lbir1211

2021

Analysis of multivariate functions

5.00 credits	30.0 h + 30.0 h	Q1

Teacher(s)	Hanert Emmanuel ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Learning outcomes	
Evaluation methods	The course assessement is based entirely on a written exam.
Teaching methods	There will be one two-hour lecture and one two-hour practical session per week.
Content	The following topics will be covered: • Functions of two variables and space geometry • Limits and continuity of functions of two variables • Partial derivatives and tangent plane • Gradient vector and applications of partial derivatives • Extreme values of functions of two or three variables and Lagrange multipliers • Multiple integration on regular domains and Riemann sums • Multiple integration on arbitrary domaines • Vector analysis (line integrals of scalar and vector fields, Green and Stokes's theorem, ...)
Inline resources	Moodle course site Reference book
Bibliography	Ouvrages de référence et outils de travail : Ce cours se base uniquement le deuxième volume du livre de référence « Analyse, concepts et contextes : Fonctions de plusieurs variables » de James Steward, 3ème édition, de boeck. Ce livre est disponible à la DUC. Une version électronique est également disponible sur le site suivant (après identification) : http://accesnoto.deboecksuperieur.com/notobib. Des documents complémentaires seront également mis à disposition sur le site Moodle du cours.
Other infos	The course does not use any particular support which would have to be paid and deemed obligatory. Any paid books that may be recommended are optional.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Bioengineering	BIR1BA	5	LBIR1110 AND LBIR1111	🔍