

## *Information and Uncertainty*

Academic Year: 2016/2017

2nd Quarter

Instructor: Catarina Reis

*email:* [creis@ucp.pt](mailto:creis@ucp.pt)

*Office:* 5303

---

Course Description: This course offers an introduction to decision making under uncertainty and information economics. The course is intended for master students who wish to develop a solid background in this area.

---

### Course Content:

Introduction and review of statistics

Part I – Decision under uncertainty (approximately 5 lectures)

- A. Expected utility theory and decision under uncertainty
- B. Measuring risk aversion of agents
- C. Measuring riskiness of lotteries
- D. Alternatives to expected utility: prospect theory
- E. Optimal risk sharing

Part II – Incentives and moral hazard (approximately 4 lectures)

- A. Moral hazard with discrete action and discrete outcome
- B. Moral hazard with continuous action
- C. Moral hazard with continuous outcome
- D. Dynamic moral hazard: optimal unemployment insurance

Part III – Adverse selection and signaling (approximately 3 lectures)

- A. Labor market with heterogeneous productivity
- B. Insurance markets
- C. Education as signaling

---

Course Objectives: After taking the course, students should be able to understand and derive models with economics uncertainty and decisions with asymmetric information.

---

Grading: 80% final exam, 20% quizzes.

---

Bibliography: There isn't one book that fits the class exactly. A useful references is:

Mas-Colell, Whinston, and Green, *Microeconomic Theory*, Oxford University Press, 1995

[www.jstor.org/stable/1914185](http://www.jstor.org/stable/1914185) (prospect theory)

[www.jstor.org/stable/10.1086/262078](http://www.jstor.org/stable/10.1086/262078) (dynamic moral hazard)

[www.jstor.org/stable/1885326](http://www.jstor.org/stable/1885326) (adverse selection in insurance markets)

---

*Short Bio of Instructor:* Catarina Reis holds a Ph.D. in Economics from the Massachusetts Institute of Technology, USA, and B.Sc. in Economics from the Católica-Lisbon SBE. Formerly she was Academic Director of the M.Sc. in Economics at Católica-Lisbon.

Her research focuses on macroeconomic models of optimal taxation, with a special focus on the taxation of capital income. Her research has been published in international journals such as *Macroeconomic Dynamics* and *Journal of Economic Theory*.