1.	Field of study	Geography
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2020/2021 (winter term), 2021/2022 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Laser scanning - data collecting and analysis

Module code: 04-GF-S2-1112

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-S2-1112_1	The student has the knowledge of basic concepts and terminology relating to laser scanning and processing of laser data. The student is aware of the most recent achievements in laser scanning and their importance with regard to other fields of sciences.	KGG2_W02	3
04-GF-S2-1112_2	The student can operate the laser scanner. The student knows the general applicability of software used for acquisition and processing of laser scanning data. The student applies different methods of data processing. The student can use laser scanning data in interpretation and presentation of wide spectrum of phenomena and processes taking place on the earth's surface. Recognizes the utility of laser scanning in scientific research, and shows a need of permanent actualizing of specialist knowledge and skills.	KGG2_K02 KGG2_K03 KGG2_U01 KGG2_U03 KGG2_U04	3 3 4 4 4

3. Module description

Description	The course enables student to increase his knowledge on processing of laser scanning data and use them in geographical information systems and other scientific research. The student participating in the course have an opportunity to familiarize themselves with methodology of acquisition and processing of laser scanning data. The student organize workflow in the field, process their own data and use them for monitoring and understanding of fundamental phenomena and processes happened on the earth's surface.
Prerequisites	The course is provided in English therefore students attending it should be able to understand written and spoken English.

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
04-GF-	Test	Verification of knowledge gained from lectures and from literature.	04-GF-S2-1112_1

S2-1112_w_1			
04-GF-S2-1112_w_2	Project	The student during the course will do the project finished with the report. The final mark will encompass proper processing of data and ability to correct presentation and interpretation of the results.	04-GF-S2-1112_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-S2-1112_fs_1	lecture	The lecture part of this course will focus on theory of laser scanner. Examples of practical application of scanning in environmental sciences will be provided. Lectures are in the form of multimedial presentations.	5	The student will be encourage to further explore the topics discussed during the lectures based on proposed literature and publications.	20	04-GF-S2-1112_w_1
04-GF-S2-1112_fs_2	laboratory classes	Practical exercises with laser scanner and solving environmental problems with laser data.	35	The student analyzes results from practical exercises and prepares the report.	40	04-GF-S2-1112_w_2