

L. D. College of Engineering, Ahmedabad – 15
LESSON PLAN

Over all Term Planning	
Branch:	Information Technology
Semester:	B.E 5 th SEM
Subject Name:	Computer Graphics
Subject Code:	2151603
Affiliating University:	Gujarat Technological University
Starting date of the term:	18/6/2018
Ending date of the term:	17/10/2018
Course Teacher:	Prof. Pradip R. Patel

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks						Total Marks
L	T	P		Theory Marks			Practical Marks			
				ESE (E)	PA (M)		ESE (V)		PA (I)	
				PA	ALA	ESE	OEP			
4	0	2	6	70	20	10	20	10	20	150

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment;

Syllabus:

Sr. No.	Content	Total Hrs	% Weightage
1	Basic of Computer Graphics: Basic of Computer Graphics, Applications of computer graphics, Display devices, Random and Raster scan systems, Graphics input devices, Graphics software and standards	06	15
2	Graphics Primitives: Points, lines, circles and ellipses as primitives, scan conversion algorithms for primitives, Fill area primitives including scan-line polygon filling, inside-outside test, boundary and flood-fill, character generation, line attributes, area-fill attributes, character attributers.	08	20
3	2D transformation and viewing: Transformations (translation, rotation, scaling), matrix representation, homogeneous coordinates, composite transformations, reflection and shearing, viewing pipeline and coordinates system, window-to-viewport transformation, clipping including point clipping, line clipping (cohen-sutherland, liang- bersky, NLN), polygon clipping	08	20
4	3D concepts and object representation: 3D display methods, polygon surfaces, tables, equations, meshes, curved lies and surfaces, quadric surfaces, spline representation, cubic spline interpolation methods, Bazier curves and surfaces, B-spline curves and surfaces	06	15
5	3D transformation and viewing: 3D scaling, rotation and translation, composite transformation, viewing pipeline and coordinates, parallel and perspective transformation, view volume and general (parallel and perspective) projection transformations	08	20

6	Advance topics: visible surface detection concepts, back-face detection, depth buffer method, illumination, light sources, illumination methods (ambient, diffuse reflection, specular reflection), Color models: properties of light, XYZ, RGB, YIQ and CMY color models	06	10
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Reference Books:

1. Computer Graphics, D.Hearn And P.Baker - Pearson Education - C Version
2. Computer Graphics, with OpenGL Hearn and Baker, - Pearson
3. Computer Graphics, Foley and van Dam - Person Education

Lesson Plan

No of lectures: 2

Sr. No	Topic	Planned Date	Actual Date	Mode of Delivery	Resources required
1	Basic of Computer Graphics: Basic of Computer Graphics, Applications of computer graphics	18/06/18 20/06/18 25/06/18 27/06/18 02/07/18			
2	Display devices, Random and Raster scan systems, Graphics input devices, Graphics software and standards	04/07/18 09/07/18 11/07/18			
3	Graphics Primitives: Points, lines, circles and ellipses as primitives, scan conversion algorithms for primitives Quiz	16/07/18 18/07/18 23/07/18 25/07/18 30/07/18			
4	Scan-line polygon filling, inside-outside test, boundary and flood-fill, character generation, line attributes, area-fill attributes, character attributers.	01/08/18 06/08/18 08/08/18 13/08/18 20/08/18			
5	3D concepts and object representation: 3D display methods, polygon surfaces, tables, equations, meshes, curved lies and surfaces Quiz	27/08/18 29/08/18 05/09/18 10/09/18 12/09/18			
6	Quadric surfaces, spline representation, cubic spline interpolation methods	17/09/18 19/09/18 24/09/18 26/09/18			
7	Bazier curves and surfaces, B-spline curves and surfaces Quiz	01/10/18 03/10/18			
8	Revision and Question Paper Solving	08/10/18 10/10/18			

Faculty Sign