ECONOMICS 105
Economics of Uncertainty
Winter 2014-15

Instructor: Ram Singh, ♯ 122 Economics (Main Building)
Office Hours: Monday and Wednesday 2.30-4:30 pm and by appointment.

This course focuses on the applications of decision making under uncertainty, with special emphasis on the Contracts. Study of contracts and the corresponding incentives structures has come to become a major preoccupation of thinking and research in Economics. The course makes extensive uses results on decision making under uncertainty; such as, the Expected Utility Theorem, Money Lotteries, Measures of risk aversion, Risk aversion across wealth levels and across individuals, Insurance. Specifically, the course deals with incentive structures induced by various contracts, when at least one of the parties involved has to make decision under uncertainty of some kind. Most of the real world contractual settings are characterized by conflict of interests as well as asymmetry of information among the individuals involved. Therefore, the contractual and institutional settings involving informational asymmetry among the contracting parties will be the mainstay of the course. The structure of the course is as follows:

1. Decision Making Under Uncertainty: The Expected Utility Theorem; Money Lotteries; Measure of Risk aversion; Comparing Risk aversion; Comparison of risky alternatives; and Insurance

2. Hidden Information and Adverse Selection: The first-best versus the second-best in presence of informational asymmetry; Single-crossing condition and monotonicity of choice; The Revelation Principle; The Rent Extraction versus Allocative Efficiency Tradeoff; Screening and its applications - Credit Rationing, Regulation, Insurance, etc. Signalling and its applications.

3. Hidden Action and Moral Hazard: The basic principal-agent problem; Rent Extraction-Efficiency Tradeoffs, The first-order approach; Linear and Non-linear Contracts; Insurance Contracts; Value of information; Adverse selection with Moral hazard; Multi-task moral hazard; Relational Contracts.

4. Competitions and Moral hazard in Teams: Competitions among agents; Symmetric and Asymmetric Competitions; Relative performance evaluation; Multi-agent moral hazard; Moral hazard in teams; Firm as a team.

5. Incomplete Contracts: Basic framework; Verifiability; Hold-up problem and its consequences; Market and Non-market Organizations; Markets and contracts; Foundations of Incomplete Contracts.

6. Issues in Procurement Contracts and Ownership of Public Goods: Traditional Procurement Contracts used by Governments; Short-term versus Long-term Procurement Contracts; Public versus Private ownership; Public Private Partnerships; Life cycle models.

Examinations and Grading

One Mid-semester exam worth (along with group specific assignment) 30 marks, and the Final exam worth 70 marks.

General References

- Bolton, P. and M. Dewatripont (2005), *Contract Theory*, MIT Press.
- Hart, O. (1995), *Firms, Contracts and Financial Structure*, Oxford, England: Oxford University Press. First 3 Chapters.
- Laffont, J-J, and Martimort (2002), *The Theory of Incentives*, Princeton University Press. (below referred to as L-M) First 3 Chapters.
- Mas-Collel, A, M. Whinston and J.Green. (1995), *Microeconomic Theory*. Chapter 6.

Besides, we will cover several papers from the economics journals. The relevant module-specific readings will be announced ahead of the lecture.