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
Valid From:	Jan 1, 2018	**Subject group:**	MS1
Version:	4	**Specialised in:**	G1F
Reg number:	JTH 2018/100-313		

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
Course unit 1, 0,0 credits

Type of instruction

Lectures and seminars.

The teaching is conducted 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 is preliminary until one month before the course starts.

Probability, Statistics and stochastic Processes

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