

Basis Mathematics Tools (E001141)

Course size (nominal values; actual values may depend on programme)
 Credits 3.0 Study time 90 h Contact hrs 37.5 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	Dutch	seminar: coached	27.5 h
		exercises	
		lecture: plenary	2.5 h
		exercises	
		lecture	7.5 h

Lecturers in academic year 2018-2019

De Schepper, Hennie TW16 lecturer-in-charge

Offered in the following programmes in 2018-2019

	crdts	offering
Bachelor of Science in Civil Engineering	3	A
Bachelor of Science in Computer Science Engineering	3	A
Bachelor of Science in Chemical Engineering and Materials Science	3	A
Bachelor of Science in Electrical Engineering	3	A
Joint Section Bachelors of Science in Engineering	3	A
Bachelor of Science in Engineering Physics	3	A
Bachelor of Science in Electromechanical Engineering	3	A
Preparatory Course Master of Science in Biomedical Engineering	3	A

Teaching languages

Dutch

Keywords

Matrix, system of equations, complex numbers, elementary functions, function behaviour, vectors, projection

Position of the course

The aim of this course is threefold: (1) to rehearse the fundamental mathematics knowledge for starting academic engineering studies (2) to make clear what is the expected mathematics level in academic engineering studies (3) to establish a uniform starting level for all students.

Contents

- Matrices and systems
- Complex numbers
- Elementary functions, function behaviour, interpretation of graphs, integration techniques
- Vectors and projection in 2 and 3 dimensions

Initial competences

high school education

Final competences

- 1 To have a thorough knowledge of the topics matrices, complex numbers, elementary functions and vectors.
- 2 Being able to perform basic calculations quickly and efficiently by hand.
- 3 Being able to make a correct reasoning and to write it down in a structured way.
- 4 Being able to formulate correctly and with mathematical precision.

Conditions for credit contract

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

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, lecture: plenary exercises, seminar: coached exercises

Extra information on the teaching methods

Students are divided into groups and make exercises under supervision. It is strongly recommended to prepare the exercises before class, and to finish them afterwards.

Learning materials and price

Lecture notes; additional material available electronically (Minerva).

Cost: ca 10 euro.

References

Course content-related study coaching

Intensive study coaching during the classroom problem solving sessions. Additionally, students will be encouraged to make use of the available tutoring services for extra help. Interactive support (Minerva forum) is available.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

- Periodic evaluation at the end of the third week. Disclosure of marks and feedback by the end of the fourth week.
- Permanent evaluation: written closed-book examination.

Calculation of the examination mark

Evaluation during semester 50%, examination 50%. When absent for a motivated reason at the evaluation during semester, the examination counts for 100% of the final score. Each student, except the aforementioned ones, can ask (in the first examination period) to be dispensed from the examination, in which case the marks of the evaluation during semester will account for 100% of the final score. Second examination period: final examination only (for 100%).