Teaching Scheme       Examination Scheme       Total         L       T       P       C       Hrs/Wee       Theory       Practical       Total         3         3       3       25       50       25         100         OBJECTIVES         1.       To introduce the concept of vectors and co-ordinate geometry, differential equations, basics of statistics and numerical methods.       2.       Methods for solving problems encountered in Mathematics         SYLLABUS         Unit-I       Total         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors <i>i</i> . <i>j</i> and <i>k</i> . Components of a vector. Position vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.       10         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular val	16BSM202 - GENERAL MATHEMATICS-II (Group B)												
Image:	Teaching Scheme         Examination Scheme												
Image: Second statistics       Image: Second	L	Т	Р	С	Hrs/Wee		Theory Practic			actical		Total	
a       a         3         3       3       25       50       25         100         OBJECTIVES         Image: Imag					k	MS	ES	IA	LW	LE/V	/iv	Marks	
3         100         OBJECTIVES         I. To introduce the concept of vectors and co-ordinate geometry, differential equations, basics of statistics and numerical methods.         2.       Methods for solving problems encountered in Mathematics         SYLLABUS         Unit-I         10         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors $i, j$ and $k$ . Components of a vector. Position vector, Direction cosines and direction ratios. Dot and cross products. Projection of a vector or on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNITI II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, nomogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNITI II         10         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and A, Factorial Notations, Methods of any given polynomial in factorial notation. Lebinitz rule, APPROXIMATE TOTAL       9         Basics of Numerical Methods: Calcu										a			
OBJECTIVES         INTERCENTING ON CONCENTION ON CONCENTIAL AND CONCENTION	3			3	3	25	50	25				100	
1. To introduce the concept of vectors and co-ordinate geometry, differential equations, basics of statistics and numerical methods.       2. Methods for solving problems encountered in Mathematics         SYLLABUS         Unit-I       10         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors <i>i</i> , <i>j</i> and <i>k</i> . Components of a vector. Position vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.       10         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.       10         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and A, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL         OUTCOMES         1.       Understanding the representation data and analyzing them, 4.         4.       Understanding the representation data and analyzing						0	BJECTIV	/ES					
basics of statistics and numerical methods.         2. Methods for solving problems encountered in Mathematics         SYLLABUS         Unit-I       10         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors <i>i</i> , <i>j</i> and <i>k</i> . Components of a vector. Position vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis         UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and A, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES       1. Understand the concepts vectors and geometry         1. Und	1. To introduce the concept of vectors and co-ordinate geometry, differential equations,												
2. Methods for solving problems encountered in Mathematics         SYLLABUS         Unit-I         10         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors <i>i</i> . <i>j</i> and <i>k</i> . Components of a vector. Position vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II         IO         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III         IO         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion. Kewness and Kurtosis         UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference for two perators E and A, Factorial Notations, Methods of any given polynomial in factorial notation. Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         Auderstand the concepts vectors and geometry	basics of statistics and numerical methods.												
SYLLABUS         Unit-I         10         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to         geometry and mechanics. Unit vectors, vectors <i>i</i> . <i>j</i> and <i>k</i> . Components of a vector. Position         vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II         10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III         10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis         UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and A, Factorial Notations, Methods of any given polynomial in factorial notation. Lebinitz rule.         OUTCOMES         1.       Unders	2. Methods for solving problems encountered in Mathematics												
SYLLABUS         Unit-I       10         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors <i>i</i> , <i>j</i> and <i>k</i> . Components of a vector. Position vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basics Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion. Skewness and Kurtosis         UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and A, Factorial Notations, Methods of any given polynomial in factorial notation.         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them, 4.													
Unit-I       10         Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors <i>i</i> , <i>j</i> and <i>k</i> . Components of a vector. Position vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.       10         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion. Skewness and Kurtosis       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and A, Factorial Notations, Methods of any given polynomial in factorial notation. Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         0UTCOMES       1.         Understand the concepts vectors and geometry       2.         Enable to solve ordinary differential equations       39 Hours         30.       Understanding the representation data and analyzing them. <t< td=""><td colspan="13">SYLLABUS</td></t<>	SYLLABUS												
Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to geometry and mechanics. Unit vectors, vectors <i>i</i> , <i>j</i> and <i>k</i> . Components of a vector. Position vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and A, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES       1.         Understand the concepts vectors and geometry       2.         Enable to solve ordinary differential equations       39 Hours         3.       Understanding the representation data and analyzing them, 4.         4.       Understanding of operators and notations used	Unit-I									10			
geometry and mechanics. Unit vectors, vectors <i>i</i> , <i>j</i> and <i>k</i> . Components of a vector. Position         vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on         another. Distance between two points. Equations of a line, plane and sphere. Intersections.         Distance between two points. Shortest distance between lines.         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         I. Understand the concepts vectors and geometry       2. Enable to solve ordinary differential equations         3. Understanding the representation data and analyzing them,       4. Understanding of operators and notations used in Numerical Analysis	Vectors and Coordinate Geometry (3D): Vectors and their algebra. Simple applications to												
geometry and mechanics, unit vectors, vectors is a rate x. components of a vector, Position         vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on         another. Distance between two points. Equations of a line, plane and sphere. Intersections.         Distance between two points. Shortest distance between lines.         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis       9         UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and A, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         I. Understand the concepts vectors and geometry       2. Enable to solve ordinary differential equations         3. Understanding the representation data and analyzing them,       4. Understanding of operators and notations used in Numerical Analysis	and the second machine limit water water is in the former is the second s												
Vector Differential Statistics Declarid cross products. Projection of a vector off another. Distance between two points. Equations of a line, plane and sphere. Intersections. Distance between two points. Shortest distance between lines.         UNIT II         Intervential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III         10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis         UNIT IV         9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and $\Delta$ , Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	geometry and mechanics. Unit vectors, vectors ', J and K. Components of a vector. Position												
Distance between two points. Shortest distance between lines.       10         UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis         UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES       39 Hours         1. Understand the concepts vectors and geometry       39 Hours         3. Understanding the representation data and analyzing them, 4. Understanding of operators and notations used in Numerical Analysis       TEXTS AND PEEEPENICES	vector. Direction cosines and direction ratios. Dot and cross products. Projection of a vector on												
UNIT II       10         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation. Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         0UTCOMES       .         1. Understand the concepts vectors and geometry       .         2. Enable to solve ordinary differential equations       .         3. Understanding the representation data and analyzing them,       .         4. Understanding of operators and notations used in Numerical Analysis       .	another. Distance between two points. Equations of a line, plane and sphere. Intersections.												
Ito         Ito         Elementary Differential Equations: Definitions of order, degree, linear, nonlinear, homogeneous and non-homogeneous. Solution of first order equations. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III         10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis         UNIT IV         9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and $\Delta$ , Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL         39 Hours         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis													
Elementary       Differential       Equations:       Definitions of order, degree, intear, nonlinear, nonl	CIVIT II												
Initial and information of thist order equators. Complementary function and particular integral. Initial and boundary value problems. Linear differential equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	homogeneous and non-homogeneous Solution of first order equations. Complementary												
equations with constant coefficients. Cauchy-Euler equation.         UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis         UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         0UTCOMES       1. Understand the concepts vectors and geometry         2. Enable to solve ordinary differential equations       3. Understanding of operators and notations used in Numerical Analysis         TEXTS AND DEFERENCES	function and particular integral Initial and boundary value problems linear differential												
UNIT III       10         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis       Skewness and Skewness and Skewness of Dispersion, Skewness and Skewness of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES       1. Understand the concepts vectors and geometry         2. Enable to solve ordinary differential equations       3. Understanding the representation data and analyzing them,         4. Understanding of operators and notations used in Numerical Analysis       TEXTS AND DEFERDENCES	equations with constant coefficients. Cauchy-Euler equation.												
Item         Basic Statistics Classification of data. Mean mode, median and standard deviation. Frequency distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis         UNIT IV <b>9</b> Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and $\Delta$ , Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	UN	тп	T				( )				10		
distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis 99 Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule. APPROXIMATE TOTAL 39 Hours 0UTCOMES 1. Understand the concepts vectors and geometry 2. Enable to solve ordinary differential equations 3. Understanding the representation data and analyzing them, 4. Understanding of operators and notations used in Numerical Analysis	Bas	ic St	atisti	cs <mark>Cl</mark>	assification o	<mark>f data. Me</mark>	an mode.	median an	<mark>d standa</mark>	<mark>rd devi</mark>	ation	n. Frequency	
Kurtosis       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES       1.       Understand the concepts vectors and geometry       2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,       4.       Understanding of operators and notations used in Numerical Analysis	distributions and Measures of Central Tendency, Measures of Dispersion, Skewness and												
UNIT IV       9         Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference         table, Effects of an error in a tabular value, The operator E, Properties of two operators E and         Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES	Kurtosis												
Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference         table, Effects of an error in a tabular value, The operator E, Properties of two operators E and         Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	UN	т г	V								9		
table, Effects of an error in a tabular value, The operator E, Properties of two operators E and Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	Basics of Numerical Methods: Calculus of finite differences, Difference formula, difference												
Δ, Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.         APPROXIMATE TOTAL       39 Hours         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	table, Effects of an error in a tabular value, The operator E, Properties of two operators E and												
APPROXIMATE TOTAL       39 Hours         OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	$\Delta$ , Factorial Notations, Methods of any given polynomial in factorial notation, Lebinitz rule.												
OUTCOMES         1.       Understand the concepts vectors and geometry         2.       Enable to solve ordinary differential equations         3.       Understanding the representation data and analyzing them,         4.       Understanding of operators and notations used in Numerical Analysis	AP	PRO	XIM	IATE	E TOTAL						39 Hours		
OUTCOMES         1. Understand the concepts vectors and geometry         2. Enable to solve ordinary differential equations         3. Understanding the representation data and analyzing them,         4. Understanding of operators and notations used in Numerical Analysis         TEXTS AND PEEEPENCES													
<ol> <li>Understand the concepts vectors and geometry</li> <li>Enable to solve ordinary differential equations</li> <li>Understanding the representation data and analyzing them,</li> <li>Understanding of operators and notations used in Numerical Analysis</li> </ol>					7	OUTCOM	<b>MES</b>				1		
<ol> <li>Enable to solve ordinary differential equations</li> <li>Understanding the representation data and analyzing them,</li> <li>Understanding of operators and notations used in Numerical Analysis</li> </ol>	1.	Un	derst	and	the concepts	s vectors a	nd geome	etry .					
<ul> <li>Understanding the representation data and analyzing them,</li> <li>Understanding of operators and notations used in Numerical Analysis</li> </ul>	2.	Ena	able	to so	olve ordinary	different	ial equation	ons					
4. Understanding of operators and notations used in Numerical Analysis TEXTS AND DEEEDENCES	3.	Un	derst	andi	ng the repre	sentation	data and a	nalyzing	them,				
TEYTS AND DEEEDENCES	<mark>4.</mark>	Un A m	derst	andi	ng of operat	ors and no	otations u	sed in Nur	nerical				
	Analysis TEXTS AND REFERENCES												

- 1. Thomas, G. B. and Finney, R. L., Calculus and analytical geometry, 9<sup>th</sup> Ed., Pearson Education Asia (Adisson Wesley), New Delhi, 2000
- 2. NCERT, Mathematics Textbook for class XI and XII, 2009.
- 3. Sharma, R.D., Mathematics, Dhanpat Rai Publications, New Delhi, 2011.
- **4.** Raisinghania, M.D., Ordinary and Partial Differential Equations by, 8<sup>th</sup> edition, S. Chand Publication (2010).
- 5. S.C. Gupta, V.K. Kapoor, Fundamentals of Mathematical Statistics, S. Chand & Sons