



Course title: FIELD EXERCISES IN GEOMATICS

ECTS credit allocation (and other scores): 2.5

Semester: spring

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 60 hours of classes

Course coordinator/ Department and e-mail: Adam Doskocz, Department of Geodesy, adam.doskocz@uwm.edu.pl

Type of classes: classes

Substantive content

CLASSES: Topographic surveys and creation of digital base map (*setting of 3D surveying control points; use of total station to measurements with codes describing the features; GNSS surveying by RTK or RTN techniques; digital map data acquisition and creation of digital base map; generate the DTM and contouring*);. Transpose of coordinates of the home point of horizontal control (*designing network of transpose; use of the manual-graphic method; field surveying and rigorous adjustment of observations and assessment of the accuracy of the transposed point*). Height determination of the horizontal control point by means of trigonometric leveling (*determining the influence of Earth's curvature and vertical refraction*). Processing of results on computers along with the preparation of a technical reports.

LECTURES: no lectures in this course

Learning purpose: Ability to design detailed control network and realization of measurements and processing of results along with the preparation of a technical report. Competence in the systematics of state control networks and their accuracy analysis as well as effective use of the national spatial reference system. Skills in the topic of transformation of coordinates and solving intersections.

On completion of the study programme the graduate will gain:

Knowledge: Knowledge of coordinate systems used in surveying and instruments and their use as well as in measurement techniques. Classification of horizontal and vertical control network, detailed and survey network and realization of topographic survey. Data evaluation and their accuracy estimation, as well as automation of measurements and compilation of digital and analogue maps.

Skills: Skills to design detailed control network and realization of levelling and topographic survey. Use of electronic and classical instruments in measurements. Data evaluation and compilation of maps.

Social Competencies: Competencies to interact and work in a team, assuming different roles and indicate accordingly priorities for carrying out the task set out and think and act rationally.

Basic literature:

LITERATURE IN POLISH:

LAZZARINI T. (red.), Geodezja. Geodezyjna Osnowa Szczegółowa, PPWK, 1992. SKÓRCZYŃSKI A.M., Niwelacja trygonometryczna w pomiarach szczegółowych, Wydawnictwo PW, 2000. SKÓRCZYŃSKI A.M., Poligonizacja, Wydawnictwo PW, 2000. SKÓRCZYŃSKI A.M., Lokalna triangulacja i trilateracja, Wydawnictwo PW, 2004. JAGIELSKI A., Geodezja II, P.W. STABIL., 2003. JAGIELSKI A., Przewodnik do ćwiczeń z geodezji II, GEODPIS, 2006. LAMPARSKI J., ŚWIĄTEK K., GPS w praktyce geodezyjnej, GALL, 2007. OSADA E., Osnowy geodezyjne, UxLAN Wrocław, 2014. OSADA



E., Geodezyjne układy odniesienia, UxLAN Wrocław, 2014. OSADA E., Geodezyjne pomiary szczegółowe, UxLAN Wrocław, 2014. GAŹDZICKI J. (red.), Leksykon geomatyczny, <http://www.ptip.org.pl>, 2002. GUGiK, Obowiązujące w dziedzinie geodezji i kartografii akty prawne oraz standardy techniczne, <http://isap.sejm.gov.pl>, 1989.

Supplementary literature:

LITERATURE IN ENGLISH (for example):

Charles D. Ghilani and Paul R. Wolf, Elementary Surveying: An Introduction to Geomatics, 15th Edition, 2017.

Jack C. McCormac, Surveying, 6th Edition, 2012.

Frederic P. Miller, Agnes F. Vandome and John McBrewster, Geomatics, 2010.

Barry F. Kavanagh, Surveying: Principles and Applications, 8th Edition, 2008.

The allocated number of ECTS points consists of: 2.5 (63 hours)

Contact hours with an academic teacher: 60 hours.

Student's independent work: 3 hours.