

**PG Course Outline**  
**EC5320: Foundations of Finance**  
2017/18

**Autumn: Foundations of Finance**  
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### **Aims**

Foundations of Finance is a course designed to introduce students to the analysis of investment decisions and financial markets, training their intuition and providing them with the analytical tools and quantitative methods needed for financial decision making. The course begins with the connection between consumption and investment and the principles of investment decisions under certainty. It continues with how this is modified in the presence of uncertainty, introducing students to the theory of choice under risk and state preference theory with complete markets.

Building on that, security pricing by no-arbitrage conditions with complete markets is derived as the main principle of asset pricing. Portfolio optimization and the trade-off between expected returns and risk is illustrated by mean-variance portfolio theory. Putting these investment decisions into the context of markets leads to the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT). Market incompleteness is discussed and the pricing kernel, that substitutes for state prices, is derived. By introducing derivatives, options are shown to be capable of completing markets. The principles of option pricing are explained, leading up to the Black-Scholes model.

### **Learning Outcomes**

In this course students should learn about

- how investment and consumption decisions are related;
- the theory of choice under uncertainty;
- mean-variance analysis and how to form an efficient portfolio;
- how to apply state prices to valuation by no-arbitrage;
- asset pricing models, in particular the fundamental CAPM;
- the pricing kernel for incomplete market economies;
- principles of option pricing, inclusive of the Black-Scholes model.

### **Course Delivery**

One 2-hour lecture and one 1-hour seminar class every week.

Course outline, lecture notes, problem sets, and readings will appear on Moodle.

### **Assessment and Feedback**

- One 2-hour unseen written final exam taken during the summer term, contributing 75% towards the final mark.
- One written mid-term exam contributing 25% of the final mark.

Deadlines and dates of tests will be confirmed in the Departmental Student Handbook and on the Economics Department Website.

### **Reading**

The main textbooks for the course are:

Copeland, T. E., J. F. Weston, and K. Shastri (2005): *Financial Theory and Corporate Policy*, 4th edition, Addison-Wesley.

LeRoy, S. F., and J. Werner (2001): *Principles of Financial Economics*, Cambridge University Press.

Students are advised to purchase their own copy of the book. Further reading material, e.g. journal articles, will be posted on Moodle.

### **Topics to be covered**

- Capital markets, consumption, and investment.
- State prices and security valuation.
- Choice under uncertainty.
- Mean-variance portfolio theory.
- Asset pricing models.
- Pricing kernel.
- Option pricing.