BACHELOR OF ECONOMICS
THAMMASAT UNIVERSITY

Course Outline

EE 433 Asset Pricing Theory

Semester 2/2021

Number of credits: 3 credits (3-0-6)
Course Description:

Study concepts and frameworks of asset pricing theory in the intermediate level; the theory of choice under uncertainty; classical asset pricing theory in the discrete time such as the Capital Asset Pricing Model (CAPM), The Arbitrage Pricing Theory (APT), and The Consumption Capital Asset Pricing Model (C-CAPM); Empirical puzzles in asset pricing/returns and proposed resolutions in the literature.

Prerequisites: EE320 and EE311

Course Objectives:

This course aims to introduce students to the modern theory of asset pricing, portfolio theory and derivatives pricing. Topics covered include (i) no-arbitrage, Arrow- Debreu prices, and equivalent martingale measures, (ii) security structure and market completeness, (iii) mean-variance analysis, Beta pricing, CAPM, (iv) derivatives pricing, and (v) C-CAPM

Required Text:

Danthine and Donaldson [D], (2004), “Intermediate Financial Theory”, 2nd edition, Elsevier.

Stephen F. LeRoy and Jan Werner [L], (2001), “Principles of Financial Economics”, Cambridge University Press.

Yvan Lengwiler, [Y] (2004), “Microfoundations of Financial Economics: An

Introduction to General Equilibrium Asset Pricing”, Princeton University Press

Topics in this Class:

PART 0: Introduction

- What is Finance?
- Choice under uncertainty

PART I: One-Period Models

1. **Setup**
   - Security structure and market, Options, Forwards, Futures, Swaps
   - LoOP, No Arbitrage
   - Basics of Option Pricing

2. The four Pricing Formulas:

- Arrow-Debreu (State) Prices/Stochastic Discount Factor/Martingale Pricing
- Single Factor State-price Beta Model

3. Risk Measures and Preferences

- Stochastic Dominance, Expected Utility, Portfolio Choice
- Optimality, Representative Agent Analysis
- Sharpe Ratio Bounds, Equity Premium Puzzle

4. Mean Variance Analysis, Beta-Pricing, CAPM
5. Test Methodology

PART II: Multi-period Models

6. Setup

- Filtration, Event Prices
- Dynamic Market Completeness
- Risk Neutral Valuation
- Ponzi Schemes
- "Rational Bubbles"

7. Fixed Income, Futures, Swaps

8. **Option Pricing**
    - Black-Scholes Option Pricing Formula
9. **Equilibrium Models: ICAPM, Hedging Demand**
10. **Funding Liquidity Risk, collateral pricing, violation of LoOP**
11. **Multiple Factor Pricing Models**
    - Conditional versus unconditional beta
12. **Market Efficiency – Asymmetric Information and Frictions**
13. **Consumption-based asset pricing**
    - Representative agent models, the equity premium puzzle, and the equity volatility puzzle
    - Long-run risks and changing volatility