Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT328	Partial Differential Equations	6	3	2	0	5	8

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Introduction to the theory and solution of partial differential equations.
Content	Initial-Boundary value problems, first-order equations, second-order equations, transport equation, heat equations, wave equation, Laplace equation, separation of variables, Fourier analysis, Green's function
References	Introduction to partial differential equations - Pinchover, Rubenstein Partial differential equations - Evans Introduction aux Equations aux Dérivées Partielles - Heffler, Ramond Équations aux dérivées partielles - Reinhard

Theory Topics

Week	Weekly Contents
1	Overview
2	Classification
3	First-order PDEs
4	Transport equation
5	Second-order equations, quizz
6	Wave equation
7	Heat equation
8	Midterm
9	Laplace equation
10	Sturm-Liouville problems
11	Transformées
12	Green functions
13	Equations in high-dimension
14	Variational methods, quizz