AMITY UNIVERSITY

UTTAR PRADESH

Course Name: Basic Mathematics

Course Level : UG

Course Type :Allied Course

Course Code: Math 105

Credit Units: 04

L	T	P/S	SW/FW	TOTAL CREDIT UNITS
3	1	-	-	4

Course Objective:

The Objective of this course is to

- aimed to solve standard topical text book-level problems by analytical means
- Apply multiple concepts in the solution of a more sophisticated problem, which may be derived from a scientific application or from basic application.
- Model a topical problem from math, solve the problem, and report the results in the original problem context.

Pre-requisites:
Basic knowledge of Mathematics

Student Learning Outcomes:
After completion of the course, The student will be able to:

- To solve standard topical text book-level problems by analytical means.
- To apply multiple concepts in the solution of a more sophisticated problem, which may be derived from a scientific application or from basic application.
- To solve a topical problem and report the results in the original problem context.

Course Contents/Syllabus:

	Weightage (%)
Module I: Set Theory and Matrices	**25**
Sets, Types of Sets, Basic Operations on Sets, Venn diagram, Cartesian product of two sets, Distributive law, De Morgan's Law, Matrix, Submatrix, types of matrices, symmetric, square, diagonal matrices, singular and nonsingular matrices. Addition, Subtraction, multiplication of matrices, Rank of matrix.	
Module II: Mathematical Logic	**20**
Basic Concepts, Propositions or Statements, Truth Table, Connectives and Compound Propositions, Implication, Bi-conditional of Connectives, Converse, Inverse and Contra positive of an Implication, Tautology, Logical Equivalence, Switching Circuits	
Module III: Group and Subgroup	**20**
Binary Operations, Properties of Binary Operations, Semi group, Monoid, Group, Subgroups and other Groups	
Module IV: Graph Theory	**20**
Graph, Multi Graph, Complete Graph, Bi Graph, Degree, isomorphic Graph, Euler Graph, Hamiltonian Graph, Bipartite Graph.	
Module V: Data Analysis	**15**
Data and Statistical Data, Frequency Distribution, Graphical Representation, Measure of the Central Tendency, Measure of Dispersion, Kurtosis, skewness.	

Pedagogy for Course Delivery:
The course will be taught in theory based mode. The instructor will discuss numerical computation problems to the students for better understanding of the concept.

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	TOTAL
100	-	100

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)	**Mid-Term Exam**	**Assignment**	**Presentation/Quiz**	**Attendance**	**EE**
Weightage (%)	10	10	10	5	70

- **Text**:
- Business Mathematics, Sancheti & Kapoor, S.Chand & Sons

- **References:**
- Discrete Mathematical Structure, Kolman, Busby and Ross, PHI