

## **FDP Reverse Engineering in Product Manufacturing**

**Date:** 19th November to 23rd November 2019

**Resource Person Details:** Dr.V.Panduranga, IIT Bhubaneswar

**No. of Students and/or Faculty Participated:** 20 participants from faculty members and B.Tech 7<sup>th</sup> semester students

### **Detailed report of the activity:**

#### **Report on Faculty Development Programme on "Reverse Engineering in Product Manufacturing" at Department of Mechanical Engineering, School of Engineering and Technology, Centurion University of Technology and Management, Paralakhemundi**

We held A short term Faculty Development Programme On "Reverse Engineering in Product Manufacturing" at the Department of Mechanical Engineering School of Engineering and Technology under Centurion University of Technology and Management, at Paralakhemundi campus from 19th November to 23rd November 2019. The FDP aims to provide opportunities to staff members, research scholars and post-graduate students to enrich their learning techniques and research in Design and Manufacturing. The Programme also intends to develop the ability of participants for reverse engineering skills as a tool to manufacture a product using different advanced machining technologies with hands-on teaching sessions in 3D experience -CATIA platform, 3D scanning, CMM, CNC machining & 3D printers. The participants done the 3D scan a physical object, optimize its value and topology using 3d design simulation devices and manufactured in 3d printers and CNC machining which was an integral part of Industry 4.0. 20 participants from faculty members of Mechanical department from various institutes/Universities and UG students attended the FDP.

#### **INAUGURAL SESSION**

The esteemed personalities present on the inaugural of the programme:

- 1) Prof.Dr.V.Panduranga , IIT Bhubaneswar
- 2) Prof.Dr.P.S.Rao, Dean R & D, SOET, CUTM
- 3) Mr. Mir Sadat Ali, Dean Skill Integration, HOD Mechanical, CUTM
- 4) Prof.Dr.M.Vamsi Krishna, Associate Dean ,CUTM

#### **TECHNICAL SESSIONS:**

1st Day (13/01/14) Session I:

Prof.Dr.V.Panduranga, Associate professor, School of Mechanical Sciences, IIT Bhubaneswar has delivered keynote talkon "Need of Modeling and Optimization in the Context of Manufacturing". In this session participants were taught the function of Modelling,Simulation,Optimisation needed for the manufacturing industry with the help of different traditional and non-traditional methods of representing such as mathematical,statistical, Neural network, Fuzzy based modelling . He also address case studies how to use the modelling techniques using Genetic Algorithms.

1st Day (13/01/14) Session II:

Dr V.PanduRanga has delivered a collective session of “Fuzzy Logic” models used in Robotics technology and to understand its concepts using different approaches such as Mamdani Approach, Takagi and Sugeno. In this session the participants learn about the techniques that can be used for robotic technology. In the end of the session he also shown different robots that has been developed in the under him in IIT Bhubaneswar.

2nd day & 3rd day (20/11/19 & 21/11/19) Hands on session :

A demonstration on “Reverse Engineering Tools” was given by Mr. Ashok Kumar Bhuyan from Mini Tool Room and Training Centre, Gram Tarang. At first participants were trained with schematic design and then layout design procedure .They had done the cloud point generations and its measurement’s in Coordinate Measuring Machine. They had also the hand on session CAD development by Mr. Vasanth Kumar , Project Associate ,CUTM using the cloud point data in 3D Experience Dassault platform –CATIA on the 3rd day with Workbenches such as Part modelling ,Surface Generation , Drafting .

4Th day (22/11/2019) Hands-on Session:

Mr. AurobindoSahu , Gram Tarang unit has demonstrated on “Operations in CNC”. In this session participants were skilled develop their own CAM programs and manufacture the product the “CHESS COIN”Also Mr. Suman from 3D printer laboratory, CUTM has demonstrated the “Manufacturing Operations in 3D Printers “.Participants were skilled and trained their own develop product “CHESS KING KEY”

5th day (23/11/2019)

Its been the last day of the FDP .Participants were made to visit laboratory facilities available in CUTM .All of them found to be very excited in visiting the new technology labs such as AR-VR lab, Eicher Lab, Unity Gaming Lab, Welding Lab.

#### VALEDICTORY SESSION:

The honorable personalities present in this occasion were Prof.Dr.P.S.Rao, Dean R&D, SOET Prof.Dr.M.Vamsi Krishna, Associate Dean ,CUTM summarized the program. All the personalities appreciated the department for organizing theFDP.The program was ended with vote of thanks by Mr. AmritMallick, Asst. Prof., Mechanical Dept., CUTM, Co-Convener of the FDP



INAUGURAL SESSION



**1st Day (13/01/14) Session I:**

**1st Day (13/01/14) Session II**



**2<sup>nd</sup> day & 3<sup>rd</sup> day-Hands on practice on digital image capturing**



**5th day-Visit to AR-VR Laboratory**



**VALEDICTORY SESSION**

**Brochure related to the event:**

**Reverse Engineering in Product Manufacturing**  
REVERSEENGINEERING2019  
11:00 AM to 1:00 PM only

1. Name: \_\_\_\_\_

2. Designation: \_\_\_\_\_

3. Institution: \_\_\_\_\_

4. Email: \_\_\_\_\_

5. Mobile No: \_\_\_\_\_

6. DID No/Office Details:

Bank: \_\_\_\_\_

Transaction ID: \_\_\_\_\_

Date: \_\_\_\_\_

Amount: \_\_\_\_\_

7. Address for Correspondence: \_\_\_\_\_

8. Educational Qualification: \_\_\_\_\_

9. Subject taught so far: \_\_\_\_\_

10. Experience (in various Teaching/Research/Industry): \_\_\_\_\_

11. Accommodation request: YES/NO

Sign & Stamp as \_\_\_\_\_  
Head of Institution      Sign as a Participant

**Patron**

Prof. M. K. Mishra  
 President, CUTE  
 Prof. S. K. Das  
 Vice-President, CUTE

**Chief Patron**

Prof. Suparna Das Nayak  
 Vice-Chancellor, CUTM  
 Prof. Anula Patra  
 Registrar, CUTM

**Convener**

Mr. Sachin Mishra

**Co-Convener**

Mr. Ananta Mallik

**Organizing Committee**

Prof. P. Srinivasan Reddy  
 Prof. Sushil Ghosh  
 Mr. Rudrajeet Das Nayak  
 Mr. P. Sankaran  
 Mr. Santosh Kumar  
 Mr. Sudhansu Sekhar Sahoo  
 Mrs. Ch. Shilpa  
 Mr. Hemanta Nayak  
 Mr. Sabyasachi Nayak  
 Mr. Kausthub  
 Mr. Vasanth Reddy  
 Mr. Anandendu Nayak  
 Mr. Ashok Kumar Bhuyan  
 Mr. Swarna  
 Mr. Sreyas Toib

*Five days Short Term*  
**Faculty Development Program**  
 On  
**Reverse Engineering in Product Manufacturing**  
10:00 AM to 12:30 PM November 2019



Organized By



**Centurion UNIVERSITY**  
Shaping Lives... Empowering Communities...

Department of Mechanical Engineering  
 School of Engineering and Technology  
 Centurion University of Technology and Management  
 Parlakhemundi-761211, Dist-Gajapati Odisha-India



List Of Participants



CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT, ODISHA

FDP

ON

REVERSE ENGINEERING IN PRODUCT MANUFACTURING

Date: 19-11-2019 to 23-11-2019

ATTENDANCE SHEET

Sl. No.	Name	Full Signature(19-11-2019)	Full Signature(20-11-2019)	Full Signature(21-11-2019)	Full Signature(22-11-2019)	Full Signature(23-11-2019)
1	Prajna Paramita Debata					
2	Babuli Kumar Jena					
3	Dilip Kumar Mohanta					
4	Dr. Kapileswar Mishra					
5	Dr. Kamal Kumar Barik					
6	Dr. Siba Prasad Mishra					
7	Sagarika Panda					
8	Snigdha A Sanyal					
9	Sadhana Devi					
10	Vignesh M.					
11	Mr. Sujit Mishra					
12	Dr. P.S.Rao					
13	Mrs. G.Sridevi					
14	Mr. Sujit Mishra	-	-	-	-	-
15	Mr. Amrit Mallik					
16	Mr. D. Raghuvver					
17	Mr. Sukanta Nayak					
18	Mr. Prafulla Panda					
19	Mr. Satyabrata Nayak					
20	Mr. Santosh Patro					

Dr. Prasanta Ku. Mohanty  
Dean Academic

Prabhat K. Pattnaik  
FDP Coordinator