

### Zagdu Singh Charitable 'Trust's (Regd.) THAKUR COLLEGE OF **ENGINEERING & TECHNOLOGY** (Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai\*) (Accredited Programmes by National Board of Accreditation, New Delhi\*\*)

A - Block, Thakur Educational Campus, Shyamnarayan Thakur Marg, Thakur Village, Kandivali (East), Mumbai - 400 101.



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TCET/FRM/IP-08/10 Revision: B

### **Semester Plan**

### (Practical / Tutorials / Assignment)

Semester: V Batches: LAB 213 A1,A3 Course: B.E.(IT)

Subject: Computer Graphics and Virtual Reality Class: T.E(IT) A Batch Size: 20

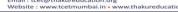
Laboratory faculty in charge: Mr. Sandip Bankar Lab. Assistant /Attendant: Mr. Vinod Mourya

Sr.	TITLES	Planned Date	Completion Date	Remarks
No.	Experiments / Tutorials / Assignment (Planning with use of Technology)	A1 A3	A1 A3	
	To draw different graphics objects / graphics primitives using basic graphics commands.	26/07/2017		
1	primitives using basic graphics commands.	27/07/2017		
2	To implement Digital Differential Analyzer line drawing algorithm and draw house using	26/07/2017		
	same algorithm.	27/07/2017		
	To implement Bresenham's line drawing	2/8/2017		
3	algorithm and draw any closed shape using same algorithm.	3/8/2017		
	Design/ Develo	ppment Experiments	:	
4	To implement midpoint circle drawing algorithm and draw Olympic symbol,	2/8/2017		
	concentric circle using same algorithm.	3/8/2017		
5	To Implement Area Filling algorithm using 4	9/8/2017		
	connected & 8 connected approach.	10/8/2017		
6	To implement Generation of 2D (Bezier)	16/8/2017		
	curves and fractals.	24/8/2017		
7	To implement 2-D Transformation on any polygon.	30/8/2017		
		31/8/2017		
8	To implement the line clipping algorithm (Cohen Sutherland and Liang Barsky Line	6/9/2017		
	clipping algorithm) and consider line in all three possible cases.	7/9/2017		



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9	To implement polygon clipping algorithm. Sutherland Hodgeman Polygon clipping algorithm and Weiler Atherton Polygon clipping algorithm.	13/9/2017 14/9/2017					
	Group Learning Activity:						
10	Case Study on: Case study of VRML to create & implement	4/10/2017					
	models in Virtual Reality.	5/10/2017					
11	Project: 1. To represent a 3D object using polygon	20/9/2017					
	surfaces and performs 3-D transformation 2. To implement Computer animation	21/9/2017					
12	IEEE Transaction: Towards Pervasive Augmented Reality: context awareness in Augmented Reality	16-8-17					

Bridge courses Objective: Bridging of gaps with respect to prerequisites and industry skills or to carryout research in that particular field. ( 30 Hrs / Semester / student)

S. No.	Bridge courses/Technology	Duration (Week/hrs)	Modes of Learning	Recommended Sources	
1.	Prerequisite course:  Matrix calculations in maths  Programming using C++ or Java	2 Weeks / 3 Hrs	Self- Learning/ Revision	http://www.tutswing.c om/cplusplus-home	
2	Advanced course:  Multimedia Systems, Gaming, Animation	06 Weeks / 2 Hrs	Technolo gy Based learning	https://ocw.mit.edu/courses/comparative-media-studies-writing/cms-608-game-design-fall-2010/study-materials/     https://ocw.mit.edu/courses/comparative-media-studies-writing/cms-608-game-design-fall-2010/study-materials/     https://www.university.youth4work.com/AAGAcademy-of-Animation-and-Gaming/study	



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1. Mini /Minor Projects Objective: To get hands on experience to execute projects with respect to student choice in the following areas. (30 Hrs / Semester / Student). (Total 120 Hrs)

### The areas are:

Research 2. Core 3. Interdisciplinary 4. Application 1.

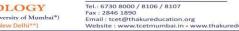
Minor project : As per University Scheme

Sr. No	Project Title/Group Size		Class		Type / Project Hours	Modes of Learning	Reference	
07	1. This OpenGL computer graphic project involves simulation of a racecar. 2. Create a STEAM ENGINE model. The Engine is made up of a Piston, Engine Pole, Cylinder Head, Flywheel, Crank Bell and a Crank using OpenGL.  Group Size- 3 Students Per Group		TE IT A		2-3	Minor	Technology Based Learning  • https://www.opengl.org/ • https://learnopengl.com/ • www.videotutorialsrock.com/ • https://www.vrs.org.uk/virtual-reality/what-is-virtual-reality.html • whatis.techtarget.com/Topics/DataCenter/Virtualization • http://cg.cs.uni-bonn.de/en/projects	
	Planned	Completed		Planned	Completed		Planned	Completed
No. of Prac.	Basic Exp: 03  Design Base Exp: 06  Group Learning: 02  Bridge Course: 02  Minor Project: 02		No. of Assign.	03		No. of Tutorial		
DOSLNE: DOSLE (engaged in some other dates):					:			



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Group activities are required to be added with the practical related to course to enhance the learning activity of the student in the course. Group activity includes: Group presentation, new experiment design, mini projects etc.

#### Note:

1. The practical plan date and completion date shall be in compliance. For any non-compliance reason(s) required to be stated

in remark column.

2. Learning objective and outcome shall be clearly stated with each of experiments/ tutorials/ assignments and are required to be

mapped at the end of the semester.

3. Entry for DOSLE (engaged on some other date) shall be done with proper mapping to DOSLNE.

sd/sd/sd/-

Mrs. Purvi Sankhe Dr. Rajesh Bansode Dr. R. R. Sedamkar

Name & Signature of Faculty Signature of HOD Signature of Principal/ Dean (Academics)

Date: 14/07/17 Date:14/07/17 Date: 14/07/17