SUBJECT NO-CS60012, SUBJECT NAME- COMPUTER GRAPHICS

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Introduction: Display of entities, Geometric computation and representation, Graphics Environments; Working Principles of display devices: refreshing raster scan devices, vector devices, Cathode Ray Tube Terminals, Plotters; Display of colors: Look Up Tables, display of gray shades, Half toning; Display and drawing of graphics primitives: point, line, polygon, circle, curves and text; Coordinate Conventions: world coordinates, device coordinates, normalized device coordinates, view-port and window, zooming and panning by changing coordinate reference frames; Computations on polygons: point inclusion problem, polygon filling, polygon intersection, clipping, polygonization of a point set, convex hull computation, triangulation of polygons; Transformations in 2D and 3D: translation, rotation, scaling, reflection, Projection: perspective and parallel projections, isometric projection, Transformation matrices; Volume and Surface Representation: polygonal meshes, parametric curves and surfaces, Cubic and Bicubic Splines, Voxel, Octree and Medial Axis representation, Sweep Representation, Surfaces and Volumes by rotation of curves and surfaces, fractal modeling; Hidden surface and line elimination: Elimination of back surfaces, painters algorithms, Binary Space Partitioning Tree; Rendering and Visualization: Shading model, Constant, Goraud and Phong Shading, Ray tracing algorithm, Radiosity Computation; Computer Animation: fundamental concepts.