

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

Module: Intelligent data processing

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

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 is aware of intelligent data processing possibilities, especially in large data sets.	K_K02	1
M_002	The student knows the basics of artificial intelligence, including fuzzy logic and fuzzy inference.	K_W02	2
		K_W04	3
		K_W09	2
M_003	The student has a knowledge of data mining in detecting dependencies and patterns (e.g. rules) in regular and atypical data.	K_W02	1
		K_W04	2
		K_W08	2
		K_W09	4
M_004	The student knows the basics of artificial neural networks and deep learning.	K_W02	2
		K_W04	2
		K_W08	2
		K_W09	3
M_005	The student can implement or manually perform calculations and operations of fuzzification, fuzzy inference and defuzzification.	K_U03	3
		K_U07	2
		K_U08	2
		K_U09	3
M_006	The student can apply the selected rule induction algorithm (e.g. decision trees, association rules) for any data set or detection of unusual cases.	K_U01	1

		K_U03	3
		K_U08	2
		K_U09	3
M_007	The student knows how to use a dedicated tool to create a neural network model and interpret the developed model's learning results for any data set.	K_U03	3
		K_U07	2
		K_U08	2
		K_U09	3

3. Module description

Description	The aim is to introduce the student to data mining methods, classification tasks, clustering and rule induction process. It also includes the basics of fuzzy inference or deep learning with elements of neural networks.
Prerequisites	

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
W_001	Exam (Test)	The exam checks the knowledge gained in the lectures. The test comprises both open and closed-ended theoretical questions.	M_001, M_002, M_003, M_004, M_005, M_006, M_007
W_002	Project reports	The students develop projects with reports within a deadline, which is to verify the skills gained while solving the tasks.	M_001, M_005, M_006, M_007

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 content will be provided in verbal form with support of various audiovisual means and also other teaching aids.	15	The students prepare for the exam.	15	W_001
Z_002	laboratory classes	The classes prepare students to complete tasks with the emphasis on the method and the sequence of operations.	30	The students independently solve tasks assigned to the classes and prepare reports for their projects.	60	W_002