

1.	Title of the course	Discrete Mathematics for Computer Science
2.	Course number	CS207L
3.	Structure of credits (L-T-P-C)	3-1-0-4
4.	New course/modification to	Modified with CS201L/DISCRETE MATHEMATICS FOR COMPUTER SCIENCE
5.	To be offered by	Computer Science and Engineering
6.	Proposed by	S Raja
7.	Prerequisite	None
8.	Course Objective(s): To discuss formal representation and reasoning methodologies for fundamental discrete structures in computer science.	
9.	Course Content: Sets: finite sets, power set, cartesian product, properties of sets, infinite sets, well-ordering, countable and uncountable sets, Cantor's diagonalization; Logic: propositional logic, truth tables, deduction, resolution, predicates and quantifiers; Mathematical proofs; Combinatorics: basic counting techniques, principle of inclusion-exclusion, pigeon hole principle, recurrence relations, generating functions; Sequences; Functions; Relations: binary relations, equivalence relations, partial orders, lattices, Hasse diagrams; Basic graph theory: graphs, trees, connectivity, paths, cycles, Eulerian walks, Hamiltonian cycles, colourings, planarity, matching; Basic number theory and cryptography.	
10.	Textbook(s): 1. Rosen K H, Discrete Mathematics and its Applications, 7th Edition, Tata McGraw Hill (2015).	
11.	Reference(s): 1. Liu C L and Mohapatra D P, Elements of Discrete Mathematics: A Computer Oriented Approach, 4th Edition, McGraw Hill (2014). 2. Graham R L, Knuth D E and Patashnik O, Concrete Mathematics: A Foundation for Computer Science, 2nd Edition, Pearson Education Publishers (1996).	