

## COURSE DESCRIPTION CARD – SPECIMEN

Faculty of Mechanical Engineering									
Field of study	Mechanics							Degree level and programme type	Bachelor
Specialization/ diploma path	general							Study profile	
Course name	CAD/CAM Systems							Course code	IS-FME-00241W
								Course type	obligatory
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	winter
	15			30				No. of ECTS credits	4
Entry requirements	Basic knowledge of manufacturing techniques								
Course objectives	To acquaint the student with using of CAD / CAM systems in a modern design and manufacturing process. Learnig of operating skills and rules of using specialized CAD / CAM software. Design of the part manufacturing technology in the CAD / CAM system, the programming and operation of the CNC machines and using of CAD / CAM systems for the design and generation of detail processing paths								
Course content	<p><b>Lecture:</b>            Computer aided design - structure and principle of operation of CAD systems. Methods of creating geometry used in computer engineering systems. Basic tasks of creating and modifying shapes of objects in CAD systems. Types of geometric models used in CAD / CAM systems. Solid and surface modelling. Exchange of geometric data between CAD / CAM systems. Computer aided manufacturing (CAM) - definition, structure, ways of information processing. The use of CAM systems in the preparation of production. Integrated CAD / CAM systems - properties, system selection criteria. Features of CAD / CAM systems. The use of a CAD / CAM system to develop a technological process for a numerically controlled machine tool. The use of CAD / CAM systems for programming numerically controlled machine tools. Concurrent engineering and reverse engineering.</p> <p><b>Project:</b>            Basics of CAD / CAM system operation. Development of the technological process of the technical object and generation of programs controlling the CNC machine tool - using the CAD / CAM system.</p>								
Teaching methods	Lectures and project classes								
Assessment method	Lectures - mid-term and final test, Project - evaluation of reports								
Symbol of	Learning outcomes							Reference to the	

learning outcome		learning outcomes for the field of study	
LO1	Uses CAD / CAM systems in the development of part manufacturing technology		
LO2	Knows the general principles of using CAD / CAM systems		
LO3	Has detailed knowledge of computer-aided design and manufacturing systems		
LO4	Student able to work in a team.		
LO5			
LO6			
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
LO1	reports	P	
LO2	mid-term and final test, reports	L, P	
LO3	mid-term and final test,	L	
LO4	observation of work during laboratory classes	P	
LO5			
LO6			
Student workload (in hours)		No. of hours	
Calculation	Laboratory classes	15	
	Project classes	30	
	Consultations	5	
	Realization of project tasks	20	
		TOTAL:	70
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		50	3
Student workload – practical activities		20	1
Basic references	1. M. P. Groover, Cad/CAM: Computer-Aided Design and Manufacturing, 2. I. Zeid, Mastering CAD/CAM		
Supplementary references	1. M. P. Groover, Automation, Production Systems, and Computer-Integrated Manufacturing		
Organisational unit conducting the course	Department of Materials and Production Engineering	Date of issuing the programme	
Author of the programme	Ph.D., Eng. Karol Golak	16.03.2021	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,

S – seminar