

# MSQE PROGRAM

## Finance Pre-Semester Course 2008 MSQE Program (Finance Track) Syllabus

(Version September 1, 2008)

**Note:** The course “Dynamic Capital Market Theory I” of the MSQE Program (Finance Track) in the academic year 2008/2009 will have two components: an entrance examination based on the contents of the Finance Pre-Semester Course (the entrance examination will be given on October 17, 2008 from 9:00 am to 10:30 am, counting 10% towards the overall course grade); and a course component taught during the fall semester (counting 90% towards the overall course grade).

**Instructor:** Sha He ([heshasha@yahoo.com](mailto:heshasha@yahoo.com)).

**Time:** September 8 to September 12, every day from 10:00 am to 12:00 pm and from 1:00 pm to 3:00 pm.

**Location:** House of Finance, Shanghai Room.

**Prerequisites:** Students are expected to have a solid undergraduate background in mathematics. Students missing some of this background are expected to have worked through the following references *prior* to the beginning of the course:

- Chiang, A.C. and K. Wainwright (2005): *Fundamental Methods of Mathematical Economics*, Boston: Mc Graw-Hill Irwin, Chapters 1 through 13.

**Course Text:**

- Grinblatt, M. and S. Titman (2002): *Financial Markets and Corporate Strategy*, Second Edition, McGraw-Hill Irwin.

## **Course Outline:**

### **Day 1 – Introduction** (Grinblatt & Titman, Chapters 1 to 4)

1. Financial Markets and Institutions
2. Financial Instruments: Debt and Equity
3. Portfolio Analysis
4. Assignments

### **Day 2 – CAPM and APT** (Grinblatt & Titman, Chapters 5 and 6)

1. Mean-Variance Analysis
2. Portfolio Optimization and Efficient Frontier
3. Capital Market Pricing Model
4. Arbitrage Pricing Theory
5. Assignments

### **Day 3 – Financial Derivatives 1** (Grinblatt & Titman, Chapter 7)

1. Overview of Financial Derivatives
2. Pricing of Forwards and Futures
3. Assignments

### **Day 4 – Financial Derivatives 2** (Grinblatt & Titman, Chapter 8)

1. Option Pricing in Discrete Time
2. Option Pricing in Continuous Time and Black-Scholes Formula
3. Assignments

### **Day 5 – Capital Structure** (Grinblatt & Titman, Chapters 14 to 17)

1. Modigliani-Miller
2. Factors Affecting Capital Costs
3. Taxes
4. Bankruptcy Costs
5. Information and Incentive Problem
6. Optimal Capital Structure
7. Assignments