GHENT UNIVERSITY

Course Specifications

Valid in the academic year 2018-2019

Mathematics II (E690028)

Course size (nominal values; actual values may depend on programme)

Credits 3.0	Study time 90 h	Contact hrs	36.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	lecture	36.0 h

Lecturers in academic year 2018-2019

De Vos, Oriana	TW05	staff member
Audenaert, Pieter	TW05	lecturer-in-charge

Offered in the following programmes in 2018-2019	crdts	offering
Linking Course Master of Science in Electrical Engineering Technology (main subject Automation)	3	A
Linking Course Master of Science in Electrical Engineering Technology (main subject Electrical Engineering)	3	A
Linking Course Master of Science in Electronics and ICT Engineering Technology (main subject Electronics Engineering)	3	A
Linking Course Master of Science in Electronics and ICT Engineering Technology (main subject Embedded Systems)	3	A
Linking Course Master of Science in Electronics and ICT Engineering Technology (main subject MIT)	3	A
Linking Course Master of Science in Electromechanical Engineering Technology	3	A
Linking Course Master of Science in Industrial Design Engineering Technology	3	A
Linking Course Master of Science in Biochemical Engineering Technology	3	A
Linking Course Master of Science in Chemical Engineering Technology	3	A
Linking Course Master of Science in Environmental Engineering Technology	3	A

Teaching languages

Dutch

Keywords

Calculus, linear algebra

Position of the course

With this course we want to give the student the fundamentals of techniques and solutionmethods to solve a variety of engineeringproblems. We want them to be able to solve exercises even with a certain degree of abstraction. With this, the student must be able to understand scientific texts with mathematical derivations.

Contents

Contents "Wiskunde II S"

- Matrices
- Determinants
- The inverse of a square matrix
- Lineair equations
- Three-dimensional geometry
- Eigenvalues and eigenvectors
- Functions of several variables - derivatives - extreme values
- Differential equations of the 1st order

- Differential equations of the 2nd order

Initial competences

to have attended the course "Wiskunde I".
This course relies on some final competencies of "Wiskunde I"

Final competences

1 To know the important properties and calculationmethods concerning matrices and systems of linear equations
2 To be able to solve applications concerning eigenvalues and eigenvectors.
3 To have insight in the positions of planes and lines in space, to be able to find their equations and to find distances and angles in space
4 To be able to give the mathematical and the fysical interpretation of the partial derivatives, the total differential for functions of two variables. To know how to use the chainrules and be able to find the extreme values of a function of 2 variables
5 To have insight in the classification of differential equations of the first and second order.
6 To be able to solve a mathematical problem in a systematic and accurate way and to evaluate the results found in a critical manner

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

Access to this course unit via an exam contract is unrestricted

Teaching methods

Lecture

Extra information on the teaching methods

During the lectures, we make a lot of exercises. After each chapter, the student is given the opportunity to try some extra problems.

Learning materials and price

- Syllabus in dutch on Minerva
- Presentations in dutch on Minerva

References

- Calculus, B. Thomas, Pearson
- Linear Algebra and its applications, Lay, Pearson

Course content-related study coaching

On demand.

Evaluation methods

end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period

Written examination

Examination methods in case of periodic evaluation during the second examination period

Written examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Calculation of the examination mark

Final mark = mark exam