1.	**Field of study**	**Computer Science**
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2021/2022 (summer term), 2022/2023 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	part-time

Module: Microcomputers and network couplers

Module code: W4-IN-N2-20-F-MiSS

1. Number of the ECTS credits: 4

2. Learning outcomes of the module

code	description	learning outcomes of the programme	level of competence (scale 1-5)
M_001	Describes advantages of MCU microcomputer Harvard architecture and reduced instruction set (RISC).	K_W03 K_W06 K_W09	1 1 1
M_002	Presents various concepts of microcontrollers networks.	K_W03	3
M_003	Understands threats connected with maintenance-free control of manufacturing processes.	K_W03 K_W05 K_W09	2 1 1
M_004	Uses runtime systems for microcomputers.	K_U01 K_U08 K_U09	1 1 1

3. Module description

Description	Aim of the module is to present the concept of communicating networks and cooperating microcontrollers. The student familiarizes with two microcontrollers families and justifies choice of optimum solutions analyzing widely perceived cost of the solution (equipment cost, energy consumption, simplicity of implementation, etc.).
Prerequisites	

4. Assessment of the learning outcomes of the module			
code	**type**	**description**	**learning outcomes of the module**
W_001	Lecture credit	Questions from lecture subject matter.	M_001, M_002, M_003
W_002	Conversation during crediting tasks.	Checks the skill of generalizing skills acquired while tasks execution in the groups of two.	M_004

5. Forms of teaching						
code	**form of teaching**			**required hours of student's own work**		**assessment of the learning outcomes of the module**
	type	**description (including teaching methods)**	**number of hours**	**description**	**number of hours**	
Z_001	lecture	Content available in the form of multimedia transfer.	15	Preparing to laboratory classes and to lecture credit.	15	W_001
Z_002	laboratory classes	Writing simple programs for microcomputer using the chosen programming language and runtime environment. Designing and activating microcomputer-controlled devices.	30	Activating programs dedicated to the Designed microcomputer-based device. Preparing specification for the designed device.	60	W_002