SAINT-ETIENNE SCHOOL OF ECONOMICS

Economics of Innovation 1

Level: Master – first year - M1 / first semester
Cursus: Data Science and Management of Innovation / Political Engineering / Regional Development
Semester: 1
Teaching hours: 12h in class (lectures - CM)
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Abstract:

The course provides an introduction to economics of innovation, putting special emphasize on empirical measures, stylized facts, and institutional dimensions. The course covers sectoral patterns of innovation and heterogeneity of innovation activities (including non-technological innovation and innovation in services). The lectures discuss the role of firms, institutions of higher education, research institutes, households, and individuals, as well as inter-actor linkages.

Learning objectives:

At the end of the class, students are expected to:
- identify the main issues in the economics of innovation,
- mobilise appropriate measures to report on innovation,
- identify the main actors of the innovation systems,
- reflect on topical issues related to innovation.

Course contents: The course is organized in 1.5 hours of lectures (8 sessions)

1. Introduction

1.1/ The economists of innovation
1.2/ The different conceptions of the innovation process

2. Innovation output

2.1/ Indicators of innovation output
2.2/ Stylized facts and actors of innovation
2.3/ Main theoretical issues on innovation output

3. Innovation inputs

3.1/ Indicators of innovation inputs
3.2/ Stylized facts and actors of knowledge investment

3.3/ Main theoretical issues on knowledge investment
3.4/ Topical issue: Frugal innovation

4. Adoption / diffusion

4.1/ Indicators of innovation adoption and diffusion
4.2/ Stylized facts and actors of innovation adoption and diffusion
4.3/ Main theoretical issues on innovation adoption and diffusion
4.4/ Topical issue: The rapid adoption of data-driven-decision-making

5. Collaboration

5.1/ Indicators of collaboration for innovation
5.2/ Stylized facts and actors of collaborative innovation
5.3/ Main theoretical issues on collaborative innovation
5.4/ Topical issue: Open innovation

Assessment Elements: Written exam (last session)

Bibliography:

Rosenberg, N., & Hall, B. H. (2010). *Handbook of the Economics of Innovation*. Amsterdam: North Holland.
P. Swann (2014), Economics of Innovation: An introduction, Edward Elgar.
Lim, C., & Fujimoto, T. (2019). Frugal innovation and design changes expanding the cost-performance frontier: A Schumpeterian approach. *Research Policy*, 48(4), 1016-1029.
Brynjolfsson, E., & McElheran, K. (2016). The rapid adoption of data-driven-decision-making. *American Economic Review*, *106*(5), 133-39.
Science, Technology and Industry scoreboard (2018) OECD report.
Main Science and Technology Indicators (2020) OECD report.
European Innovation Scoreboard (2020) EUROSTAT report.
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