COURSE DESCRIPTION CARD – SPECIMEN

Faculty of Mechanical Engineering									
Field of study	**Engineering**							**Degree level and programme type**	**Bachelor's degree**
Specialization/ diploma path	**-**							**Study profile**	**-**
Course name	**SQL Based Data Analysis and Reporting**							**Course code**	**IS-FEE-10023W**
								Course type	**elective**

Forms and number of hours of tuition	**L**	**C**	**LC**	**P**	**SW**	**FW**	**S**	**Semester**	**winter**
	15			**15**				**No. of ECTS credits**	**2**

Entry requirements	**programming - basic engineering level**
Course objectives	**Knowledge and understanding of the basics of SQL databases. Creation of reporting systems using MSSQL functions and procedures.**
Course content	**Introduction to SQL and T-SQL. Introduction to Tables. Introduction to Data Selection. Sorting Records. Introduction to Data Filters. Introduction to Relational Databases. Introduction to Data Joins. Introduction to Views. Topics on Views. Aggregate Queries. Selecting Records Over Partitions. Ranking Records Over Partitions. Triggers. Sub-Queries. Stored Procedures.**
Teaching methods	**Lecture and discussion, project**
Assessment method	**Lecture – exam; Project - Creation of a reporting system using MSSQL T-SQL extension**

Symbol of learning outcome	**Learning outcomes**	**Reference to the learning outcomes for the field of study**
LO1	**knowledge of the basics of SQL databases**	
LO2	**knowledge of the basics of MSSQL T-SQL extension**	
LO3	**knowledge of the principles of proper preparation of reports and is able to analyze them**	
LO4	**preparing, testing and running own scripts for data acquisition, processing and analysis**	
LO5		
LO6		
Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**

LO1	exam, partial evaluation of project	L,P
LO2	exam, partial evaluation of project	L,P
LO3	exam, partial evaluation of project	L,P
LO4	exam, partial evaluation of project	L,P
LO5		
LO6		

Student workload (in hours)		No. of hours
Calculation	lecture	15
	classes	15
	preparation for project	6
	creation of data analysis and reporting system	20
	TOTAL:	56

Quantitative indicators	HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation	30	
Student workload – practical activities	0	

Basic references	1. A. Molinaro, SQL Cookbook, O'Reilly and Associates; 1. Edition 2. W. Shields, SQL QuickStart Guide: The Simplified Beginner's Guide to Managing, Analyzing, and Manipulating Data With SQL, ClydeBank Media LLC; Illustrated Edition 3. Itzik Ben-Gan, T-SQL Fundamentals, Microsoft Press; 3rd edition		
Supplementary references	1. G.S. Linoff, Data Analysis Using SQL and Excel, Wiley; 2. Edition		
Organisational unit conducting the course	Department of Automatic Control and Robotics	Date of issuing the programme	
Author of the programme	Maciej Ciężkowski, Ph. D.	12.02.2021	

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

S – seminar