# Computer Graphics & Multimedia

## Session 1: Introduction

4. Various algorithms and their comparison.
5. Circle generation- Bresenham’s mid point circle drawing algorithm, mid point ellipse drawing algorithm.

## Session 2: Transformation

1. Attributes of output primitives, line style, color and intensity.
2. Area filling algorithms, Scan line algorithm, boundary fill flood fill algorithm, Antialiasing techniques.
3. Two dimensional transformations: translation, scaling, rotation.
4. Reflection sheering, composite transformation, transformation commands, character generation.

## Session 3: Coordinates, Clipping & Illumination Model

1. Viewing coordinates, Window, view port, clipping.
2. Window to view port transformation, line clipping algorithm; Cohen Sutherland, polygon clipping; Sutherland hodgman algorithm.
3. 3D clipping: Normalized view volumes, view port clipping, clipping in homogeneous coordinates.
5. Reflected light, intensity levels, surface shading.
6. Phong shading ground shading, color models like RGB, YIQ, CMY, HSV etc.

## Session 4: 3D Viewing

1. 3-D Viewing: Three-dimensional concepts, 3D display techniques.
2. 3D representation polygon & curved surfaces.
4. 3D transformation transition, scaling, composite transformation rotation about arbitrary axis.
5. Projections: Parallel & Perspective, Hidden surface and line removal; back face removal, depth buffer and scan line methods.

## Session 5: Introduction to Multimedia

1. Introduction to multimedia, multimedia components.
2. Multimedia hardware, SCSI, IDE, MCI.
3. Multimedia data and file formats, RTF, TIFF, MIDI, JPEG, DIB, MPEG.
4. Multimedia tools, presentations tools, Authoring tools, presentations.
Book References