

Analyse I



Lecturer

Yves DE SMET (Coordinator)

Course mnemonic

MATH-H1002

ECTS credits

5 credits

Language(s) of instruction

French

Course period

Second term

Campus

Other campus

Course content

Elementary differential equations of order 1 and 2. Vector valued functions, parametrized curves, Frenet's frame. Multivariable functions: limit, partial derivative, differential, Taylor's polynomial approximations, extrema with and without constraints, Lagrange's multipliers, tangent subspaces, gradient. Riemann integrals and line integrals.

Objectives (and/or specific learning outcomes)

Study the basic concepts and tools of real analysis necessary for the engineering sciences in general, as well as developing the ability to go further in mathematics. Prepare for the next analysis course (on vector analysis, differential equation, partial differential equation and Fourier series).

Pre-requisites and co-requisites

Co-requisites courses

MATH-H1001 | Eléments d'algèbre et d'analyse | 5 crédits and TRAN-H100 | Introduction aux sciences appliquées | 8 crédits

Courses having this one as pre-requisit

MATH-H202 | Analyse numérique | 4 crédits, MATH-H3001 | Signaux et systèmes | 5 crédits and MECA-H3001 | Fluid mechanics and transfer processes | 5 crédits

Courses having this one as co-requisit

CNST-H2001 | Mécanique des solides et des structures | 5 crédits, ELEC-H3001 | Electricité appliquée | 5 crédits and PHYS-H200 | Physique quantique et statistique | 5 crédits

Teaching method and learning activities

Lectures supported by slides and supervised exercises

Contribution to the teaching profile

Provide mathematical tools and abilities to solve complex scientific problems.

Other information

Place(s) of teaching

Other campus

Contact(s)

Yves DE SMET

Evaluation method(s)

written examination

Evaluation method(s) (additional information)

Written examination in May or June, testing both theory and exercises

Determination of the mark (including the weighting of partial marks)

Mark obtained for the written examination.

Main language(s) of evaluation

French

Programmes

Programmes proposing this course at the Brussels School of Engineering

BA-IRAR | Bachelor in Engineering : Architecture | unit 1 and BA-IRCI | Bachelor in Engineering Sciences | option Bruxelles/unit 1