

		Course Contents	Teaching Learning Strategy	Assessment Strategy
Week 01	Lecture 01	Propositional logic	Lecture Assignment	Short Answer Exercise Tutorial Assignment
	Lecture 02	Propositional Equivalence		
Week 02	Lecture 03	Predicates and Quantifier		
	Lecture 04	Predicates and Quantifier 2		
Week 03	Lecture 05	Rules of Inference		
	Lecture 06	Introduction to Proofs		
Week 04	Lecture 07	Set Theory, Set Operation		
	Lecture 08	Function		
Week 05	Lecture 09	<b>Number Theory:</b> Divisibility, Primes, Prime Examples, Generating functions, Factorial factors, Relative Primality, 'mod': The Congruence Relation, Independent Residues, Binomial Coefficient, Special Numbers and Chinese remainder theorem,	Lecture Assignment	Short Answer Assignment Exercise
	Lecture 10	<b>Number theory 02</b>		
Week 06		<b>Counting:</b> The Basics of Counting, The Pigeonhole Principle, Permutations and Combinations, Binomial Coefficients and Identities, Linear Recurrence Relations, Divide-and-Conquer Algorithms and Recurrence Relations, Generating Functions, Inclusion–Exclusion,	Lecture Assignment	Exercise Interview Assignment
		<b>Counting:</b> The Basics of Counting, The Pigeonhole Principle, Permutations and Combinations, Binomial Coefficients and Identities, Linear Recurrence Relations, Divide-and-Conquer Algorithms and Recurrence Relations, Generating Functions, Inclusion–Exclusion,		
Week 07				
Week 08		<b>Discrete Probability and Algorithms:</b> Definitions, Mean and Variances, Probability Generating Functions, Flipping Coins, Hashing. Growth of functions, complexity of algorithms.	Lecture Assignment	Short Answer Assignment MCQ

Week 09		<b>Relations:</b> Relations and Their Properties, -binary Relations and Their Applications, Representing Relations, Closures of Relations, Equivalence Relations, Partial Orderings, Function and algebraic Structure	Lecture Assignment	Exercise Interview
		<b>Relation 02</b>		
Week 10		<b>Graph</b> Basic terminologies of graph and tree, Handshaking theorem, Bipartite graphs, Graph Isomorphism, Hamilton circuits and path, Euler circuit and path, Shortest path problem, Chromatic number,		
		<b>Graph 02</b>		
Week 11		<b>Tree:</b> Properties of tree, Binary search tree, Tree traversal, BFS and DFS, Graph coloring, N-queens problem, Minimum Spanning Tree and Prim's and Kruskal's algorithm.		
		<b>Tree 02</b>		
Week 12		<b>Boolean Algebra:</b> Boolean Functions, Representing Boolean Functions, Logic Gates, Minimization of Circuits	Lecture Assignment	Exercise Assignment Tutorial MCQ

Online Slide:

1. <https://zitompul.wordpress.com/2-core-lectures/5-discrete-mathematics/>
2. <https://www.cse.iitd.ac.in/~naveen/courses/CSL105/>
3. <https://www.gradesaver.com/textbooks/math/advanced-mathematics/discrete-mathematics-and-its-applications-seventh-edition/chapter-1-section-1-4-predicates-and-quantifiers-exercises-page-53/10>
4. [https://www.google.com/url?q=https%3A%2F%2Fhighereducation.com%2Fsites%2F0073383090%2Fstudent\\_view0%2Flecture\\_powerpoint\\_slides.html&sa=D&sntz=1&usq=AOvVaw3OqeilceRGuXaOP6MZ\\_xJA](https://www.google.com/url?q=https%3A%2F%2Fhighereducation.com%2Fsites%2F0073383090%2Fstudent_view0%2Flecture_powerpoint_slides.html&sa=D&sntz=1&usq=AOvVaw3OqeilceRGuXaOP6MZ_xJA)
- 5.