COURSE SYLLABUS

Basic Calculus, 6 credits

Grundläggande analys, 6 högskolepoäng

Course Code:	TGAG17	**Education Cycle:**	First-cycle level
Confirmed by:	Dean <MISSING VALUE>	**Disciplinary domain:**	Natural sciences
Valid From:	Jan 1, 2017	**Subject group:**	MA1
Version:	1	**Specialised in:**	G1N
Reg number:	JTH 2016/2669-313		

Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding
- display knowledge of the elementary functions and their basic properties

Skills and abilities
- demonstrate the ability to read and interpret mathematical text on a basic level
- demonstrate skills of evaluating limits and using basic continuity theorems
- demonstrate skills of calculating derivatives and basic integrals involving elementary functions
- demonstrate the ability to use limits and derivatives in order to analyze the properties of a given function and to methodically solve optimization problems
- demonstrate skills of evaluating generalized integrals

Contents

The course will include the basic theory of elementary functions, derivatives and integrals. It will also focus on mathematical reasoning, logic and problem solving in general with the aim to support the use of mathematics in an engineering context.

The course includes the following elements:
- Elementary function theory
- Limits and continuity
- Derivatives, differentiation rules, applications using the derivative to solve optimization problems
- Integrals, integration techniques, applications using integrals to solve geometrical problems

Type of instruction

Lectures and tutorials.

The teaching is conducted in English.

Prerequisites

General entry requirements and Physics 1, Chemistry 1, Matematics 3c or Physics A, Chemistry A, Matematics D and English 6 or English B in the Swedish upper secondary school system or international equivalent (or the equivalent).

Examination and grades

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

Registration of examination:

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

Course literature

The literature list for the course will be provided one month before the course starts.
Title: Calculus for business, economics and the social and life sciences: Brief edition
Eleventh Edition
McGraw-Hill International Edition
ISBN: 978-007-131071-0