1.	**Field of study**	**Computer Science**
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2019/2020 (summer term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Microcomputers and network couplers

Module code: 08-IN-IIN-S2-MiSS

1. Number of the ECTS credits: 3

2. Learning outcomes of the module

code	description	learning outcomes of the programme	level of competence (scale 1-5)
MiSS -K_12	Independently gets acquainted with issues beyond the field of study, which enable to realize interdisciplinary projects.	K_K02 K_U05	1 1
MiSS -K_13	Presents his own project.	K_K01	1
MiSS -U_10	Designs and implements simple drivers using microcontrollers.	K_U09	4
MiSS -U_11	Selects appropriate instructions and addressing modes to optimize the control program.	K_U13	1
MiSS -U_7	Uses runtime systems for microcomputers.	K_U14 K_U20	2 2
MiSS -U_8	Programs microcontrollers in the chosen programming language.	K_U12 K_U13 K_U15	2 2 1
MiSS -U_9	Enters the program in internal memory of the microcontroller and deploys it stepwise.	K_U09 K_U20	3 1
MiSS -W_1	Characterizes processor and internal peripheral systems of microcontroller.	K_W04	1
MiSS -W_2	Describes advantages of MCU microcomputer Harvard architecture and reduced instruction set.	K_W04 K_W07	1 1
MiSS -W_3	Understands the need to use microcomputers in everyday life.	K_W13 K_W14	1 1

MiSS -W_4	Presents various concepts of microcontrollers networks.	K_W04 K_W13 K_W14	1 1 1
MiSS -W_5	Understands technical documentation and instruction set of microcontrollers.	K_W07	1
MiSS -W_6	Understands threats connected with maintenance-free control of manufacturing processes.	K_W20	1

3. Module description	
Description	The goal of the module is to familiarize the student with current trends in the use of microprocessors in designing the controllers and authoring devices. Aim of the module is to present the concept of communicating and cooperating microcontrollers networks. The student gets to know two families of microcontrollers and justifies the choice of optimum solutions after analyzing a 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
MiSS _w_1	Lecture credit	Questions from the lecture subject matter.	MiSS -W_1, MiSS -W_2, MiSS -W_3, MiSS -W_4, MiSS -W_5, MiSS -W_6
MiSS _w_2	Conversation during crediting tasks	Verifies the ability to generalize the skills acquired while implementing and documenting the program created in groups of two students	MiSS -K_12, MiSS -K_13, MiSS -U_10, MiSS -U_11, MiSS -U_7, MiSS -U_8, MiSS -U_9

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	
MiSS _fs_1	lecture	Content available in the form of multimedia transfer.	15	Preparing to laboratory classes and to lecture credit.	30	MiSS _w_1
MiSS _fs_2	laboratory classes	Implementing simple programs for microcomputer using the chosen programming language and runtime environment. Designing and activating microcomputer-controlled devices.	30	Implementing and running programs dedicated to the designed microcomputer-based device. Preparing specification for the designed device.	15	MiSS _w_2