MODULE SPECIFICATION

Module code	
Module title in Polish	**Geodezja 1**
Module title in English	**Surveying Engineering 1**
Module running from the academic year	**2016/2017**

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	**Civil Engineering**
Level of qualification	**First cycle** *(first cycle, second cycle)*
Studies profile	**Academic** (*academic/practical)*
Mode of study	**Full-time** *(full-time / part-time)*
Specialism	
Organisational unit responsible for module delivery	The Department of Geomatics, Surveying and Cartography
Module co-ordinator	Maciej Hajdukiewicz, PhD, Eng.
Approved by	**Marek Iwański, Professor**

B. MODULE OVERVIEW

Module type	**Core module** (*core/programme-specific/elective HES*)*
Module status	**Compulsory module** *(compulsory / non-compulsory)*
Language of module delivery	**English**
Semester in the programme of study in which the module is taught	**Semester 1**
Semester in the academic year in which the module is taught	**Winter semester** *(winter / summer)*
Pre-requisites	**None** (*module code/module title, where appropriate)*
Examination required	**No** *(yes / no)*
ECTS credits	**2**

Mode of instruction	**lectures**	**classes**	**laboratories**	**project**	**others**
Total hours per semester	**30**				

* elective HES − elective modules in the Humanities and Economic and Social Sciences

C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	The aim of the module is to prepare students to co-operate with surveying services (having been familiarised with basic issues of surveying and photogrammetry with the application of new techniques and technologies of surveying processing).

Module outcome code	Module learning outcomes	Mode of instruction *(l/c/lab/p/ others)*	Corresponding programme outcome code	Corresponding discipline-specific outcome code
W_01	A student is familiar with legal regulations determining the field of co-operation between surveying services and a graduate.	l	B_W04	T1A_W02
W_02	A student is familiar with basic surveying services conducted with the use of classical surveying devices in civil engineering.	l	B_W04	T1A_W02 T1A_W04 T1A_W06
W_03	A student knows the principles of coordinate calculus while creating a map background.	l	B_W04	T1A_W01 T1A_W02 T1A_W07
W_04	A student knows surveying papers: maps, and documentation sketches.	l	B_W05	T1A_W01 T1A_W02 T1A_W03 T1A_W07
U_01	A student can calculate the coordinates of points on the basis of completed surveys.	l	B_U05 B_U06	T1A_U03 T1A_U07 T1A_U15
U_02	A student can take basic surveys with the use of a tape measure, a range finder, theodolite, a tacheometer, and a leveller.	l	B_U05	T1A_U03 T1A_U08 T1A_U14
U_03	A student is capable of reading surveying maps	l	B_U05 B_U06	T1A_U03 T1A_U07 T1A_U15 T1A_U05 T1A_U14 T1A_U16
K_01	A student can assess survey results and formulate appropriate conclusions.	l	B_K04	T1A_K01 T1A_K07

Module content:

1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1.	Discussing the syllabus concerning the lectures. Basic notions and definitions concerning surveying and cartography.	W_01 W_04
2	Legal fundamentals of the completed surveying works. Surveying and cartographic service.	W_01
3	The types of surveying studies.	W_04
4	Linear surveys. Direct and indirect surveys of length.	W_02
5	Setting out straight lines.	W_02
6	Geometric conditions of theodolite.	W_02
7	The methods of surveying horizontal angles.	W_02
8	Surveys of situational details. The orthogonal methods, the polar method, the method of angular and linear indents.	W_02
9	GPS surveying methods.	W_02

10	The elements of the coordinate calculus. Surveying coordinate system.	W_03
11	Height surveys. The structure of a leveller, surveying conditions of a leveller.	W_02
12	Surveys with the geometric levelling methods (frontwards and from the middle). Levelling sequences.	W_02
13	The methods of surface levelling: dispersed points, mesh, and section.	W_02
14	Tacheometry (topographic surveys). The structure of electronic tacheometers.	W_02

2. Topics to be covered in the classes
3. Topics to be covered in the laboratories
4. Topics to be covered in the projects

Assessment methods

Module outcome code	**Assessment methods** *(Method of assessment; for module skills − reference to specific project, laboratory and similar tasks)*
W_01	A written test
W_02	A written test
W_03	A written test
W_04	A written test
U_01	A written test
U_02	A written test
U_03	A written test
K_01	A written test

C. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	**Study time/ credits**
1	Contact hours: participation in lectures	**30**
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	
4	Contact hours: attendance at office hours (2-3 appointments per semester)	**3**
5	Contact hours: participation in project-based classes	
6	Contact hours: meetings with a project module leader	
7	Contact hours: attendance at an examination	**2**
8		
9	**Number of contact hours**	**35** *(total)*
10	**Number of ECTS credits for contact hours** *(1 ECTS credit =25-30 hours of study time)*	**1.4**
11	Private study hours: background reading for lectures	**5**
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	
14	Private study hours: preparation for laboratories	
15	Private study hours: writing reports	
16	Private study hours: preparation for a final test in laboratories	
17	Private study hours: preparation of a project/a design specification	

18	Private study hours: preparation for an examination	**10**
19		
20	**Number of private study hours**	**15** *(total)*
21	**Number of ECTS credits for private study hours** *(1 ECTS credit =25-30 hours of study time)*	**0.6**
22	**Total study time**	**50**
23	**Total ECTS credits for the module** *(1 ECTS credit =25-30 hours of study time)*	**2**
24	**Number of practice-based hours** *Total practice-based hours*	**3**
25	**Number of ECTS credits for practice-based hours** *(1 ECTS credit =25-30 hours of study time)*	**0.12**