

Syllabus

Course name

Innovation Economics

Semester

Fall 2022 semester

Name of the instructor

Taras Hrendash, M.A., Ph.D. cand.

Date

- Classes: November 7 – December 16, 2022
- Final exam week: December 19 – 23, 2022
- Make-up exam week: December 26 – 30, 2022

Time

- Lectures: To be determined.
- Exercise session: To be determined.

Office hours

To be determined.

Course information

This course will cover selected topics on Economics of Innovation. It will help students to answer the most common questions about economic aspects of innovations: Why do firms innovate and why do they strive to be first in a race of research and development? How is the intellectual property of innovators protected and what are the costs and scope of such protection? Where can innovative start-up firms get money to finance their projects? How can employees be motivated to produce innovative outputs? How do innovative ideas spread and foster creation of new knowledge?

The contents of this course are based on insights from macro and microeconomics, contract theory, corporate finance, and applied econometrics. Previous knowledge in these subjects will be beneficial, but is not required.

Teaching methodology

Along with the theoretical part of this course, which will be taught online and supported with the slides shared with all participants, practical case studies related to selected topics will be provided for in-group discussions. Local TAs will moderate the discussion at each participating university and, afterwards, students will work on individual assignments – essays summarizing their findings from the discussed case studies.

Course outline

Week 1: Competition and innovation

Discussion of the “EMI and the CT scanner” case study

Readings:

Acemoglu, D. (2009). Chapter 12: Modeling Technological Change. In *Introduction to modern economic growth*. Princeton University Press.

Aghion, P., Bloom, N., Blundell, R., Griffith, R., & Howitt, P. (2005). Competition and Innovation: an Inverted-U Relationship. *The Quarterly Journal of Economics*, 120(2), 701–728.

<https://doi.org/10.1093/qje/120.2.701>

Week 2: Intellectual property rights protection

Discussion of the “The LEGO Group - Publish or Protect?” case study

Readings:

Acemoglu, D., & Akcigit, U. (2011). Intellectual Property Rights Policy, Competition and Innovation. *Journal Of The European Economic Association*, 10(1), 1-42. <https://doi.org/10.1111/j.1542-4774.2011.01053.x>

Moser, P. (2013). Patents and Innovation: Evidence from Economic History. *Journal of Economic Perspectives*, 27(1), 23–44. <https://doi.org/10.1257/jep.27.1.23>

Week 3: Commercializing innovation

Discussion of the “Numenta – Inventing and (or) Commercializing AI” case study

Readings:

Stephan, P. E. (2012). Chapter Seven. The Market for Scientists and Engineers. *How Economics Shapes Science*, 151–182. <https://doi.org/10.4159/harvard.9780674062757.c9>

Arora, A., Gambardella, A., & Fosfuri, A. (2004). Chapter 1: Markets for Technology. In *Markets for Technology: The Economics of Innovation and Corporate Strategy*. MIT Press.

<https://doi.org/10.7551/mitpress/4451.003.0002>

Week 4: Financing innovation

Discussion of the readings

Readings:

Hall, B. H., & Lerner, J. (2010). The Financing of R&D and Innovation. *Handbook of The Economics of Innovation, Vol. 1 Handbook of the Economics of Innovation*, 609–639. [https://doi.org/10.1016/s0169-7218\(10\)01014-2](https://doi.org/10.1016/s0169-7218(10)01014-2)

Czarnitzki, D., Hall, B., & Hottenrott, H. (2014). Patents as Quality Signals? The Implications for Financing Constraints on R&D. <https://doi.org/10.3386/w19947>

Fischer, T., & Ringler, P. (2014). What patents are used as collateral?—An empirical analysis of patent reassignment data. *Journal of Business Venturing*, 29(5), 633–650.

<https://doi.org/10.1016/j.jbusvent.2014.04.002>

Week 5: Incentives for innovators

Readings:

Manso, G. (2011). Motivating Innovation. *The Journal of Finance*, 66(5), 1823–1860.

<https://doi.org/10.1111/j.1540-6261.2011.01688.x>

Stock-Homburg, R. M., et al. (2020). Need-solution pair recognition by household sector individuals: Evidence, and a cognitive mechanism explanation. *Research Policy*, 104068.

<https://doi.org/10.1016/j.respol.2020.104068>

Week 6: Knowledge spillovers

Discussion of the “Pixar” case

Readings:

Jaffe, A. B., Trajtenberg, M., & Henderson, R. (1993). Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations. *The Quarterly Journal of Economics*, 108(3), 577–598.

<https://doi.org/10.2307/2118401>

Feldman, M. P., & Avnimelech, G. (2011). Knowledge Spillovers and the Geography of Innovation – Revisited: A 20 Years’ Perspective on the Field on Geography of Innovation. *Handbook of Research on Innovation and Entrepreneurship*. <https://doi.org/10.4337/9781849807760.00020>

Grading

The final exam will be organized as a 90-min online test (mix of multiple-choices and open questions). Starting from the second week, each lecture will start with a short online quiz on a topic from the previous lecture (five quizzes in total). No make-up for missed online quizzes is provided. Individual assignments will include three one-page essays on discussed case studies with biweekly deadlines. Submitted essays will be graded by the local instructors.

The split of a total course grade is the following:

- 45% - Final exam
- 45% - Essays on Case studies (3*15%)
- 10% - Weekly online quizzes (5*2%)
- 10% (extra) - Peer review

To pass this course and earn a certificate, at least 50% on final exam and 50% of the overall course results (excluding extra points) is required.

Course materials

Lecture and case discussion slides, readings, and lecture recordings.
