1.	Field of study	Geography
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2019/2020 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Introduction to hydrological modelling

Module code: 04-GF-S2-1119

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)
04-GF-S2-1119_1	The student possesses basic knowledge about aims and rules in hydrodynamic hydrological modeling focusing on surface water and groundwater.	KGG2_U01 KGG2_U06	2 1
04-GF-S2-1119_2	The student knows the rules of designing and construction of hydrologic models in ArcSWAT and FEFLOW environment. Is able to creates simple models and interpret the results and its capable to creates prognostic simulation.	KGG2_U01 KGG2_U02 KGG2_U03 KGG2_U05	1 1 1 1

3. Module description

Description	The subject Introduction to hydrological modelling allows the student to be familiar with the basic method of mathematical modeling applied in hydrology and hydrogeology. The subject gives opportunities to know the importance of these studies, their scope and practical applications. The course focuses on practical components. During lessons hours the student has a chance to create itself a simple hydrological and hydrogeological models, analysis the results and provide prognostic simulations.
Prerequisites	

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
04-GF-S2-1119_w_1	Computational and modeling work	Development and construction of simple numerical groundwater flow model and geochemical models.	04-GF-S2-1119_1, 04-GF-S2-1119_2

04-GF-S2-1119_w_2	Practical test	Verification of knowledge acquired by the student during laboratory hours.	04-GF-S2-1119_1, 04-GF-S2-1119_2
04-GF-S2-1119_w_3	Reports on conducted modeling studies	Preparation of reports on model simulations and tutorials, performed calculation and interpretation of model results.	04-GF-S2-1119_1, 04-GF-S2-1119_2

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	
04-GF-S2-1119_fs_1	laboratory classes	Student gets acquainted with methods of modeling research. Discussion on the issues and methodology of the development models. The student becomes familiar with selected examples of the application of such models to resolve environmental issues.	30	Preparation to the laboratory by consulting with the indicated issues, work with manuals, literature review, consultations.	45	04-GF-S2-1119_w_1, 04-GF-S2-1119_w_2, 04-GF-S2-1119_w_3