Unit: 1 **[25%]**

An **Introduction Graphics System:** Application of computer graphics, **Graphics Systems:** Video Display Devices – Refresh CRT, Raster and Random scan display, Color CRT, DVST, Flat panel Display. Raster Scan Systems, Random Scan Systems, Graphics Monitors and Work Stations, Input Devices, Hard Copy Devices, Graphics Software

Unit: 2 **[25%]**

Output Primitives: Points and Lines, Line Drawing Algorithms, Circle Generating Algorithms, Scan-Line Polygon Fill Algorithm, Inside-Outside tests, Boundary-Fill Algorithm, Flood Fill Algorithm, Character Generation.

Attributes of Output Primitives: Line attributes, Color and Grayscale Levels, Area fill Attributes, Character Attributes, Bundled Attributes. Antialiasing

Unit: 3 **[25%]**

Two-dimensional Geometric Transformations: Basic Transformations – translation, rotation, scaling. Matrix Representations and Homogeneous Coordinates, Composite Transformations – translation, rotation, scaling, general pivot-point rotation, general fixed-point scaling, scaling direction, concate properties. Other transformation - Reflection and Shearing.

Unit: 4 **[25%]**

Two-Dimension Viewing: The viewing Pipeline, Window to view port coordinate transformation, Clipping Operations, Point Clipping, Line Clipping – cohen-sutherland line clipping, Liang-barsky Line clipping, N-L-N line clipping, Polygon Clipping – sutherland-hodgeman polygon clipping, weiler-atherton polygon clipping, Text Clipping, Exterior Clipping.

Three–Dimensional Concepts: Three Dimensional Display Methods, 3D Transformations – translation, rotation, scaling. Parallel Projection and Perspective Projection.

Text Books :-
   1. Computer Graphics 2nd edition By Donald Hearn and M.Pauline Baker pearson education

Reference Book : -
   1. Computer Graphics: Principles and Practice J. Foley, A.van Dam, S. Feiner, and J. Hughes, 2nd edition pearson
   2. Elements for Computer Graphics D. Rogers and J. Adams, Mathematical, McGraw-Hill International Edition.