No	Information of every subject	
1	Unit name:	Engineering Mathematics(III)
2	Code:	EM-21003
3	Classification:	Supporting Subject
4	Credit value:	4.5
5	Semester/ Year Offered:	1/2
6	Pre-requisite:	
7	Mode of delivery:	Lecture, Tutorial, Oral
8	Assessment system and breakdown of marks: Test	 15%
	Mid-term Examination	35%
9	Academic staff teaching unit:	Engineering Mathematics
10	Course Outcomes of unit: In this course students will be able to • calculate the length of the curve and surface area for revolution • compute the hyperbolic functions and their inverses, with their applications to integration • compute the slopes, lengths , parametric and plane equations and also sketch their graph • calculate lines, planes , surface and curves in spaces • apply linear algebra	
11	Synopsis of unit: The course introduces students to Applications of Definite Integrals, Integrals and Transcendental Functions, Parametric Equations and Polar Coordinates, Vectors and the Geometry of Space and Linear Algebra.	
12	Topic: 6. Applications of Definite Integrals - Volumes Using Cross-sections - Volume Using Cylindrical Shells - Arc Length - Areas of Surfaces of Revolution 7. Integrals and Transcendental Functions - The Logarithm Defined as an Integral - Hyperbolic Functions	

	11. Parametric Equations and Polar Coordinates - Parametrizations of Plane Curves - Calculus with Parametric Curves - Polar Coordinates - Graphing in Polar Coordinates - Areas and Lengths in Polar Coordinates 12. Vectors and the Geometry of Space - Vectors - The Dot Products - The Cross Product - Lines and Planes in Space 7. Linear Algebra II - Matrices, Vectors: Addition and Scalar Multiplication - Matrix Multiplication - Linear Systems of Equations. Gauss Elimination - Linear Independence. Rank of a Matrix. Vector Space - Solutions of Linear Systems: Existence, Uniqueness - For Reference: Second and Third Order Determinants - Determinants. Cramer's Rule - Inverse of a Matrix. Gauss Jordan Elimination 8. The Matrix Eigenvalue Problem -Determining Eigenvalues and Eigenvectors
14	Main references: - Thomas' Calculus (12^{th} Edition), George B. Thomas, Maurice D Weir, Joel R. Hass, Copyright @ 2010, Pearson Education, Inc. - Advanced Engineering Mathematics (10^{th} Edition, ErwinKreyszig, John-Wiley and Sons.
15	Additional references: - http:// www. pearsoned.com / legal / permissions.htm. - http: // www. wiley.com / college / kreyszig/ .