

ADMINISTRATION OF TECHNOLOGY AND INNOVATION ECOSYSTEMS

Credit points	3 CP		
Study course annotation	The course covers basic concepts, theories and approaches related to innovation and innovation ecosystems. Within its framework, management models of innovation ecosystems, criteria and parameters for evaluation of novelty of technologies and products, methods of identification of innovation opportunities and innovation planning and implementation strategies are considered.		
Aim of the study course	The aim of the course is to help students understand the main trends and challenges in the processes of innovative product/technology development and innovation management, as well as to find creative solutions to overcome these challenges.		
Results of the Study course	Knowledge	Skills	Competences
	Understand the nature and role of innovation in the development of society, industries and businesses	manage innovation and creative creativity processes within the company, be able to find and select viable innovative ideas, discuss recent innovation and technology trends	apply it to the management decision-making process, take responsibility for implementing the innovative idea, its interaction with society and the environment
Course content	Topics		
	1	Introduction to the course. Management of innovation ecosystems. Management models: reflective, adaptive, agile, experimental, preliminary and anticipatory management. RIS3 management and smart specialization strategies.	
	2	Elements of innovation ecosystems: actors, products, activities, relationships, regulation. Value chain and value chain economy. RIS3 governance and the role of innovation ecosystems in the context of development of global value chains.	
	3	Concept and dimensions of innovation: invention dimension and market dimension. Harvard University and Massachusetts Institute of Technology Approaches to Understanding Innovation. Emerging trends: impact dimension and social, ethical and environmental aspects. Responsible innovation and its history. Corporate Sustainability Reporting Directive (CSRD) and European Sustainability Reporting Standards (ESRS).	
	4	Invention-driven and need-driven innovations. The problem of unarticulated needs and 'functional fixation'. Drivers of innovation: PPOs/universities, start-ups, DeepTech startups, SMEs/innovative and/or exporting merchants, large industry/corporations.	
	5	Innovation ecosystems, their elements and management. Conceptual and legal framework of Latvian innovations. The role of the Frascati manual in Latvian innovation policy. Concepts of experimental development and technological uncertainty. Definitions of a new product in CM regulations no. 692. Case Study: A New Product in Software. Regulation of start-ups.	
	6	Invention level of innovation. Product dimensions: components and functions. Functional analysis of technologies and the concept of new functionality. Resolving physical and technical conflicts. Inventive problem solving theories: SCAMPER, TRIZ, morphological analysis, SAPPPhIRE. Algorithmic thinking.	
	7	Technology Development Levels (TRLs). Technical specification and its requirements (functional, performance, physical, etc.). Minimum viable product: conceptual, simulated and actual (prototype).	
	8	Market level of innovation. B2B vs B2C. Determination of competitive advantage. The main value parameters of the product. Impact on user behavior. Cloverleaf	



		Model: technological readiness, market readiness, commercial readiness, management readiness.
	9	Support and financing models for innovation and innovative start-ups. 5 basic stages of investment and support.
	10	Protection of intellectual property and patenting of innovations. Work with patent databases (functional approach, new applications approach and natural language analysis of patent summaries). Competing technologies, related technologies and component technologies. Patents and Copyright: Problems with Patenting Algorithms and Code End of the course.
The form of exam:	Preparation of an essay	
Mandatory literature:		
<ul style="list-style-type: none"> • <i>The Public Governance of Anticipatory Innovation Ecosystems in Latvia. Exploring Applications in Key Sectors.</i> OECD Public Governance Reviews, January 17, 2023. • Ove Granstrand, Marcus Holgersson. <i>Innovation ecosystems: A conceptual review and a new definition.</i> Technovation, Volumes 90–91, February–March 2020. • Santosh Jagtap. <i>Design creativity: refined method for novelty assessment.</i> International Journal of Design Creativity and Innovation, 7:1-2, 99-115, 2019. 		
Additional Literature:		
<ul style="list-style-type: none"> • Batya Friedman, Peter H. Kahn, Jr., Alan Borning. <i>Value Sensitive Design and Information Systems.</i> In P. Zhang & D. Galletta (Eds.), <i>Human-Computer Interaction in Management Information Systems: Foundations.</i> M.E. Sharpe, Inc: NY, 2006. • <i>Frascati Manual 2015. Guidelines for Collecting and Reporting Data on Research and Experimental Development.</i> OECD, October 08, 2015. 		
Other sources of information:		
During the study process, changes and additions to the program and to the list of literature are possible		