1.	**Field of study**	**Computer Science**
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2020/2021 (summer term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Biometric recognition and access control systems

Module code: W4-INA-S2-20-F-BSRUK

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	The student should solve problems individually or in a team, using the gained knowledge and practical skills.	K_K01 K_K03 K_K04 K_U01 K_U02	1 1 1 1 1
M_002	The student knows the biometric data acquisition and processing process.	K_W01 K_W02 K_W03 K_W05 K_W09	1 1 1 1 1
M_003	The student knows and understands the operation of selected methods and algorithms for biometric verification or identification.	K_W01 K_W02 K_W04 K_W05 K_W09	1 1 1 1 1
M_004	The student can design hybrid biometric security systems.	K_U01 K_U03 K_U05	1 1 1

		K_U09 K_U10 K_W01 K_W02 K_W09	1 1 1 1 1
M_005	The student knows the construction and operation of access control systems.	K_U01 K_U10 K_W01 K_W02 K_W03 K_W06 K_W09	1 1 1 1 1 1 1
M_006	The student can test and refer to the advancement of his work or teamwork.	K_K01 K_U03 K_U04 K_U05	1 1 1 1

3. Module description	
Description	This course aims at introducing the issues of broadly understood biometrics and biometric access control systems.
Prerequisites	

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
W_001	Test	The students solve a theoretical test related to the topics discussed in the lectures.	M_002, M_003, M_005
W_002	Project documentation	The students present the full documentation of the project, including all stages of its implementation.	M_001, M_002, M_003, M_004, M_005, M_006

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	The lectures primarily focus on the most challenging issues and those deeply rooted in theory. The students are encouraged by asking them questions concerning the presented content.	15	The students prepare for the test individually.	10	W_001
Z_002	laboratory classes	The students work in the laboratory on computers and biometric measuring devices. There are both traditional and e-learning classes.	30	The students study for the labs. They complete tasks assigned to the labs and prepare report presentations and develop biometric identification or verification systems.	65	W_002