George Mason University  
School of Business  
Spring 2016  
Finance 412- Futures and Options Markets  
Class Time: Monday 7:20 PM to 10:00 PM

Instructor: Dr. George H. K. Wang**  
Room 223, Enterprise Hall, Phone: 703-993-3415  
Fax: 703-993-1870  
E-mail: Gwang2@gmu.edu  
Office Hours: Monday 3:30PM-4:30PM; Tuesday 3:30PM-4:30PM or by Appointment (lecture notes and assignments are available in Blackboard)

Texts:  
1. Hull, John C.  *Fundamentals of Futures and Options Markets*  
   2008 (eight edition), Prentice Hall (required)  
2. Hull, John C.  *Solutions Manual and Study guide to Fundamentals of Futures and Options Markets*  
   2008 (eight edition), Prentice Hall (recommended),

Prerequisites: Finance 311 and Decision Science 201.

Objectives: The purpose of this course is to acquaint the student with the following subjects:  
(1) The economic function and institutional characters of futures and options markets; (2) The rationales behind major derivative pricing models and using these pricing models to evaluate alternative derivative instruments; (3) Various arbitrage, hedging and trading strategies commonly used in these markets and (4) Fundamental concepts of risk management.

This course will build a foundation for you to pursue further study in the areas of Derivatives. The current demand for financial analysts with a concentration in derivatives is very high. Be sure to master this course and you will be rewarded in the future.

Outside Readings:  

2. Additional reading assignment will be announced in class and all reading assignments are available at the reserve desk of the Johnson library.
Examination Policies:

(1) Grading standards:

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Mid-term exam</td>
<td>35%</td>
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<td>Final exam</td>
<td>40%</td>
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<td>Quiz and problem sets</td>
<td>25%</td>
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<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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(2) Use of (+, -) grades and Types of exams: short essay on fundamental concepts and problem-solving questions.

Course Outline and Schedule

Part I: **Futures and Forward Markets**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics [Chapters (Hull (2010))]</th>
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<tbody>
<tr>
<td>1.</td>
<td>1/25 Introduction and the Mechanics of Futures Markets (Chapters 1 and 2)</td>
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<td>2.</td>
<td>1/25 Mechanics of Futures Markets and Hedging Strategies Using Futures (Chapters 2 and 3)</td>
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<td>3.</td>
<td>2/1 Hedging Strategies Using Futures (Chapter 3)</td>
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<td>4.</td>
<td>2/1 Interest Rates (Chapter 4)</td>
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<td>5.</td>
<td>2/8 Interest Rates (Chapter 4)</td>
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<td>6.</td>
<td>2/8 Determination of Forward and Futures Prices (Chapter 5)</td>
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<tr>
<td>7.</td>
<td>2/15 Determination of Forward and Futures Prices (Chapter 5)</td>
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<td>8.</td>
<td>2/15 Determination of Forward and Futures Prices (Chapter 5) and Interest Rate Futures (Chapter 6)</td>
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<td>9.</td>
<td>2/22 Interest Rate futures (Chapter 6)</td>
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<td>10.</td>
<td>2/22 Interest Rate futures (Chapter 6)</td>
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<tr>
<td>11.</td>
<td>2/29 Swaps (Chapter 7)</td>
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<td>12.</td>
<td>2/29 Swaps (Chapter 7)</td>
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<td>13.</td>
<td>3/7 Spring Recess</td>
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Spring Recess

Part II: Options Markets

15 3/14 Mid-term Examination and Mechanics of Option Markets and Properties of Stock Options (Chapters 9)

16 3/14 Properties of Stock Options and Trading Strategies Involving Options (Chapters 10 and 11)

17 3/21 Properties of Stock Options and Trading Strategies Involving Options (Chapters 10 and 11) Trading Strategies Involving Options

18 3/21 Introduction to Binomial Tree (Chapter 12)

19 3/28 Valuing Stock Options: Black-Scholes Model (Chapters 13)

20 3/28 Valuing Stock Options: Black-Scholes Model (Chapters 13)

21 4/4 Options on Stock Indices, Curries (Chapters 15)

22 4/4 Futures Options (Chapter 16)

23 4/11 The Greeks (Chapters 17)

24 4/11 Volatility Smiles (Chapter 19)

25 4/18 Volatility Smiles (Chapter 19)

26 4/18 Binomial Trees in Practices (Chapter 18)

27 4/25 Binomial Tress in Practices (Chapter 18)

28 4/25 Interest rate options (Chapter 21-21.1 section,)

29 5/2 Review for final examination

30 5/9 Final Examination
(7:30 -10:15 PM)

Note: final drop deadline 2/19

Honor Code: Students are expected to observe the GMU Honor Code.
**Attendance**  Students are strongly encouraged to attend every class meeting. Anyone who thinks that he/she has a chance of missing more than four classes should definitely take a different course.

**Etiquette in the Class Room** - Students must turn off all phones, beepers, etc. when attending class. No one has permission to tape record any part of any lecture or discussion in any session. **PRIVATE CONVERSATIONS BETWEEN STUDENTS WHILE CLASS IS IN SESSION ARE IMPOLITE, UNPROFESSIONAL, AND UNWELCOMED.**

**Exams**  Students who want to take an exam at other than at the scheduled time must get prior permission from the instructor who is unlikely to give it unless the student has a serious medical problem (documented by a doctor in writing) or faces a severe conflict in schedule because of a work-related matter (documented in writing by a supervisor).

Suggestions for Readings


** (Short Bio) George H. K. Wang is the Research Professor of Finance in the School of Management at George Mason University. He received his Ph. D in statistics and economics (double majors) from Iowa State University, Ames, Iowa. He was the Deputy Chief Economist and Director of Research , U. S. Commodity Futures Trading Commission. Dr Wang was visiting Professor of Finance, Faculty of Economics and Business, University of Sydney, Australia in summer, 2006, 2007and W and 2007winter, 2013-14. Visiting Professor, CRC Capital Markets Ltd, Sydney Australia, 2010 and Visiting Professor of Finance, College of Management, National Central University, Jhongli, Taiwan in summer 2007. He has published widely in major refereed journals in the areas of derivative markets, applied time series, econometrics, mortgage markets and transportation. He is an elected ordinary member of International Statistical Institute and on the editorial board of the Journal of Futures Markets.