

## COURSE DETAIL

### MATHEMATICAL STATISTICS: STATISTICAL INFERENCE THEORY

**Country**

Sweden

**Host Institution**

Lund University

**Program(s)**

Lund University

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Statistics Mathematics

**UCEAP Course Number**

118

**UCEAP Course Suffix****UCEAP Official Title**

MATHEMATICAL STATISTICS: STATISTICAL INFERENCE THEORY

**UCEAP Transcript Title**

INFERENCE THEORY

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

4.00

## Course Description

The course covers sufficient statistics, factorization criteria, exponential families, Rao-Blackwells theorem, ancillary statistics, Cramér-Rao's bound, Neyman-Pearson's lemma, permutation test, and connection between hypothesis testing and confidence intervals. Asymptotic methods: maximum likelihood estimation, profile, conditional and penalized likelihood as well as hypothesis testing with likelihood ratio-, Wald- and score-method. Bayesian inference: estimation, hypothesis testing, and confidence interval and the difference compared to frequentist interpretation.

## Language(s) of Instruction

English

## Host Institution Course Number

MASC02

## Host Institution Course Title

MATHEMATICAL STATISTICS: STATISTICAL INFERENCE THEORY

## Host Institution Campus

Lund

## Host Institution Faculty

Science

## Host Institution Degree

## Host Institution Department

Math

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