

<b>Devi Ahilya University, Indore, India Institute of Engineering &amp; Technology</b>				<b>III Year B.E. (Computer Engineering)(Full Time)</b>			
Subject Code & Name	Instructions Hours per Week			Credits			
CER6L4 Computer Graphics Lab	L	T	P	L	T	P	Total
<b>Duration of Theory Paper:</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

**List of Practical Assignments :**

1. Implement following line drawing algorithm & compare it on the basis (mentioned in table given below) and prepare the table.

	Bresenham	DDA
No. of addition or subtraction		
No. of multiplication		
Execution time		

2. Implement following Circle drawing algorithm & compare it on the basis (mentioned in table given below) and prepare the table.

	Bresenham	Mid point algorithm
No. of addition or subtraction		
No. of multiplication		
Execution time		

3. Implement following Character generation algorithm & compare it on the basis (mentioned in table given below) and prepare the table.

	Stroke	Bit Map
Execution time		
Implementation complexity ( advantages/disadvantages)		

4. Implement following Polygon filling algorithm & compare it on the basis

( m e n t i o n e d i n t a b l e g i v e n b e l o w )	Seed fill	Scan line
Execution time		
Implementation complexity ( advantages/disadvantages)		

oned in table given below) and prepare the table.

Implement Cohen Sutherland and Cyrus Back line clipping algorithms and display the clipped portion of line as demonstration.

5. Implement Cohen Houghman polygon clipping algorithm to clip a polygon against a rectangular boundary and combine Cohen Houghman polygon

clipping algorithm with Cyrus Back line clipping algorithms to clip a polygon against another polygon and display the clipped portion of polygon.

6. Implement the following 2D transformation using matrix multiplication.  
Translation  
Rotation  
Scaling  
Shearing  
Reflection
7. Implement parallel (oblique and axonometric) and perspective projection and display following objects using projections.  
Pyramid  
Rectangles
8. Implement the following 3D transformation using matrix multiplication. And display using perspective projection.  
Translation  
Rotation  
Scaling  
Shearing  
Reflection
9. Implement rotation of an object about any arbitrary axis.
10. Implement reflection of an object about any arbitrary plane.
11. Implement the L-system for generation of symmetric objects(Fractals)
12. Generate 2D curve and surfaces using implementation of Bezier curve.
13. Implement the following visible surface detection algorithm and compare them on the basis of complexities and execution time.  
Z-buffer  
Scan-line  
Depth sorting  
Octree  
RayCasting
14. Implement the following rendering algorithm and compare them on the basis of complexities and execution time.  
Flat Shading  
Gouraud shading  
Phong shading  
Ray tracing