

# USC Marshall

School of Business

## FBE 459 Management of Financial Risk Syllabus, Fall 2017

**Class Lectures:** Tuesday and Thursdays 10am – 11:50am

**Professor:** Mark D Griffiths

**Office Hours:** M&W 10-11:30; 4-5:30; Tu. 5-6 and by appointment.

**Office:** ACC226

**E-mail:** [mark.griffiths@marshall.usc.edu](mailto:mark.griffiths@marshall.usc.edu)

**Online communication regarding this course will be via Blackboard.**

**Prerequisite:** 1 from (**BUAD 215 or BUAD 306**)

### **Course Objective**

Making sound business and economic decisions requires knowing economic environment in This course is intended to be an introduction to financial derivatives, namely options, futures and swaps. The goal is to provide a complete overview of the main characteristics of these securities and pricing and hedging issue, from the point of view of the investment bank or large investor (rather than from the point of view of the small investor). The emphasis of the course will be on conceptual issues as opposed to the institutional aspects (although the basic institutional aspects will be covered). By all standards, this is a quantitative course and a good background in calculus and statistics is highly desirable, if not necessary.

### **Course Materials**



***Derivatives, Wendy Pirie, CFA Institute***

***And (because this book contains the solutions to chapter questions)***

***Derivatives, Workbook, Wendy Pirie, CFA Institute***

Note: since we will ***NOT*** be reviewing every chapter in the book, you may wish to share a copy or get a used version. The workbook is helpful.

***Note also: The Instructor's Lecture Notes are quite comprehensive and the course is supplemented with many Workshops and Self-test quizzes. As a result, purchase of the text and workbook are NOT mandatory,***

The textbook for this course is Derivatives by Wendy L. Pirie, CFA Institute 2017. This textbook is to serve as the point of departure for lectures and some of the homework assignments and tests.

You are also required to follow the current economic news in the media and see how they relate to the economic theories covered in the class. The two sources that I would recommend for finding up-to-date economic news with a fairly accurate economic analysis are *Wall Street Journal* and *The Economist*. From time to time, class will be conducted in a discussion format. Students are required to participate in the discussions. Regardless of which format is employed, questions and comments are always encouraged.

A financial calculator is **required**. It should have the ability to do Time Value of Money (TVM) problems including continuous compounding and discounting problems.

I recommend the Hewlett Packard 10BII



The Texas Instruments BAII Plus is also acceptable.



Graphing calculators are also acceptable as long as they can handle TVM (Time Value of Money) problems.

## **Calculator Tutorials**

[http://www.tvmcalcs.com/calculator\\_index](http://www.tvmcalcs.com/calculator_index)

[http://h10025.www1.hp.com/ewfrf/wc/useCategory?lc=en&cc=us&dlc=en&product=61751&dest\\_page=product](http://h10025.www1.hp.com/ewfrf/wc/useCategory?lc=en&cc=us&dlc=en&product=61751&dest_page=product)

**Note:** Calculators come with instruction manuals – read it – do not expect me to be your private tutor for something you can and should do by yourself.

## **Midterm Exams**

There will be two midterms during the semester plus the final exam. The midterms will be worth 30% each and the final exam will be worth 40% of the course grade. The midterms will be multiple-choice and/or problem-solving questions. **No makeup exam will be given. Any missed midterm will have the weight shifted to the remaining midterm(s) or final exam.**

## **Final Exam**

The final exam will be comprehensive but will emphasize the material covered after the second test. The final will comprise multiple-choice and/or problem-solving questions. If you miss the final exam for a medical emergency reason that can be documented and verified, there will be a makeup final to be arranged as soon as possible. Otherwise, a grade of zero will be assigned to the final exam. **All the tests in this course are closed notes, closed book, open mind.**

## **Course Grading**

Each student will be assigned a grade measured by the relative performance on the following exercises:

2 Mid-Term Exams (30% each)	60%
Final Exam	40%

According to the Marshall School grading policy, the average grade for this course should be 3.0 (B). Marshall does not enforce a strict “curve” or grade distribution, but that grade is a reasonable expectation of the current course grade average.

Generally speaking 33% of the students score in the A range (includes A-); 40 % score in the B range (includes B+ and B-), 12% score in the C+ range, and the remainder score lower. This distribution generates a class GPA in the 3.0+ range.

## **Important Dates**

9/21	<b>Mid-Term 1 in regular classroom</b>
10/26	<b>Mid-Term 2 in regular classroom</b>
11/16	<b>No class - SFA</b>
11/23	<b>No class - Thanksgiving</b>

**Final Exam (Thursday December 7, 11am-1pm) in regular classroom**  
**Verify the exam date here: <http://classes.usc.edu/term-20173/finals/>**

## **Structure and Content**

This course covers the fundamentals of option from pricing and hedging to their use in the management of financial risk. The course begins with a thorough theoretical development of futures, forwards, options and swaps, and ends with an analysis of structured products that have embedded derivative contracts. Along the way, we will discuss issues of counter-party risk and the responsible use of derivatives.

This course is about the use of financial instruments, in particular derivative products, to restructure or rearrange cash flows to achieve particular financial goals and is used to:

- rearrange the timing of cash flows
- reduce currency, interest rate and credit risk
- reduce the cost of capital and the costs of doing business

Specifically, this course will introduce a process of creating financial products whose payments are linked to, or based on, one or more underlying assets. The linkages between assets can take the form of:

- Absolute price levels or index values;
- Spreads between individual securities, baskets, sectors, indices, and markets;
- Correlations between two or more asset classes;
- Yield curve shapes: convergence, or divergence.

As a result, this course not only covers a lot of material but also requires the student to revisit and expand on material taught in previous classes. **Note:** you may need to review the material taught in earlier classes.

A brief review of the factors contributing to the increasing importance of this field demonstrates the need to be able to consolidate information from various sources:

- Tax asymmetries that can be exploited to produce tax savings for the issuer, investors, or both and that are not offset by the added tax liabilities of the other.
- Rules regarding information disclosure or accounting conventions. Regulatory barriers or legislative changes: market access restrictions, interest rate controls, capital controls. Transaction costs associated with bringing a new security to the market.
- Agency costs or the costs of enforcing contracts.
- Costs associated with information search on the credit worthiness of a borrower or issuer.
- Opportunities to reduce some form of risk or to reallocate risk from one market participant to another who is either less risk averse or else willing to bear the risk at a lower cost.
- Opportunities to increase an asset's liquidity.
- Level and volatility of interest rates, commodity prices, and exchange rates.
- Technological advances.

You will **NOT** be able to leave studying for this course until the last moment and then hope to memorize enough lists or methods to pass an exam. This course is about understanding financial instruments and how they can be applied to different financial situations. You will have to **learn** the material as the course progresses. My best advice is “Do **not** fall behind in the class. Come to class prepared, and **whenever in doubt, ask questions!**” There will be plenty of opportunity to ask!

## **DISABILITY SERVICES AND PROGRAMS ANNOUNCEMENT**

Please be aware of the following policy regarding disabled student accommodations:

"Any student requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or my TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776." [www.usc.edu/disability](http://www.usc.edu/disability)

### **Statement on Academic Integrity**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, ([www.usc.edu/scampus](http://www.usc.edu/scampus) or <http://scampus.usc.edu>) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>. Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

### **Support Systems**

Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs ([www.usc.edu/disability](http://www.usc.edu/disability)) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* (<http://emergency.usc.edu/>) will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

### **Emergency Preparedness/Course Continuity**

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.

### **Course Outline**

The following course outline will be followed in a lecture format, but with sufficient flexibility to alter allotted time and emphasis as questions arise. From time to time, class will be conducted on a discussion format. You are required to follow the economic news in the press and participate in the class discussions. Regardless of which format is employed, questions and comments are always encouraged.

## **Course Outline\***

Date	Topic of Study	Chapters
8/22	Introduction to Forwards, Futures & Derivatives	1
8/24	Future Commitment Pricing	1.4.1
8/29	Bond Pricing, Bootstrapping, Accrued Interest Calculations.	Lecture notes
8/31	Duration and Convexity measurement	Lecture notes
9/5	Forward Pricing	3 & 7
9/7	Forward Pricing (continued)	3.3 & 7.2
9/12	Forward Rate Agreements	3.3 & 7.2
9/14	Interest Rate Futures	3.3.4
9/19	<b>Mid-Term #1 Review</b>	
9/21	<b>Mid-Term #1</b>	
9/26	Bond Futures	7.3.2 & Lecture notes
9/28	Other Futures Contracts	3.3.2, 3.3.6 & 3.3.7
10/3	Introduction to Interest Rate Swaps	3.4.1 & 9.2
10/5	Interest Rate Swaps (continued)	3.4.1 & 9.2
10/10	Introduction to Currency Swaps	3.4.2 & 9.3
10/12	Currency Swaps (continued)	3.4.2 & 9.3
10/17	Introduction to Credit Default Swaps	6.4.2, 6.5.5 & 6.6.2
10/19	Credit Default Swaps (continued)	6.4.2, 6.5.5 & 6.6.2
10/24	<b>Mid-Term #2 Review</b>	
10/26	<b>Mid-Term #2</b>	
10/31	Introduction to Options	4 & 5
11/2	Introduction to Option Pricing	4 & 5
11/7	Option Pricing (continued)	5 & Lecture notes
11/9	Introduction to FX options	Lecture notes
11/14	Hedging Stocks with Options	5.5 & Lecture notes
11/16	<b>No class</b>	
11/21	Hedging Portfolios with Options	8
11/23	<b>No class - Thanksgiving</b>	
11/28	Structured Products	Lecture notes
11/30	Final Exam, Review	

N.B. Every topic/section is supported by Lecture notes available on BlackBoard

\*- All details in this schedule are subject to change with adequate notice.