


ACADEMIC LESSON PLAN 2022 (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 : 15/09/2022 to 22/12/2022 No. of weeks : 15	
Week	Class Day	Theory / Practical Topics	Remark
1 st Week 15 th Sept-17 th Sept	1 st	Introduction to Computer Graphics Applications of Computer Graphics & Multimedia Computer graphics in CAD, Presentation Graphics, Computer Art,	
	2 nd	Entertainment, Education & Training Visualization, Image Processing, Graphic User Interface, Multimedia Concepts	
2 nd Week 19 th Sept -24 th Sept	1 st	Question Answer Discussion/Quiz	
	2 nd	Overview of Graphics System, Raster Scan Display	
	3 rd	Random Scan Display, Difference between Raster scan display and Random Scan Display	
	4 th	Graphics Input Devices used for graphics, Graphics Software.	
3 rd Week 26 th Sept-1 st Oct	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 03 rd Oct -8 th Oct	1 st	Puja Vacation	
	2 nd		
	3 rd		
	4 th		
5 th Week 10 th Oct- 15 th Oct	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, Flood fill algorithm	
6 th Week 17 th Oct- 22 nd Oct	1 st	Question Answer Discussion/Quiz	
	2 nd	Definition of 2D Transformation, Types of 2D transformation, Translation, Rotation	
	3 rd	Scaling, Reflection, Shear	
	4 th	Matrix representation and Homogenous coordinate system, Composite transformation	
7 th Week 25 th Oct-29 th Oct	1 st	What is 2D viewing, viewing pipeline, viewing coordinate reference frame, Window to view port coordinate transformation	
	2 nd	What is Clipping, Line clipping concept, Polygon Clipping	
	3 rd	Question Answer Discussion/Quiz	
8 th Week 31 st Oct -5 th Nov	1 st	Three-Dimensional Object Representations Polygon surface, Polygon table, Plane equation	
	2 nd	Polygon mesh, Quadric surfaces, Sphere	
	3 rd	Ellipsoid, Spline representation	
	4 th	Bezier curves & Surfaces	

9 th Week 7 th Nov -12 th Nov	1 st	B-Spline curves & surfaces	
	2 nd	Question Answer Discussion/Quiz	
	3 rd	Three Dimensional Geometric & Modeling Transformations Definition of 3D transformation, Its types, Translation, Rotation	
	4 th	Scaling, Reflection, Shear	
10 th Week 14 th Nov -19 th Nov	1 st	Composite transformation Modeling & Coordinate transformation	
	2 nd	Three-Dimensional Viewing Viewing pipeline, Viewing coordinates	
	3 rd	Parallel projection, Perspective projection	
	4 th	Differences between Parallel Projection and Perspective projection, Concept of 3D clipping	
11 th Week 21 st Nov -26 th Nov	1 st	Different Types of 3D clipping	
	2 nd	Question Answer Discussion/Quiz	
	3 rd	Illumination Model & Surface Rendering Methods Different light sources used in 3D modeling	
	4 th	Basic Illumination model, Ambient light, Diffuse reflection, Specular reflection	
12 th Week 28 th Nov -3 rd Dec	1 st	Introduction to Digital Audio Basics of Acoustics, Psychoacoustics, Musical sound and noise, elementary sound system, Microphones,	
	2 nd	Amplifiers, digital audio formats	
	3 rd	Audio compression (LPC), Sub Band Encoding	
	4 th	Question Answer Discussion/Quiz	
13 th Week 5 th Dec -10 th Dec	1 st	Introduction to Digital Image Vector and raster Graphics Digital representation of image,	
	2 nd	colour, 16-bit, 24-bit colour depth Colour Characteristics-Hue, saturation, Luminance,	
	3 rd	Colour Palette, Image formats- JPEG, BMP,TIFF, GIFF image format	
	4 th	Image evaluation, Layers, Filters	
14 th Week 12 th Dec-17 th Dec	1 st	Image manipulation-scaling, cropping, rotation	
	2 nd	Question Answer Discussion/Quiz	
	3 rd	Introduction to Video, Video in Multimedia Basics of Motion-Video, Sources of Motion-Video	
	4 th	Video formats, lines, frames, fields	
15 th Week 19 th Dec-22 nd Dec	1 st	TV Broadcast standards- PAL, NTSC, SECAM	
	2 nd	MPEG Compression	
	3 rd	Question Answer Discussion/Quiz	
	4 th	Doubt clearing, Last year questions discussion	


 Signature of Faculty