MGB 263 Derivative Securities
University of California, Davis
Graduate School of Management

Contact Information:
Instructor: Dr. Yu (Ben) Meng
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Course Description:
Derivatives can trace their origins back to ancient Greece. Forwards, futures, swaps and options are all instruments that are widely used for hedging and/or speculative purposes. This course will focus on the technical aspects of these instruments and demonstrate their importance to all facets of the economy from corporations to hedge funds. An emphasis will be placed on the application of these instruments using “plain vanilla” derivatives as the fundamental building blocks that student can apply toward the more exotic derivatives.

Prerequisites for this course are the core finance (MGB 205) and familiarity with calculus and regression analysis.

Textbooks
Required: Options, Futures and Other Derivatives, 8th Edition

Grading
Quizzes: 30%
Homework: 30%
Final: 40%

Although class participation is not part of your grade, I will cold call students. As a word of caution, I tend to select students without a name tent.

Please be sure to bring your laptops to every class as we will have a number of in-class exercises.

There will be 3-4 quizzes throughout the 5 sessions. You can replace your lowest quiz score with your highest. Each quiz will be closed book and will last about 20 to 25 minutes. Quizzes will be given at random times, and will cover material up to the prior lecture, so please come to class prepared.

The final will be an in-class closed book exam. You are allowed to bring a standard calculator. A one page 8.5”x 11” (both side) cheat-sheet is allowed.
Assignments, Exams, Course Policy and Office Hour:

- **Assignments**: Homework will be assigned on a regular basis. Hard copies are preferred, but formatted electronic PDF versions may also be submitted via the course website. Unformatted Word or Excel files will not be accepted or graded. Late assignments are NOT acceptable. I encourage working with one another on homework assignments, but I do require everyone turn in an individual version of the write-up for each assignment.

- **Quizzes and Exams**: The quizzes and final exam are closed book and closed notes exam. For the final you will be allowed a 1-page (both sides) cheat sheet. A non-programmable calculator may be used during the exam. Use of iPhone/iPad, smartphone calculator app or any computers with internet capability will not be permitted during quizzes or the final exam.

- **Makeup Quizzes and Exams**: There will be no makeup quizzes or exams. Any missed quiz or assignment not turned in will receive a zero and be included in your grade. However, for quizzes, you are allowed to replace your lowest score with your highest.

- **E-mail**: Although I do not hold official office hours, I am available for questions during our breaks and via e-mail.

- **Additional Course Materials**: Homework assignments, solutions, additional readings and other additional course materials will be posted on the course website. You will be responsible for downloading this material. This includes the lecture notes. I will also post an “after lecture” version of my notes with solutions to the examples discussed in class.

- **Class Participation**: Class participation is an important aspect to both the teaching and learning aspect. Questions/comments related to the course material by students will help me better gauge the material that may require more attention or further clarification as well as help spark stimulating discussions on the material. Although class participation is not part of the grade, I have a tendency to cold call (esp. students without name tents).

Class Overview:
(This is a tentative course outline and assigned readings: topics are subject to change)

1. **Forwards and Futures**
   a. Mechanics of Forwards and Futures
   b. Equity Forwards
   c. Currency Forwards
   d. Eurodollar Futures
2. **Swaps**
   a. Mechanics of Swaps
   b. Interest Rate Swaps
   c. Credit Default Swaps
3. Options
   a. Mechanics of Options
   b. Black-Scholes Option Pricing Model
   c. Greeks
   d. Implied Volatility

Instructor:

Dr. Yu (Ben) Meng is a Senior Portfolio Manager and the head of Asset Allocation at the California Public Employees’ Retirement System (CalPERS). At CalPERS, Asset Allocation encompasses various assets such as domestic and international equity, Treasury and agency debt, corporate bonds, mortgage backed securities, CDOs, private real estate, currency overlay, venture capital, leveraged buyouts, and hedge funds.

From 2009-2011, Dr. Meng served as a portfolio manager at CalPERS leading the fixed income quantitative research group. One of his first projects at CalPERS was to develop a quantitative capital structure allocation strategy between equity and corporate bonds. He developed and led a quantitative measure for liquidity risk and a tool to monitor systemic risk. Also, in collaboration with an outside consultant, he led the research effort at CalPERS to develop a factor-based asset allocation and risk management framework that is internally consistent across all asset classes, public and private.

Before joining CalPERS, Dr. Meng was the head of research and senior portfolio manager of quantitative hedge fund strategies with Barclays Global Investors. Prior to that, he was a risk officer at then Lehman Brothers after his role as a bond trader at Morgan Stanley.

Dr. Meng graduated from the inaugural class of the Master’s program in Financial Engineering (MFE) at Haas School of Business at UC Berkeley in 2002. He worked as a civil engineer for three years after graduating from UC Davis in 1998 with a doctoral degree in Civil Engineering.

Prior to immigrating to the U.S., Dr. Meng was employed by The Ministry of Railway in China working in conjunction with The World Bank to perform investment analysis on transportation infrastructure projects.

During his career, Dr. Meng has managed multi-billion dollars in assets and has worked with numerous financial products. In his spare time, he teaches at the Haas School of Business at UC Berkeley and the Graduate School of Management at UC Davis. He is also on the editorial board of Journal of Investment Management (JOIM) and Drexel University’s Board of Advisors.