

# GUJARAT TECHNOLOGICAL UNIVERSITY

## M.E Semester: 1 Computer Engineering

Subject Name Computer Graphics

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Sr.No	Course content
1.	Display Technologies: Basics of CRT, color CRT, graphics mode, display adapter cards, raster scan and vector scan.
2.	2-D Graphics Primitives: Lines, circle and ellipse scan conversion algorithms, polygons and polylines, polygon filling algorithms, thick primitives, filling with different patterns, character generation, generation of bar-chart and pie-chart, aliasing and anti-aliasing.
3.	Windowing and Clipping: Cohen-Sutherland and Cyrus-back line clipping algorithms, Sutherland-Hodgeman and Weiler-Atherton polygon clipping algorithms.
4.	Geometrical Transformations: Basic Transformations: scaling, rotation, translation. Other transformations: shearing and reflection. Window to view-port transformation.
5.	3-D Viewing and Transformation: Representation of 3-D object in form of polygon mesh, curve and surfaces, 3-D geometrical transformation, parallel and perspective projection.
6.	Rendering: Basics, Rendering techniques: Visible surface determination, Illumination and Shading.

### Reference Books:

1. Computer Graphics: principles and practice Foley, vanDam, Feiner Hughes Addison Wesley
2. Computer Graphics Donald Hearn and M.Pauline Baker Prentice Hall India
3. Procedural Elements-Computer Graphics, David Rogers, TMH
4. Computer graphics – Schaum's Outline Series, Computer graphics – Schaum's Outline Series, Tata McGraw Hill