



Course No.	Course Title	No. of Units			Pre-requisites
		Th	Pr.	Credit	
MATH 151	Foundations of Mathematics	3	-	3	MATH 101

#### Course Objectives:

- To know how to think logically and mathematically.
- To know mathematical arguments.
- To gain the knowledge of writing proofs.
- To formulate mathematical arguments in an elementary mathematical setting.
- To know a particular set of mathematical facts of Set theory, Number theory, Complex number system and Algebraic structure and how to apply them.
- To form a foundation of abstract mathematics.

#### Course Description:

Basic set theory, logic, methods of mathematical proofs, basic number theory, complex number system, mathematical proofs, different types of proofs, mathematical induction, algebraic structures, binary operations, group, ring, field, Boolean algebra, Boolean functions, representing Boolean functions.

#### Main Text Book:

- Discrete Mathematics and its Applications, by Kenneth. H. Rosen, 6<sup>th</sup> edition, McGraw-Hill 2007.

#### Subsidiary Books:

- Foundations of Discrete Mathematics, by H. B. Hoyle, P. Fletcher, and C. W. Patty, International Thomson Publishing 1990.