



FINA4319-001: Financial Derivatives (3 Credit Hours)
Fall 2017

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Office Hours: Monday 2:00-3:30PM, Wednesday 2:00-3:30PM, or by appointments

Section Information: Topics included in FINA4319-001 Financial Derivatives are an introduction to options and futures markets, investment and risk management strategies using these derivative products, and pricing of options and futures contracts. Additional coverage includes basic swap agreements, exotic options, and corporate risk management. Prerequisite: FINA 3313.

Time and Place of Class Meetings: COBA149, Tuesday and Thursday 5:30-6:50PM

Description of Course Content: FINA4319-001 covers topics in financial derivatives: forward/futures, options, swaps, and how to use these derivative products in financial risk management. Unlike stocks or bonds, financial derivatives are a special group of financial instruments that are designed and used for managing financial risks. Main differences lie in: 1) The value of derivatives contract depends on its underlying asset value; 2) Derivatives are not used as vehicles of financing or investing, but as tools of hedging financial risks; 3) As a whole trading derivatives is a zero-sum market. 4) Speculation is common in derivatives market which could pose potential hazards to financial markets. This course will introduce fundamental concepts of derivative instruments from following aspects: 1) Forward and futures: mechanics of forward/futures market, hedging strategies using futures, and formation of forward and futures prices; 2) Swaps: interest rate swaps, total return swaps, and pricing of swaps; 3) Options: mechanics of options market, properties of stock options, trading strategies using options, valuation of stock options, and options on indices and currencies; 4) Structured products (Securitization): mortgage backed securities, credit securitization, and valuation of structured derivative products. Advanced mathematical and statistical methods are extensively applied in this course for valuation and risk analysis of these derivatives instruments. Spreadsheet exercises will be heavily used to develop quantitative analysis skills.

Student Learning Outcomes:

- 1) Through the course students are expected to have a full understanding of main derivative instruments and their markets: forward/futures, options, swaps, and structure products.
- 2) Students should be able to design basic hedging strategies using derivative contracts to manage financial risks, investment risks, or cash flow risks.
- 3) Students are also expected to know how the value of derivative contracts is determined, and understand derivatives valuation techniques, such as binominal tree, lattice method and Black-Scholes model.
- 4) Students must understand the mechanics of derivative contracts, including payoff structure, measures of price sensitivity to risk factors (Greek letters), and dynamics of derivatives market.
- 5) Through the course students are expected to have a better understanding of speculating in derivatives market, from simple long/short strategy to more complicated option trading strategies (so called financial engineering). Students are also expected to be able to design basic hedging strategies or derivatives trading strategies independently by applying risk measures or Greek letters.

- 6) Students should be able to identify advantages, disadvantages or potential damages that derivatives instruments and derivatives markets could bring. After taking this course you should have a better understanding of 2008 financial crisis and future regulations on derivatives market.
- 7) Through the course students are also expected to understand advanced analytical techniques such as scenarios analysis, breakeven analysis, simulations, and stochastic method of option valuation. Financial modeling using Excel spreadsheet or other programming languages are highly encouraged in this course.

Required Textbooks and Other Course Materials:

1. Required Text: "*Fundamentals of Futures and Options Markets*" by John C. Hull, Pearson Education Publishing, 9th edition, 2017, ISBN-10: 0134083547, ISBN-13: 9780134083544.
2. Other recommended materials: Wall Street Journal, Bloomberg News and Markets, Yahoo Finance;
3. Technical Requirements: Calculators: TI BAII (Plus)/Professional or HP 12C financial calculators, Laptop, Microsoft Office, Computer Lab or Internet Connections.

Descriptions of major assignments and examinations:

1. Exams: Two mid-term exams and one final exam. The lower score of the two mid-term exams will be dropped. Final exam is comprehensive and mandatory which could not be dropped.
2. Homework Assignments: During the semester you are expected to have total three homework assignments in the format of **multiple-choice questions**. Students are expected to complete each assignment independently before the due date. No delayed turn in will be accepted. You could find them in course schedule for tentative posting and due date. **Spreadsheet problems** are also to be assigned for after class learning and practice.
3. Case Analysis: Students are expected to form study groups voluntarily or by the instructor. Cases are assigned to each group. Each group must do analysis on assigned cases and answer the case questions in a formal report within two pages. (See Appendix 1 for instruction of case analysis)
5. Class participation: Class participations are components of the final grade. Class participation is strongly encouraged for everyone.

Attendance: At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I have established following attendance policy: Students enrolled in this course are expected to attend each class with homework and reading assignments completed. Any student who must miss a class is responsible for securing all class materials and assignments for coursework missed. Students are required to maintain class attendance at least at an acceptable level. Class roll will be randomly called during class meetings.

Course Policy: 1. During class meetings non-class activities are refrained in the classroom. These may include, but are not limited to, silencing cell phones, etc.

2. Students are encouraged to participate in interactive discussions and ask questions;
3. In case the instructor is late for more than 15 minutes, please leave the classroom quietly;
4. Students should check your UTA e-mail account for any important updates from the instructor. Students are responsible for any missed class materials and assignments.
5. All exams are mandatory with closed book and notes
6. UTA IDs must be in front of the students at all times during exams.
7. Formula sheet will be provided for exams by instructor.
8. Students must bring their own Scantron form 882-ES and financial calculators. Programming-enhanced calculators are not allowed in the exam.
9. The instructor may relocate students in the exam room.
10. Academic honesty is a must in this course. Any misconducts or dishonesties might result in an automatic F and/ or appropriate disciplinary action.

Grading: Class performance is evaluated by a weighted average of exams, homework assignments, homework project, finance tutorial, and class attendance and participation. Extra credits: Bonus questions will be offered on exams and assignments.

GPA Composition	Weights	Score	Letter Grade
Mid-term Exam 1	30%	89.50-100.0	A
Mid-term Exam 2		79.50-89.49	B
Final Exam (Comprehensive)	40%	69.50-79.49	C
Homework Assignments: 1) Multiple Choice Questions (3×3.33%) 2) Spreadsheet Exercise (5%)	15%	59.50-69.49	D
Case Analysis	10%	0-59.49	F
Attendance and Participation	5%		

Make-up Exams: Make-up exam could be scheduled for students who contact the instructor at least one week prior to the scheduled exam date with a valid reason.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least 6 hours per week on course related activities, including reading required materials, completing assignments, preparing for exams, working on project, etc.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog. For undergraduate courses, see <http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>; for graduate courses, see <http://catalog.uta.edu/academicregulations/grades/#graduatetext>. For student complaints, see <http://www.uta.edu/deanofstudents/student-complaints/index.php>.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

Non-Discrimination Policy: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information,*

and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.

Title IX Policy: The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.*

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

Student Feedback Survey: At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: for semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following

this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities. Evacuation plans may be found at http://www.uta.edu/campus-ops/ehs/fire/Evac_Maps_Buildings.php.

In the event of an evacuation of the College of Business building, when the fire alarm sounds, everyone must leave the building by the stairs. All those in the North tower side of the building should proceed to the fire escape stairs located on the East and West sides of that wing. With the current fire alarm system, the elevators will all go to the first floor and stay there until the system is turned off. For Disabled Persons: Please go to the Northeast fire stairs. There is an evacuate track chair located on the 6th floor stairwell. There are people trained in the use of this chair and there will be someone who will go to the 6th floor to get the chair and bring it to any lower floor stairwell to assist disabled persons. Should this be a real emergency, the Arlington Fire Department and UTA Police will also be here to help. Students should also be encouraged to subscribe to the MavAlert system that will send information in case of an emergency to their cell phones or email accounts. Anyone can subscribe at <https://mavalert.uta.edu/> or <https://mavalert.uta.edu/register.php>

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include [tutoring](#), [major-based learning centers](#), developmental education, [advising and mentoring](#), personal counseling, and [federally funded programs](#). For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

University Tutorial & Supplemental Instruction (Ransom Hall 205): UTSI offers a variety of academic support services for undergraduate students, including: 60 minute one-on-one [tutoring sessions](#), [Start Strong](#) Freshman tutoring program, and [Supplemental Instruction](#). Office hours are Monday-Friday 8:00am-5:00pm. For more information visit www.uta.edu/utsi or call 817-272-2617.

The IDEAS Center (2nd Floor of Central Library) offers **FREE** tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in, or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

The English Writing Center (411LIBR): The Writing Center offers **FREE** tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at <https://uta.mywconline.com>. Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see www.uta.edu/owl for detailed information on all our programs and services.

The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>

Course Schedule (Tentative)

Week	Date	Weekday	Lecture Topics
Week1	8/24/2017	Th(First day of class)	Syllabus

Week2	8/29/2017	T	CH01 Introduction
	8/31/2017	Th	CH01 Introduction
Week3	9/5/2017	T	CH01 Introduction
	9/7/2017	Th	CH02 Mechanics of Futures Markets
Week4	9/11/2017	Census Date	CH02 Mechanics of Futures Markets
	9/12/2017	T	CH03 Hedging Strategies Using Futures
	9/14/2017	Th	CH03 Hedging Strategies Using Futures CH05 Determining of Forward and Futures Prices
Week5	9/19/2017	T	CH05 Determining of Forward and Futures Prices
	9/21/2017	Th	CH05 Determining of Forward and Futures Prices
Week6	9/26/2017	T	CH04 Interest Rates, CH06 Interest Rate Futures
	9/28/2017	Th	Exam 1
Week7	10/3/2017	T	CH04 Interest Rates, CH06 Interest Rate Futures
	10/5/2017	Th	CH07 Swaps
Week8	10/10/2017	T	CH07 Swaps
	10/12/2017	Th	CH08 Mechanics of Options Markets
Week9	10/17/2017	T	CH08 Mechanics of Options Markets
	10/19/2017	Th	CH09 Properties of Stock Options
Week10	10/24/2017	T	CH09 Properties of Stock Options
	10/26/2017	Th	CH10 Trading Strategies Involving Options
Week11	10/31/2017	T	CH10 Trading Strategies Involving Options
	11/1/2017	(Last day to drop)	
	11/2/2017	Th	Exam 2
Week12	11/7/2017	T	CH12 Valuing Stock Options: The Black-Scholes Model
	11/9/2017	Th	CH13 Options on Stock Indices and Currencies
Week13	11/14/2017	T	CH13 Options on Stock Indices and Currencies
	11/16/2017	Th	CH15 The Greek Letters
Week14	11/21/2017	T	CH15 The Greek Letters
	11/23/2017	Th (Thanksgiving)	No Class
Week15	11/28/2017	T	CH11 Introduction to Binominal Trees
	11/30/2017	Th	CH16: Binominal Trees In Practice
Week16	12/5/2017	T(Last Day of Class)	Review
Week17	12/12/2017	Th	Final Exam (5:30-8:00PM)

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381