2-YEAR M. TECH.
IN
COMPUTER SCIENCE & ENGINEERING

I SEMESTER M.TECH-CSE					
Course No.	Name of the Courses	L	T	P	Credit Hours
CSC51102	Advanced Data Structures and Algorithms	3	1	0	7
CSC51103	Discrete and Analytical Mathematics	3	1	0	7
CSC51106	Cryptography and Network Security	3	1	0	7
CSE511xx	Elective−I	3	1	0	7
CSE511xx	Elective−II	3	1	0	7
CSC51202	Advanced Data Structures and Algorithms Laboratory	0	0	2	2
CSC51206	Cryptography and Network Security Laboratory	0	0	2	2
Total					39
Contact Hrs.		15	05	04	24

CSC51102	Advanced Data Structures and Algorithms	3-1-0

Asymptotic complexity, Amortized analysis, Dynamic data structures and their applications, Binomial heaps, Fibonacci heaps, Data structures for disjoint sets, Data Structures for maintaining Ranges and Intervals, kd-Tree; Data Structures for Memory Optimization, Dynamic programming: matrix chain multiplication, assembly line scheduling, Graph algorithms: Strongly connected components, shortest paths problems; Geometric algorithms: Segment intersections, closest pairs; Number-theoretic algorithms: basic arithmetic, Modular arithmetic, Powers of an element; Matrix operations: Linear equations solver; Polynomials and FFT; Internet algorithms; String matching algorithms: Naïve approach, Rabin-Karp algorithm, Knuth-Morispratt algorithm, Approximation algorithms; Local search heuristics; Randomized algorithms.