KG REDDY College of Engineering & Technology

KG Reddy College of Engineering & Technology
(Approved by AICTE, New Delhi, Affiliated to JNTUH, Hyderabad)
Chilkur (Village), Moinabad (Mandal), R. R Dist, TS-501504

A+ NAAC

Report

On

Advanced course

"3D Printing"

As a part of

Emerging Technology course

Under

Engineering for sustainable development program

19/06/2021 to 10/07/2021

Organized by

3D PRINTING CLUB
and
Mechanical Engineering Department

In association with
H&S Department

At

KG Reddy College of Engineering & Technology

Submitted by

Mrs. Kalpana Kilaru & Mr. S Suresh
Assistant professors
Department of Mechanical Engineering

ME,HoD

HEAD
DEPT. OF MECHANICAL ENGINEERING
K.G. REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
CHILKUR (V), MOINABAD, R.R. DIST, TS-501 504.

Principal

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KG Reddy College of Engineering & Technology
Chilkur (V), Moinabad (M),
R.R. Dist. Telangana.

Objectives and Outcome of the Advanced Course in 3D Printing.

Objectives:

- To introduce students to the advanced concepts and techniques of 3D Printing and Solid works.
- To develop skills for solving practical problem

Outcome:

Students will be able to

- Describe the Supervised solid works techniques.
- Design the components
- Part assembly

Course introduction

Course Name: Advanced Course in 3D Printing

Course duration: 4 – weeks

Total Number of Students-15

Organizing Department: Institutions Innovation Council

Collaborations: H & S dept., Center for Innovation and Social Transformation

Course offered by – 3D Printing club, Mechanical Engineering Department

Venue: T-412, KG Reddy College of Engineering and Technology, Hyderabad

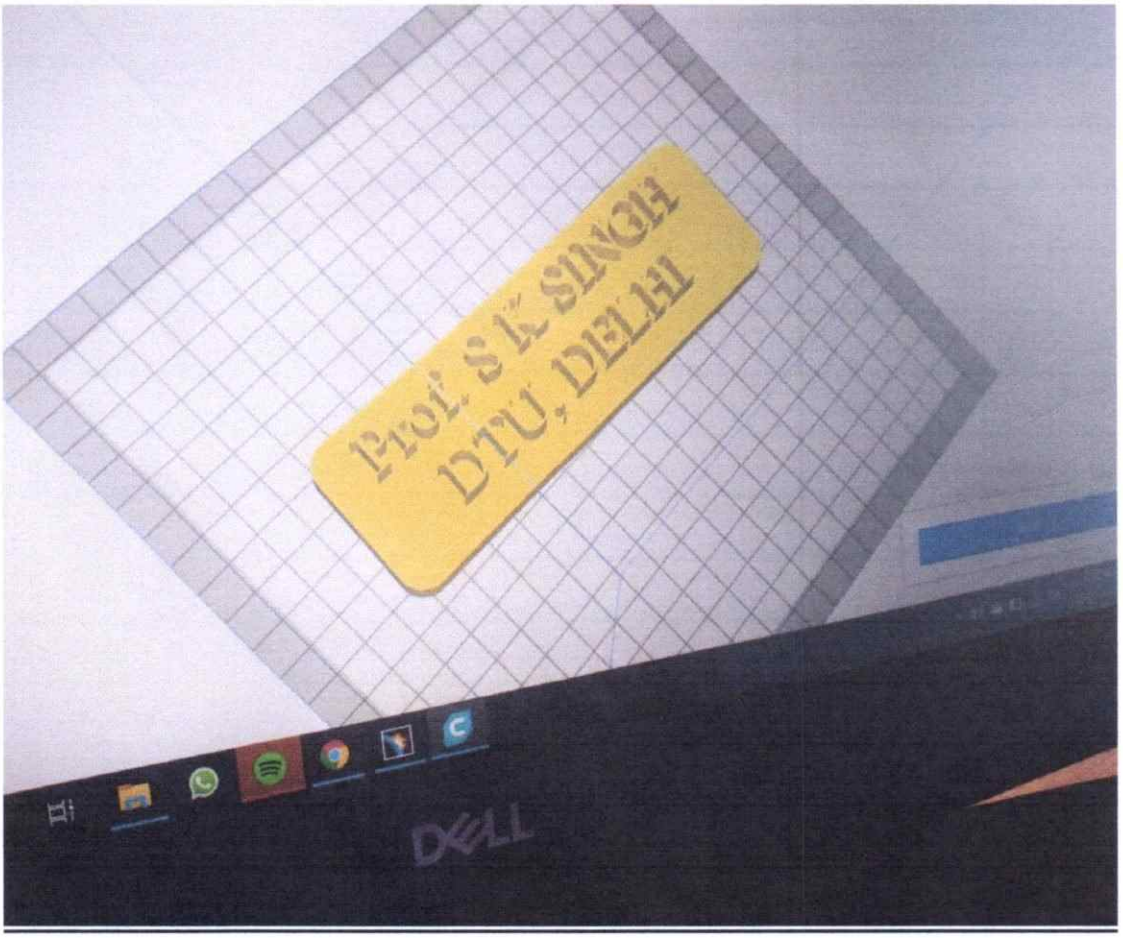
Speakers: Mr. S Suresh, Assistant Professor, Dept. of ME, KGRH

Mrs K Kalpana, Assistant Professor, Dept. of ME, KGRH

About the course: 3D Printing belongs to a class of techniques known as additive manufacturing, which builds objects layer-by-layer rather than through molding or subtractive methods. Additive manufacturing is leaping forward, silently and relentlessly transforming the world economy. This course is designed to help the freshmen students to understand the differences between traditional and advanced Manufacturing processes and also creates the awareness on latest technologies in Manufacturing & Design soft wares.

Solid Works is a solid modeling computer-aided design (CAD) and computer-aided engineering (CAE) computer program, that runs primarily on Microsoft Windows. it is a solid modeler, and utilizes a parametric feature-based approach which was initially developed by PTC (Creo/Pro-Engineer) to create models and assemblies. The software is written on Para solid-kernel. *Parameters* refer to constraints whose values determine the shape or geometry of the model or assembly. Parameters can be either numeric parameters, such as line lengths or circle diameters, or geometric parameters, such as tangent, parallel, concentric, horizontal or vertical, etc. Numeric parameters can be associated with each other through the use of relations, which allow them to capture design intent. *Design intent* is how the creator of the part wants it to respond to changes and updates. For example, you would want the hole at the top of a beverage can to stay at the top surface, regardless of the height or size of the can. Solid Works allows the user to specify that the hole is a feature on the top surface, and will then honor their design intent no matter what height they later assign to the can.

Photographs:



Explaining Introduction to Solid works design by Mr. S Suresh

COURSE STRUCTURE

Week 1:

Session1:

SolidWorks sketch tools: Line, Circle, Perimeter circle, Trim Entities, Relations, Centerline, Smart Dimensions, ellipse

Session2:

SolidWorks sketch tools: Spline, Fit Spline, Rectangle [Corner, Center, 3 Point Corner and Center, Parallelogram], Arc [Center Point, Tangent, 3 Point], Ellipse, Partial Ellipse, Parabola, Slot, Polygons, Fillet, Chamfer, Point, Text

Week 2:

Session3:

Sketch Commands: Extend Entities, Offset Entities, Mirror Entities, Move Entities, Copy Entities, Rotate Entities, Stretch Entities, Scale Entities, Linear Sketch Patter, Circular Sketch Patter, Display/Delete Relation, Add Relation, Fully Define Sketch, Quick Snaps

Session4:

3D Part Modelling: Extrude Boss/Base, Extruded Cut, Zoom Fit, Pan, View Orientation, Orbit, Normal To, Display Style, Zoom to Area, How to Edit Feature in SolidWorks.

Week 3:

Session5:

3D Part Modelling: Fillet, Variable Radius, Full Round Fillet, Face Fillet, Chamfer, Plane, Mirror, Measure, Mass Properties

Session6:

3D Part Modelling: SolidWorks Rib Feature and Draft Command, Crate rib parallel to sketch and normal to sketch, draft parting line, draft angle, draft neutral plane ,step draft, draftface propagation, draft one side.

Week 4:

Session7:

Linear and Circular Patter Tool:extrude boss base, extrude cut, mirror, circular patter, through cut, extrude to next surface, linear patter.

Session8:

Test

Activity:

Design of phone holder

Assessment:

Design of machine components through test printing

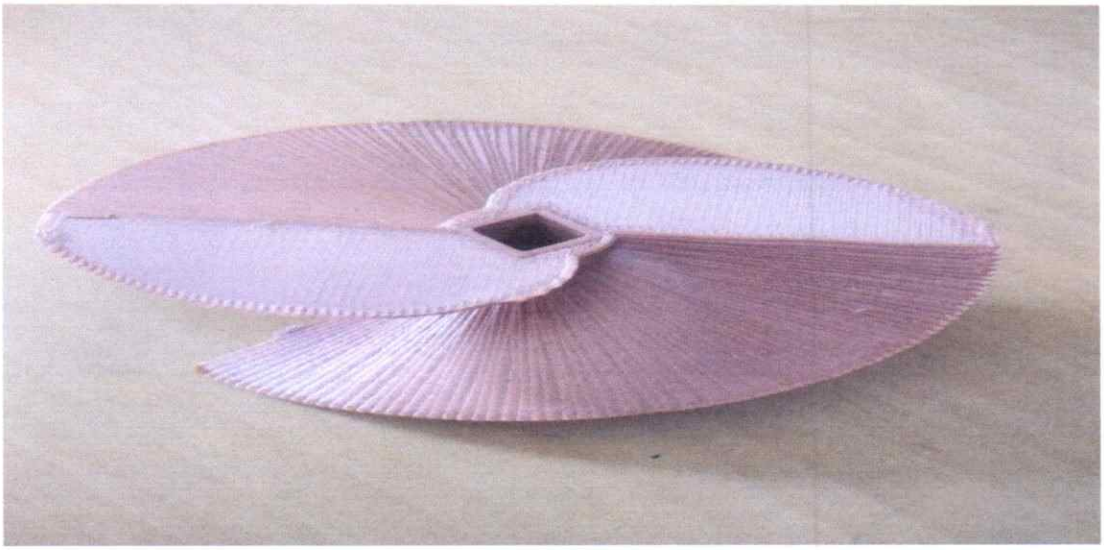
3D PRINTING CLUB

ASSESMENT TEST : **Max Marks : 25**

Design the following components by using solid works and creality 20 3D Printer :

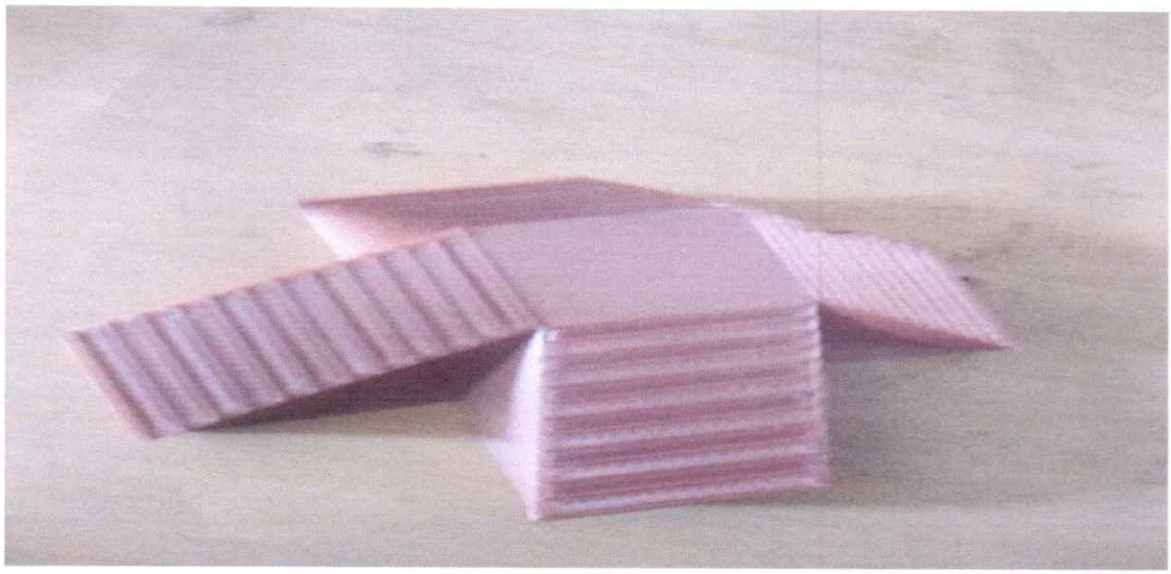
1. Archimedes screw
2. 3 tooth plastic crushing blade
3. Toy creating illusion
4. Sprocket key chain
5. Mechanical bush
6. KGRCET neme plate
7. Height adjustable phone holder

Archimedes screw :

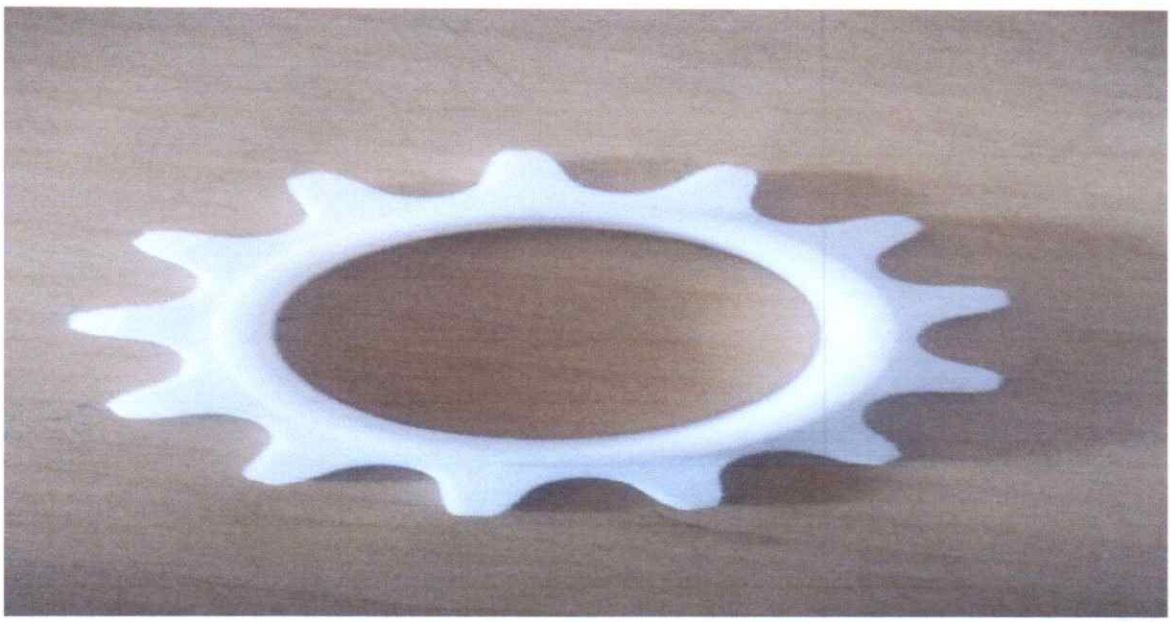


3 Tooth plastic crushing blade

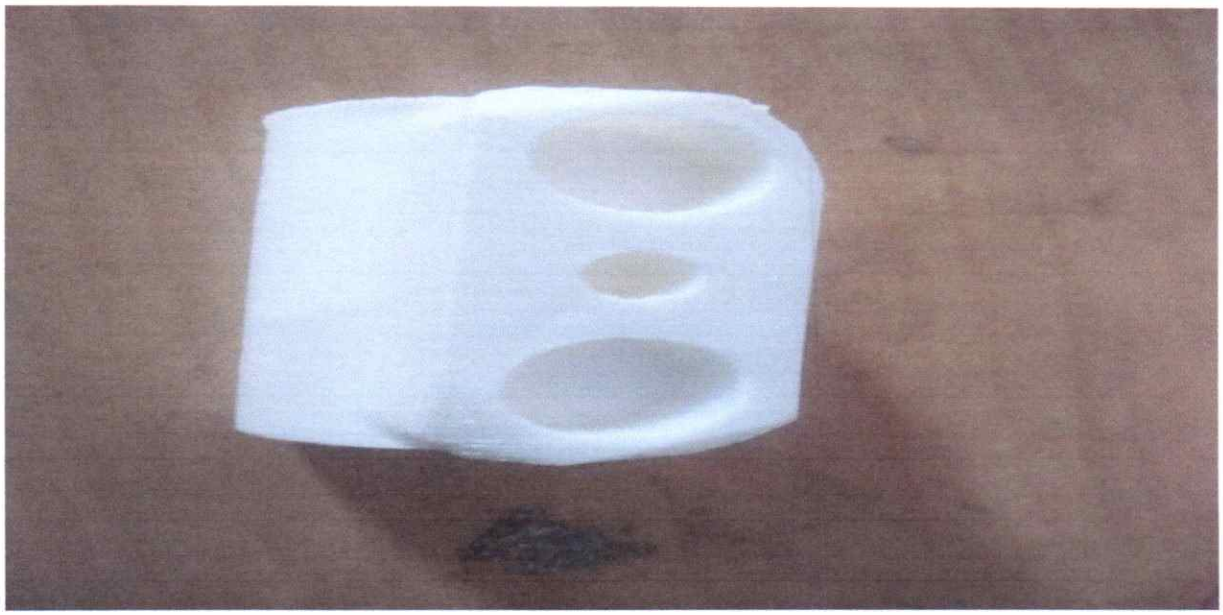
Toy creating illusion



Sprocket key chain



Mechanical bush



KGRCET Name plate

Height adjustable phone holder

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3D PRINTING CLUB

ASSESMENT TEST marks **Max Marks : 25**

Evaluator ; Mr. Mahesh R Reddy

S.no	Name of the student	Roll Num	Prototype	Marks
1	Pusthakala Harika	20QM1A0306	Archimedes screw	25
2	K Mounika	20QM1A0540	3 tooth plastic crushing blade	24
3	N Jaanvi	20QM1A6652	Toy creating illusion	25
4	K Nitya sri	20QM1A6719	Sprocket key chain	24
5	K Deepika	20QM1A6723	Mechanical bush	30
6	M Srinidhi	20QM1A6730	KGRCET neme plate	23
7	S Chaithanya	20QM1A6737	Height adjustable phone holder	23
8	K Shiva	20QM1A0549	Archimedes screw	25
9	G Vivek	20QM1A6621	3 tooth plastic crushing blade	25
10	Tehmeena begum	20QM1A0596	Toy creating illusion	25
11	Raman suvekha	20QM1A0577	Sprocket key chain	25
12	K Shiva	20QM1A0549	Mechanical bush	24
13	A supriya	20QM1A0508	KGRCET neme plate	25
14	E vamshi	20QM1A0532	Height adjustable phone holder	24
15	Geetha shivani	20QM1A05A3	Height adjustable phone holder	24

Club-Coordinator

HoD, ME

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CHILKUR (V), MOINABAD (M), R.R. DIST, TS-501 504.

Attendance :

List of users in meeting ESD 3D Printing Advance Course at 6/19/2021:10:28:19 AM

Sorted by first name:
A supriya
G Vivek
Geetha Shivani
Harika
janavi
KILARU KALPANA
Mahesh(3D print coord)
Mutyala srinidhi
R.K.Sahil Singh 574
Raman Suvekha
shiva
Somalla Suresh
Tehmeena begum

Sorted by last name:
R.K.Sahil Singh 574
Tehmeena begum
Mahesh(3D print coord)
KILARU KALPANA
Geetha Shivani
Mutyala srinidhi
A supriya
Somalla Suresh
Raman Suvekha
G Vivek
Harika
janavi
shiva

Club-Coordinator

HoD, ME

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Attendance :

List of users in meeting ESD 3D Printing Advance Course at 6/26/2021:10:28:19 AM

Sorted by first name:
A supriya
G Vivek
Geetha Shivani
Harika
janavi
KILARU KALPANA
Mahesh(3D print coord)
Mutyala srinidhi
R.K.Sahil Singh 574
Raman Suvekha
shiva
Somalla Suresh
Tehmeena begum

Sorted by last name:
R.K.Sahil Singh 574
Tehmeena begum
Mahesh(3D print coord)
KILARU KALPANA
Geetha Shivani
Mutyala srinidhi
A supriya
Somalla Suresh
Raman Suvekha
G Vivek
Harika
janavi
shiva

Club Coordinator

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KG REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
CHILKUR (V), MOINABAD, R.R. DIST, TS-501 504.

Attendance :

List of users in meeting ESD 3D Printing Advance Course at 07/03/2021:10:28:19 AM

Sorted by first name:
A supriya
G Vivek
Geetha Shivani
Harika
janavi
KILARU KALPANA
Mahesh(3D print coord)
Mutyala srinidhi
R.K.Sahil Singh 574
Raman Suvekha
shiva
Somalla Suresh
Tehmeena begum

Sorted by last name:
R.K.Sahil Singh 574
Tehmeena begum
Mahesh(3D print coord)
KILARU KALPANA
Geetha Shivani
Mutyala srinidhi
A supriya
Somalla Suresh
Raman Suvekha
G Vivek
Harika
janavi
shiva

Club Coordinator

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Attendance :

List of users in meeting ESD 3D Printing Advance Course at 07/10/2021:10:28:19 AM

Sorted by first name:
A supriya
G Vivek
Geetha Shivani
Harika
janavi
KILARU KALPANA
Mahesh(3D print coord)
Mutyala srinidhi
R.K.Sahil Singh 574
Raman Suvekha
shiva
Somalla Suresh
Tehmeena begum

Sorted by last name:
R.K.Sahil Singh 574
Tehmeena begum
Mahesh(3D print coord)
KILARU KALPANA
Geetha Shivani
Mutyala srinidhi
A supriya
Somalla Suresh
Raman Suvekha
G Vivek
Harika
janavi
shiva

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KGRCET/MECH/DDC/CIRCULAR/2020-21/SEM-II/ Date: 17/06/2021

Department of Mechanical Engineering

Circular

It is here by informed that Mechanical Department – 3D Printing Club is organizing A **"Advanced course on 3D Printing"** on 19th -June-2021 to I year Students. So, all the students are instructed to attend the session without fail and utilize the opportunity.

Mech,HoD

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Copy to

- All MECH Faculty members
- Head of the Departments
- Students

KG REDDY College of Engineering & Technology
Engineering India's Changemakers

ACCREDITED WITH GRADE A+ NAAC

3D PRINTING CLUB

Department of Mechanical Engineering

Certificate of participation

This is to certify that Mr/Mrs Raman Suvekha has successfully completed the Advanced Course in 3D Printing.

Mrs. K Kalpana	Mr S Suresh	Mr. Mahesh R Reddy	Dr R S Jahagirdhar
Club Co-ordinator	**Club Co-ordinator**	**HOD**	**Principal**

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3D PRINTING CLUB

Department of Mechanical Engineering

Certificate of participation

This is to certify that Mr/Mrs G. vivek has successfully completed the Advanced Course in 3D Printing.

Mrs. K Kalpana	Mr S Suresh	Mr. Mahesh R Reddy	Dr R S Jahagirdhar
Club Co-ordinator	**Club Co-ordinator**	**HOD**	**Principal**

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& Technology
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Department of Mechanical Engineering

Certificate of participation

This is to certify that Mr/Mrs Pusthakala Havika has successfully completed the Advanced Course in 3D Printing.

Mrs. K Kalpana	Mr S Suresh	Mr. Mahesh R Reddy	Dr R S Jahagirdhar
Club Co-ordinator	**Club Co-ordinator**	**HOD**	**Principal**

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