

Course title: GNSS DATA PROCESSING

ECTS credit allocation (and other scores): 3

Semester: autumn

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 45

Course coordinator/ Department and e-mail: Professor Sławomir Cellmer, Ph.D., Institute of Geodesy,  
slawomir.cellmer@uwm.edu.pl

Type of classes: classes and lectures

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Substantive content

CLASSES: RINEX file reading; matrix computations; single point positioning (SPP); adjustment based on various mathematical models in a precise, satellite positioning;

LECTURES: RINEX format; matrix computations; error ellipsoids; mathematical model of adjustment; observation equations and linear combinations of GNSS observations; single point positioning (SPP); the DGPS method, ambiguity resolution; the LAMBDA method; the M-AFM method

Learning purpose: The basic aim is the acquisition of a general knowledge on the methods used in the GNSS data processing

On completion of the study programme the graduate will gain:

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Knowledge: Has general knowledge covering key issues of GNSS data processing.

Skills: Is able to use theoretical knowledge in practical tasks of GNSS data processing.

Social Competencies: Can interact and work in groups, on programming a computational process.

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Basic literature: 1) Leick A., Rapoport L., Tatarnikov D., GPS satellite surveying, wyd. Wiley, 2015, t. 1, s. 807; 2) Kai Borre, Gilbert Strang, Algorithms for Global Positioning, wyd. Wellesley-Cambridge Press, 2012, t. 1, s. 433.

Supplementary literature: de Jonge, A processing strategy for the application of the GPS in networks, wyd. NCG, 1998, s. 225.

The allocated number of ECTS points consists of: 3

Contact hours with an academic teacher: 50

Student's independent work: 25