

COURSE DETAIL

ADJUSTMENT THEORY II

Country

Germany

Host Institution

Technical University Berlin

Program(s)

Technical University Berlin

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Statistics

UCEAP Course Number

106

UCEAP Course Suffix**UCEAP Official Title**

ADJUSTMENT THEORY II

UCEAP Transcript Title

ADJUSTMNT THEORY II

UCEAP Quarter Units

5.50

UCEAP Semester Units

3.70

Course Description

This course examines different statistical distributions and how to apply them for hypothesis testing. Students learn to solve adjustment problems with a singular design matrix, e.g. free network adjustment. The course discusses quality assessment of adjustment results with respect to precision and reliability. Students learn to detect blunders in the observations and to evaluate the geometry of adjustment problems from partial redundancies. Students are able to solve arbitrary adjustment problems with conditions and constraints, e.g. from a rigorous solution of the nonlinear Gauss-Helmert model. They study the concept of robust parameter estimation and when to apply it. They also study how to apply the concepts of statistic and adjustment calculation for analysis of stochastic processes, e.g. time series analysis. Course topics include statistical distributions and confidence intervals, hypothesis testing, least-squares adjustment with singular design matrix A , free net adjustment, adjustment with observed unknowns, quality assessment of adjustment results, data snooping, S-transformation, Gauss-Helmert model, variance component estimation, and robust parameter estimation.

Language(s) of Instruction

English

Host Institution Course Number

3633 L 223,3633 L 224

Host Institution Course Title

ADJUSTMENT THEORY II

Host Institution Course Details

<https://moseskonto.tu-berlin.de/moses/modultransfersystem/bolognamodule/beschre...>

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Institut für Geodäsie und Geoinformationstechnik

Course Last Reviewed

2025-2026

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