



Subject card

| | | | | | | | |
|---|--|--|---|-------------------------------------|---|------------|-----|
| Subject name and code | APPLIED USE OF SURVEYING DATA ADJUSTMENT AND ANALYSIS, PG_00044810 | | | | | | |
| Field of study | Geodesy and Cartography | | | | | | |
| Date of commencement of studies | October 2021 | | Academic year of realisation of subject | | 2022/2023 | | |
| 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 | 2 | | Language of instruction | | Polish | | |
| Semester of study | 4 | | ECTS credits | | 5.0 | | |
| 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 inż. Daria Filipiak-Kowszyk | | | | |
| | Teachers | | dr inż. Daria Filipiak-Kowszyk | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 30.0 | 30.0 | 0.0 | 0.0 | 0.0 | 60 |
| | E-learning hours included: 0.0 | | | | | | |
| 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 | 60 | | 9.0 | | 56.0 | 125 |
| Subject objectives | Teach students the practical application of alignment calculus methods to evaluate geodetic measurements, including analyzing results and estimating their accuracy. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| | [K6_W03] knows and understands the principles of mathematical statistics described in the examples of the adjustment computations | | The student knows and understands the elements of matrix calculus, statistics and probability necessary for solving tasks from the alignment calculus | | [SW1] Assessment of factual knowledge | | |
| | [K6_U03] can use a adjustment calculations to analyze the results of measurements and determine their accuracy | | The student is able to put into practice the methods of alignment calculus | | [SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment | | |
| Subject contents | 1. Parametric method2. Conditional method3. Mixed methods: - Parametric method with conditions binding parameters - Conditional method with parameters | | | | | | |
| Prerequisites and co-requisites | Knowledge of mathematics in the field of matrix calculus, statistics and probability, presented in the framework of the alignment calculus subject. | | | | | | |
| Assessment methods and criteria | Subject passing criteria | | Passing threshold | | Percentage of the final grade | | |
| | Test | | 60.0% | | 50.0% | | |
| | Test | | 60.0% | | 50.0% | | |

| | | |
|--|--|--|
| Recommended reading | Basic literature | L.W. Baran, Theoretical foundations for the analysis of geodetic survey results, ed. PWN, 1999, Warsaw. Z. Wiśniewski, Alignment Calculus in Geodesy (with examples). Ed. UWM, 2009, Olsztyn |
| | Supplementary literature | Z. Wiśniewski, Matrix algebra and mathematical statistics in alignment calculus (theory and tasks), ed. UWM, 2000, Olsztyn |
| | eResources addresses | Adresy na platformie eNauczanie: |
| Example issues/ example questions/ tasks being completed | The distance to 4 geodetic points with given coordinates, and angles between them were measured. The following results were obtained (d_1 , d_2 , d_3 , d_4 , A_{12} , A_{23} , A_{34}). The mean error of distance measurement was m_d and angle measurement m_A . Calculate the x , y coordinates of the point and their estimated accuracy. | |
| Work placement | Not applicable | |