Unit	BCA414: Computer Graphics
I	Introduction: fundamentals of Computer Graphics, point, dot, pixel, Resolution, Elements of graphics workstation. Video Display Devices-Raster Scan Systems Random Scan systems, aliasing problem and solution techniques, Input devices. Graphics Coordinate Representations, Concepts of video memory and frame buffer.
II	Algorithms: Line drawing algorithms- DDA Algorithm, Bresenham's Line Algorithm, Circle: Midpoint Circle Algorithm. Polygons, convex and convex polygons. Inside-Outside tests, Polygon fill algorithms: Boundary fill Algorithm, Flood fill Algorithm.
III	Graphics Primitives: Primitive Operations, The display file interpreter-Normalized Device Coordinates, Display- File structure. Display – file algorithm. Display control and Polygon representation. Attributes of output primitives: character generation, Line attributes - Line type. Line width, Pen and Brush options. Line Color. Color and gray scale levels. Color-tables. Gray scale. Area- Fill Attributes- Fill styles. Pattern fill. Soft fill. Character Attributes. Text attributes, curve attributes..
IV	Geometric Transformations: Matrices. Translation, Scaling, Rotation Transformations. Homogeneous Co-ordinates. Composite Transformation. Rotation and scaling about an arbitrary point. Other transformations: reflection and shearing. Inverse Transformations.
V	2-D Viewing- The viewing pipeline. Viewing co-ordinate, Reference Frame. Window to viewports co-ordinate transformation, 2-D Viewing functions. Clipping operations point clipping, Cohen- Sutherland Line Clipping algorithm, Sutherland Hodgmann polygon clipping algorithm.