

## Contents of the Course Units

Course Title	Basic Mathematics			Course Code	BST 11012	
Year	1	Semester	1	Credits	02	
						Theory (hr) 20
						Practical (hr) 20
						Independent Learning (hr)

### Aim of the Course:

To provide students with the mathematical concepts that are applicable to the discipline of bio-systems technology

### Intended Learning Outcomes:

*After completion of this course, the learner should be able to:*

- Interpret the data using different types of functions and graphs.
- Apply the Set Theory to make inferences.
- Solve a system of linear equations using matrices.
- Solve problems using calculus.

### Course Capsule:

Theory
Number line: integers, irrational numbers, rational numbers, natural numbers, prime numbers; Element of set theory notation: Set builder form, Equality of two sets, Disjoint sets, Finite and Infinite sets, Union and intersection of sets, set operations, Venn diagrams; Introduction to Matrix algebra; Solving system of equations using Cramer's Rule; Introduction to function: Domain, Co-domain and Range of a function, Types of functions and their properties, Graphs of functions, General equation for a straight line, Parabola, Circle; Introduction to calculus: Limits, Differentiation, Integration and their applications

Practical
Application of Set Theory to solve real world problems; Solve system of equation by using Matrix algebra; Brake even analysis; Finding out critical points of a function; Introduction to calculus: Limits, Differentiation, Integration and their applications

### Assessment:

Continuous assessment:	30%
End semester assessment:	70%