

Management and production engineering – 4 semester

Lp.	Subject	Description	Semester	ECTS credits	Number of hours for the form of education						Form of passing	
					Lecture	Exercise	Practical classes	ZK	PS	PZ	Exam	Credit
1.	Operational research	Students will be introduced to the theory and basic methods of operations research. They will acquire the ability to correctly classify and formulate selected real-world decision-making (optimization) problems and serialization problems. They will be able to select a method or an appropriate algorithm to solve a formulated problem.	4	4	30	-	30				x	-
2.	Optimisation methods	Students will be introduced to the theory and basic methods of optimization. They will acquire the ability to correctly classify and formulate selected real-world decision-making problems. They will be able to select a method or an appropriate algorithm to solve a formulated problem.	4	4	30	-	30				x	-
3.	Protection of natural resources and the environment	Familiarize students with basic concepts related to environmental protection and pollution of the atmosphere, soil and water. Students will acquire knowledge of the origin of selected pollutants. To	4	3	30	-	15				-	x

		get students acquainted with environmental monitoring, selected methods of contaminants determination in water samples and monitoring: soil, water, atmosphere. They will become familiar with selected modern methods of pollution removal.										
4.	Chemical technologies in environmental protection	To familiarize students with selected chemical technologies used in environmental protection. Students will be aware of the threats posed by selected chemical compounds to the environment (e.g. Phenols, PAHs, Asbestos). They will become familiar with the methods of waste disposal and disposal of learn about the importance of protecting the atmosphere from dust and SO ₂ /NO _x fumes ('zero emission' technologies).	4	3	30	-	15				-	x
5.	Automation and robotisation of production processes	To provide students with a basic knowledge of describing the dynamics of objects in the time, operator and frequency variable domain. To develop in students the ability to solve simple object identification and control system design problems. To develop in students the ability to work in an interdisciplinary team, in particular in cooperation with process technologists.	4	3	15	15	30				-	x
6.	Market and marketing research	Impart knowledge of market and marketing research techniques and methods. To familiarize students with	4	4	30	15	15				x	-

		the types and possibilities of research implementation by a company. To understand the mechanisms of enterprise functioning in the market.										
7.	Microeconomics	Students learn the basic concepts of macroeconomics. They will acquire the ability to search for relevant information in this field on the Internet. They will understand the causes of microeconomic phenomena. They will learn to use source materials.	4	3	30	15	-				x	-
8.	Cost accounting	Students will learn about the methods and tools of cost analysis in a company. They will acquire knowledge of the theory and practice of cost accounting. They will acquire the ability to determine the cost of production, which is a fundamental factor in decision-making in enterprises.	4	3	30	-	15				-	x
9.	Fundamentals of machine construction II	To provide students with basic knowledge of mechanical engineering. to familiarize students with computer-aided design (CAD), standardization issues and EU requirements in the area of mechanical engineering. To familiarize students with the most common methods of joining components and the construction of universal machine assemblies (e.g. couplings, gears). To develop the ability to construct simple machine	4	2	15	-	15				x	-

