

COURSE DETAIL

HIGH-DIMENSIONAL DATA ANALYSIS

Country

Sweden

Host Institution

Lund University

Program(s)

Lund University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Statistics Mathematics

UCEAP Course Number

164

UCEAP Course Suffix**UCEAP Official Title**

HIGH-DIMENSIONAL DATA ANALYSIS

UCEAP Transcript Title

HIGH-DIM DATA ANA

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

Many statistical models try to explain how one variable relates to others. In this course, how to analyze multiple variables simultaneously, multivariate analysis. Both how they depend upon other variables, but also how they depend upon each other. With the tremendous amount of data available nowadays, e.g. in genetics, it is often the case that the number of variables is far greater than the number of observations. This demands special techniques that are learned in this course. Course content includes matrices and multivariate normal distribution, singular value decomposition and its geometric interpretation, principal component analysis including its functional formulation, factor analysis, cluster analysis, prediction theory including prediction with high-dimensional predictors, penalized regression and prediction, sparse matrices, linear discriminant analysis, and large-scale inference.

Language(s) of Instruction

English

Host Institution Course Number

STAN53

Host Institution Course Title

HIGH-DIMENSIONAL DATA ANALYSIS

Host Institution Course Details

<https://www.lunduniversity.lu.se/lubas/i-uoh-lu-STAN53>

Host Institution Campus

Lund

Host Institution Faculty

Economics and Management

Host Institution Degree

Host Institution Department

Course Last Reviewed

2025-2026

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