

Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT301	Topology	5	4	0	0	4	8

Prerequisites	MAT101, MAT102
Admission Requirements	MAT101, MAT102

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Master elementary topology via the study of the topology of metric spaces.
Content	Metric spaces (main inequalities, distances, equivalent distances, examples of metric spaces, normed vector spaces and convexity, distance between two sets and diameter, open and closed balls, neighborhood, open and closed sets, closure and interior, dense subsets). Topology (topological spaces, induced topology). Sequences in metric spaces (convergence, convergence in a product of metric spaces, limit point, characterisation of closed sets with sequences, Cauchy sequences, complete spaces). Continuous maps between metric spaces (sequential and topological characterisation of continuity, uniform continuity, Lipschitz maps). Compactness. Connectedness
References	

Theory Topics

Week	Weekly Contents
1	Metric Spaces
2	Metric Spaces
3	Metric spaces
4	Metric spaces
5	Topological spaces
6	Topological spaces
7	Topological spaces
8	Topological spaces
9	Continuity
10	Continuity
11	Continuity
12	Compactness
13	Compactness
14	Connectedness