

ACADEMIC LESSON PLAN 2023 (WINTER)

Discipline: Information Technology	Semester : 5th	Name of the Teaching faculty: Swetalina Das
Subject : Computer Graphics and Multimedia	No. of Days/per week class allotted : 04	Semester from date : 01/08/2023 to 30/11/2023 No. of weeks : 17
Week	Class Day	Theory / Practical Topics
1 st Week (1 st Aug-5 th Aug)	1 st	Applications of Computer Graphics & Multimedia Computer graphics in CAD, Presentation Graphics, Computer Art,
	2 nd	Entertainment, Education & Training Visualization, Image Processing
	3 rd	Graphic User Interface, Multimedia Concepts
	4 th	Question Answer Discussion/Quiz
2 nd Week (6 th Aug-12 th Aug)	1 st	Overview of Graphics System, Raster Scan Display
	2 nd	Random Scan Display, Difference between Raster scan display and Random Scan Display
	3 rd	Graphics Input Devices used for graphics,.
	4 th	Graphics Software
3 rd Week (14 th Aug- 19 th Aug)	1 st	Question Answer Discussion/Quiz
	2 nd	Graphics Output primitive-Points & Lines, DDA Line Drawing Algorithm
	3 rd	Examples of DDA Line Drawing Algorithm
	4 th	Bresenham's Line drawing Algorithm
4 th Week (21 st Aug- 26 th Aug)	1 st	Examples of Bresenham's Line drawing Algorithm
	2 nd	Mid-Point Circle algorithm
	3 rd	Filled Area Primitives
	4 th	Boundary fill algorithm
5 th Week (28 th Aug- 2 nd Sept)	1 st	Flood fill algorithm
	2 nd	Question Answer Discussion/Quiz
	3 rd	Definition of 2D Transformation, Types of 2D transformation, Translation, Rotation
	4 th	Scaling, Reflection, Shear
6 th Week (4 th Sept -9 th Sept)	1 st	Matrix representation and Homogenous coordinate system
	2 nd	Composite transformation
	3 rd	What is 2D viewing, viewing pipeline, viewing coordinate reference frame, Window to view port coordinate transformation
	4 th	What is Clipping, Line clipping concept
7 th Week 11 th Sept - 16 th Sept	1 st	Polygon Clipping
	2 nd	Question Answer Discussion/Quiz
	3 rd	Three-Dimensional Object Representations Polygon surface, Polygon table, Plane equation
	4 th	Polygon mesh, Quadric surfaces, Sphere
8 th Week 18 th Sept - 23 rd Sept	1 st	Ellipsoid, Spline representation
	2 nd	Bezier curves & Surfaces
	3 rd	B-Spline curves & surfaces
	4 th	Question Answer Discussion/Quiz

9 th Week 25 th Sept - 30 th Sept	1 st	Three Dimensional Geometric & Modeling Transformations Definition of 3D transformation, Its types, Translation, Rotation
	2 nd	Scaling, Reflection, Shear
	3 rd	Composite transformation Modeling & Coordinate transformation
	4 th	Three-Dimensional Viewing Viewing pipeline, Viewing coordinates
10 th Week 2 nd Oct -7 th Oct	1 st	Parallel projection, Perspective projection
	2 nd	Differences between Parallel Projection and Perspective projection, Concept of 3D clipping
	3 rd	Different Types of 3D clipping
	4 th	Question Answer Discussion/Quiz
11 th Week 9 th Oct -14 th Oct	1 st	Illumination Model & Surface Rendering Methods
	2 nd	Different light sources used in 3D modeling
	3 rd	Basic Illumination model, Ambient light
	4 th	Diffuse reflection, Specular reflection
12 th Week 16 th Oct-20 th Oct	1 st	Introduction to Digital Audio Basics of Acoustics, Psychoacoustics, Musical sound and noise, elementary sound system
	2 nd	Microphones, Different types of Microphones
	3 rd	Amplifiers, digital audio formats
	4 th	Audio compression (LPC)
13 th Week 30 th Oct -4 th Nov	1 st	Sub Band Encoding
	2 nd	Question Answer Discussion/Quiz
	3 rd	Introduction to Digital Image, Vector and Raster Graphics Digital representation of image,
	4 th	colour, 16-bit, 24-bit colour depth
14 th Week 6 th Nov-11 th Nov	1 st	Colour Characteristics-Hue, saturation, Luminance,
	2 nd	Colour Palette, Image formats- JPEG, BMP,
	3 rd	TIFF, GIFF image format
	4 th	Image evaluation, Layers, Filters, Image manipulation-scaling, cropping, rotation
15 th Week 13 th Nov-18 th Nov	1 st	Introduction to Video, Video in Multimedia Basics of Motion-Video, Sources of Motion-Video
	2 nd	Video formats, lines, frames, fields
	3 rd	TV Broadcast standards- PAL, NTSC, SECAM
	4 th	MPEG Compression
16 th Week 20 th Nov-25 th Nov	1 st	Question Answer Discussion/Quiz
	2 nd	Revision of Chapter 1, 2 &3
	3 rd	Revision of Chapter 4, 5 &6
	4 th	Revision of Chapter 6,7 &8
17 th Week 27 th Nov-30 th Nov	1 st	Revision of Chapter 9,10,11&12
	2 nd	Previous year questions discussion

Signature of Academic Coordinator

Signature of Faculty
29/07/23