


5.00 credits	30.0 h + 30.0 h	Q2
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Teacher(s)	Craeye Christophe ;Peters Thomas (compensates Vitale Enrico) ;Vitale Enrico ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	This course assumes that the student already masters the skills of end of secondary allowing to translate a problem into a system of equations with several variables and to solve it.
Main themes	<p>The course focuses on :</p> <ul style="list-style-type: none"> • the understanding of mathematical tools and techniques based on a rigorous learning of concepts favored by highlighting their concrete application, • the rigorous manipulation of these tools and techniques in the context of concrete applications. <p>Matrix calculation</p> <ul style="list-style-type: none"> • transposition, • operation on matrices, • rank and resolution of a linear system, • inversion, • determinant <p>Resolution of linear equation systems</p> <ul style="list-style-type: none"> • Matrix writing of a system of linear equations • Basic operations on the lines • Elimination of Gauss-Jordan • LU Factoring • Implementation of Linear Equation System Resolution Algorithms <p>Linear algebra</p> <ul style="list-style-type: none"> • vectors, vector operations, • vector spaces (vector, independence, base, dimension), • linear applications (applications to transformations of the plan, kernel and image), • eigenvectors and eigenvalues (including applications)
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>Given the learning outcomes of the "Bachelor in Computer science" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes:</p> <ul style="list-style-type: none"> • S1.G1 • S2.2 <p>1 Students who have successfully completed this course will be able to:</p> <ul style="list-style-type: none"> • Model concrete problems using matrices and vectors; • Solve concrete problems using matrix calculation techniques (in particular the resolution of linear systems); • Reason using correctly the mathematical notation and methods keeping in mind but exceeding a more intuitive understanding of the concepts.
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Computer Science	SINF1BA	5		
Master [120] in Data Science : Statistic	DATS2M	5		