

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Fundamentals of geodesy</b>		Code <b>1010104121010115118</b>
Field of study <b>Civil Engineering First-cycle Studies</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>20</b> Classes: <b>-</b> Laboratory: <b>12</b> Project/seminars: <b>-</b>		No. of credits <b>4</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art		ECTS distribution (number and %)
<b>Responsible for subject / lecturer:</b>		
mgr inż. Michał Moczko email: <a href="mailto:michal.moczko@put.poznan.pl">michal.moczko@put.poznan.pl</a> tel. tel. 61 665 24 21 Budownictwa i Inżynierii Środowiska ul. Piotrowo 5, 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Knowledge of analytical geometry, trigonometry and knowledge of basic methods of mathematical analysis.
2	<b>Skills</b>	Ability to solve basic tasks in mathematics of geometry and trigonometry.
3	<b>Social competencies</b>	Diligence and regularity in acquiring knowledge and skills.
<b>Assumptions and objectives of the course:</b>		
Activities are intended to familiarize the students towards the construction of the large scale trends studies geocartographic and the basic work of the geodesic used in the construction industry, including: Mastering the techniques of surveying in the field to separate the execution of measurement of lengths, angles, the designation of the differences of method of geometric leveling and trigonometric, calculation of the coordinates and the surface. Skills of formulating and solving simple tasks of surveying. The ability to determine the impact of errors in measurements and the accuracy of the measurements. Surveying literacy materials and documentation prepared in the traditional and digital.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Know the basic measuring methods used in geodesy and useful means of the processing of measurement results. - [-K_W03] 2. Know what are the fundamentals of geometric and technical implementation of the basic maps and other geomapping studies. - [-K_W02] 3. Know what geodetic works are performed in the construction industry. - [-K_W03]		
<b>Skills:</b>		
1. Knows how to correctly measure the angles, distances and differences in height, calculate their most likely values and assess the accuracy of the measurements. - [-K_U14] 2. It can convert the size observed on the coordinates and their derivatives, and vice versa; know how to use computer software to the public. - [-K_U14] 3. Can read the map key directly and with the use of CAD programs, as well as to enrich it with new content. - [-K_U14]		
<b>Social competencies:</b>		
1. Deepens Student knowledge of surveying and verifies it legally. - [-K_K03] 2. The Student works in team. - [-K_K01]		

<b>Assessment methods of study outcomes</b>	
<p>Conditions for inclusion of lectures:            Seminar on written on the last classes lasting 45 minutes for a maximum of 20 points.            Rating scale:            The number of points P-max 20            P &gt; 18 - 5,0            16 &lt; P &lt; 18 - 4,5            14 &lt; P &lt; 16 - 4,0            12 &lt; P &lt; 14 - 3,5            10 &lt; P &lt; 12 - 3,0            P &lt; 10 - 2,0</p> <p>Conditions for inclusion of laboratories:            2 cast do (projects), each for a maximum of 4 points,            6 practice made each for a maximum of 1 point,            Seminar on written on the last classes lasting 45 minutes for a maximum of 6 points.            Rating scale:            The number of points P-max 20            P &gt; 18 - 5,0            16 &lt; P &lt; 18 - 4,5            14 &lt; P &lt; 16 - 4,0            12 &lt; P &lt; 14 - 3,5            10 &lt; P &lt; 12 - 3,0            P &lt; 10 - 2,0</p>	
<b>Course description</b>	
<p>Legal space geodesy. Tasks of Geodesy and geodetic documentation in construction investment process. Spatial reference System: coordinate systems, mapping. The classification of occupancy: measurements of situational-altitude, implementation, control. Situational-altitude and geodetic warp. Methods of measurement of basic size measured in surveying: direction, length, azimuth, altitude difference. Geodetic measurement techniques: built, ways of measurement and presentation of results. The principle and application of geometric leveling and trigonometric. Evaluation of the accuracy of the measurements. Source and accidental biases in measurements. Geodetic instruments (rangefinders, Theodolites, tachimetry, levels, satellite receivers): construction, maintenance, control of the correctness of the operation. Map as a source of spatial information. The classification of maps due to the content of the criteria and scales. Map of the main and derivatives, as follows: for the purposes of map design, map standard. The main map in the form of analog and digital. The Bill on the coordinates and the theory of errors (the basics).</p>	
<p><b>Basic bibliography:</b></p> <ol style="list-style-type: none"> <li>1. Geodezja - M. Wójcik, I. Wyczałek, Wydawnictwo Politechniki Poznańskiej 1997</li> <li>2. Geodezja dla kierunków niegeodezyjnych - Stefan Przewłocki PWN, Warszawa 2002</li> <li>3. Geodezja. Podręcznik dla studiów inżynieryjno-bodowlanych - M.Odlanicki-Poczobutt PPWK, Warszawawa 1989</li> </ol>	
<p><b>Additional bibliography:</b></p> <ol style="list-style-type: none"> <li>1. Geodezja w budownictwie i Inżynierii - Michał Gałda Rzeszów 2001</li> <li>2. Geodezja 1 - A. Jagielski, Kraków 2005</li> <li>3. Geodezyjne pomiary inżynieryjne - I. Wyczałek, E. Wyczałek, Poznań 2005</li> <li>4. Inne pozycje książkowe z podstaw geodezji lub geodezji dla kierunków niegeodezyjnych.</li> </ol>	
<b>Result of average student's workload</b>	
Activity	Time (working hours)
1. Participation in lectures.	20
2. Participation in laboratory classes.	12
3. Preparation for the laboratory.	3
4. Completing the home exercises surveying .	12
5. Part in the consultation on the implementation of exercises surveying .	3
6. Preparing for inclusion in the laboratory exercises .	12
7. Preparing for inclusion in lectures.	28
<b>Student's workload</b>	

<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	100	4
Contact hours	38	1
Practical activities	12	1