



**LUNDS UNIVERSITET**  
Lunds Tekniska Högskola

*Course syllabus*

# **Matematisk modellering med statistiska tillämpningar, projekt**

## **Mathematical Modelling with Statistical Applications, Project**

**FMAF25, 3 credits, G2 (First Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED F/Pi

**Date of Decision:** 2023-04-18

### **General Information**

**Main field:** Technology.

**Compulsory for:** Pi2

**Language of instruction:** The course will be given in Swedish

### **Aim**

- To develop the student's capability to write technical reports and to orally present scientific results.
- To develop the student's capability to cooperate within a group within given time limits.
- To give the student the basics in mathematical modelling of random variation and an understanding of the principles behind statistical analysis.

### **Learning outcomes**

*Knowledge and understanding*

For a passing grade the student must

- have a good knowledge about the rules for writing technical reports.
- have an understanding for the need for statistical methods when making decisions within business and organizations.
- be able to describe fundamental techniques for statistical inference and be able modify them to fit realistic situations.

*Competences and skills*

For a passing grade the student must

- together with another student have written a project report in Swedish that satisfies the common demands on a technical report.
- be able to present the contents of the report using adequate audiovisual equipment.
- be able to implement mathematical and/or statistical methods using Matlab.

#### *Judgement and approach*

For a passing grade the student must

be able to examine a mathematical or statistical model and its ability to describe reality.

## **Contents**

The course contains a lecture part (30%) and a project part(70%).

The lecture part treats the interpretation of statistical results, and how incorrect conclusions sometimes are drawn from a correct analysis. The presentation is based on classical medical examples.

The project part consists of two shorter projects, of which the first is directly connected to the lectures. The second project focuses on the writing of reports.

The participants are given rough plans for the projects at start.

## **Examination details**

**Grading scale:** UG - (U,G) - (Fail, Pass)

**Assessment:** Written report on one to two small projects. Oral presentation of one project. Written test on what was done in the project may occur.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

## **Admission**

**Admission requirements:**

- FMAB40 Mathematical Modelling

**Assumed prior knowledge:** FMAF05 Mathematics - Systems and Transforms, FMSF80 Mathematical Statistics, Basic course

**The number of participants is limited to:** No

## **Reading list**

- Material which is handed out to the participants.
- Walla, E: Så skriver du bättre tekniska rapporter. Studentlitteratur, 2004, ISBN: 9789144019130.

## **Contact and other information**

**Course coordinator:** Anders Holst, studierektor@math.lth.se

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**Course homepage:** <https://canvas.education.lu.se/courses/20448>