UNIT 1 – OUTPUT PRIMITIVES

1. Output primitives – points and lines.

2. Line drawing algorithms (DDA, Bresenham).

3. Frame buffer and its loading.

4. Line function.

5. Circle generating algorithms.

6. Ellipse generating algorithms.

7. Line attributes.

8. Curve attributes.

9. Color and grayscale levels.

10. Area-fill attributes.

11. Character attributes.

UNIT 2 – 2D GEOMETRIC TRANSFORMATIONS & VIEWING

1. Basic 2D transformations.

2. Matrix representation of transformations.

3. Composite transformations.

4. Other transformations.

5. Viewing pipeline.

6. Viewing coordinate reference frame.

7. Window to viewport transformation.

8. 2D viewing functions.

9. Clipping operations.

UNIT 3 – TEXT & IMAGE

1. Types of text.

2. Unicode standard.

3. Fonts.

4. Text insertion methods.

5. Text compression.

6. Text file formats.

7. Image types.

8. Color perception.

9. Color models.

10. Steps in image processing.

11. Digital image acquisition devices.

12. CMS and device-independent color models.

13. Image file formats.

14. Image output on monitor and printer.

UNIT 4 – AUDIO

1. Introduction to audio.

2. Acoustics and sound waves.

3. Characteristics of sound.

4. Audio input and output devices.

5. Digital audio.

6. Synthesizers and MIDI.

7. Sound cards.

8. Audio transmission.

9. Audio file formats and CODECs.

10. Audio recording systems.

11. Voice recognition.

12. Audio processing software.

UNIT 5 – VIDEO, ANIMATION & COMPRESSION

1. Analog video camera.

2. Transmission of video signals.

3. Video signal formats.

4. Television broadcasting standards.

5. PC video.

6. Video file formats and CODECs.

7. Video editing.

8. Video editing software.

9. Types of animation.

10. Principles of animation.

11. Computer assisted animation.

12. Animation techniques.

13. Animation on the web.

14. Rendering algorithms.

15. MPEG-1 and MPEG-2 audio and video compression.