Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT328	Partial Differential Equations	6	4	0	0	4	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	