Rayat Shikshan Sanstha's
Yashavantrao Chavan Institute of Science, Satara (Autonomous)

Department of Electronics

Capsule Courses

1. Programme offered : UG
2. Structure of Courses:

Duration	Theory Periods	Practical Periods	Total Periods	Credits	No. of Students in batch	Course Fee Rs.	Exam Fee Rs.
1 Month	-	10	10	1	20	100/-	50

3. Evaluation of Capsule Course

Assessments Type	Evaluation Method	Marks	Total Mark	Passing Requirement
Internal	Labwork	50	50	50%

4. Details of courses:

No. of Course	Title of Course	Type of Course	Target Audience	No of Enrolled students	Fee Collection	Details of Faculty		
						Name	Qualification	Designation
II	Introduction to 3D Printing and Design	Hand on Training	B.Sc-III	30	NIL	Mr. S.K. Shinde	M.Sc., NET	Assistant Professor

5. Syllabus:

1. TITLE: Introduction to 3D Printing and Design
2. Year of Implementation: 2020
3. Class : B.Sc - III

Syllabus

.

Contact Hrs: 10 **Credits: 01**

Learning Objectives:

1. Able to use 3D software to design a wide variety of objects for both personal and professional use.
2. To develop ability to print and customize 3D designs.

List of Experiment

(10)

1. Study of Tinkercad environment
2. Designing a 3D object using Tinkercad/ Fusion 360
3. Study of Simulation 3D object using Tinkercad/ Fusion 360
4. Design, fabrication a Gear in Tinkercad
5. 3D Modeling a Geared DC Motor Arm in Tinkercad
6. 3D Modeling a robotic arm gripper for servo motor
7. 3D Modeling Arduino nano case
8. Design, fabrication Linear servo actuator
9. Design, fabrication Servo Pan-tilt module
10. Tinkercad to Fusion 360 Rendering of 3d design

Learning Outcomes:

1. Design and Simulate wide variety of objects Using Tinkercad and Fusion 360.

2. Design and Develop various customize 3D model.

Recommended Books:

1. Kelly, J.F., 3D Modeling and Printing with Tinkercad: Create and Print Your Own 3D Models, 2014, Pearson Education.
2. Shaun C. Bryan, Tinkercad For Dummies For Dummies, (For Dummies (Computer/Tech)) (March 27, 2018),1st Edition.
3. A Beginner's Guide to 3D Modeling: A Guide to Autodesk Fusion 360 Paperback – June 11, 2019, No Starch Press (June 11, 2019)
4. Lydia Cline , 3D Printing with Autodesk 123D, Tinkercad, and MakerBot Paperback – November 27, 2014
5. Sachidanand Jha , Autodesk Tinkercad Exercises: 200 Practice Exercises For Teachers, Kids, Hobbyists and Designers Paperback – May 28, 2019