



Report on 3 days workshop
“Industry 4.0 - Industrial Design, Visualisation & Conceptualisation”

Conducted *by* **Mrs .Vaishnavi Vignesh Raja and Team,**

Director - Equad Engineering Services VP - Operations & Strategy - SECO Controls Pvt. Ltd.

29.10.2021

October 27,28 & 29 , 2021, Time:9.00 PM to 4.00 PM

School of Mechanical Sciences, BSACIST in Association

With

MSME (Govt of India) & Equad Engineering Services

Organized a workshop on

“Industry 4.0 - Industrial Design, Visualization & Conceptualization”

<p><u>Convenor</u></p> <p>Dr.S.Rasool Mohideen , Dean SMS School of Mechanical Sciences, BSA Crescent Institute of Science and Technology</p> <p><u>Coordinator</u></p> <p>Dept. of Mechanical Engineering Dr.S.Ravikumar, Asst Professor Department of Mechanical Engineering School of Mechanical Sciences, BSA Crescent Institute of Science and Technology</p>	<p>Speaker:</p> <p>Mrs .Vaishnavi Vignesh Raja, Director - EQUad Engineering Services VP - Operations & Strategy - SECO Controls Pvt. Ltd. Chennai, Tamilnadu, India.</p> <p>&</p> <p>Equad Engineering service team</p>
--	--

PREAMBLE

The Industry 4.0 - Industrial Design Visualisation & Conceptualisation” workshop was organized by Department of Mechanical Engineering along with MSME (Govt of India) and Equad Engg services Pvt Ltd. The workshop was inaugurated by Dr.S.Rasool Mohideen , Dean SMS . The introduction was delivered by Mrs. Vaishnavi Vignesh Raja,. Director - Equad Engineering Services, VP - Operations & Strategy - SECO Controls Pvt. Ltd.

Around 37 students from Mechanical department participated in the workshop.

The workshop Outcome is to make:

1. Understand how to envision & translate an industrial engineering problem into a Design Solution
2. Emphasis on practical modelling for improved thinking in Dynamic Mechanical Design
3. Techniques to handle critical design parameters and processes for an industrial product
4. Enable Effective use of 2D Drafting & 3D Modelling and Analysis Platforms
5. Systematically design modules for Prototyping and Production

The three days' workshop covered the following topics

- Approach to overall industrial mechanical design
- Observe how Industry 4.0 impacts and affects Industrial Mechanical Design
- Design sketching & modelling techniques
- How to modularize mechanical design
- Difference in design for standard parts and custom design
- How to arrive at schematics of design
- Distinguish in design approach between prototype design & product design
- Understanding how to identify critical and noncritical dimensions
- Interpret how to predict efficiency and performance issues in design (4.0)
- Understand manufacturing sequence and machine tolerance impact in design (4.0)

- Impact of design on product endurance
- Detailed design and drafting in – CADD software
- Live industry examples; modules and exercises
- Diy – component / tool / equipment innovative design (4.0)

Session Wise Details

Approach to industrial design visualization and conceptualization

SESSION-1

1. INTRODUCTION TO METHODOLOGY

1.1 What is Engineering Design in today's Industry 4.0 world

1.2 Four Step Process

1.3 Familiarization

2. APPROACH TO THE OVERALL DESIGN

2.1 Overview

2.2 Requirement / Specification

2.3 Four Aspects of Requirements

SESSION-2

3. VISUALIZATION - FIRST STEP TOWARDS ENGINEERING DESIGN

3.1 Concept Sketch

3.2 Knowledge Gap Table

4. DESIGN FROM VISUALIZATION TO ACTUALIZATION

4.1 MODULARISATION

4.2 What is a Module

4.3 Rules of Modularization

4.4 Module Specifications

4.5 Interface Description

SESSION-3

5. ENGINEERING DESIGN (Part -1)

5.1 Part Design – Use of Standard Parts / Custom Design

5.2 Drawing / Schematics

5.3 Design for Prototype Vs Design for Production - Prototype Stages

5.4 Review

5.5 Documentation of Anticipated Problems

6. ENGINEERING DESIGN (Part-2)

6.1 Material Selection / Component selection

6.2 Dimension Logics

6.2.1 Arriving Dimensions for Each Part

6.2.2 Identifying Critical, Non critical and Matching Dimensions

6.3 Performance

6.4 Efficiency

6.5 Manufacturing / Dimensional

6.6 Process Window / Process Parameter

6.7 Manufacturing Sequence / Machine Tolerance

6.8 Failure Limit / Factor of Safety

6.9 Endurance / Life

SESSION-4

7. MANUFACTURING SEQUENCE

SESSION-8

8. DOCUMENTATION

8.1 Drafting

8.2 Bill of materials

8.3 Test case

8.3.1 How to test a module

8.4 Review / review sheet

SESSIONS- 5 &6

Exercises - practice sessions

Live examples (Real time with Industry 4.0 case studies)

Do it yourself component / tool / equipment design

At the end of the workshop on 3rd day certificates were issued

The certificates were issued by Dr.S.Rasool Mohideen , Dean SMS.

Finally Dr. S.Ravikumar - Coordinator concluded the workshop with Vote of thanks .



Coordinator



HOD (Mech)

The participants list

Sl no	NAME (with intials)	Email Address	Mobile no
1	G MOHAMMED MUZAFFAR	mohammadmuzaffar1111@gmail.com	6309363153
2	T.Mohamed fazil	fazilmds2002@gmail.com	7305396138
3	k.s.keerthivasan	k.s.keerthivasan@gmail.com	9500123863
4	Chandraprakash C	chandru.cp2000@gmail.com	7338806687
5	Mohamed Hairur Raheem	mohamedhairurraheem@gmail.com	9677957494
6	T Deepakkumar	deepakkumar2000cs@gmail.com	8072282073
7	N.MD ABUTHAHIR KALAM	abuthahirkalam@gmail.com	8056031378
8	Gowtham kumar TA	ashokangowtham6656@gmail.com	9789913650
9	Shahidafin	shahidafin6538@gmail.com	9486006000
10	SUHAIL DIAUDDIN	suhailsyed2000.26@gmail.com	9677114316
11	Ayisha Siddiqa. H	siddiqaayisha13@gmail.com	6379679849
12	Sathish	sathish.aero_2019@crescent.education	8838784544
13	A.VISHAL	avishal1772000@gmail.com	7448559768
14	R.ragul raj	ragulron10e21@gmail.com	9597221606
15	Mohammed Asif S	mohammedasif.14003@gmail.com	951407403
16	Mohamed Athil	aathilsha456@gmail.com	8838848282
17	Shaik Abdul Wazeed	abdulwazeedmech9@gmail.com	9182090006
18	Subramanian.S	subramanian.aero_2019@crescent.education	9790692505
19	Muzahir Mahmood A	200121601004@crescent.education	9003593678
20	S.mohammed abubackar	abubac163@gmail.com	
21	Ajmal mohamed.k	ajmalmohamed2001@gmail.com	9443720896
22	MOHAMMED KAIF	Mdkaifznkhi@gmail.com	9705062479
23	Meesam Raza	mirmeesamraza.aero_2019@crescent.education	8939258014
24	Vishal Thirumurugan	vishal.aero_2019@crescent.education	7904679927
25	Shaik mandem sufiyan	sufiyansuri4321@gmail.com	6301543773
26	Mohamed Hannifa S	mohamedhannifa03@gmail.com	8838617188
27	S. Skanth	skanthmoorthy@gmail.com	9003698238
28	MOHAMMED KAIF	Mdkaifznkhi@gmail.com	9705062479
29	Bharat Raj	bharatrajmurugan@gmail.com	7904080916
30	Arun Benny	bennypaul052000@gmail.com	8056104999
31	Ananthkrishnan. M	ananthkrishnanm26@gmail.com	8870149384
32	Noufal Akram	noufalakram7@gmail.com	6380110337
33	M. Mohammad ibrahim	ibrahimems2002@gmail.com	8925050761

34	Syed Ashfaq Ahamed	ash03q@gmail.com	9840322293
35	Benny Paul	bennypaul052000@gmail.com	8056104999
36	Dhanwanth S	200091601006@crescent.education	7358202282
37	G MOHAMMED MUZAFFAR	mohammadmuzaffar1111@gmail.com	6309363153

"In the Name of Allah, The Most Beneficent, The Most Merciful"



B.S. Abdur Rahman

Crescent

Institute of Science & Technology
Deemed to be University u/s 3 of the UGC Act, 1956
GST Road, Vandalur, Chennai 600 048



School of Mechanical Sciences

in Association with

MSME (Govt. of India) & Equad Engineering Services Pvt Ltd

With hands on training



3 days workshop on

Industry 4.0 Industrial Design Visualization & Conceptualization

27.10.2021 to 29.10.2021



**INDUSTRY
4.0**

Additional Features

- ⇒ Free Internship for Participants
- ⇒ Placement Assistance

UG | PG
2nd | 3rd | 4th Year
Mech | Aero
Auto | Polymer

Convenor
Dr. S. Rasool Mohideen, Dean SMS

Coordinator
Dr. S. Ravikumar, AP, Mech

Co-Coordinator
Mr. S. Arulmozhiselvar, AP, Aero
Mr. N. Kamesh, AP, Auto
Dr. J. Shahitha Parveen, AP, Poly



B.S. Abdur Rahman
Crescent
Institute of Science & Technology
Deemed to be University u/s 3 of the UGC Act, 1956
GST Road, Vandalur, Chennai 600 048



School of Mechanical Sciences

in Association with



MSME (Govt. of India) & Equad Engineering Services Pvt Ltd

With hands on training



**3 days workshop on
Industry 4.0**



Industrial Design Visualization & Conceptualization

27.10.2021 to 29.10.2021

**Seminer Hall, 3rd floor, Mechanical Sciences Block
School of Mechanical Sciences**



**INDUSTRY
4.0**

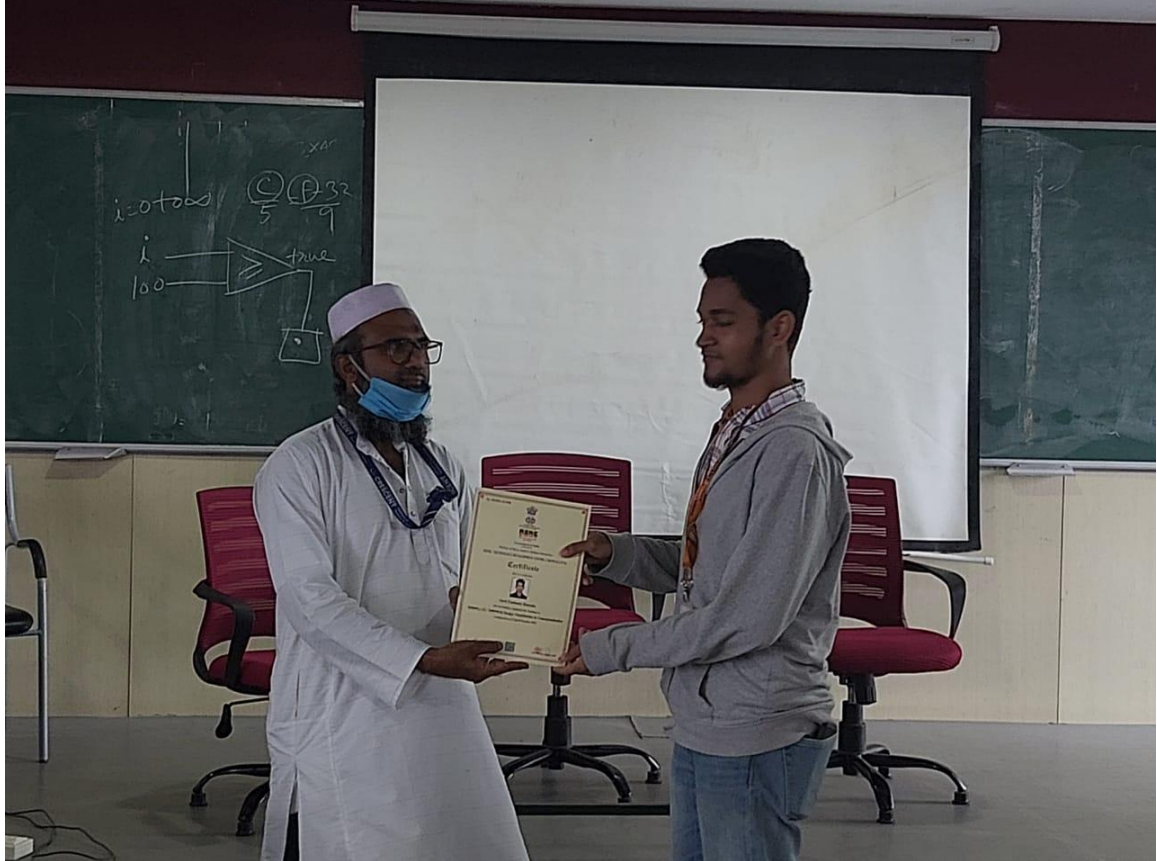


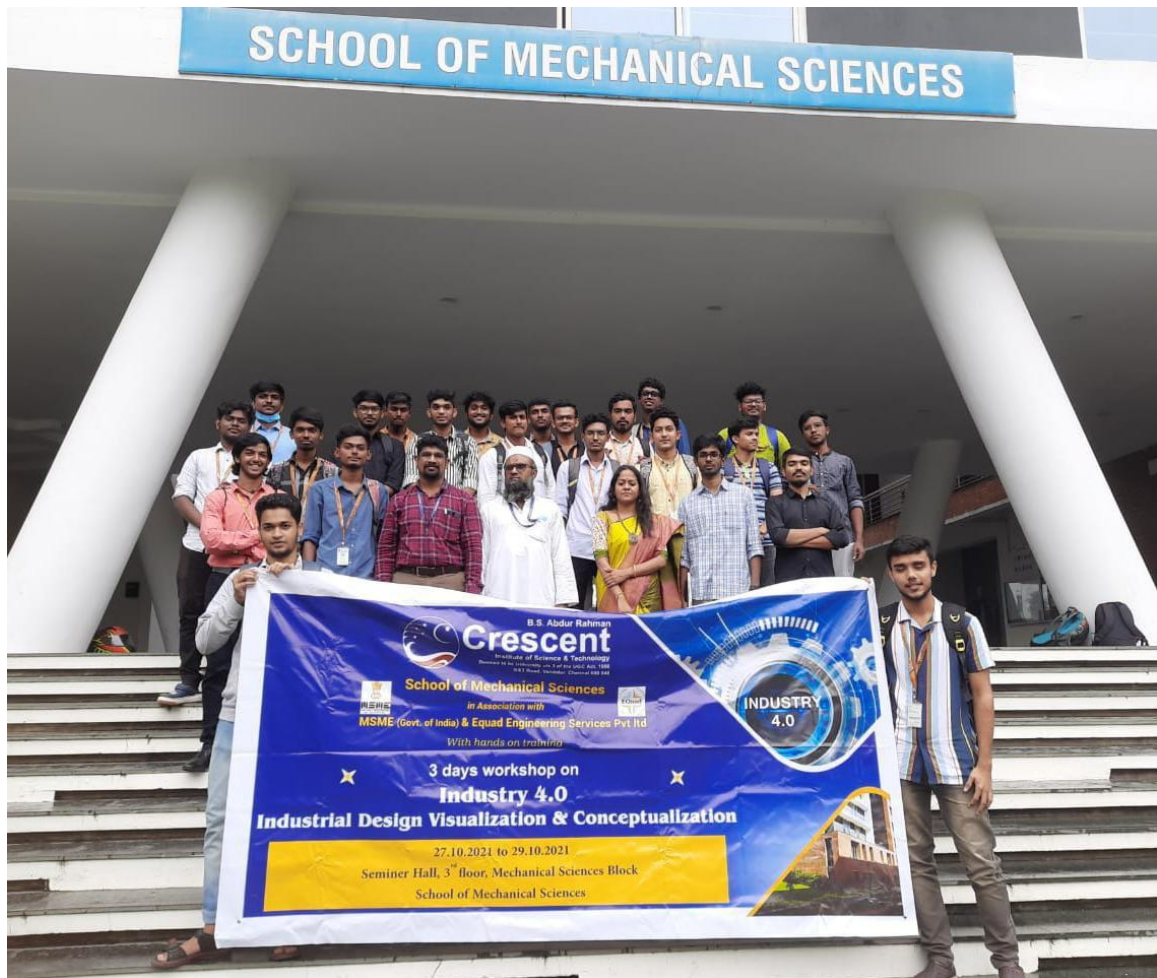












FEEDBACK FORM

TITLE: Industrial Design Visualization and Conceptualization

DATE: October 27th to 29th 2021

Objectives: To Impart Industrial Skill Training

Particulars	Fair(v)	Good(v)	Very Good(v)	Excellent(v)
Presentation met stated objectives				✓
Presentation was interesting			✓	
Study Materials			✓	
Presentation was relevant				✓

Please Rate the following Faculty on the basis of knowledge and Lecture delivered on the Topic.

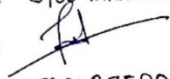
Faculty Name	Topic	Rate out of 10
GINO GEORGE	4 STEPS	9
MUTHURAM	PROTOTYPING	10
RISHI PREM	DRAWING	10

Purpose of studying this course [mark ✓]	Employability []	Organizational growth []	Technical skill [✓] Management skill [✓]
--	-------------------	---------------------------	---

Overall Rating of the Training program(v):

1 Low	2	3	4	5	6	7	8	9	10 High
----------	---	---	---	---	---	---	---	---	------------

Participant Name: SYED FARHAN HUSSAIN

Signature: 

Contact No.: 7804375206

MSME-TECHNOLOGY DEVELOPMENT CENTRE (CFTI)

FEEDBACK FORM

TITLE: Industrial Design Visualization and Conceptualization

DATE: October 27th to 29th 2021

Objectives: To Impart Industrial Skill Training

Particulars	Fair(v)	Good(v)	Very Good(v)	Excellent(v)
Presentation met stated objectives		✓		
Presentation was interesting			✓	
Study Materials		✓		
Presentation was relevant		✓		

Please Rate the following Faculty on the basis of knowledge and Lecture delivered on the Topic.

Faculty Name	Topic	Rate out of 10
GINO GEORGE	CAD Design	9
MUTHURAM	Prototyping, Engg design, Drawings, Manual & Assembly, Seq, Factors efficiency, BOM, Best Case.	10
RISHI PREM	HS, Fun, O/I req, Concept, Knowledge, Module, Std, Custom design	10

Purpose of studying this course [mark ✓]	Employability []	Organizational growth [✓]	Technical skill []	Management skill []
--	-------------------	---------------------------	---------------------	----------------------

Overall Rating of the Training program(v):

1 Low	2	3	4	5	6	7	8	9 ✓	10 High
----------	---	---	---	---	---	---	---	-----	------------

Participant Name: A. Somanth.

Signature: 

Contact No.: 9361479653