



DEPARTMENT OF
STATISTICS
UNIVERSITY OF OXFORD



Course Overview

Actuarial Science, HT 2012

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Housekeeping

- Learning
 - Mathematics versus mathematical social science
 - Slides
 - Tone/level of assignment sheets
- Books
 - L. Eeckhoudt, C. Gollier and H.Schlesinger, Economic and Financial Decisions under Risk (2005)
 - Chapters 1-6, 10-11, and topics from 12-13
 - C. Gollier: The Economics of Risk and Time (2001)
 - Chapters 1-4, 13, 15, 21-22
- Undergraduate classes
 - Weeks 3-8, fill in signup sheet today
- MSc students
 - Lectures 1-7 are examinable, 8-16 are not.
- Specimen exam questions
- Errata

Overview of this term

EGS: Eeckhoudt et al. (2005)
G: Gollier (2001)

1. The Expected Utility Theory (EUT) model (~4-5 lectures; G1-2; EGS 1)
 - Justification for EUT, EUT axioms, risk aversion, risk premium and certainty equivalent.
2. EUT and individual decision making (~5-6 lectures; EGS 2-6; G 3,13,15)
 - Decision-theoretic orderings of riskiness.
 - Demand for insurance, risky assets, and Arrow Debreu securities.
 - Consumption under certainty and Fisher's Separation Theorem.
3. EUT and models of perfect financial markets (~4 lectures; EGS 10-11; G 21-22)
 - Financial institutions as intermediaries and the desynchronisation of income and consumption streams.
 - Edgeworth box, portfolio theory, mutuality principle, social welfare function and Wilson's Theorem.
 - The Capital Asset Pricing Model.
 - The efficient markets hypothesis and index funds (not in EGS or G).
4. Imperfections in financial markets (~2 lectures; EGS 12-13)
 - Capital requirements, ruin models and ruin probabilities (not in EGS or G).
 - Behavioural economics and departures from full risk sharing.
 - Moral hazard and adverse selection.