General data

Course code:	*M23VFA01E*
ECTS credits:	*9*
Semester:	*Spring*
Course restrictions:	*No restrictions*
Course leader (with availabilities):	*Dr. Tamás Sebestyén, professor, sebestyent@ktk.pte.hu*
Further lecturer(s) (with availabilities):	*Dr. Katalin Erdős, assistant professor, erdosk@ktk.pte.hu* *Dr. Kármen Kovács, associate professor, kovacs.karmen@ktk.pte.hu* *Dávid Bilicz, assistant lecturer, bilicz.david@ktk.pte.hu*

1. Description and aims

The course provides a structured insight into the most important topics of innovation theory and its practical aspects. Besides the importance of understanding technological change and the introduction of basic concepts and approaches, high emphasis is put on microeconomic (market structure, diffusion, technology transfer, university-industry cooperation, externalities), macroeconomic (systems of innovation, innovation and growth), respectively on geographic aspects. During the course also practical problems of economic policy (technology policy, technology evaluation) and firm-level innovation management will be discussed in detail. Based on the knowledge gained through the course, students will be able to handle the importance of technological development, to participate in the decision making and evaluation of innovation policy and to manage innovation processes of companies.

2. Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, students should be able to:

CILO1: recognize the role of innovation in company performance and economic growth;

CILO2: discuss and analyse the roles of different actors in national, regional and company level innovation systems;

CILO3: successfully participate in innovation management teams and efficiently articulate their knowledge and understanding about innovation processes;

3. Content, schedule

1. Definition and measurement of innovation
2. The economics of innovation
3. Innovation systems
4. Social and sustainable innovation
5. Universities and innovation
6. From product development to innovation marketing
7. Innovation, company performance and competitiveness
8. Definition and measurement of innovation
9. Market oriented innovation
10. Intellectual Property Rights

11. Invited lecturer in different, innovation related topics

4. Learning and teaching strategy, methodology

This is a master course, which means that in addition to standard lecture formats where professors introduce the basic concepts of the topic, students are required to actively participate in open discussions as well as group works and individual assignments. Students are required to read, present and discuss selected academic contributions to some detailed aspects of the topics, which enable them to familiarize with rigorous scientific research as well as challenging their presentation skills by requiring a clear and focused delivery of these materials to the classroom. Group works enhance collective problem solving, as well as bring some actual cases into the classroom. Finally, preparation of a semester paper develops skills in collecting, analyzing and (written) presenting of information.

5. Assessment

Formative assessment elements

Students are continuously exposed to discussions, encouraged to raise their questions. This allows the teacher to put more emphasis on those parts of the learning material that seems less clear to students. Also, frequently added questions from students drive the course of the classes along a way that they find more interesting, thus enabling a better student-teacher interaction throughout.

Summative assessment elements

Name of the element	**Weight**	**Type**	**Details**	**Retake opportunity**	**Req.***	**Related CILOs**
Student presentations	20%	individual, oral & written (presentation slides), home preparation, class presentation	For a set of topics/classes, some papers are assigned to be discussed. Students must prescribe for one paper (one student per paper), and prepare a short presentation (5-10 minutes) about the content of the paper. This presentation must be held during the given class.	There is no resit opportunity for presentations.	No	CILO1, CILO2, CILO3
Groupwork	20%	groupwork, written, in-class activity and home assignments	Group assignments are going to be scheduled during the semester. The specific instructions are going to be given on site, by the professors.	There is no resit opportunity for groupwork.	No	CILO2, CILO3

Class activity	10%	individual, written, in-class activity	After the presentations and its discussion (Q&A), a short test is written with a few simple questions to check how the class was able to understand and follow the presentation. The total score of the latter test for all presentations during the course counts as an element of class activity.	There is no resit opportunity for class activity	No	CILO1, CILO3
Semester paper	50%	individual, written, home assignment	Students are required to write a semester paper by the end of the course. These are meant to be concise summaries of a given topic. The semester papers are evaluated on a 100-point basis, according to some criteria, as follows.	If a student fails the semester paper, the student have to take written exam in the exam period.	Yes	CILO1, CILO2

** Req.: Completion of the element is required to pass the course, irrespective of the performance in other elements.*

6. Learning materials

Core leaning materials

Economics of innovation

1. Peter J. Klenow, Andrés Rodríguez-Clare (2005): Chapter 11 Externalities and Growth. In: Philippe Aghion, Steven N. Durlauf (eds), Handbook of Economic Growth. Elsevier, Volume 1, Part A, pp 817-861.
2. Philippe Aghion, Ufuk Akcigit, Antonin Bergeaud, Richard Blundell, David Hemous (2019): Innovation and Top Income Inequality. The Review of Economic Studies, Volume 86, Issue 1, pp. 1–45.
3. Dutta, Antara (2011): From free entry to patent protection: welfare implications for the Indian pharmaceutical industry. The Review of Economics and Statistics, vol. 93, no. 1, pp. 160–78.

Innovation systems and networks

4. Scellato, G., Franzoni, C., Stephan, P. (2015): Migrant scientists and international networks. Research Policy 44: 108-120.
5. Juhász, S., Tóth, G., Lengyel, B. (2020): Brokering the core and the periphery: Creative success and collaboration networks in the film industry. PLoS ONE 15(2): e0229436.

6. Lau, A. K., – Lo, W. (2015). Regional innovation system, absorptive capacity and innovation performance: An empirical study. Technological Forecasting and Social Change, 92, pp. 99-114.

Sustainable and social innovation

7. Phillis, J. A. Jr. – Deiglmeier, K. – Miller, D. T. (2008): Rediscovering Social Innovation. Stanford Social Innovation Review.

Universities and innovation

8. Trippl, M. – Sinozic, T. – Lawton Smith, H. (2015): The Role of Universities in Regional Development: Conceptual Models and Policy Institutions in the UK, Sweden and Austria. European Planning Studies. 10.1080/09654313.2015.1052782. (Available at: https://www.researchgate.net/publication/278032448_The_Role_of_Universities_in_Regional_Development_Conceptual_Models_and_Policy_Institutions_in_the_UK_Sweden_and_Austria)
9. Kempton, L. – Goddard, J. – Edwards, J. – Hegyi, F. B. – Elena-Pérez, S. (2014): Universities and Smart Specialization. JRC Technical Reports. S3 Policy Brief Series No. 03/2013 (Available at: https://publications.jrc.ec.europa.eu/repository/bitstream/JRC85508/ipts%20jrc%2085508%20(completo-email).pdf)
10. Benneworth, P. – Cunha, J. (2015): Universities' contributions to social innovation: reflections in theory & practice. *European Journal of Innovation Management*, Vol. 18, No. 4, pp. 508–527

Organizational frameworks of innovation

11. Lee, Y-N. and Walsh, J. P. (2016) Inventing while you work: Knowledge, non-R&D learning and innovation. Research Policy, Vol. 45. No. 1. pp. 345-359.
12. Kach, A., Azadegan, A. and Wagner, S. M. (2015) The influence of different knowledge workers on innovation strategy and product development performance in small and medium-sized enterprises. International Journal of Production Research, Vol. 53. No. 8. pp. 2489–2505.
13. Zoghi, C., Mohr, R. D. and Meyer, P. B. (2010) Workplace organization and innovation. Canadian Journal of Economics, Vol. 43. No. 2. pp.622-639.

From product development to innovation marketing

14. Cui, A. S. and Wu, F. (2017) The impact of customer involvement on new product development: contingent and substitutive effects. Journal of Product Innovation Management, Vol. 34. No. 1. pp. 60–80.
15. Florén, H. and Frishammar, J. (2012) From preliminary ideas to corroborated product definitions: Managing the front end of new product development. California Management Review, Vol. 54. No. 4. pp. 20–43.

Innovation, company performance and competitiveness

16. Zhang, X., Chu, Z., Ren, L. and Xing, J. (2023) Open innovation and sustainable competitive advantage: the role of organizational learning. Technological Forecasting & Social Change, Vol. 186 No. 122114
17. Rubera, G., Chandrasekaran, D. and Ordanini, A. (2016) Open innovation, product portfolio innovativeness and firm performance: the dual role of new product development capabilities. Journal of the Academy of Marketing Science, Vol. 44. No. 2. pp. 166–184.
18. Huang, S. Y. et al. (2018) The relationship between corporate innovation and performance. Total Quality Management, Vol. 29. No. 4. 441–452.

Optional learning material

- Atkinson, R. D. – Ezell, S. J. (2016): *Innovation economics – The Race for Global Advantage.* Yale University Press, New Haven and London
- Clark, B. R. (1998): *Creating Entrepreneurial Universities – Organizational Pathways of Transformation.* Pergamon Press
- Etzkowitz, H. (2008): *The Triple Helix – University-Industry-Government Innovation in Action.* Routledge, New York and London
- Freeman, C. – Soete, L.: *The economics or industrial innovation*, Routledge, London and New York 2004
- Maital, S. – Seshadri, D. V. R. (2014): *Innovation Management: Strategies, Concepts and Tools for Growth and Profit.* 2. ed., 2. print. Los Angeles: SAGE. ISBN 978 81 321 0722 4
- Polenske, K. R. (ed.): *The economic geography of innovation*, Cambridge University Press 2007
- Swann, G. M. P.: *The Economics of Innovation*. Edward Elgar Cheltenham, UK, Northampton, MA, USA 2009
- Tidd, J. – Bessant, J. (2014): *Managing innovation: integrating technological, market and organizational change*. 5., reprinted ed. Chichester: Wiley. (Includes interactive e-book) ISBN 978 1 118 36063 7

7. Further information

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