



Faculty of Civil and Environmental Engineering						
Study programme:	Construction and Building Systems Engineering			Degree level:	full-	Bachelor's degree
Specialization	Diploma path:					
Module name:	Engineering geodesy					
Module type:	obligatory	Semester:	1	ECTS	3	Module ID: CBSE1111
No. of hrs in semester:	L - 15	C - 0	LC- 0	P- 0	SW- 30	S- 0
Prerequisites:	<i>Complete with prerequisites or "-"</i>			-		
Aims and objectives:	The purpose of the course is to familiarise students with a basic knowledge in the field of acquisition and development of land information, the development of the construction project surveying, situational and height staking, the measurement of inventory related to the technical infrastructure of land, technology measurement of displacements and deformations of engineering structures					
Forms of teaching activities:	<i>lecture, specialization workshop</i>		Assessment:	<i>Evaluation must be relevant to the intended learning outcomes</i>		
			lecture - test; specialization workshop – tests, report of calculation works			
Module content:	Areas of interest of geodesy as a science. Systems of reference of geodetic measurements. Coordinate systems used in geodesy. Elements of coordinates. The role and the division of geodetic networks. Methods and equipment for angular and linear measuring. Situational measurement methods. Methods and equipment for measuring altitude. Situational-height maps and their use for environmental engineering. Calculation methods associated with situational-elevation maps. Maps for design purposes. Methods of situational and height staking. Geodetic measurements related to the implementation and operation of utilities. Geodetic records of public utilities - design principles and main tasks. Measurements of displacements and deformations and constructions. General principles of GPS measurements.					
Teaching methods:	lecture, specialization workshop					
Learning outcome	<i>Specify min. 4, max. 8 learning outcomes in the following order: knowledge – skills – competence. Each learning outcome must be verifiable</i>					<i>Reference to the programme learning outcomes</i>
LO1	Student knows the basic reference mapping and surveying works in construction; He knows legal and technical surveying in the construction investment process					CBSE_W11
LO2	Student has detailed knowledge related to selected issues on construction					CBSE_W11
LO3	Student knows the rules of diagnosis, test methods and evaluation of the technical condition of buildings and their components					CBSE_W16
LO4	Student knows how to read architectural, construction and surveying drawings, and can prepare a graphical documentation using the variety of chosen graphical systems in accordance with the principles of descriptive geometry and technical drawing; can provide an interpretation of basic building installations projects					CBSE_U04
LO5	Student can determine directions of a further education and realize self-education.					CBSE_U07
LO6	Student understands the importance of non-technical aspects and consequences of engineering activity, including its influence on the environment and related responsibility for own decisions.					CBSE_K01
LO7	Student properly identifies and resolves dilemmas related to the profession.					CBSE_K04

LO8	Student is aware of a social role of a technical university graduate, and understands in particular the need for formulating and disseminating information and opinions on scientific and technical achievements and other aspects of an engineer's activity; makes efforts to pass on such information and opinions in an understandable way	CBSE_K05	
No. of learning outcome	Methods of assessing the learning outcome	Type of teaching activities (if more than one) during which the outcome is assessed	
L01	written test lecture, test in specialization workshop	L, SW	
L02	written test lecture, test in specialization workshop	L, SW	
L03	written test lecture, test in specialization workshop	L, SW	
L04	observation of work activities and discussion with the defence of the sampling work	SW	
L05	observation of work activities and discussion with the defence of the sampling work	SW	
L06	observation of work activities and discussion with the defence of the sampling work	SW	
Student workload (in hours)	lecture attendance	15 x1h =	15
	participation in classes, laboratory classes, etc.	15 x2h =	30
	preparation for classes, laboratory classes, projects, seminars, etc.		10
	working on projects, reports, etc.		15
	participation in student-teacher sessions related to the classes/seminar/project		5
	implementation of project tasks		5
	preparation for and participation in exams/tests		10
		TOTAL:	90
Quantitative indicators	Student workload - activities that require direct teacher participation: 15+30+5	50	ECTS 2
	Student workload - practical skills activities:30+10+15	55	2
Basic references:	<i>Łyszkowicz A., Łyszkowicz S., Surveying, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2010</i>		
Supplementary references:	<i>Schofield W., Breach M.: Engineering Surveying, Elsevier, Sixth Edition civil-team.weebly.com/.../engineering_surveying_w_schofieldmark_breach_6th_ed.pdf</i>		
Unit:	Department of Geospatial Information Studies and Spatial Economy		
Date of issuing the programme:	01.02.2017	Author of the programme:	Waldemar Łupiński, PhD Eng

L - lecture C - classes

LC - laboratory classes P-project