



### MODULE SPECIFICATION

Module code	
Module title in Polish	<b>Geodezyjna obsługa inwestycji</b>
Module title in English	<b>Surveying for constructing 2</b>
Module running from the academic year	<b>2016/2017</b>

### A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	<b>Surveying and Cartography</b>
Level of qualification	first cycle (first cycle, second cycle)
Programme type	academic (academic/practical)
Mode of study	full-time (full-time/part-time)
Specialism	all
Organisational unit responsible for module delivery	The Department of Geotechnical Engineering, Geomatics and Waste Management
Module co-ordinator	Prof. Bogdan Wolski, PhD hab., Eng.
Approved by:	Ryszard Florek-Paszkowski, PhD, Eng.

### B. MODULE OVERVIEW

Module type	core module (core/programme-specific/elective HES*)
Module status	compulsory module (compulsory/optional)
Language of module delivery	English
Semester in the programme of study in which the module is taught	semester 5
Semester in the academic year in which the module is taught	summer semester (winter semester/summer semester)
Pre-requisites	None (module code/module title, where appropriate)
Examination required	yes (Yes/No)
ECTS credits	6

\* elective HES – elective modules in the Humanities and Economic and Social Sciences



# Politechnika Świętokrzyska

## WYDZIAŁ INŻYNIERII ŚRODOWISKA, GEOMATYKI I ENERGETYKI

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



### C. LEARNING OUTCOMES AND ASSESSMENT METHODS

<b>Module aims</b>	The aim of the module is to master knowledge on typical tasks concerning geodetic investment service in general and industrial civil engineering. This knowledge covers technical and organisational aspects of selecting the methods of obtaining data as well as preparing survey results concerning transport routes, industrial halls, tower and geotechnical objects.
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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 has general knowledge on civil engineering, which is indispensable to realise typical survey tasks concerning building structures.	l/l	GiK_W26	T1A_W06 T1A_W07
W_02	A student has knowledge on engineering surveying, which is indispensable to realise typical survey tasks concerning building structures at the stage of planning, building, and utilising them.	l/l	GiK_W03	T1A_W01 T1A_W04 T1A_W07
W_03	A student knows basic methods, techniques, and tools applied while preparing survey procedures at the stage of field works (and processing the results).	l	GiK_W27	T1A_W07
U_01	A student is capable of preparing a project as regards developing a plot terrain (in terms of surveying) and subsequently set out a designed building structure.	l	GiK_U23	T1A_U15 T1A_U16
U_02	On completing the structure, a student can make a post-realisation inventory and prepare a valuable documentation.	l	GiK_U25	T1A_U16
U_03	A student can apply various surveying methods in engineering object survey (particularly plan and realise a survey task at the stage of designing and realizing transport routes, industrial halls, tower objects, and geotechnical objects).	l	GiK_U14 GiK_U23	T1A_U_8 T1A_U15 T1A_U16
U_04	A student can plan and realise the task of registering a geometrical structure of a building structure at the stage of utilising it for diagnostic purposes.	l	GiK_U18 GiK_U26	T1A_U_9 T1A_U16
K_01	A student understands the necessity and knows the possibilities of continuous education and raising his/her qualifications.	l	GiK_K01	T1A_K01
K_02	A student is aware of the necessity of self-betterment and acting in a professional as well as responsible manner according to the principles of professional ethics.	l	GiK_K02	T1A_K01, T1A_K02, T1A_K05 T1A_K07
K_03	A student is aware of the responsibility for the reliability of the completed project, survey, and calculation works; moreover, a student can correctly identify and solve dilemmas connected with completing the assigned tasks.	l/l	GiK_K05	T1A_K02
K_04	A student is able to co-operate and work in a team during the realisation of engineering tasks by accepting various roles which result from the specificity of the realised task.	l	GiK_K06 GiK_K07	T1A_K03

#### Module content:

##### 1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1.	Geodetic control networks for investment services during its realisation and exploitation. The methods of setting out and inventory.	



2.	Transport route survey. Setting out vertical and horizontal circular arches. Transition curves.	
3.	Calculating the cubic capacity of ground masses.	
4.	Industrial hall surveys. Setting out and inventory of industrial structures and devices.	
5.	Tower structures surveys. Determining the shape of an industrial chimney axis. The inventory of land development network.	
6.	Surveying in geotechnics. Observing engineering objects in the impact zone of deep excavations. Landslide survey.	
7.	The surveys of deformations and displacement of engineering objects together with their elements. The scope and survey methods	

### 2. Topics to be covered in the laboratories

No.	Topics	Module outcome code
1	Preparing documentation sketches to realise an engineering object. Accuracy assessment of a geodetic control network. Surveying preparation of a circular arch and transition curves. The survey of edge shape as regards an engineering object. Determining the coordinates of a point as regards an engineering object with the trigonometric method.	W_01, _02 U_01, U_02 U_03, U_04 K_04

### Assessment methods

Module outcome code	Assessment methods <i>(Method of assessment; for module skills – reference to specific project, laboratory and similar tasks)</i>
W_01, W_02 W_03	Obtaining a credit on the basis of written tests
U_01 U_02, U_03, U_04 U_05	Completing tasks and assignments
K_01, K_02 K_03	Observing a student's involvement during the completion of tasks



### D. 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	30
4	Contact hours: attendance at office hours (2-3 appointments per semester)	4
5	Contact hours: participation in project-based classes	
6	Contact hours: meetings with a project module leader	
7	Contact hours: attendance at an examination	3
8		
9	<b>Number of contact hours</b>	<b>67</b> <i>(total)</i>
10	<b>Number of ECTS credits for contact hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>2.68</b>
11	Private study hours: background reading for lectures	15
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	10
14	Private study hours: preparation for laboratories	8
15	Private study hours: writing reports	15
16	Private study hours: preparation for a final test in laboratories	15
17	Private study hours: preparation of a project/a design specification	
18	Private study hours: preparation for an examination	20
19		
20	<b>Number of private study hours</b>	<b>83</b> <i>(total)</i>
21	<b>Number of ECTS credits for private study hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>3.32</b>
22	<b>Total study time</b>	<b>150</b>
23	<b>Total ECTS credits for the module</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>6</b>
24	<b>Number of practice-based hours</b> <i>Total practice-based hours</i>	<b>72</b>
25	<b>Number of ECTS credits for practice-based hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>2.9</b>

### E. READING LIST

References	
	1. W. Schofield, Engineering Surveying. Theory and Examination Problems for Students eBook ISBN: 9781483105130. Published by Butterworth-Heinemann, 1985
	2. N. Dann, D. Worthing, D. Marshall. The Construction of Houses Roger Heath 2013 Publisher <a href="#">Taylor &amp; Francis Ltd.</a>
	3. <a href="#">Russell C. BrinkerThe Surveying Handbook.</a> Technology & Engineering 2013
	4. <a href="#">Journal of Surveying Engineering</a> ISSN (print):0733-9453ISSN , Frequency: Quarterly



# Politechnika Świętokrzyska

## WYDZIAŁ INŻYNIERII ŚRODOWISKA, GEOMATYKI I ENERGETYKI

	<p>5. Reports on Geodesy. Warsaw University of Technology.</p> <p>6. Geomatics and Environmental Engineering. AGH University of Science and Technology</p>
Module website	<p>7. W. Schofield, Engineering Surveying. Theory and Examination Problems for Students eBook ISBN: 9781483105130. Published by Butterworth-Heinemann, 1985</p> <p>8. <u>N. Dann, D. Worthing, D. Marshall</u>. The Construction of Houses <u>Roger Heath</u> 2013 Publisher <u>Taylor &amp; Francis Ltd</u>.</p> <p>9. <u>Russell C. Brinker</u><u>The Surveying Handbook</u>. Technology &amp; Engineering 2013</p> <p>10. <u>Journal of Surveying Engineering</u> ISSN (print):0733-9453ISSN , Frequency: Quarterly</p> <p>11. Reports on Geodesy. Warsaw University of Technology.</p> <p>12. Geomatics and Environmental Engineering. AGH University of Science and Technology</p>