



<b>Course Content</b>		
<b>UNIT-1</b>	<p><b>Mathematical Logic:</b> Introduction-Statements and Notations-Connectives(Negation,Conjunction,Disjunction)-Statement formulas and Truth Tables, Conditional and Bi-conditional, Well-Formed Formulas, Tautologies, Equivalence of Formulas, Duality Law, Tautological Implication, Functionally Complete Sets of Connectives, Other Connectives.</p> <p><b>Normal Forms:</b> Disjunctive Normal Forms (DNF), Conjunctive Normal Forms (CNF), Principal of Disjunctive Normal Forms (PDNF), Principal of Conjunctive Normal Forms (PCNF).</p>	<b>CO1, CO2</b>
<b>UNIT-2</b>	<p><b>Theory of Inference for Statement Calculus:</b> Validity using Truth Tables-Rules of Inference – Consistency of Premises and Indirect Method Proof.</p> <p><b>Predicate calculus:</b> Introduction to Predicates - Statement functions, Variable and Quantifiers- Predicate Formulas-Free and Bound Variables-Universe of Discourse.</p>	<b>CO1,CO2</b>
<b>UNIT-3</b>	<p><b>Recurrence Relations</b>-The Method of Characteristic Roots-Solutions in Inhomogeneous Recurrence Relation.</p>	<b>CO1,CO3</b>
<b>UNIT-4</b>	<p><b>Relations and Directed Graphs</b>-Special Properties of Binary Relations-Equivalence Relations- Ordering Relations, Lattices, and Enumerations-Operations on Relations- Paths and Closures-Directed Graphs and Adjacency Matrices</p>	<b>CO1,CO4</b>
<b>UNIT-5</b>	<p><b>Graphs</b>- Basic Concepts- Isomorphism's and Sub graphs-Trees and Their Properties - Spanning Trees-Planar Graphs-Euler's Formula- Multi-graphs and Euler Circuits-Hamiltonian Graphs- Chromatic Numbers.</p>	<b>CO1,CO4</b>
<b>Learning Resources</b>		
<b>Text Books</b>	<ol style="list-style-type: none"> <li>Discrete Mathematical Structures with Applications to Computer Science , J P Trembly and R Manohar, 1988, McGraw-Hill (Unit-I,II)</li> <li>Discrete Mathematics for Computer Scientists &amp; Mathematicians, Joe L. Mott. Abraham Kandel and Theodore P. Baker, Second Edition, 2017, PHI. (Unit-III,IV,V)</li> </ol>	
<b>Reference Books</b>	<ol style="list-style-type: none"> <li>Discrete Mathematics and its Applications, Kenneth H. Rosen, Seventh Edition, 2017, McGraw-Hill.</li> </ol>	
<b>e-Resources &amp; other digital material</b>	<p><a href="https://www.geeksforgeeks.org/engineering-mathematics-tutorials/">https://www.geeksforgeeks.org/engineering-mathematics-tutorials/</a>  <a href="https://www.tutorialspoint.com/discrete_mathematics/index.htm">https://www.tutorialspoint.com/discrete_mathematics/index.htm</a>  <a href="http://www.alas.matf.bg.ac.rs/~mi10164/Materijali/DS.pdf">http://www.alas.matf.bg.ac.rs/~mi10164/Materijali/DS.pdf</a>  <a href="https://nptel.ac.in/courses/111107058/">https://nptel.ac.in/courses/111107058/</a></p>	