COURSE OUTLINE

(1) GENERAL

SCHOOL	ECONOMICS and BUSINESS ADMINISTRATION		
ACADEMIC UNIT/PARTICIPATING UNITS*	Department of Economics		
PARTICIPATING INSTITUTIONS**	-		
POSTGRADUATE PROGRAMME: TITLE OF POSTGRADUATE PROGRAMME	Innovative and Sustainable Entrepreneurship		
LEVEL OF STUDIES	Post-graduate		
COURSE CODE	KAE-06	SEMESTER	1st
COURSE TITLE	Economics of Innovation		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	WEEKLY TEACHING HOURS	CREDITS
	3	6

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special Background
PREREQUISITE COURSES:	Entrepreneurship and Innovation
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek with readings in English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	To be announced

*Στην περίπτωση Διακρατικού, Διιδρυματικού ή Διατμηματικού ΠΜΣ συμπληρώνονται όλα τα συμμετέχοντα Τμήματα και χαρακτηρίζεται σε παρένθεση το επισπεύδον, π.χ. Φυσικής (επισπεύδον)

**Συμπληρώνεται μόνο στην περίπτωση Διακρατικού ή Διιδρυματικού ΠΜΣ

(2) LEARNING OUTCOMES

Learning outcomes
The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described. *Consult Appendix A* • *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area* • *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong*

Learning and Appendix B

- *Guidelines for writing Learning Outcomes*

The course studies the economics of innovation and technological change from three perspectives: macro, micro and industry level. The first part of the course (macro) examines the relationship between technological change and economic transformation (e.g. productivity growth, unemployment, structural change). Particular attention is paid to measurement of innovation activities and the relationship between innovation and places and why some places prosper while others stagnate. Secondly the course studies at the micro level the different sources of innovation and the main appropriability strategies. It studies the dichotomy big state vs. free markets and asks which works best, for whom and when. It addresses the issue of skills and innovation and how the rewards from innovation activities are distributed. At the industry level the course analyzes the forces that drive the diffusion of new processes and products, industry and market lifecycles, the role of design(s), network effects and standards and how to address the technological lock-in and lock-out. In addition, two themes are central in the analysis of technological innovation. Intellectual property (patents, copyrights and trademarks) and scientific progress. The course examines the economic justification for intellectual property and how different possible institutional designs can stimulate or hinder innovation. It addresses the efficiency of the international regulation of intellectual property with a specific regard to developing countries (diffusion of knowledge, access to medicines etc. etc.). It studies how intellectual property can be used for technology transfer between university and industry. Secondly, the course analyzes the economics of science, the determinants of scientific progress and its economic impact. Some sectoral or firm-level case studies are proposed in some particularly relevant industries as the so-called 'industry 4,0' or biotechnology, software and telecommunication.

Upon successful completion of the requirements for this course, students will be able to:
1. understand the relationships between innovation and the most important economic processes like growth, unemployment and structural change.
2. evaluate different competitive strategies in different the different innovative and emerging industries in the economy.
3. master the microeconomic principles driving innovation.
4. understand the different sources of innovation for the firm and the various appropriability strategies.
5. evaluate critically the use and impact of intellectual property.
6. think critically about the opportunities and challenges in the relationship between scientific progress and innovation.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

Search for, analysis and synthesis of data and information using of the appropriate technology, adapting to new situations, Decision-making, Production of new ideas, Criticism and self-criticism, team-working, free, creative and inductive thinking.

(3) SYLLABUS

The course offers specialised knowledge on issues related to Innovation Economics. More specifically, the course covers the following topics:

1. Introduction to the course: stylized facts - basic concepts and definitions
2. Sources of innovation
3. Research and Development, and its importance
4. The external organization of innovation: "Open Innovation"
5. Innovation and Internationalization
6. Platforms and Business Model Innovation
7. Innovation and Growth: Artificial Intelligence and General Purpose Technologies
8. Measurement of innovation: Indicators and data
9. Diffusion of Innovation
10. Intellectual property rights and Profiting from Innovation
11. Innovation, Efficiency and Productivity
12. Environmental and Digital Innovations: Drivers and Effects.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Distance Learning
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	• Use of PowerPoint during lectures • Posting of educational material on the asynchronous e-learning platform in the course area • Provision of bibliographic references for study on the asynchronous tele-education platform at the course site • Use of videos and podcasts • Posting of information of interest and announcements related to the course on the asynchronous e-learning platform in the classroom • Communication via e-mail/eclass
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well*	

Activity	*Semester workload*
Lectures (3 hours/week x 13 weeks)	39 hours
Group assignment (economic analysis of sources and impact of an existing innovation)	20 hours
Presentation and discussion of case studies	10
Debate	10
Independent study	92
Course total (25 hours	200 hours

as the hours of non-directed study according to the principles of the ECTS	of workload per ECTS credit)	(total student workload)
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Students' grades are based on Group assignments (30%), case studies presentation (10%), debate (10%), and a final exam (50%).	

(5) RECOMMENDED BIBLIOGRAPHY

Suggested bibliography:

- Fagerberg, J., Mowery, D., Nelson, R. (2005). Oxford Handbook of Innovation. Oxford University Press
- Fagerberg, J. (2003). "A Layman's Guide to Evolutionary Economics" https://www.duo.uio.no/bitstream/handle/10852/17708/WPnr17_Fagerbergs_Laymans_Guide.pdf?sequence=1
- Hall, B. and N. Rosenberg, (2010). Handbook of the economics of innovation. Elsevier
- Swan, P.G.M. (2009).The Economics of Innovation. Edwar Elgar Publishing, Cheltenham UK.

Indicatively the following published papers:

- Chatzistamoulou, N., Kounetas, K. and Tsekouras, K. (2022). "Technological hierarchies and learning: Spillovers, complexity, relatedness, and the moderating role of absorptive capacity". Technological Forecasting & Social Change. 183, (doi.org/10.1016/j.techfore.2022.121925)
- Dimakopoulou, A. Gkypali and K. Tsekouras (2024), "Technological and non-technological innovation synergies under the lens of absorptive capacity efficiency", Journal of Business Research, 176, 114593
- Dimakopoulou A., Chatzistamoulou N., Kounetas K., and K. Tsekouras K. (2023). "Environmental innovation and R&D collaborations. Firm decisions in the innovation efficiency context". The Journal of Technology Transfer 48, 1176–1205
- Dosi, G., & Nelson, R. R. (2013). The evolution of technologies: An assessment of the state-of-the-art. Eurasian Business Review, 3, 3-46.
- Dosi, G., Lechevalier, S., & Secchi, A. (2010). Introduction: Interfirm heterogeneity—nature, sources and consequences for industrial dynamics. Industrial and Corporate Change, 19, 1867-1890.

- Tsekouras, K., Chatzistamoulou, N., Kounetas, K., & Broadstock, D. C. (2016). Spillovers, path dependence and the productive performance of European transportation sectors in the presence of technology heterogeneity. Technological Forecasting and Social Change, 102, 261-274.

Related academic journals:
Indicatively: Technological Forecasting and Social Change, Research Policy, Journal of Business Research, Technovation, Industry and Innovation, Journal of Technology Transfer, Journal of Evolutionary Economics, Economics of Innovation and New Technology, Small Business Economics, Industrial and Corporate Change, Information Economics and Policy.