UNIVERSITY OF CALIFORNIA — Course Outline

Haas School of Business — Fall 2016

MFE 230H – Financial Risk Measurement and Management

Professor Amir Kermani

COURSE OVERVIEW

This is an applied finance and economics course that focuses on the economics of financial intermediation, financial system architecture. The course then examines financial risk measurement and management, including market risk, credit risk, liquidity risk, settlement risk, model risk, volatility risk, kurtosis risk and other types of financial risks. The course also includes the discussion of OTC markets, CCPs and counterparty risk in derivatives market. The course concludes with issues around the regulation of financial institutions and the new developments in Dodd-Frank act.

COORDINATES

Class schedule is as follows:

230H	Kermani	Tu	8/16/2016	4-9PM	C230	4
230H	Kermani	Tu	8/30/2016	4-6PM	F320	2
230H	Kermani	Th	9/1/2016	4-6PM	C230	2
230H	Kermani	Tu	9/6/2016	4-6PM	F320	2
230H	Kermani	Th	9/8/2016	4-6PM	C230	2
230H	Kermani	Tu	9/13/2016	1:30-3:30PM	F320	2
230H	Kermani	Tu	9/13/2016	4-6PM	F320	2
230H	Kermani	Th	9/15/2016	4-6PM	C230	2
230H	Kermani	Tu	9/20/2016	1:30-3:30PM	F320	2
230H	Kermani	Tu	9/20/2016	4-6PM	F320	2
230H	Kermani	Th	9/22/2016	4-6PM	C230	2
230H	MIDTERM	Mo	9/26/2016	4-6PM	F320	2
230H	Kermani	Tu	9/27/2016	4-6PM	F320	2
230H	Kermani	Th	9/29/2016	4-6PM	C230	2
230H	Kermani	Tu	10/4/2016	4-6PM	F320	2
230H	Kermani	Th	10/6/2016	Final Project	Final Project	

Review sessions are as follows:

230H	Yingge	Tu	8/23/2016	4-6PM	F320
230H	Troup	W	8/31/2016	4-6PM	F320
230H	Yingge	M	9/12/2016	4-6PM	F320
230H	Troup/Yingge	M	9/19/2016	4-6PM	F320
230H	Troup	M	10/3/2016	4-6PM	F320

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The GSIs are Troup Howard (troup_howard@haas.berkeley.edu) and Yingge Yan (yingge_yan@haas.berkeley.edu).
Office Hours: By arrangement.

TEXTBOOKS AND READINGS

Readings through bCourses and study.net

Required textbook:

Hull, John. "Risk Management and Financial Institutions", 4th Edition, 2015, Wiley Finance Series.

Lecture notes will be handed out in class and will be available on the class bCourses web page.

Optional books:

Mishkin, Frederic S. "The Economics of Money, Banking, and Financial Markets", 11th Edition, 2016. Pearson Education.

Tim Geithner , *Stress Test*, Broadway Books.

Ben Bernanke , *The Courage to Act*, W. W. Norton & Company.

CLASS PARTICIPATION

The course depends heavily on student participation. Students are expected to prepare for each class in advance, attend each class and contribute throughout the course. Please bring your name cards to class and display them prominently.

There will be 2-3 quizzes throughout the term. Each quiz will be closed book and will last about 15 to 20 minutes. Quizzes will be given at random times, and will cover material up to the prior lecture, so please come to class prepared. Quizzes counts for 15% of your grade.

EXAM

There is one “Midterm” Exam after the 6th week. The midterm is designed to help you evaluate yourself on the core concepts in class. The exams, in total, count for 40% of your grade.

ASSIGNMENTS

There are two cases and two problem sets that are to be handed in. You can do these assignments in groups of 2. These assignments count for 20% of your grade.

FINAL PROJECT

The course has a final project due on the last day of class. Proposals for the final project are due on Week 6. Students can work in groups of 5 for the final project. Every member of the group must participate in the in-class oral presentation of the project as well. Final project makes up 25% of your final grade.

SCHEDULE FOR PROJECT AND EXAMS

In-class Mid-term	September 26th
Project Proposal Due	September 15th
Project Presentations	October 6th

MFE 230 H – SYLLABUS

1. **Lecture 1 and 2: Economics of Financial Intermediation**
   [August 16th]

- Moral hazard and credit transformation: basic moral hazard framework, Moral hazard and financial intermediation (Holmstrom-Tirole 1997), Monitoring the monitor (Diamond 1984)
- Maturity transformation: Banks as liquidity providers (Diamond-Dybvig 1983) vs. Market as liquidity provider (Jacklin 1986), Maturity Rat Race (Brunnermeier-Ohemke 2015)
- Adverse selection and Liquidity transformation: Lemons problem (Akerlof 1970), Security design and the importance of debt (Gorton-Pennachi 1990), DeMarzo-Duffie (1999)
- Rise and fall of the bear

- *Review session on 8/23 will focus on material from theoretical models.*

2. **Lecture 3 and 4: Financial System Architecture and Financial Institutions balancesheet**

   [August 30th and September 1st]
   - Financial System Architecture (Mishkin Ch. 8, Web Ch. 3)
   - Commercial banks and investment banks (Hull Ch.2 , Mishkin Ch. 9, Balluk 2015)
   - Insurance companies and Pensions (Hull Ch.3, Chodorow-Reich – Ghent – Haddad 2016)
   - Hedge Funds, Mutual funds (Hull Ch.4, Berk-Binsbergen 2014)
   - Shadow banking (Pozsar-Adrian-Ashcraft-Boesky 2010)
   - **Homework set 1 handed out on August 30th and Due on September 6th**

   - *Review session on 8/31 will cover methods for actuarial calculations which will be used in Homework 1.*

3. **Lecture 5 and 6: Market Risk I**

   [September 6th and 8th]
   - Greek letters (Hull Ch.8)
   - Interest rate risk (Hull Ch.9)
   - Special Topic I: the Fed since the financial crisis
   - Volatility (Hull Ch.10)
   - Correlations and Copulas (Hull Ch.11)
   - LTCM case: **Case due on September 8th**

   - *Review session on 9/12 will cover credit default swaps and/or other topics*

4. **Lecture 7 and 8: Market Risk II**

   [September 13th]
   - Value at Risk and Expected shortfall (Hull Ch.12)
   - Special topic II: Macro implications of VAR

- Extreme value theory (Hull Ch.13)
- Scenario analysis (Hull Ch. 22)
- London Whale case: **Case due on September 13th**

5. **Lecture 9 and 10: Trading in Financial Markets: Exchange economy, OTC Markets and Clearing Houses**
   [September 15th and 20th]
   - OTC markets (Hull Ch.5, DiMaggio-Kermani-Song 2016)
   - Derivative settlements, CCP vs bilateral (Hull Ch. 18), Title VII Dodd-Frank Act.
   - Counterparty risk, CVA: (Hull Ch.20)
   - **Homework set 2 handed out on September 20th and due on September 27th**

   - *Review session on 9/19 will focus on midterm preparation.*

6. **Lecture 11: Other Risks**
   [September 20th]
   - Liquidity Risk (Hull Ch.24)
   - Model risk (Hull Ch.25)
   - Complexity and sensitivity analysis: Coval-Jurek-Stafford (2009), Caballero-Simsek (2013)

7. **Lecture 12 and 13: Regulation of BHCs**
   [September 22nd and 27th]
   - Economics of Financial Regulation (Mishkin Ch. 10)
   - Basel I, II and III (Hull Ch.15 and 16)
   - Supervision framework for large financial institutions (SR 12-17)

8. **Lecture 14 and 15: Dodd-Frank Act and BHCs**
   [September 29th and October 4th]
   - Stress testing
   - Funding and liquidity risk management (SR 10-6)
   - Enhanced Prudential Standards: Regulation YY
   - Failure resolution plan: Regulation QQ
   - TLAC

   - *Review session on October 3rd: content TBD.*