Department of Computer Science & Engineering National Institute of Technology Srinagar				
Course Title	Computer Graphics Lab	**Semester**	6th	
Department	Computer Science & Engineering	**Course Code**	CST358	
Credits	01	**L**	**T**	**P**
Course Type	Lab	0	0	2

Course Objectives

- Implement the 2D primitive drawing algorithms
- Demonstrate and Implement the 2D transformation techniques
- Demonstrate and implement the 3D transformation techniques
- Implement Animation scenes

Learning Outcomes

By the end of this course, the students will beable to:

- Implement the algorithms for drawing the basic graphic primitives.
- Apply different kinds of transformations.
- Draw three dimensional objects.
- Generate fractal images.

Course Synopsis

Bresenham's algorithms for drawing line, circle and ellipse; Two dimensional transformations, Three dimensional transformations, Composite transformations.

Course Outline / Content

Unit	Topics	Week
1.	Implementation of Bresenham's Algorithm – Line, Circle, Ellipse. Implementation of Line, Circle and ellipse Attributes.	2
2.	Two Dimensional transformations - Translation, Rotation, Scaling, Reflection, Shear.	2
3.	Composite 2D Transformations.	2
4.	Cohen Sutherland 2D line clipping and Windowing	1
5.	Sutherland – Hodgeman Polygon clipping Algorithm.	1
6.	Three dimensional transformations - Translation, Rotation, Scaling.	2
7.	Composite 3D transformations.	2
8.	Drawing three dimensional objects and Scenes.	1
9.	Generating Fractal images.	1

Text Books

1.	Computer Graphics by Hearn and Baker, PHI
2.	Preparata, Shamos, Computational Geometry- An Introduction.

References

1.	Procedural Elements for Computer Graphics by Rogers, TMH.
2.	Mathematical Elements for Computer Graphics by Rogers and Adams, Mac Graw Hills.
3.	Computer Graphics: Schaum's Outline of Computer Graphics by Roy A Plastock.
4.	Research papers/Journal Articles from Standard Sources.