

Course Number and Name												
BMA201 - MATHEMATICS – II												
Credits and Contact Hours												
3 & 60												
Course Coordinator's Name												
Ms.Kavitha												
Text Books and References												
TEXT BOOK:												
1. R.M.Kannan and B.Vijayakumar“ Engineering Mathematics–II “2 nd Edition, SRB Publicat Chennai 2007.												
2. Bali.N.P and Manish Goyal , “Engineering Mathematics“, 3 rd Edition, Laxmi Publications (P) Ltd, 2008												
3. Grewal .B/S “Higher Engineering Mathematics”, 40 th Editon, Khanna Publications, Delhi, 2007												
REFERENCES :												
1. Ramana.B.V, “Higher Engineering Mathematic“, Tata McGraw Hill Publishing Company, New D 2007.												
2. Gupta SC, and VK.Kapoor, “Fundamentals Mathematical Statistics”, 11 th edition, Sultan Chand Sons, Delhi, 2014.												
Course Description												
Ability to apply these principles of mathematics in projects and research works.												
Prerequisites						Co-requisites						
Mathematics I						NIL						
required, elective, or selected elective (as per Table 5-1)												
Course Outcomes (COs)												
CO1	Student shall be able to Solve differential equations, simultaneous linear equations, and some special types of linear equations related to engineering.											
CO2	Relate the use of mathematics in applications of various fields namely fluid flow, heat flow, solid mechanics, electrostatics, etc.											
CO3	Ability to test hypothesis											
CO4	Find intensity of degree of relationship between two variables and also bring out regression equations.											
CO5	Understand to solve matrix problems related to real life problems.											
CO6	Formulate mathematical models											
Student Outcomes (SOs) from Criterion 3 covered by this Course												
	COs/SOs	a	b	c	d	e	f	g	h	i	j	k
	CO1	H		L								
	CO2		H				H		L	L		M
	CO3		H				H		L	L		M
	CO4					M						M

	CO5										M	M
	CO6										M	

List of Topics Covered		
UNIT I	ORDINARY DIFFERENTIAL EQUATION	12
Higher order linear differential equations with constant coefficients - Method of variation of parameters – Cauchy’s and Legendre’s linear equations - simultaneous first order linear equations with constant coefficients.		
UNIT II	VECTOR CALCULUS	12
Gradient, divergence and curl –Directional derivatives –Irrotational and solenoidal vector fields – vector integration– Green’s theorem in a plane , Gauss divergence theorem and Stoke’s theorem (without proofs) – simple applications involving cubes and rectangular parallelepipeds.		
UNIT III	ANALYTIC FUNCTIONS	12
Functions of a complex variable – Analytic functions – Necessary conditions, Cauchy-Riemann equation and sufficient conditions (without proofs) – Harmonic and orthogonal properties of analytic functions – Harmonic conjugate – construction of analytic functions – conformal mapping: $W= Z+C$, CZ , $1/Z$ and bilinear transformation.		
UNIT IV	COMPLEX INTEGRATION	12
Complex integration – Statement and application of Cauchy’s integral theorem and Cauchy’s integral formula –Taylor and Laurent expansions – Singular points – Residues – Residue theorem –Application of Residue theorem to evaluate real integrals – Unit circle and semi-circular contour (excluding poles on boundaries).		
UNIT V	STATISTICS	12
Mean, Median, Mode – Moments –Skewness and Kurtosis – Correlation – Rank Correlation – Regression – Chi square test for contingency tables.		