MAE123T Co-ordinate system	ns and Differential equation
----------------------------	------------------------------

Semest	er: II Course Title: equation	Course Title: Co-ordinate systems and Differential equation		
Course	No.: 123T Minor-2(T)		Hours: 2/week	
COs wi	ith Cognitive Abilities			
COs	COGNITIVE ABILITIES	COURSE OUTCOMES		
CO1	REMEBERING	Describe various coordinate system in R <sup>2</sup> and R <sup>3</sup>		
CO2	UNDERSTANDING	Discuss how to formulate and solve differential equations.		

## **CO-PO Mapping**

.

	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>
<b>CO 1</b>	1	2			
CO 2	1	1			

Unit	Detailed Syllabus	No. of Hours of Teaching
Ι	various coordinate system in $\mathbb{R}^2$ and $\mathbb{R}^3$ and Cone and cylinder in $\mathbb{R}^3$ :	
	<ul> <li>(a) Polar coordinates in R<sup>2</sup>&amp; R<sup>3</sup> and its Relationships with Cartesian coordinates, polar equation of line-/circle /conic and properties of conics. Mutual relationship between Spherical, Cylindrical and Cartesian coordinates.</li> <li>(b) Introduction to different types of cone and cylinder, Equations of enveloping cone and cylinder. Right circular cone/cylinder (without proof). Problems on cone and cylinder.</li> </ul>	15
II	Methods of solving Differential Equations of first order and first degree: Variable separable, Homogeneous, and non-homogeneous differential equations, Exact differential equations (without proof), Integrating factors, Linear differential equation of first order and first degree, Bernoulli's differential equation & Differential Equations reducible to them	15

## **Suggested Reference books:**

- Discrete Mathematical Structures with Applications to Computer Science -J. R. Tremblay and R. Manohar, McGraw-Hill International Editions, ISBN 0-07-065142-6.e
- 2. Boolean Algebra and its Application J. E. Whitesitt, Addison-Wesley Publishing Co. Inc.
- 3. Foundation of Discrete Mathematics K. D. Joshi, New Age International Limited Publishers, ISBN 81-224-0120-1.
- 4. Logic and Boolean Algebra B. H. Arnold, P H Inc LCCN 62-19100.

## M.G. Science Institute (Autonomous) B.Sc. (Hons.) Mathematics

- 5. Introduction to Lattice Theory D. E. Rutherford, University Mathematical Oliver and Boyed Ltd.
- 6. Modern Applied Algebra Garret Birkhoff and Thomas C Bartee, CBS Publishers and Distributors.
- 7. Sets Lattices and Boolean Algebras James C Abbott.

-