



Subject card

Subject name and code	Management and Production Engineering, E:41047W0						
Field of study	Space and Satellite Technologies						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2023/2024		
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		English		
Semester of study	1		ECTS credits		3.0		
Learning profile			Assessment form		assessment		
Conducting unit	Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksandra Wiśniewska				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	15.0	0.0	45
	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	45		0.0		0.0	45
Subject objectives	To familiarise students theoretically and practically with production processes and systems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_W11		Student has the knowledge on production systems related to space technologies.		[SW1] Assessment of factual knowledge		
	K7_U05		He demonstrates the ability to quantify the performance of production systems and to perform a preliminary economic analysis of planned engineering activities in the field of automation of production systems and the operation of machinery and technical equipment.		[SU1] Assessment of task fulfilment		
	[K7_K04] Can show resourcefulness and ingenuity in dealing with professional tasks.		He demonstrates initiative and ingenuity when implementing tasks related to production systems.		[SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	Elements of a manufacturing process (definitions and terms). The structure and functions of a production system. Integration forms of process components: machining (manufacturing), material flow (transportation), information flow and process control. Classification of machine tool control technologies. Numerical control and automatic regulation. Automation components for machine tools and their systems. Automation versus flexibility and production scale. Productivity and the degree of system autonomy. Flexibly automated CNC machine tools, machining centers and autonomous machining stations in integrated manufacturing systems (IMS). Flexible manufacturing systems (FMS). Factors and measures for FMS integration: transportation and material (part/tooling) handling subsystems using manipulators and industrial robots. Integration of process flow functions. Surveillance and diagnosis in FMS. FMS operation and process flow control. Typologies of production facility organisation. The stationary system layout. Cellular and linear forms of layout organisation. The means for hybrid manufacturing technology realisation.						
Prerequisites and co-requisites	-						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	project		50.0%		30.0%		
	laboratory		50.0%		30.0%		
	exam		50.0%		40.0%		
Recommended reading	Basic literature		Students will receive a reading list at the beginning of the semester.				

	Supplementary literature	-
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	-	
Work placement	Not applicable	