

## **BUSINESS FINANCE 7230**

### **Autumn 2025**

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<i>Instructor:</i>	Professor Kewei Hou
<i>Office:</i>	820 Fisher Hall
<i>Phone:</i>	292-0552
<i>Fax:</i>	292-7062
<i>E-mail:</i>	<a href="mailto:hou.28@osu.edu">hou.28@osu.edu</a>
<i>Class Times and Rooms:</i>	Tue/Thu 9:45am-11:15am, Gerlach 375 Tue/Thu 4:30pm-6:00pm, Gerlach 315
<i>Office Hours:</i>	By appointment only

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#### **A. Course Description**

This course explores the valuation of forwards, options, forward-based, and option-based financial instruments. While a student may have studied options and/or forwards in other courses, this course examines in detail the analytical methods used to price these securities, and the analytical analysis of arbitrage, hedging, and speculation using these securities.

Course objectives are: (1) to provide an understanding of the basic concepts and principles of derivatives, (2) to provide opportunities to learn skills used in derivative analysis and valuation, (3) to evaluate trading and speculation opportunities available in the current financial markets, and (4) assess the influence of economic events upon pricing.

The course is divided into three parts, covering separately (1) Derivative basics, strategies and payoffs; (2) Valuation of forward and forward-based derivatives; and (3) Valuation of option and option-based derivatives.

#### **B. Prerequisite**

Derivatives valuation is a technically demanding area, and although no math other than algebra is required, students should be comfortable with basic statistics (such as variance, correlation, linear regression and distributions) and fundamental finance topics (principally time value of money and compounding). Occasionally concepts will be explained using some calculus, but this should only require a basic conceptual understanding.

#### **C. Course Materials**

##### ***Recommended Textbook***

McDonald, Robert L., *Derivatives Markets*, Third Edition, 2013 (Addison-Wesley, ISBN: 978-0-321-54308-0). This book comes with software that allows students to price a wide arrange of derivative securities. The book is available at the bookstore and at [www.amazon.com](http://www.amazon.com).

**Lecture Notes**

I will post my lecture notes on Carmen prior to class - please make sure you print the notes and bring them to class.

**Other Sources**

I strongly encourage students to do regular reading of the financial press, such as the *Wall Street Journal*, *Financial Times*, or the business section of the *New York Times*. There also are websites dedicated to derivatives markets. Other tools such as *Bloomberg* and *Datastream International* that were used in previous finance classes also will be useful in 7230.

**D. End-Of-Chapter Problems**

For each topic, there is a set of study problems that highlights the course material. *These problems will not be collected but they will help you prepare for the exams.* Answers to these problems will be posted on Carmen. *Exam questions will be based, in part, on these problems.*

**E. Exams**

There will be *one cumulative* final exam that *will cover material presented in class lectures and study problems.* You will be allowed to bring one 8-1/2" x 11" sheet of paper with notes and formulas (both sides are OK) on it. The final exam is scheduled well in advance so that you can plan around the date. Please do not ask to be excused from the exam for matters of personal convenience.

The final exam grade will count for *75 percent* of your total course grade. There will also be a “practice” final that will count for *25 percent* of your total course grade.

**F. Academic Integrity**

All students enrolled in this course are responsible for abiding by the guidelines outlined in the University’s Code of Student Conduct. According to University Rule 3335-31-02, *all suspected cases of academic misconduct will be reported to the Committee on Academic Misconduct.*

**G. Use of Artificial Intelligence (AI)**

Unless I specifically mention otherwise (and in writing), the use of any AI-generated content in any deliverables in this course will be considered academic misconduct and will be acted on as such.

**H. Disenrollment**

Fisher College University Rule 3335-8-33 provides that a student may be disenrolled after the third instructional day of the quarter, the first Friday of the quarter, or the student’s second class session of the course, whichever occurs first, if the student fails to attend the scheduled course without giving prior notification to the instructor.

## **I. Religious Accommodations**

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Office of Institutional Equity.

## **J. Acknowledgement**

Many of the lecture notes and other course materials are derived from those used by Professor Bernadette Minton at the Ohio State University, Professor George Constantinides and Professor Jesus Santos at the University of Chicago, Professor John Hull at the University of Toronto, and Professor Robert McDonald at Northwestern University. I thank all of them for their assistance.

## **K. Course Outline**

Each topic includes *recommended* readings and study questions from *McDonald*.

## Course Outline

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### **I. Derivative Basics**

- *McDonald*, Chapters 1, 2, and 3.
- Study Questions: 1.3, 1.7, 1.9, 2.5, 2.7, 2.9, 2.12, 2.14, 3.1, 3.4, 3.8, 3.11, 3.14, 3.15, 3.16, 3.17, and 3.18.

### **II. Financial Forwards and Futures**

- *McDonald*, Chapter 5.
- Study Questions: 5.3, 5.4, 5.8, 5.10, 5.13, and 5.19.

### **III. Commodity Forwards and Futures**

- *McDonald*, Chapter 6.
- Study Questions: 6.1, 6.3, 6.4, 6.6, 6.8, and 6.9.

### **IV. Option Relationships**

- *McDonald*, Chapter 9.
- Study Questions: 9.1, 9.3, 9.4, 9.6, 9.7a, 9.7b, 9.9, 9.10, 9.11, and 9.15.

### **V. Binomial Option Pricing**

- *McDonald*, Chapters 10 and 11.
- Study Questions: 10.6, 10.10, 10.12, 10.16, 10.19, 10.21, 11.1, 11.4, 11.8, 11.14, 11.16, and 11.18.

### **VI. Black-Scholes Model**

- *McDonald*, Chapter 12.
  - Study Questions: 12.3, 12.5, 12.9, 12.14, and 12.20.
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