
	SRI VIDYA COLLEGE OF ENGINEERING & TECHNOLOGY COURSE PLAN (THEORY)	
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ACADEMIC YEAR: 2018 - 2019

Subject Code	CS6504	L	P	T	C
Subject Title	COMPUTER GRAPHICS	3	0	0	3
Year / Dept / Sem	III / CSE / V	Regulation Year		2013	
Faculty Name / Desg / Dept	S. GURURAGAVENDRAN / AP / CSE				
Course Prerequisite	-				

Attach the copy of syllabus

Course Objectives (CO)	<p>The student should be made to:</p> <p>CO1: Gain knowledge about graphics hardware devices and software used. CO2: Understand the two dimensional graphics and their transformations. CO3: Understand the three dimensional graphics and their transformations. CO4: Appreciate illumination and color models. CO5: Be familiar with understand clipping techniques.</p>
Expected Course Outcomes (ECO)	<p>At the end of the course, the students should be able to:</p> <p>ECO1: Design two dimensional graphics. ECO2: Apply two dimensional transformations. ECO3: Design three dimensional graphics. ECO4: Apply three dimensional transformations. ECO5: Apply Illumination and color models. ECO6: Apply clipping techniques to graphics. ECO7: Design animation sequences.</p>

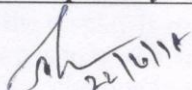
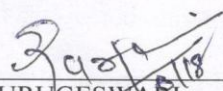
Mapping of CO & PO(Specify the PO's) - (Fill the col.s with the legend given below)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	B,2	A,2	-	-	-	-	-	-	-	-	-	-
CO2	-	-	B,3	B,2	-	-	G,2	-	G,1	-	-	-
CO3	-	-	C,2	-	H,1	-	-	-	-	-	-	-
CO4	-	F,2	-	G,2	-	-	-	-	G,2	-	-	-

Bridging the Curriculum Gap (Additional Topics beyond syllabus/Seminars/Assignments)	<p>BCG1: OpenGL (Assignment)</p> <p>BCG2: Flash Animation Project (Demo)</p> <p>BCG3: Multi Cloud based Multimedia Service</p>
Related Website URLs	<p>W1: http://cse18-iiith.vlabs.ac.in/</p> <p>W2: https://helpx.adobe.com/creative-cloud/help/animate-characters-mixamo.html</p> <p>W3: https://www.sciencedaily.com/terms/morphing.htm</p>
Related Video Course Materials (min. 3 no.s)	<p>V1: https://www.youtube.com/watch?v=5b2eKCMTq-A</p> <p>V2: https://www.youtube.com/watch?v=AfJ1g1wWVvI</p> <p>V3: https://www.youtube.com/watch?v=gB9n2gHsHN4</p>

S.No	Topic Name	Book – P. No	Teaching Aids	No of hrs	Cumulative hrs
UNIT I INTRODUCTION					
1.	Survey of computer graphics	T1/22-54	BB	1	1
2.	Overview of graphics systems – Video display devices, Raster scan systems, Random scan systems	T1/56-77	LCD	1	2
3.	Graphics monitors and Workstations, Input devices, Hard copy Devices, Graphics Software	T1/77-102	BB	1	3
4.	Output primitives – points and lines, line drawing algorithms	T1/104-113	BB	3	6
5.	Loading the frame buffer, line function	T1/114-116	LCD	1	7
6.	Circle generating algorithms	T1/117-129	OHP	2	9
7.	Ellipse generating algorithms	T1/130-133	OHP	2	11
8.	Pixel addressing and object geometry, filled area primitives.	T1/134-150	BB	1	12
9.	Recap of Unit I	-	-	1	13
UNIT II TWO DIMENSIONAL GRAPHICS					
1.	Two dimensional geometric transformations	T1/203-208	LCD	1	14
2.	Matrix representations and homogeneous coordinates	T1/208-210	LCD	1	15
3.	Composite transformations	T1/211-220	LCD	1	16
4.	Two dimensional viewing – viewing pipeline	T1/237-239	BB	1	17
5.	Viewing coordinate reference frame	T1/239-240	BB	1	18
6.	Window-to-viewport coordinate transformation	T1/240-242	LCD	1	19
7.	Two dimensional viewing functions	T1/242-233	BB	1	20
8.	Clipping operations – point, line, and polygon clipping algorithms.	T1/244-263	BB & LCD	4	24
9.	Recap of Unit II	-	-	1	25
UNIT III THREE DIMENSIONAL GRAPHICS					
1.	Three dimensional concepts; Three dimensional object representations	T1/316-323	LCD	1	26
2.	Polygon surfaces- Polygon tables- Plane equations - Polygon meshes	T1/324-330	LCD	1	27
3.	Curved Lines and surfaces, Quadratic surfaces; Blobby objects; Spline representations	T1/330-340	LCD	2	29
4.	Bezier curves and surfaces -B-Spline curves and surfaces	T1/347-365	BB	2	31
5.	Three dimensional geometric and modeling transformations(Translation, Rotation, Scaling, composite transformations)	T1/427-445	LCD	2	33
6.	Three dimensional viewing(viewing pipeline, viewing coordinates)	T1/451-459	BB	2	35
7.	Projections, Clipping	T1/460-483	LCD	1	36
8.	Visible surface detection methods.	T1/489-513	BB	2	38
9.	Recap of Unit III	-	-	1	39
UNIT IV ILLUMINATION AND COLOUR MODELS					
1.	Light sources - basic illumination models	T1/516-531	BB	1	40
2.	Halftone patterns and dithering techniques (Properties of light)	T1/ 536-541, 585-588	BB	1	41
3.	Standard primaries and chromaticity diagram	T1/588-590	LCD	1	42
4.	Intuitive colour concepts- - RGB colour model	T1/591-594	LCD	1	44
5.	YIQ colour model - CMY color model	T1/594-595	LCD	1	45

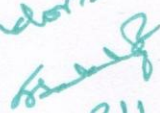
6.	HSV colour model - HLS colour model, Colour selection.	T1/595-597, 599-601	LCD	1	46
7.	Recap of Unit IV	-	-	1	47
UNIT V ANIMATIONS & REALISM					
1.	Design of animation sequences	T1/604	BB	1	48
2.	Animation function , raster animation	T1/606-607	BB	1	49
3.	Motion specification,	T1/614	LCD	1	50
4.	Morphing, Tweening.	T1/608	LCD	1	51
5.	Tiling the plane, recursively defined curves	T1/Notes	LCD	1	52
6.	Koch curves , c curves, dragons, space filling curves	T1/387,Notes	LCD	2	54
7.	Fractals, grammar based models, fractals	T1/Notes	BB & LCD	2	56
8.	Turtle graphics, ray tracing.	T1/547	BB	2	58
9.	Recap of Unit V	-	-	1	59

	<i>Prepared by</i>	<i>Approved by</i>
Signature		
Name	S. GURURAGAVENDRAN	Dr.P.MURUGESWARI
Designation	Assistant Professor / CSE	Professor & HOD (Dept)
Signed date	22.06.2018	22.06.2018

LEGEND:**METHODOLOGY TO MAP OBJECTIVE WITH OUTCOME**

Course outcomes are achieved through

- a. Suitable Analogies.
- b. Class room teaching.
- c. Assignments.
- d. Tutorials
- e. Weekly, monthly and model exams.
- f. Brain storming.
- g. Group discussion and role play.
- h. Seminars

/ Endorsed /

 (P.M)