Code	Subject Title	Cr. Hrs	Semester
MATH-105	Discrete Mathematics	2	II
Year	Discipline		
1	Mathematics-I,II		

Function and Sequences

- Introduction to sets
- Functions
- Inverses of function
- Sequences
- Big-Oh notation

Elementary Logic

- Introduction to elementary logic
- Propositional calculus
- Methods of proof

Induction and Recursion

- Loop invariance
- Mathematical induction
- Recursive definition
- Recurrence relations

Relations

- Introduction of relation
- Equivalence relations and partitions of sets
- Partially ordered sets
- Special orderings
- Properties of general relations

Principles of Counting

- Pigeon rule the sum rule
- Inclusion exclusion principle
- The product rule and binomial methods

Recommended Books

1. K.A Ross & C.R.B. Wright, *Discrete Mathematics*, Prentice Hall, New Jersey, 2003.
2. Kenneth H. Rosen, *Discrete Mathematics and its Application*, Mc-Graw Hill Company, 2003
3. J.P. Trembley & R.Manoher, *Discrete Mathematical Structure with Application to Computer Science*, McGraw Hill, 1975.
4. Noman L-Brigs, *Discrete Mathematics*, Oxford University Press, 2003