MATH 2200	Discrete Structure	3 Credit Hours
Prerequisites:	MATH 1200 MATH I	
Goal	Introduce fundamental formal concepts in computing to provide training in formal education.	

Objectives	Outcomes
1. Gain an understanding of the particular nature of problems in discrete structure and be familiar with the methods of solutions of these problems.	The students should be able to: 1. Use the techniques of discrete structure, especially the idea of recurrence, to solve problems in probability theory, counting and number theory. 2. Apply pigeonhole principle. 3. Make use of the counting methods 4. Generate functions 5. Recurrence relations and their solution, and the inclusion-exclusion formula. 6. Formulate and model the problems in discrete structure. 7. Apply truth table, implications and equivalence, resolution and proof techniques. 8. Make use of graph and set theory, relational and functions. 9. Identify the characteristic of an algorithm. 10. Employ directed and undirected graphs as a relational system, Eulerian paths and cycles, Hamiltonian paths and cycles, Trees and Providing properties of graph using mathematical induction 11. Deal with Sequential circuits and define-state machines, Deterministic and non-deterministic, finite automata and their relationship. 12. Define algebraic structures; Semigroups, Groups and subgroup, Homomorphism and iso morphism of groups, Lagrange's theorem, Ring and fields.