COURSE SYLLABUS
Mathematical Statistics, 6 credits

Matematisk statistik, 6 högskolepoäng

Course Code:	TMAK17	**Education Cycle:**	First-cycle level
Confirmed by:	Dean Feb 1, 2017	**Disciplinary domain:**	Natural sciences
Revised by:	Director of Education Oct 27, 2021	**Subject group:**	MS1
Valid From:	Jan 1, 2022	**Specialised in:**	G1F
Version:	5		

Intended Learning Outcomes (ILO)

On completion of the course, the student should

Knowledge and understanding
- display knowledge of the most common methods that is used to numerically and graphically describe a data set

Skills and abilities
- demonstrate ability to perform basic probability calculations involving random variables
- demonstrate ability to compute estimates of relevant statistical parameters from a random sample
- demonstrate ability to perform different types of hypothesis tests and compute the power of such a test in the case of normal distribution assumption

Judgement and approach
- display understanding of the concept of random variability and judge the benefits and risks of using different statistical models

Contents

The course includes the following topics:
- Basic probability theory
- Random variables
- Discrete and continuous distributions, especially the normal distribution
- Central limit theorem with applications
- Descriptive statistics
- Point estimates and interval estimates
- Hypothesis testing

Type of instruction

Lectures and seminars.

The teaching is normally conducted in Swedish, but can occasionally be in English.

Prerequisites

General entry requirements and completed course Single Variable Calculus, 9 credits or Basic Calculus, 6 credits (or the equivalent).

Examination and grades

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Examination	6 credits	5/4/3/U

Course literature

Literature

The literature list for the course will be provided 8 weeks before the course starts.

Probability, Statistics and stochastic Processes

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ISBN: 9780470889749