:** This is an introductory course on derivative securities. The course will focus on options, forward and futures contracts, and swaps. We will look at how derivatives can be used for hedging risk. We will study the organization of derivatives markets, relevant trading strategies and the pricing models applicable to these securities.

**Textbook:** John Hull, Options, Futures, and Other Derivatives, 10th ed., Prentice Hall, 2018.

### Grading Scheme:

Class Participation (e.g. quizzes, etc.)	5 %
Excel-based Project Assignments (3@10%):	30 %
Midterm:	25 % (Date: TBA)
Final:	40 % (Date: TBA)
Total:	100%

**Expectations:** The course will require you to both understand the economic intuition of financial concepts and to perform mathematical calculations.

(1) **Reading** – You are expected to have covered the readings before class and re-read the chapter to gain a complete understanding of the material after class.

(2) **Sample Problems** –To ensure that you understand the material, sample problems and quizzes will be given. These problems and quizzes will NOT be graded, but it will be required that you complete the quizzes by a given deadline. It is also strongly recommended that you try solving the assigned problems as they will help you in preparation for the assignments and exams. Group work on the sample problems is encouraged.

### *Notes on Examinations and Assignments*

The mid-term test and the final exam will cover both the theory and application of topics covered in classes and the readings. The mid-term test and final examination are closed-book and closed-notes. Students are allowed to bring in a TI BAI plus calculator only. The final exam will be comprehensive. Both midterm and final will consist of multiple choice and short essay/problem type questions. The date for the final exam will be posted by the University later in the semester. The assignments are designed to focus on material that was just covered.

### *Exam Attendance and Assignments Completion*

If a student is unable to sit for a mid-term test or complete an assignment / quiz due to verifiable illness (or, in rare cases, some other circumstances beyond your control), the student will be given a choice to write the test on an alternate date or mark allocation to a given assignment will be allocated to remaining assignments; the mark allocation for the mid-term test will be allocated to the final exam. If a student is unable to sit for the final exam, the student may apply to the Registrar's Office to write a deferred examination. Deferral final examination will only be granted to students showing satisfactory in-term performance (as described below). Please also see Sections 2.4, 2.5 and 2.6 of the Undergraduate Calendar. It should be noted that deferred examinations are not granted to students who make travel plans that conflict with the examination period.

## Satisfactory In-term Performance

1. The criterion and the standard for Satisfactory In-term Performance are as follow: 50% of total pre-final exam work (cumulative) marks. This includes total marks for all assignments and midterm exam, and participation in all activities as indicated during the course such as completing the quizzes.

2. Unsatisfactory In-term Performance in this course will lead to Failure in this course (regardless of the performance at the Final exam or final project) **No**  
FND grade in this course (in case of missed Final exam) **Yes**

## Course Outline

\*The following outline is tentative and subject to change. The instructor reserves the right to drop one or two topics if there is insufficient time. \*

Date	Session	Chapter	Topic
Jan 12	1	Ch 1 & 2	<b>Introduction</b> Mechanics of Futures Markets, Part 1
Jan 19	2	Ch 2 & 3	Mechanics of Futures Markets, Part 2 Hedging Strategies Using Futures
Jan 26	3	Ch 5	Determination of Forward and Futures Prices
Feb 2	4	Ch 6	Interest Rate Futures
Feb 9	5	Ch 7	Swaps <b>Assignment 1 due</b>
			<b>Winter Break. No classes.</b>
Feb 23	6		<b>Midterm (TBA)</b>
March 2	7	Ch 9	Mechanics of Options Markets
March 9	8	Ch 10	Properties of Stock Options <b>Assignment 2 due</b>
March 16	9	Ch 11	Trading Strategies Involving Options
March 23	10	Ch 12	Introduction to Binomial Trees
March 30	11	Ch 13	The Black-Scholes-Merton Model I
April 6	12	Ch 15	Options on Stock Indices & Currencies
April 13	13	Ch 17	The Greek Letters <b>Assignment 3 due</b>
			<b>Final Exam (TBA)</b>

## ADDITIONAL INFORMATION

### e-Proctoring

Please note that tests and examinations in this course may use a remote proctoring service provided by Scheduling and Examination Services (tbc). You can find more information at <https://carleton.ca/ses/e-proctoring>.

### **Course Sharing Websites**

Materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

### **Required calculator in BUSI course examinations**

If you are purchasing a calculator, we recommend any one of the following options: Texas Instruments BA II Plus (including Pro Model), Hewlett Packard HP 12C (including Platinum model), Staples Financial Calculator, Sharp EL-738C & Hewlett Packard HP 10bII

### **Group work**

The Sprott School of Business encourages group assignments in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks/assignments/projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50			

Grades entered by Registrar:

WDN = Withdrawn from the course

DEF = Deferred

### **Academic Regulations**

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

### **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](http://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](https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

**Academic Accommodations for Students with Disabilities**

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](mailto:pmc@carleton.ca) for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. 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](https://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](https://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](https://students.carleton.ca/course-outline)

**Academic Integrity**

Violations of academic integrity are a serious academic offence. Violations of academic integrity – presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the degree and will not be tolerated. Penalties may include; a grade of Failure on the submitted work and/or course; academic probation; a refusal of permission to continue or to register in a specific degree program; suspension from full-time studies; suspension from all studies at Carleton; expulsion from Carleton, amongst others. Students are expected to familiarize themselves with and follow the Carleton

University Student Academic Integrity Policy which is available, along with resources for compliance at: <https://carleton.ca/registrar/academic-integrity/>.

### **Sprott Student Services**

The Sprott student services office, located in 710 Dunton Tower, offers academic advising, study skills advising, and overall academic success support. If you are having a difficult time with this course or others, or just need some guidance on how to successfully complete your Sprott degree, please drop in\* any weekday between 8:30am and 4:30pm. Our advisors are happy to discuss grades, course selection, tutoring, concentrations, and will ensure that you get connected with the resources you need to succeed! <http://sprott.carleton.ca/students/undergraduate/learning-support/>

*\* Note that the office is physically closed. However, e-drop in is available between 8:30-4:30 until social distancing requirements are updated by the Province.*

### **Centre for Student Academic Support**

The Centre for Student Academic Support (CSAS) is a centralized collection of learning support services designed to help students achieve their goals and improve their learning both inside and outside the classroom. CSAS offers academic assistance with course content, academic writing and skills development. Visit CSAS on the 4th floor of MacOdrum Library or online at: [carleton.ca/csas](http://carleton.ca/csas).

### **Important Information:**

- Students must always retain a hard copy of all work that is submitted.
  - All final grades are subject to the Dean's approval.
  - For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, in order to respond to your inquiries, please send all email from your Carleton CMail account. If you do not have or have yet to activate this account, you may wish to do so by visiting <https://carleton.ca/its/get-started/new-students-2/>
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