

III YEAR SEM-I B.Tech CSE	ELECTIVE	L	T	P	C
Code: CS3503	COMPUTER GRAPICS & MULTIMEDIA	2	2	0	4

Unit-I

Introduction to raster scan displays, Pixels, frame buffer, Vector & Character generation, random scan systems, Graphics Primitives, Display devices, Display file structure, Scan Conversion techniques, line drawing: simple DDA, Bresenham's Algorithm, Circle Drawing Algorithms. Scan line polygon fill algorithm, boundary-fill and flood-fill algorithms

Unit-II

2D transformation:

Translation, Rotation, Scaling, Shearing, Reflection. Inverse Transformation, Homogenous coordinate system, Matrices Transformation, Composite Transformation.

UNIT III

Windowing & Clipping: World Coordinate System, Screen Coordinate System, Viewing Transformation, Line Clipping, Cohen Sutherland, Midpoint Line clipping algorithms, Polygon Clipping: Sutherland – Hodgeman, Weiler-Atherton algorithms.

Unit-IV

3D transformations:

translation, rotation, scaling. Parallel & Perspective Projection, Types of Parallel & Perspective Projection. Hidden Surface elimination: Depth comparison, Back face detection algorithm, Painters algorithm, Z-buffer algorithm. Curve generation, Bezier and B-spline methods.

Unit-V

Basic Illumination Model:

Diffuse reflection, Specular reflection, Phong Shading Gourand shading, ray tracing, color models like RGB, YIQ, CMY, HSV.

Unit –VI Multimedia System:

An Introduction, Multimedia hardware, Multimedia System Architecture. Data & File Format standards. i.e RTF, TIFF, MIDI, JPEG, DIB, MPEG, Audio: digital audio, MIDI, processing sound, sampling, compression. Video: Avi, 3GP, MOV, MPEG , compression standards, compression through spatial and temporal redundancy. Multimedia Authoring .