

CA547 COMPUTER GRAPHICS AND VISUALIZATION

Prerequisite: CA521 Programming Methodology, CA522 Data and File Structures

Aim: This is first course introducing basics of computer graphics and various visualization techniques.

Course Content:

Introduction: History, Advantages, Application, I/O Devices Graphic Packages, Languages.

2D Graphics: Drawing Elementary figures, Polygon Filling, Transformations, Windowing and clipping, Display file segmentation.

Interactive Graphics: Interactive input techniques, Event handling, Input functions;

3D Graphics and Realism: Mathematical Preliminaries, Curves and Surfaces, Clipping, Hidden line and surface removal, rendering, real-time graphics; Introduction to Visualization, Tools for Visualization, Applications etc.

Books:

1. D. Hearn and M. P. Baker: Computer Graphics, IEEE, 1989.
2. Rogers: Mathematical elements for Computer Graphics, McGraw-Hill, 1985.
3. Newman and R. F. Sproull: Principles of Interactive Graphics, McGraw-Hill, 1979.
4. Harrington, Computer Graphics: A programming approach, McGraw-Hill, 1987.
5. M. Berger: Computer graphics with Pascal, Benjamin/Cummings, 1986.
6. Foley & A. Van Dam: Fundamentals of Interactive Computer Graphics, Addison Wesley, 1982.