

COURSE DESCRIPTION

Course code: TKV14MA02

Course name: Geometry and Vectors

Scope: 3 ECTS

Target group: 1st year students

Objective: The aim of the course is to be able to solve trigonometry problems in 2 dimensions (trigonometry and vectors) and in 3 dimensions (vectors and matrices). After completing the course, the student should have knowledge about vectors, matrices and every type of triangles.

Content:

Trigonometry

- The trigonometry of the right triangle
- The laws of Sines, Cosine
- The area of a triangle

Geometry

- Areacalculations
- Volumecalculations

Vectors

- definition of a Vector
- basic vector algebra
- the dot product
- Vectors in space
- The angle between two vectors
- The crossproduct
- The tripple dot product

Matrix algebra

- Basic matrix algebra
- The determinant of a matrix
- The invers of a matrix,
- Solving systems of equations with matrixes

Methods: Lectures and exercises

Prerequisites: None

Literature: Modern engineering Mathematics - Glyn James

Examination: Exam

Time: Year 1

Language: Swedish