Mathematics for Business II (F710230)

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

     Credits 4.0   **Study time** 120 h

Course offerings and teaching methods in academic year 2025-2026

A (semester 1)	Dutch	Gent	lecture
			seminar
B (semester 2)	Dutch	Gent	seminar
			lecture

Lecturers in academic year 2025-2026

Vandenboer, Kristine	EB21	staff member
Carette, Philippe	EB21	lecturer-in-charge
Van der Stricht, Geert	EB21	co-lecturer
Van Ooteghem, Saskia	EB21	co-lecturer

Offered in the following programmes in 2025-2026	crdts	offering
Bachelor of Science in Business Administration	4	A
Linking Course Master of Science in Business Administration	4	B
Preparatory Course Master of Science in Business Administration	4	B

Teaching languages

     Dutch

Keywords

     Mathematics, algebra, functions.

Position of the course

     To provide with a continued education in differential and integral calculus and a basic education in linear algebra, that is used in economic analysis.
The mathematical concepts and techniques are presented in a rigorous way, with emphasis on the logic and coherence of the various concepts.
The concepts are well illustrated with economic applications in business economics.

Contents

Functions of one variable
- Definite and improper integrals; applications in economics: consumer and producer surplus.
- Differential equations of first order; applications: types of growth.

Functions of two variables
- Domain, graphs, level curves, continuity.
- Partial derivatives.
- Optimization with and without restrictions.
- Applications in economics: production functions, utility optimisation with budget restriction, marginal rate of substitution.

Linear algebra
- Determinants and matrices; applications: input-output analysis (Leontief model), Markov transition models.

Initial competences

- To have thorough knowledge of the fundamental mathematical principles taught in high school: real numbers, algebra and geometry.

- To be proficient in symbolic calculation and solving equations.
- To have knowledge and understanding of the foundations of differential and integral calculus, as well as their applications in business and economics.

Final competences

1 To know and understand the theoretical foundations of functions of two variables, differential equations and linear algebra, and their economic applications.
2 To analyze and solve problems in business economics with the use of mathematical techniques and models using multivariate differential calculus and linear algebra.
3 To be able to clarify quantitative results and solutions, both graphically and in words.
4 To assess the correctness of quantitative results and mathematical propositions.

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

Seminar, Lecture

Extra information on the teaching methods

Interactive plenary lectures: Discussion of the theoretical concepts, with the option of using the chat box to ask questions.
Guided exercises in groups: practicing the concepts covered in the lectures.

Study material

Type: Handbook

Name: Wiskunde voor bedrijfskundigen 2
Indicative price: € 45
Optional: no
Language : Dutch
Author : Philippe Carette
Available through Student Association : Yes

Type: Syllabus

Name: Oefeningenbundel Wiskunde voor bedrijfskundigen II
Indicative price: € 5
Optional: no
Language : Dutch
Available through Student Association : No

References

Course content-related study coaching

- Depending on the difficulty and the target audience, additional lessons can be spent on the scheduled learning material.
- Teachers are available for additional oral explanations after class.
- Electronic discussion forum.
- Sample exam questions with detailed solutions.

Assessment moments

end-of-term assessment

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

Written assessment

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

Written assessment

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

    Written exam.

Calculation of the examination mark

    periodic evaluation (100%)