

**Course Syllabus**  
**Derivative Securities**  
**FIN410 Section 01**  
**3 Credit Hours**

**Course Description**

Students gain a thorough understanding of options, futures, and other financial instruments. Skills are developed in basic pricing analysis, use of pricing models, and trading and hedging strategies. Students are first introduced to the basic techniques for pricing, hedging, and other analysis. Next, these techniques will be applied through an introduction of hedging strategies. The end goal is to develop skills which the students can apply in derivative markets.

Assignments: Each student will be required to complete a series of assignments dealing with derivative pricing and strategies. These assignments will require students to use theoretical models, monitor market prices, and track strategy positions.

**Course Objectives**

At completion of the course, students will be able to:

- ⇒ *Describe* the operation of option/futures markets
- ⇒ *Calculate* the price various derivative securities
- ⇒ *Create* strategies which meet specified goals (i.e. risk reduction)
- ⇒ *Evaluate* and *change* these strategies in light of changing economic conditions
- ⇒ *Apply* theoretical derivatives knowledge via spreadsheet applications

**Instructor**

Dr. Matthew W. Will

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**Class Format & Meeting Times**

Section 01 MWF 9:00 am – 9:50 am

Face to Face

**Office Hours**

Mon 8:00 am – 9:00 am

Tue 4:30 pm – 5:30 pm

Wed 8:00 am – 9:00 am

By appointment

## Required Stuff

### Academic Dishonesty and Plagiarism

You must not adopt or reproduce ideas, words, or statements of another person without giving an appropriate acknowledgement to the source. You must give due credit to the originality of others and acknowledge an indebtedness wherever you:

- Quote another person's actual words, either oral or written;
- Paraphrase another person's words, either oral or written;
- Use another person's ideas, opinions, or theories; or
- Cite facts, statistics, or other illustrative material, unless the information is common knowledge.

*All assignments must be your original work and not the work of other students.* Neither group work nor the individual work of another student may be submitted by you. Submission of such work will be considered academic misconduct. Incidents of academic misconduct, dishonesty and/or plagiarism will be handled as per the Student Handbook.

According to the Student Handbook:

Academic Integrity and Academic Misconduct: The students, faculty, and administrators of the University of Indianapolis commit themselves to the highest level of ethical conduct in academic affairs. The University of Indianapolis, therefore, adopts regulations concerning Academic Misconduct to safeguard the academic integrity of the institution. Academic Misconduct includes, but is not limited to, the following circumstances: (A) Cheating, (B) Fabrication, (C) Plagiarism, (D) Interference, (E) Violation of Course Rules, (F) Facilitating Academic Dishonesty, and (G) Abuse of Confidentiality. For a full statement of the policy refer to the University of Indianapolis Student Handbook, Section I, Academic Information.

### ADA & Disability Accommodation

The professor will provide accommodation for students qualifying for disability-related needs. The student should contact the Services for Students with Disabilities office (SSD) to begin the process. (see <http://www.uindy.edu/ssd> for more information).

### Class Attendance, Preparation & Participation

Class attendance is an important part of the academic process, and you are expected to attend classes regularly and to manage your schedule in order to meet the demands of this course. If you are absent, you will be responsible for arranging makeup work to be completed prior to the absence or immediately upon return to class at the instructor's discretion. As per the student handbook, reasonable documentation or verification of claims regarding absences may be requested.

Class preparation is critical to success in this course. You are expected to:

- (a) read the assigned material prior to arriving to class, as well as
- (b) review the solved problem illustrations in the chapter and
- (c) prepare a list of questions that you have about the topic.
- (d) participate in class discussions

Please note that the course topics build upon prerequisite knowledge of fundamental business concepts, algebra and basic spreadsheet skills. If you feel you may be deficient in any of these areas, you are encouraged to review them and/or seek tutoring outside of class.

### Recording & Copyright Policy

Recording of course lectures and reproduction of class content is not permitted without his expressed permission of Dr. Will. All content created by Dr. Will is copyrighted and he reserves all rights of reproduction and distribution.

## IMPORTANT STUFF

### Required Materials

Fundamentals of Futures and Options Markets by John C. Hull, 9<sup>th</sup> Edition, Prentice Hall, 2016.

The 8<sup>th</sup> edition will also work <http://www-2.rotman.utoronto.ca/~hull/ifom/>

Financial Calculator - HP12c

Bloomberg Account

ON RESERVE (BKM): Essentials of Investment by Bodie, Kane and Marcus, 5<sup>th</sup> edition, McGraw Hill, 2004...and...Options as a Strategic Investment by McMillian.

### Course Requirements

### Grading

|                               |   |         |
|-------------------------------|---|---------|
| 30% Final Exam                | A | 90-100% |
| 40% Quizzes                   | B | 80-89%  |
| 30% Assignments & Pop Quizzes | C | 70-79%  |
|                               | D | 60-69%  |
|                               | F | 0-59%   |

Pluses and minuses are assigned at the instructor's discretion, based on participation, preparation, attendance and score within each range.

### Assignments & Pop Quizzes

Assignment details will only be provided in class. Students must submit the assignments as instructed in class or credit will not be given. If students do not understand the assignment, they are responsible for asking the instructor for clarification when the assignment is reviewed in class. Every student must select a DIFFERENT security. Directions on doing this will be provided.

Pop quizzes over the readings may be given without notice by the instructor. Students should complete the assigned readings each night in preparation for the lecture and possible questions. Students who miss class without a pre-authorized university absence may not make up the missed pop quiz.

### Bloomberg Use

Almost every assignment will require use of the Bloomberg terminal, submission of screen shots and other data. Since the Finance Lab has limited hours, students are responsible for planning their assignments accordingly. All students will be required to complete the Bloomberg Market Essentials certification program.

### Quizzes / Exams

The exams are designed to evaluate the student's comprehension of material rather than just memorization. Questions may include short answer/essay, as well as problems. On exams, you will be responsible for all of the assigned readings.

If you must miss an examination, you must let me know about this prior to the exam. It will be solely at the instructor's discretion whether you may take a make-up exam and under what terms.

**Students will not be allowed to enter the classroom late, other than on days of scheduled exams. Show up ON TIME.**

## FIN 410 - Fall 2023

Tentative Schedule (subject to change at the instructor's discretion)

| Date   | Topic                               | Reading                          | Assignment   | Slides |
|--------|-------------------------------------|----------------------------------|--|--------|
| 28-Aug | Review Course                       | Ch 1, Weblink 1 & 2              |  | Set 1  |
| 30-Aug | Options overview                    | BKM - 14.1, 14.3                 | Register for Bloomberg & send me note                            | Set 2  |
| 1-Sep  | Futures overview                    | Ch - 2<br>BKM - 16.1, 16.2, 16.5 |  | Set 3  |
| 4-Sep  | NO CLASS                            |                                  |  |        |
| 6-Sep  | Commodity futures                   | WebLink 3                        | Chart one call and one put for an option                         | Set 4  |
| 8-Sep  | Futures hedging strategies          | Ch 3                             |  | Set 5  |
| 11-Sep | Futures hedging strategies          | Weblink 4                        | Access Bloomberg certification videos                            | Set 6  |
| 13-Sep | Review                              |                                  |  |        |
| 15-Sep | Quiz                                |                                  |  |        |
| 18-Sep | Interest, Forward and Futures Rates | Ch 4                             |  | Set 7  |
| 20-Sep | Duration                            | various text pages<br>See index  |  | Set 8  |
| 22-Sep | Financial futures                   |                                  | Compute forward rates for a yield curve                          | Set 9  |
| 25-Sep | Financial futures                   | Ch 5                             |  | Set 10 |
| 27-Sep | Financial futures                   | Ch 6                             |  | Set 11 |
| 29-Sep | Financial futures                   | Weblink 5                        | Compute CTD for two T-bonds using the Delivery Spot Price method | Set 11 |
| 2-Oct  | Review                              |                                  |  |        |
| 4-Oct  | Quiz                                |                                  |  |        |
| 6-Oct  | Hedge Ratios                        | Class notes                      |  | Set 12 |
| 9-Oct  | Interest Rate Swaps                 | Ch 7                             |  | Set 13 |
| 11-Oct | Currency Swaps                      | Weblink 6                        |  | Set 13 |
| 13-Oct | NO CLASS                            |                                  |  |        |
| 16-Oct | NO CLASS                            |                                  |  |        |

|           |                            |   |   |        |
|-----------|----------------------------|---|---|--------|
| 18-Oct    | SWAP Quiz                  |   |   |        |
| 20-Oct    | Foreign exchange           | Ch 3 thru 7                                   |   | Set 14 |
| 23-Oct    | Foreign exchange           | Ch 3 thru 7                                   |   | Set 14 |
| 25-Oct    | Option markets             | Ch 9  |   | Set 15 |
| 27-Oct    | Option Pricing             | McMillan Ch 1 (on reserve)                    | Bloomberg Certification Due   | Set 16 |
| 30-Oct    | Option Pricing             | Ch 10   | Option Pricing Assignment - Calculate historical volatility, implied volatility, call price, and probability of profit. | Set 16 |
| 1-Nov     | Option Volatility          | Ch 13 & Weblink 7                             |   | Set 17 |
| 3-Nov     | Option pricing             | Ch 12   |   | Set 18 |
| 6-Nov     | Review                     |   |   |        |
| 8-Nov     | Quiz                       |   |   |        |
| 10-Nov    | NO CLASS                   |   |   |        |
| 13-Nov    | Option strategies          | Ch 11, McMillan appendix A, B, C (on reserve) |   | Set 19 |
| 15-Nov    | Futures options            | Ch 16   |   | Set 20 |
| 17-Nov    | The Greeks                 | Ch 17   | Calculate the greeks for the option used in prior homework  | Set 21 |
| 20-Nov    | NO CLASS                   |   |   |        |
| 22-Nov    | NO CLASS                   |   |   |        |
| 24-Nov    | NO CLASS                   |   |   |        |
| 27-Nov    | Volatility Smiles          | Ch 19   |   | Set 22 |
| 29-Nov    | Mortgage Meltdown          | Ch 8  |   |        |
| 1-Dec     | Mortgage backed securities | Ch 22, Weblink 8 & 9                          |   | Set 23 |
| 4-Dec     | VaR                        | Ch 20   | Calculate the 10 day, 99% level VaR for \$1mil investment   | Set 24 |
| 6-Dec     | Review                     |   |   |        |
| 8-Dec     | NO CLASS                   |   |   |        |
| Finals WK | Final Exam                 |   |   |        |