

Subject card

Subject name and code	Commercialization of research results, PG_00054836						
Field of study	Environmental Protection						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Karol Krzyński				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	5.0	0.0	0.0	0.0	0.0	5
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	5		1.0		19.0	25
Subject objectives	Familiarizing students with the issues listed in the course content, i.e.: - intellectual and industrial property issues;- requirements and criteria used when preparing patent applications;- methods of managing the organization implementing the project;- principles of building, cooperation and management of a research team;- sources of financing for scientific and research projects - public and private;- principles of the knowledge-based economy;- the method of preparing a research plan and stages of commercialization.- assessint the commercial potential of the project.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OŚMU2_W11] Enumerates the methods of financing scientific and application projects in the field of environmental protection, including commercialisation of research results.	- Distinguishes between the patentability of products and technologies; - Knows the most important sources of financing for research projects. - Identifies and recognizes market needs; - Describes the commercialization plan; - Knows commercialization models; - Knows what conditions a patent application should meet.	[SW4] test/exam - oral or written [SW3] text preparation/written work
	[OŚMU2_K09] Thinks and acts in an entrepreneurial manner also in respect to the commercialization of research results.	- Understands the need for group work; - Understands the need to systematically become familiar with the literature (patent and scientific and popular articles); - Understands the need to learn about the needs of the modern market and customers; - Understands the need to deepen knowledge; - Understands the need for effective self-presentation; - Demonstrates responsibility for timely completion of tasks.	[SK2] presentation/project/paper/report [SK5] implementation of a problem task
	[OŚMU2_K08] Initiates and takes into account in the organizational activity the activities for the social environment and public interest.	- Is active in expanding knowledge and understands the need for continuous learning; - Training in the novel technologies concerning security of environment; -Knows the principles of effective cooperation.	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
Subject contents	• Knowledge-based economy: cooperation between business and research units; • The concept of innovation definitions, classifications; blue ocean strategy and innovation-friendly education systems. • Financing and commercialization of scientific research - motivation and methods of commercialization; patterns and examples of commercialization. • Sources of financing for implementation research; types and obtaining scientific grants, private funds. • Patent law and patents: types of intellectual property; methods of protection and its limitations; problems related to the protection of i.i.; patenting scientific research results; industrial and utility designs, trademarks; intellectual property in European projects. • Managerial competences: building and leading a project team; team formation phases; conflicts in the group and their causes; factors affecting team effectiveness; principles of creating an effective team; Belbin's team role theory; principles of effective management of a project team; management styles.		
Prerequisites and co-requisites	1. Completed classes in Chemistry or Environmental protection at the Bachelor's level.2. Knowledge of English at the level sufficient for understanding branch literature.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test ról grupowych Belbina	0.0%	10.0%
	Analiza problemowa treści; Rozmowa indywidualna	51.0%	40.0%
	Test jednokrotnego wyboru, sprawdzający znajomość treści nauczania przedmiotu	0.0%	50.0%
Recommended reading	Basic literature	R. Mauborgne, W. Chan Kim, "Blue Ocean Strategy", Ed. MT Business, 2018. K. Krzywiński, own materials, made available to students during classes.	
	Supplementary literature	Descriptions of patent applications and claims of selected technologies, available on the Internet.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Test questions: List the ways of commercializing research results; Identify rising trends and falling trends in organizations in today's market; Indicate the appropriate answer regarding the Blue Ocean Strategy; List the factors that influence the effectiveness of research and development cooperation.Student's own work: How can the Faculty of Chemistry earn money?; What type of patent should be applied for in the case study presented and why?; Managerial competences: Propose and justify criteria regarding the methods of assigning regional representatives to directors in the event of changes in the organization.		

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