



## SYLLABUS

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■ **Course Description** The objective of this course is to introduce students to derivative securities and other forms of financial innovations. Various characteristics of futures, options, and other derivative securities markets and how public agencies, businesses, and others use these markets are discussed. Trading and hedging with such instruments are examined. Emphasis will be placed on understanding the basic intuition of the economic rationale behind derivative securities and financial innovations, rather than on the pricing of such instruments using numerical computation methods. This course is designed to primarily address the needs of all students in advanced graduate business programs, not necessarily specializing in finance.

■ **Prerequisites** I will assume a good understanding of basic notions in finance including but not limited to: the time-value of money; return, risk and portfolio diversification and net present value. These are materials covered in MGT/P/B 205 (core finance class).

The course will be self-contained and I will assume some minimal mathematical and statistical proficiency. Even though this course is just an introductory course, the underlying subject matter is quantitative in nature, therefore, some basic understanding of the mathematical underpinning is necessary to appreciate the materials presented in the course.

Computing skills with Microsoft Excel would probably be the most useful for the group assignments and final exam.

■ **Course Materials** Lecture notes will be provided in advance. No textbook is required for this class. Recommended textbook: John Hull's "Options, Futures and Other Derivatives" - an excellent and comprehensive source though a bit more advanced, definitely not very useful for a class at introductory level.

■ **Assignments, Exams and Group Projects** There will be three group assignments handed out at the end of the first three classes and one individual take home final exam handed out at the end of the last class.

■ **Grading** A total of 100% is allocated across the assignments (each counting for 25% for a total of 75%) and the final exam (25%). The final grade will be set according to UC Davis policy based on the weighted average scores as described above.



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■ **Course Outline** The intended list of topics and quarter schedule is provided below. Topics could be added/removed as the quarter starts.

### ► **Overview of Derivative Securities (Day One)**

We will begin with an overview of derivatives market and differentiate different types of securities. We begin by contrasting arbitrage pricing methods with discounting pricing methods. We will discuss different participants in the market, such as hedgers, speculators and arbitrageurs, and their roles in the market place. We will also discuss differences between over-the-counter markets and exchange trade markets, as well as the difference between physical-settlement and cash-settlement futures. Topics such as counter-party risk and financial engineering will also be introduced.

- Reference: Lecture Notes Day One
- Group Assignment One Handed Out, Due Next Class

### ► **Basics of Options and their Uses (Day Two)**

We examine some basic characteristics of plain vanilla options and the markets where they trade. We will also examine some simple option strategies to develop basic understanding of their uses. We study some basic relationship between option values and their parameters, as well as basic properties that govern option prices, such as put-call parity, option price convexity, and early exercise of American options.

- Reference: Lecture Notes Day Two
- Group Assignment Two Handed Out, Due Next Class

### ► **Other Derivatives and Applications (Day Three)**

We study various extensions of option pricing such as stocks and bonds as options, convertible bonds, warrants and rights issues. We also discuss employee stock options. Other option-embedded securities such as principle-protected notes and mandatory convertible bonds are discussed. We also introduce the notion of 'real options'.

- Reference: Lecture Notes Day Three
- Group Assignment Three Handed Out, Due Next Class

### ► **Swaps and Securitization (Day Four)**

Simple swap contracts are introduced and we discuss their potential uses. We discuss credit risk and uses of credit default swaps. We also study securitization and collateralized debt obligations.

- Reference: Lecture Notes Day Four
- Individual Assignment Handed Out (Take Home Exam)

## The University of California, Davis CODE OF ACADEMIC CONDUCT

### Honesty, Fairness, Integrity

This Code of Academic Conduct exists to support high standards of behavior and to ensure fair evaluation of student learning. Students who violate the Code of Academic Conduct are subject to disciplinary sanctions that include censure, probation, suspension, deferred separation, or dismissal from the University of California. Unless specifically authorized by the instructor in writing, misconduct includes, but is not limited to the following:

- Academic misconduct on exams or other coursework
  - Copying or attempting to copy from another student, allowing another student to copy, or collaborating with another student on an exam
  - Displaying or using any unauthorized material such as notes, cheat-sheets, or electronic devices
  - Looking at another student's exam
  - Not following an instructor's directions regarding an exam
  - Talking, texting or communicating during an exam
  - Altering assignments or exams for re-grading purposes
  - Bringing pre-written answers to an exam
  - Having another person take an exam for you, or taking an exam for another student
  - Theft of academic work
  - Unexcused exit and re-entry during an exam period
- Plagiarism
  - Taking credit for any work created by another person; work includes, but is not limited to books, articles, experimental methodology or results, compositions, images, lectures, computer programs, or internet postings
  - Copying any work belonging to another person without indicating that the information is copied and properly citing the source of the work
  - Using another person's presentation of ideas without putting such work in your own words or form and giving proper citation
  - Creating false citations that do not correspond to the information you have used
  - Plagiarizing one's own work
- Unauthorized collaboration
  - Working together on graded coursework without permission of the instructor
  - Working with another student beyond the limits set by the instructor
  - Providing or obtaining unauthorized assistance on graded coursework
- Misuse of an instructor's course materials or the materials of others
  - Posting or sharing any course materials of an instructor without the explicit written permission of that instructor
  - Purchasing or copying assignments or solutions, to complete any portion of graded work, without the instructor's permission
  - Unauthorized use of another student's work
- Lying or fraud
  - Giving false excuses to obtain exceptions for deadlines, to postpone an exam, or for other reasons
  - Forging signatures or submitting documents containing false information
  - Making false statements regarding attendance at class sessions, requests for late drops, incomplete grades, or other reasons
- Intimidation or disruption
  - Pressuring an instructor or teaching assistant to regrade work, change a final grade, or obtain an exception such as changing the date of an exam, extending a deadline, or granting an incomplete grade
  - Refusing to leave an office when directed to do so
  - Physically or verbally intimidating or threatening an instructor, teaching assistant or staff person, including yelling at them, invading personal space, or engaging in any form of harassment

- Repeatedly contacting or following an instructor, teaching assistant, or staff person when directed not to do so
- Misusing a classroom electronic forum by posting material unrelated to the course
- Interfering with an instructor's or teaching assistant's ability to teach a class, or interfering with other students' participation in a class by interrupting, physically causing a disruption, or excessive talking

### Upholding the UC Davis Code of Academic Conduct

Students, faculty, and University administration all have a role in maintaining an honest and secure learning environment at UC Davis.

➤ The success of our Code of Academic Conduct depends largely on the degree that it is willingly supported by students.

Students:

- Are responsible to know what constitutes cheating. Ignorance is not an excuse.
- Are required to do their own work unless otherwise allowed by the instructor.
- Are encouraged to help prevent cheating by reminding others about this Code and hold each other accountable by reporting any form of suspected cheating to the University.
- Shall respect the copyright privileges of works produced by faculty, the University, and other copyright holders.
- Shall not threaten, intimidate, or pressure instructors or teaching assistants, or interfere with grading any coursework.
- Shall not disrupt classes or interfere with the teaching or learning environment.

➤ Faculty members and instructors are responsible for teaching courses and evaluating student work, and are governed by University of California and UC Davis policies and regulations. Regulation 550 of the Davis Division of the Academic Senate addresses academic misconduct. Faculty and instructors:

- Will provide students with a course outline containing information about the content of the course, amount and kind of work expected, examination and grading procedures and notice of the Code of Academic Conduct.
- Should monitor examinations to help prevent academic misconduct.
- Shall report all suspected cases of cheating and other misconduct to the Office of Student Support and Judicial Affairs (<http://ossja.ucdavis.edu/>).

➤ The University has delegated authority and responsibility to the Office of Student Support and Judicial Affairs (OSSJA) for the adjudication and resolution of academic misconduct cases. OSSJA maintains records of academic misconduct. The University:

- Shall educate faculty and students about the Code of Academic Conduct.
- Shall provide physical settings such as classrooms and labs for examinations that minimize opportunities for academic misconduct.
- Shall assist and train faculty and teaching assistants about how to prevent and address academic misconduct.

➤ Submitting Reports and Judicial Procedures:

- The Code of Academic Conduct governs academic conduct at UC Davis.
- Faculty have sole authority, as granted by the Academic Senate, to evaluate a student's academic performance and assign grades. If academic misconduct is admitted or established, instructors may assign a grade penalty no greater than "F" for the course in question. If a report is pending at the end of an academic term, instructors should assign a temporary grade of "Y" for the course until the report is resolved.
- A faculty/student panel, convened by OSSJA, shall conduct formal hearings to adjudicate contested cases of academic misconduct, unless the right to a formal hearing has been withdrawn. The right to a formal hearing may be withdrawn because of a prior finding of misconduct.
- Instructors and teaching assistants may direct a student to leave a class immediately if the student's behavior is disruptive.
- Instructors, teaching assistants, and staff persons should contact police (752-1230 or 911) if they feel physically threatened.