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Office Hours: by appointment.

Course Description

The microcosm of the innovation process, its practicalities and the funding that makes it happen are not fully accounted by microeconomic theory. This course will bridge the gap between the traditional microeconomics approach and the more modern study of innovation processes, allowing the student to come to grips with terms and issues that (s)he needs in order to fully understand Module 2 and Module 3 courses. In particular, the course examines incentives for innovation, markets for innovation, technology transfers, diffusion of innovations and what drives innovation decisions with an emphasis on the ways intellectual property influences R&D.

Objectives and Learning Outcomes

The students are expected to familiarize with classic and modern perspectives on the economics of innovations and their impact to economic activity and public policy.

- Understand the historical context and evolution of the innovation process
- Familiarize with basic aspects of innovation: incentives for innovation, benefits from innovation, market power, pricing, property rights, imitation etc.
- Employ statistical methods to measure innovation and its impact on productivity and growth.
- Identify the characteristics that make some firms being more innovative than others and the impact that public policies have on that.
- Analyze the key characteristics of innovations' diffusion: rate of adoption, statistical mechanics of diffusion, knowledge and spatial spillovers.
- Explore the impact of innovation in trade, growth and labor markets.
- Explore tools for evaluating innovation and R&D opportunities.

Reading Material

- Christine Greenhalgh and Mark Rogers, *Innovation, Intellectual Property, and Economic Growth*, Princeton University Press, 2010.
- G.M. Peter Swann, *The Economics of Innovation: An Introduction*, Edward Elgar Publishing, 2009.
- Everett Rogers, E., *Diffusion of Innovations*, 5th Edition, Free Press, 2003.
- CORE-Econ Project e-book, Chapter 21.

Additional material will be distributed during lectures and tutorials

Requirements and Assessment

Students are expected to attend all lectures and tutorials of the course. The evaluation will be based on a final exam, one individual project, performance in class activities and the preparation and active participation on case studies. The final exam counts for 50% of the grade, the homework assignment counts for 20%, the performance and active participation in class activities and the preparation and active participation in the analysis of case studies count for 30% in total.

Schedule and Content

The course will consist of six lectures.

Lectures

1. Introduction to the Economics of Innovation

- What is economics of innovation about?
- Role of innovation in the history of economic thought.
- Incentives for Innovation.
- Technological and Market forecast

2. The Process of Innovation

- Invention and Innovation.
- Commercialization of innovations.
- Measurement of innovation.

3. Aspects of Innovation Management

- Entrepreneurship and new firms.
- Returns to innovation.
- Identifying opportunities.
- Managing R&D activities and innovation projects.

4. Microeconomic Effects of Innovation and Property Rights

- Public goods, externalities and investment in knowledge.
- Private incentives for innovation and imitation.
- Nature and role of intellectual property: Patents, trademarks, copyrights.
- Competition issues, antitrust and open source technologies.

5. Diffusion of Innovations

- Modeling rate of adoption.
- Statistical evidence of adoption rates.
- Targeted advertising and viral marketing.
- R&D collaborations and spillovers.
- Network effects.

6. Innovation Systems and Macroeconomic Effects of innovation

- Public and private innovation systems.
- Innovation and economic growth.
- Innovation and trade.
- Innovation and labor markets.
- Role of public sector in innovation.