Semester	Semester One		
Course Code	SOST 11315		
Course Name	Basic Mathematics		
Credit Value	5		
Core/Optional	Compulsory		
Hourly Breakdown	Theory	Practical	Independent Learning
	75	-	175

Intended Learning Outcomes:

At the completion of this course student will be able to

- Identify the relevant calculation to given numerical or algebra expression
- Describe index numbers and logarithms
- Identify required values using graphs when linear or non-linear equation solve and simply a given equation
- Recognize derivatives of a given function and solve mathematical operations with vectors and matrices.

Course Content:

01.	Algebra Operation	Introduction to Algebra, define variables, Numerical expressions and algebraic expressions, Algebraic expression using the correct order of operations, Algebraic expression (by adding, subtracting, dividing, multiplication), Transform factorize algebraic form into its factors, Factorization and Fractions.
02.	Index Numbers and Logarithms	Describe the meaning of index numbers, Laws of index numbers and their applications, Explain logarithms and identify the laws of logarithms.

03.	Function and Graphs	Find the intercept and the slope of a graph, Find the absolute maximum/ minimum of a function using the equation and the graph, Graph linear equations, Find X, Y, intercept and slope for given simple linear equation
04.	Solving Equations	Solve Formulas and Simple Linear Equations for a specific variable, Solve quadratic equations using quadratic formulas and factors, Solve simultaneous equations and define them in algebraic and graphical methods
05.	Basic Calculus	Derivative in terms of a tangent line to the graph of the function, Limit of the function using limit laws, Derivative at a point as a limit. Compute algebraically the derivative function using limits, Explain basic rules of differentiation and use them to find derivatives of products and quotients
06.	Vector and Matrix	Define the terminology of Vector and Matrix, Describe geometric and algebraic properties of vectors to compute vector additions, subtractions and multiplication, Compute the determinant of a square matrix (2×2) by using the definition and by using the properties of determinants, Compute the inverse of a square matrix by using the definition and by using the properties of inverse, Illustrate the transpose of the matrix, Solve simultaneous equations using matrices (2×2).
Teaching/Learning Methods		Interactive Lectures, Directed Self Studies, Brainstorming, Cooperative Learning, LMS

Assessment Strategy:

Continuous Assignment 20%		Final Assignment 80%		
Assignments	Attendance	Theory	Practical	Other
15%	5%	80%	-	-

Recommended Reading:

- Sancheti, D. C. & Kapoor, V. K. (2009). *Business Mathematics.* Sultan Chand and Sons: New Delhi
- Bradely, T. & Patlon, P. (1998). *Essential Mathematics for Economics and Business*. Jhone Wiley publication: New York
- Freund, J. (2001). *Mathematics for Statistics*. Prentice Hall of India
- Strauss, M. J., Bradley, G. L. & Smith, K. J. (2002). *Calculus.* Prentice Hall of India