

## 关。GDAŃSK UNIVERSITY 创 OF TECHNOLOGY

## Subject card

Subject name and code	Surveying I (team project), PG_00050189							
Field of study	Geodesy and Cartography							
Date of commencement of studies	October 2020		Academic year of realisation of subject			2020/2021		
Education level	first-cycle studies		Subject group			Obligatory subject group in the field of study		
						Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery			at the university		
Year of study	1		Language of instruction			Polish		
Semester of study	2		ECTS credits		7.0			
Learning profile	general academic profile		Assessment form		assessment			
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Zofia Bałdysz					
	Teachers		dr Zofia Bałdysz					
			dr inż. Karolina Makowska-Jarosik					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM
	Number of study hours	50.0	50.0	0.0	0.0		0.0	100
	E-learning hours included: 0.0							
	Adresy na platformie eNauczanie:							
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study		SUM
	Number of study hours	100		15.0		60.0		175
Subject objectives	The aim of the course measurements. Stude Poland, as well as co will acquire knowledg processing geodetic of which is necessary in	e is to provide t ent will acquire ordinate syster e about measu data in dedicate order to comp	he knowledge knowledge of ns, which will b rement methor ed softwares. S lete a complex	of the methodo the reference so be necessary for ds usually used Students learn for and comprehe	ology of systems or him to d for the the spec ensive g	horizon and fra make se purp ifics of eodetic	tal and vertic me that are in a large-scale lose, and skil conducting te project.	al n force in map. Student s of eamwork,

Learning outcomes	Course outcome	Subject outcome	Method of verification	
Learning outcomes	[K6_U11] is able to develop geodetic documentation and perform individually as well as in a group, field and field surveying surveys	The student is able to perform situational and height maps, The student is capable for completing measurement and technical ocumentation. The student has knowledge of the division of duties and its impact on teamwork, is able to independently perform measurement and office tasks included in a larger project, as well as performs collective work within multi-person measurement groups. The student knows how to perform height measurements by the use of tachymetry, geometric leveling	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task	
	[K6_W07] has a well-established knowledge and understands concepts in the field of engineering geodesy including the use of calculations and measurements methods carried out with the use of geodetic instruments and photogrammetric and remote sensing technologies related to geodetic support for investment, surveying and inventory measurements and photogrammetry with remote sensing	The student performs calculation methods and measurements performed as part of the implementation of works related to engineering surveying, using devices such as an electronic total station, The students knows metodology and is able to conduct adjustment of surveyed polygons with the approximate method, The students have knowledge about situational and height coordinates calculations methodology in frames that are in force in Poland	[SW1] Assessment of factual knowledge	

Subject contents	Lectures:				
	1. ITRF / ETRF reference frames and their transfer to the territory of Poland.				
	2. Reference frames in force in Poland				
	3. Coordinate frames in force in Poland				
	4. Plane rectangular coordinates frames in force in Poland				
	5. Transformations between frames				
	6. Grawimetric and Magnetic network				
	7. Methodology of using real-time GNSS measurements in establishing the geodetic network and the performance of situational and height measurements.				
	8. Adjustment of geodetic observations by the approximate method in the C-Geo software (leveling traverse, polygon traverse)				
	9. Adjustment of geodetic observations by the method of least squares estimation in the C-Geo software (leveling traverse, polygon traverse)				
	10. Basic information on mapping and editing a situational and height map.				
	11. Geodetic documentation submitted with the completion of geodetic works.				
	Laboratories - Development of a situational and height map:				
	1. Initial analysis of the measuring object and verification of the location of existing horizontal and height reference points,				
	2. Designing the location of reference points and their stabilization,				
	3. Making sketches of the reference points and its topographic descriptions,				
	4. Situational measurement of geodetic polygons,				
	5. Height measurement of geodetic polygons,				
	6. Adjustment of geodetic polygons by approximate method,				
	7. Situational-height measurement of terrain details,				
	8. Calculation of situational and height coordinates of measurement pickets,				
	9. Performing of situational and height map,				
	10. Making a technical report.				
Prerequisites and co-requisites	Ability to handle traditional and modern geodetic instruments. Basic knowledge of the geodetic softwares that can be used for measurements processing and results visualization.				

Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade		
and criteria	Final interview	60.0%	20.0%		
	The correct performance of the report on situational-height measurements and results presentation	60.0%	80.0%		
Recommended reading	Basic literature	- Jagielski A. 2003. Geodezja I,			
		- Jagielski A. 2014. Geodezja II,			
		<ul> <li>Rozporządzenie Ministra Administracji i Cyfryzacji z dnia 2 listopada 2015 r. w sprawie bazy danych obiektów topograficznych oraz mapy zasadniczej,</li> </ul>			
		<ul> <li>Rozporządzenie Ministra Rozwoju z dnia 18 sierpnia 2020 w sprawie standardów technicznych wykonywania geodezyjnych pomiarów sytuacyjnych i wysokościowych oraz opracowywania i przekazywania wyników tych pomiarów do państwowego zasobu geodezyjnego i kartograficznego,</li> </ul>			
		<ul> <li>Rozporządzenie Rady Ministrów z dnia 15 października 2012 w sprawie państwowego systemu odniesień przestrzennych</li> </ul>			
		<ul> <li>Rozporządzenie Ministra Administracji i Cyfryzacji z dnia 14 lutego 2012cw sprawie osnów geodezyjnych, grawimetrycznych i magnetycznych</li> </ul>			
	Supplementary literature	- instruction G-4,			
		- instruction K-1,			
		- E. Osada Osnowy Geodezyjne UxLan, Wrocław 2014,			
		- E. Osada Geodezyjne pomiary terenowe UxLan, Wrocław 2014.			
		- K. Czarnecki "Geodezja współczesna w zarysie" Gall, 2010			
	eResources addresses				
Example issues/ example questions/ tasks being completed	1. Height measurement by using the geometric leveling method,				
	2. Measurement of situational details by the method of rectangular offset,				
	3. Measurement of situational details by using tachymetry,				
	4. Adjustment of basic, geodetic measuring structures by the approximate method.				
Work placement	Not applicable				