

**III/IV B. TECH. SECOND SEMESTER  
COMPUTER GRAPHICS LAB (Required)**

**Course Code:CS 6L3****Credits: 2****Lab Hours: 3 periods/ week****Internal assessment: 25 Marks****Semester end examination: 50 Marks**

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**Prerequisites:** Computer Graphics

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**Course Objectives:**

1. Understand the need of developing graphics application
2. Learn algorithmic development of graphics primitives like: line, circle, polygon etc.
3. Learn the representation and transformation of graphical images and pictures.

**Course Outcomes:**

At the end of this course student will:

CO1) Draw Geometric primitives using OpenGL

CO2) Execute scan line polygon filling using OpenGL

CO3) Implement basic transformations on objects using OpenGL

CO4) Implement clipping algorithm on lines using OpenGL

**Syllabus:**

1. Write a program to draw points on a plane in OpenGL
2. Write a program to draw a line on plane in OpenGL.
3. Write a program to draw circle on plane in OpenGL.
4. Write a program draw a white rectangle on a black background in OpenGL.
5. Write a program to draw a square when we click on the mouse button in openGL
6. Write a program to draw a color cube and spin it using open GL transformation matrices in OpenGL.
7. Write a program to create a house like figure and rotate it about a given fixed point using OpenGL functions in OpenGL.
8. Write a program to implement the Cohen-Sutherland line clipping algorithm. Make provision to specify the input line, window for clipping and viewport for displaying the clipped image in OpenGL
9. Write a program to fill any given polygon using scan line area filling algorithm in OpenGL.

**Learning Resource****Text Books**Interactive Computer Graphics A Top-Down Approach with OpenGL, Edward Angel, Pearson, 5<sup>th</sup> Edition, 2009.