HEC Lausanne - Master of Science in Finance

Asset Pricing

Course Syllabus Fall 2006

1 Contacts

- **Professor:** Jean-Pierre Danthine
- **Assistant:** Giovanni W. Puopolo
  Extranef
  e-mail: gwp@fame.ch
  Office Hours: Thursday 11:00 am to 1pm.

2 Objectives

The objective of the course is to review, deepen and expand the student's understanding of the key ideas behind modern asset pricing and cash flow valuation theory. The major themes of the theory will be covered in a rigorous way but with no claim to generality. While a vision of the uses made of these theoretical developments in applied finance will be maintained throughout, this is a 'theory' course taught in a university environment: a minimum of intellectual curiosity is expected from all participants. The course assumes a good preliminary knowledge of introductory finance at the Brealey - Myers level as well as fluency in calculus.

Students will be aware of the main dimensions of the theoretical core of the discipline and will have the tools to read frontier articles and to follow the development of the literature.

3 Organization

Lectures with frequent problem sets; a weekly exercise and review session.

4 Course Requirements

- Reading of the relevant material in advance of the corresponding classes.
- Preparation of assigned problem sets on a self-check basis. Each week a small number of selected exercises will be assigned and the solutions will be discussed in review sessions. These exercises constitute the best test of your understanding of the course material and the most appropriate

preparation for the exams. You are strongly encouraged to test yourself on a weekly basis by solving at least one of the proposed exercises under exam conditions.

- There will be a 2-hour mid-term examination taking place early December. The mid-term will cover material from the first 6 weeks of the course. The final examination will take place early February. It will last 3 hours. It will cover all the material presented in the course. Both exams will include two parts. The first part will be closed book. The second part will be open book. The final grade G will be determined as follows: $G = max[F, 1/3D + 2/3F]$, where D is grade obtained in December (mid-term) exam, F is grade obtained in February (final) exam. If $G < 4$, the exam should be retaken in September 2007 subject to the general rules of the MSc.F. In that case, the final grade does not take into account the December exam grade. I.e., G(2nd chance) $= S$, where S is the grade obtained in the September exam.

5 References

- **Course Text**
  Danthine and Donaldson, *Intermediate Financial Theory*, 2nd edition, Elsevier, NY (IFT henceforth)

  Complementary material including exercises with solutions as well as slides to be used in class can be downloaded from the following webpage:

  http://www.hec.unil.ch/jdanthine/Assetpricing.htm

- **Additional References**
  Copeland and Weston, *Financial Theory and Corporate Policy*, 3rd edit., Addison-Wesley
  Allaz and Dumas, *Financial Securities: Market Equilibrium and Pricing Methods*, 1st ed., South-Western College Publishing, 1996
  Levy and Sarnat, *Capital Investment and Financial Decisions*, Prentice Hall, New York, 4th edition, 1990
  Allen and Gale, *Financial Innovation and Risk Sharing*, The MIT Press, Cambridge, Mass. 1994

6 Course Plan and Schedule

Classes normally take place on Mondays from 1:15pm to 5pm; Exercise and review sessions will be scheduled most weeks on Wednesdays from 5:15pm to 7pm.

- Week 1 (Oct. 23): **On the Role of Financial Markets and Institutions**
  IFT - Chapter 1, focus on section 1.1 - 1.2; 1.6 and appendix. Essential pre-reading: sections 1.1, 1.2

- Week 2 (Oct. 30): **A Roadmap - Choice under Uncertainty and Risk Aversion**
  IFT - Chapters 2 & 3, focus on sections 2.1-2.3 and 3.2-3.4

- Week 3 (Nov.6): **Measuring Risk and Risk Aversion**
  IFT - Chapter 4: focus on sections 4.1-4.5
- Week 4 (Nov. 13): **Portfolio Investment Decisions**
  IFT - Chapters 5 & 6, focus on sections 5.2 - 5.3; 5.8; 6.1 - 6.5
- Week 5 (Nov. 20): **The Capital Asset Pricing Model**
  IFT - Chapter 7
- Week 6 (Nov. 27): **The Capital Asset Pricing Model**
  IFT - Chapter 7
- Week 7 (Dec. 4): **Arrow-Debreu Pricing**
  IFT - Chapter 8, focus on 8.1 - 8.4
- **Midterm exam**. Covers topics of weeks 1-6.
- Week 8 (Dec. 11): **The Consumption Capital Asset Pricing Model**
  IFT - Chapter 9, focus on sections 9.1 - 9. 3
- Week 9 (Dec. 18): **Arrow-Debreu Pricing: the Arbitrage Perspective**
  IFT - Chapter 10, focus on 10.1 - 10.4
- Week 10 (Jan. 8): **Martingale Measure**
  IFT - Chapter 11, focus on sections 11.1 - 11.5
- Week 11 (Jan. 15): **Martingale Measure - The APT**
  IFT - Chapters 12 and 13, focus on sections 12.4; 13.1-13.5
- Week 12 (Jan. 22): **Portfolio Management in the Long Run**
  IFT - Chapter 14
- Week 13 (Jan. 29): **Portfolio Management in the Long Run**
  IFT - Chapter 14
- Week 14 (Feb. 5): Review
- **Final exam** on February xx, 2007.