MANIPAL INSTITUTE OF TECHNOLOGY

(A constituent college of Manipal University, Manipal)
Manipal Karnataka 576 104

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COURSE PLAN

Department : Computer Science & Engineering.

Subject : CSE 307 – COMPUTER GRAPHICS

Semester & branch : FIFTH B.Tech. (CSE)

Name of the faculty : P. C. Siddalingaswamy
Narendra V. G.
Tanuja Shailesh
Deepthi S

No of contact hours/week : 4

Assignment portion	
Assignment no.	Topics
1	L1-L8
2	L9-L16
3	L17-L24
4	L25-L32
5	L33-44
Test portion	
Test no.	Topics
1	L1-L22
2	L23-L40

Submitted by:
Dr. P. C. Siddalingaswamy

(Signature of the faculty)
Date:

Approved by:

(Signature of HOD)
Date:

Lecture no.	Topic to be covered
1	Introduction to Computer graphics
2	Introduction to OpenGL
3	Scan converting lines-DDA algorithm & problems
4	Scan converting lines – Bresenham's algorithm & problems
5	Scan converting lines – Midpoint algorithm & problems
6	Scan converting Circle – Midpoint algorithm
7	Scan converting Ellipse – Midpoint algorithm
8	Polygon Filling – Area and Boundary fill algorithms
9	Polygon Filling – Scan fill algorithm
10	Filling of areas with irregular boundaries
11	Display technologies
12	Raster scan display & Video controller
13	2D transformations – Translation, Scaling
14	2D transformations – Rotation, Shearing
15	2D transformations – Reflection
16	Matrix representation and Homogeneous coordinates
17	2D composition transformations
18	3D transformations – Translation, Scaling
19	3D transformations – Rotation, Shearing, Reflection
20	3D composition transformations

21	Problems on 2D & 3D transformation
22	Normalization and viewport transformations
23	Clipping algorithms
24	Cohen-Sutherland line clipping
25	Liang-Barsky line clipping
26	Sutherland-Hodgeman polygon clipping
27	Curve and Text clipping
28	3D viewing pipeline
29	Projection transformations
30	Orthographic projections
31	Oblique parallel projections
32	Perspective projections
33	Shape descriptions & requirements
34	Bezier methods
35	B-Spline methods
36	Classification of VSD algorithms
37	Depth buffer method
38	Scan line method and Depth sorting method
39	BSP tree method and Area subdivision method.
40	Light sources - Ambient light
41	Diffuse reflection, Specular reflection and Phong model
42	Displaying light intensities

43	Halftone patterns and Dithering techniques
44	Basic ray tracing algorithm
45	Raster methods for computer animation
46	Traditional and Computer animation techniques
47	Key-Frame systems and Motion specifications
48	Articulated figure animation and Periodic motion