

# Syllabus

for course at advanced level

## Multivariate Analysis

### Multivariat analys

7.5 Higher Education

Credits

7.5 ECTS credits

<b>Course code:</b>	ST744A
<b>Valid from:</b>	Spring 2016
<b>Date of approval:</b>	2014-02-19
<b>Changed:</b>	2015-09-09
<b>Department</b>	Department of Statistics
<b>Main field:</b>	Statistics
<b>Specialisation:</b>	A1N - Second cycle, has only first-cycle course/s as entry requirements

### Decision

This syllabus is approved by the Board of the Department of Statistics on February 19, 2014 and revised on 9 September 2015.

### Prerequisites and special admittance requirements

90 ECTS credits in Statistics or equivalent. Mathematics for Economic and Statistical Analysis, first cycle, 7,5 ECTS credits, or equivalent. Swedish upper secondary school course English B or equivalent.

### Course structure

Examination code	Name	Higher Education Credits
11MA	Multivariate Analysis	6
12MA	Compulsory Exercise in Multivariate Analysis	1.5

### Course content

The course consists of two course modules:

1. Multivariate analysis
2. Compulsory written assignment in multivariate analysis

The course provides knowledge about both the theory and practice of Multivariate Statistical Analysis. Course unit 1 addresses Matrix Algebra, Multivariate Distributions with a weighting on the Normal Multivariate Distribution and its characteristics. The course provides specialised knowledge on Inference Theory in Multivariate Analysis, e.g. Expected Value Vectors and Covariance Matrices. Multivariate Variance Analysis, Multivariate Regression Analysis, Canonical Correlation Analysis and Discriminant Analysis are studied in greater detail. Course unit 2 includes Practical Multivariate Data Analysis with statistical software.

### Learning outcomes

To pass the course the student should be able to:

- account for important theorems and concepts in multivariate analysis
- account for the most common multivariate methods
- apply multivariate methods in multivariate analysis,
- use statistical software to analyse data.

## **Education**

The teaching consists of lectures and exercises.

## **Forms of examination**

a. The course is examined by assessing the expected learning outcomes.

Examination will be in the form of written and oral examinations.

b. The course is graded according to a seven-point goal-based grading scale:

A = Excellent

B = Very Good

C = Good

D = Satisfactory

E = Adequate

Fx = Inadequate

F = Totally Inadequate

c. The grading criteria for the course will be distributed at the start of the course.

d. In order to pass the course, the grade E or higher is required on course unit 1 and Pass on course unit 2.

e. Students who have received the grade Fx or F on an examination have the right to take an additional four examinations provided the course is given.

If a student has received the grade Fx on the written reports but is close to passing the assignment, there may be a possibility to hand in an additional assignment. The assignment should be handed in within the given time frame and after the examiner having advised on the need to revise the assignment.

Students who have received the grade E on an examination may not retake this examination in order to attempt to achieve a higher grade.

Students who have received the grade Fx or F on an examination on two occasions by the same examiner have the right to request that a different examiner be appointed to set the grade of the examination. The request must be in writing and sent to the head of the department. The examination covers all compulsory elements in the course. Every time the course is given, there should be two examination opportunities during the current term.

## **Interim**

If the course syllabus is withdrawn, the student has the right to request examination once per term during a period of three terms in accordance with this syllabus. The request must be in writing and sent to the head of the department.

## **Limitations**

This course may not be included in a degree together with the course Multivariate Methods (ST731A) 7,5 ECTS credits, or equivalent.

## **Required reading**

The course literature is described in an appendix to the syllabus.