Assumption University
Graduate School of Business
M.Sc. Investment Analysis and Management

Graduate School of Business’s Vision
“Educating Intelligences and Active Minds to Change the World”

GRADUATE SCHOOL OF BUSINESS’S MISSION

- To provide graduates competent for management and able to assume administration responsibilities with foresight and vision, who have a head to think critically and creatively, a pair hands to act with a sense of purpose and an ear attuned to the people around them.
- To generate new knowledge in management and administration, particularly in the Asian context, in this information rich, globalized economy in which we all live.

COURSE TITLE
AM 6107 Derivatives Analysis

LECTURER
Nattawoot Koowattanatianchai, DBA

CONTACT
Ph 087-5393525, fbusnwk@ku.ac.th

COURSE DESCRIPTION
Analysis of contracts, pricings, valuations and risks of forward, futures, swap, and options, risk management of option strategies, and interest and credit derivatives, introduction of various types of risks such as market risk, credit risk and operational risk, measurement of risk, and components of risk management process.

CORE TEXT

REFERENCE TEXT

Class times and room numbers

Saturday, 10.30 am – 5.30 pm, CC15 ABAC City Campus.

There will be a midterm exam on November 21, 2015, and a final exam on December 19, 2015.

Course objectives

The course is designed to introduce students to the theoretical and practical aspects of financial derivatives, including forwards, futures, options, swaps, and interest rate & credit derivatives. The course is carefully structured to ensure close alignment with the CFA curriculum. The main focus will be on characteristics, pricing, and valuation of derivative contracts. The course will also cover how credit risk affects various types of derivative contracts and how it can be managed. The subject matter requires heavily use of quantitative methods and theoretical reasoning, and most students will find it quite challenging.

Classes will comprise weekly 6 hour seminars at which student participation is encouraged and will be graded.
Course objectives, corresponding learning outcomes, teaching and evaluation approaches are outlined in the following table.

<table>
<thead>
<tr>
<th>Course objectives</th>
<th>Learning Outcomes</th>
<th>Teaching Approaches</th>
<th>Evaluation Approaches</th>
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</thead>
<tbody>
<tr>
<td>1. To be able to describe characteristics of various derivative contracts.</td>
<td>1. Well-round Knowledge</td>
<td>- Lecture</td>
<td>- Examination</td>
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<td></td>
<td>2. In-depth Knowledge</td>
<td>- Group discussion</td>
<td>- Class participation</td>
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<td></td>
<td></td>
<td>- Case Study</td>
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<td>2. To understand the mechanism of derivatives markets and derivatives trading</td>
<td>1. Well-round Knowledge</td>
<td>- Lecture</td>
<td>- Examination</td>
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<td>2. In-depth Knowledge</td>
<td>- Group discussion</td>
<td>- Class participation</td>
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<td></td>
<td></td>
<td>- Case Study</td>
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<tr>
<td>3. To be able to price various types of derivative securities.</td>
<td>1. In-depth Knowledge</td>
<td>- Lecture</td>
<td>- Examination</td>
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<td></td>
<td>2. Problem Solving</td>
<td>- Group discussion</td>
<td>- Class participation</td>
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<tr>
<td></td>
<td>3. Professional Skills</td>
<td>- Case Study</td>
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<td></td>
<td>4. Mathematical and Statistical Skills</td>
<td>- Essay</td>
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<tr>
<td>4. To be able to value various types of derivative securities at different points in time.</td>
<td>1. In-depth Knowledge</td>
<td>- Lecture</td>
<td>- Examination</td>
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<td></td>
<td>2. Problem Solving</td>
<td>- Group discussion</td>
<td>- Class participation</td>
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<tr>
<td></td>
<td>3. Professional Skills</td>
<td>- Case Study</td>
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<tr>
<td></td>
<td>4. Mathematical and Statistical Skills</td>
<td>- Essay</td>
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</table>

**Expected workload**

You are expected to spend roughly 15 hours per week for completing this course. This comprises 6 hours for the class, 5 hours in undertaking the background reading, and 4 hours in researching and writing the essay. The actual load is unlikely to be uniform however.

**Materials and equipment**

Electronic calculators are permitted in examinations. Note however that calculators must be non-programmable and without a full set of alphabetic keys.

**Assessment requirements**

The final mark for the course will be based upon the following approximate weights:

- Class participation: 10%
- Essay (see below): 30%
- Midterm exam: 30%
- Final exam: 30%

The essay comprises a critical review of the empirical literature on the question of “Does the Black-Scholes-Merton Model correctly price options”. It must be typed in Microsoft Word. The essay should not exceed 4,000 words, excluding the bibliography. It is required that at least 25 refereed journal articles relevant to the essay topic are included in the literature review. The essay should develop a classification scheme for the papers.
examined and discuss methodology as well as results. Use Harvard style of referencing. Find out more about Harvard style of referencing at https://www.citethisforme.com/harvard-referencing.

The essay is submitted via email by midnight on December 13, 2015.

The course will also be assessed via midterm and final exams. These exams will consist of essay questions (possibly including mathematical argument) which will test appreciation and understanding of important materials covered in the lecture series. Students are allowed three hours to complete each exam.

In the event that this assessment scheme yields a fail grade (less than 50% of the total marks), but the exam marks alone yield a pass, a C pass will be awarded.

Penalties

Essays handed in late will suffer a 10% penalty per calendar day for the first five days (i.e., marked out of 90, 80, etc.), and be awarded zero after five days. Extensions may be granted (for significant medical or personal problems) prior to the deadline but not after. Essay material in excess of the word limit prescribed above will not be evaluated.

Mandatory course requirements

The essay must be submitted, and both examinations attended.

In compliance with Assumption University’s policy on class attendance, the Graduate School of Business requires all students enrolled in courses to have a minimum class attendance of 80% to be eligible to sit the final examination. The 20%-absence rule, the maximum allowable absences, is inclusive for all excuses i.e. sickness, personal commitments, family trips, business trips, and other reasons.

Automatic withdrawal without students’ consent:

The Dean, the Program Director, and the Lecturer are each empowered to withdraw or withhold correction of the final examination papers of any student who fails to meet the class attendance requirements.

Communication of additional information

Course notices will generally be relayed in class, via email or a chat group on Line Application. Course contents can be downloaded from the instructor homepage (http://fin.bus.ku.ac.th/nattawoot.htm). Any queries should be directed to the instructor.

Academic rules and regulations

Students should familiarize themselves with the university’s academic rules and regulations, which can be found in the student handbook of Assumption University’s Graduate School of Business. The handbook can be downloaded from:

http://www.grad.au.edu/Student%20Handbook%20GSB%20May%20202014%20small.pdf

Please pay attention to the following topics:
- Leave of absence and resignation
- Termination of student status
- Dress code
- Student discipline
- Academic dishonesty
- Plagiarism
- Attendance and punctuality
- Class participation
- Examination regulations
- Late examination regulations
- University policy regarding cheating
- Exam scripts viewing
- Changing program

## Course Outline

This course outline is subject to review and may be amended to meet students’ needs

<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Remark</th>
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</thead>
</table>
| 1       | Sat Oct 31, 2015 | 10:30 a.m. – 17:30 p.m. | Introduction  
(a) Course overview  
(b) Course objectives  
(c) Assessment requirements  
(d) Course outline  
Forward Contracts  
(a) Nature of a forward contract  
(b) Types of forwards | - Chance/Brooks Ch 8  
- CFA II reading 47 |
| 2       | Sat Nov 7, 2015  | 10:30 a.m. – 17:30 p.m. | Pricing and Valuation of Forward Contracts  
(a) Generic pricing and valuation of a forward contract  
(b) Pricing and valuation of equity forward contracts  
(c) Pricing and valuation of fixed-income and interest rate forward contracts  
(d) Pricing and valuation of currency forward contracts  
(e) Credit risk and forward contracts | - Chance/Brooks Ch 9  
- CFA II reading 47 |
| 3       | Sun Nov 15, 2015 | 10:30 a.m. – 17:30 p.m. | Futures Contracts  
(a) Nature of a futures contract  
(b) Types of futures  
(c) Generic pricing and valuation of a futures contract  
(d) Pricing interest rate futures  
(e) Pricing stock index futures  
(f) Pricing currency futures | - Chance/Brooks Chs 8-9  
- CFA II reading 48 |
| 4       | Sat Nov 21, 2015 | 10:30 a.m. – 17:30 p.m. | Midterm Exam  
Covering lecture materials from sessions 1-3 | - The exam will be held in the morning. The exact time will be advised one week before the exam.  
- Chance/Brooks Chs 2 and 6  
- CFA II reading 49 |

Option Contracts  
(a) Basic definitions and illustration of option contracts  
(b) Types of options
<table>
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<tr>
<th>Session</th>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Remark</th>
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<tr>
<td>5</td>
<td>Sat Nov 28, 2015</td>
<td>10:30 a.m. – 17:30 p.m.</td>
<td><strong>Option Pricing</strong></td>
<td>- Chance/Brooks Chs 3-5</td>
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<td>(a) Principles of option pricing</td>
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<td>(b) Discrete-time option pricing: the Binomial Model</td>
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<td>(c) Continuous-time option pricing: the Black-Scholes-Merton Model</td>
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<td>(d) Pricing options on forward and futures contracts and an application to interest rate option pricing</td>
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<td>6</td>
<td>Sat Dec 5, 2015</td>
<td>10:30 a.m. – 17:30 p.m.</td>
<td><strong>Swap Contracts</strong></td>
<td>- CFA II reading 49</td>
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<td>(a) Nature of swap contracts</td>
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<td>(b) Types of swaps</td>
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<td>(c) Pricing and valuation of swaps</td>
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<td>(d) Variations of swaps</td>
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<td>(e) Swaptions</td>
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<td>(f) Credit risk and swaps</td>
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<td>7</td>
<td>Sat Dec 12, 2015</td>
<td>10:30 a.m. – 17:30 p.m.</td>
<td><strong>Interest Rate Derivative Instruments</strong></td>
<td>- CFA II reading 50</td>
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<td>(a) Interest rate futures</td>
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<td>(b) Interest rate options</td>
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<td>(c) Interest rate swaps</td>
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<td>(d) Interest rate caps and floors</td>
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<td><strong>Credit Default Swaps</strong></td>
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<td>Only basic definitions and concepts of CDS are covered.</td>
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<tr>
<td>8</td>
<td>Sat Dec 12, 2015</td>
<td>TBA</td>
<td><strong>Final Exam</strong></td>
<td>The exact exam time will be advised one week before the exam.</td>
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<td></td>
<td>Covering lecture materials from sessions 4-7</td>
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</tbody>
</table>

**Room:** CC 15, ABAC City Campus

**About the Instructor:**

**Biography:** Nattawoot Koowattanatianchai, DBA

Nattawoot Koowattanatianchai is a Senior Lecturer in the Department of Finance at Kasetsart Business School. He has a Doctorate degree (DBA) in Finance from Southern Cross University and has taught finance since 2006. He is currently a Program Secretary of the Master of Finance Program at Kasetsart Business School. His duties include research, developing curricula, teaching, unit coordination, preparing and presenting lecture material, and general administration. As a consultant, he has provided advice on issues pertaining to transport policy, alternative energy development, energy efficiency and real estate development to various organizations such as the Australian Railway Association, Department of Alternative Energy and Development Efficiency of Thailand, and Treasury Department of Thailand.

**Selected Publications:**