

***Two days Short Term Training Program***  
***on***  
***Conceptual Design and Innovative Manufacturing Using Solid works***  
***23-24 March, 2018***

SOLIDWORKS is a solid modeling computer-aided design (CAD) and computer-aided engineering (CAE) computer program that runs on Microsoft Windows. SolidWorks is published by Dassault Systemes and is a parametric feature-based approach which was initially developed by PTC (Creo/Pro-Engineer) to create models and assemblies.

Two days short term training program on **“Conceptual Design and Innovative Manufacturing using solid works”** was organized by the Department of Mechanical Engineering during 23-24 March, 2018 to train the students and members of the faculty on the SOLIDWORKS software. The goal of this programme was to teach the use of SOLIDWORKS to create, capture and evaluate concept designs prior to physical prototyping and detail design.

CAD/CAM is the backbone of engineering design. Any industrial design, automobile component, or machine part has to be designed using CAD/CAM and has to be analyzed for various aspects like thermal resistance, strength and moduli etc. These simulations can only be done using powerful software, thus highlighting the importance of CAD/CAM.

Mr. Mahender Ganna, Senior Design Engineer and Mr. J. Sharath Chandra, Mechanical Engineer (Design), Shreya Global Technologies, Hyderabad were the resource persons for the program. Both the resources were SOLIDWORKS Certified Professionals by Dassault Systemes and specialists in Design and Sheet metal.



### **Inaugural Session**

During the inaugural session, Dr. K.C.Varaprasad, Professor & Head, Dept. of Mechanical Engineering stressed that practical training is an essential part of studies. The aim of practical training is to develop skills and abilities that support professional studies and prepare for work later on. Everyone should know the latest know-how from each respective field of learning with them. The practical training provides an opportunity to learn important skills which will help in becoming

a professional of the future. CAD/CAM Technology has been used for decades in the manufacturing industries to produce precision tools, parts and automobiles; recently the CAD/CAM Technology and metal-free materials are used in the field of Dentistry to provide patients with milled ceramic crowns, and bridges. Every mechanical engineer need to visualize every aspect of a product. Only after keeping it on paper or computer screen only, one can easily analyze, modify and optimize a design, which by default leads to a smarter design.

Mr. A. Venkatesh convener in his opening remarks mentioned that SOLIDWORKS solutions cover all aspects of the product development process with a seamless, integrated workflow—design, verification, sustainable design, communication and data management. Designers and engineers can span multiple disciplines with ease, shortening the design cycle, increasing productivity and delivering innovative products to market faster. So, this two day short term training programme will be very much useful for the students and faculty.

During the Hands-On sessions, Mr. Mahendra Ganna and Mr. Sharath Chandra, the resource persons guided the participants to enhance the capabilities on SOLIDWORKS 3D Design, SOLIDWORKS Simulation and SOLIDWORKS Composer. SOLIDWORKS software integrates a broad range of mechanical CAD, design validation, product data management, design communication, and CAD productivity tools in a single, affordable, easy to use package.



**Mr. Mahendra Ganna delivering the lecture**

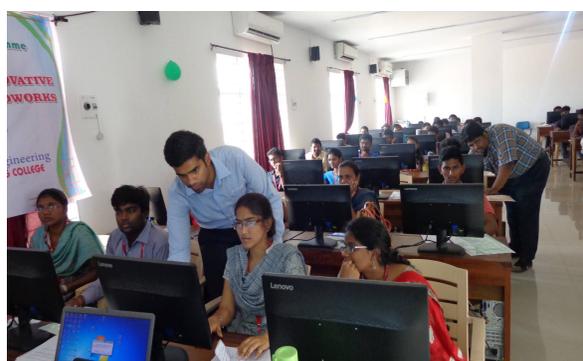


**Mr. Sharath Chandra delivering the lecture**

In this program, the resource persons given in detail hands-on training on basic CAD tools, sketches, 3D modeling and feature based modeling. Participants were trained with the most commonly used tools to create some basic part components, to be then used in the assembly environment to create a finished product. Also training was provided on the usage of SOLIDWORKS mechanical design automation software to build parametric models of parts and assemblies, and how to make drawings of those parts and assemblies. The products developed were taken into the drafting environment to produce a detailed production drawing.

***The schedule went as follows:***

23.03.2018	9:30 AM to 10 AM	Inauguration
	10 AM to 1 PM	Introduction to CAD software, Basics of Sketcher, 2D Sketch (Dimensioning, Constraints, Plane selection, Mirror, Pattern) followed by hands-on practice.
	2 PM to 5 PM	Part Modeling (Transform 2D sketch into 3D Solid) followed by hands-on practice.
24.03.2018	10 AM to 1 PM	Basics of Feature Based Modeling, Feature recognition, Assembly Drawing and commands, Illustration of one simple assembly drawing of machine component with hands-on practice.
	2 PM to 4 PM	Basics of Sheet Metal Drawing/Design approach, Generate 2D sketches from parts and Assembly 3D model, other modeling features of SOLIDWORKS, MASTERCAM
	4 PM to 5 PM	Valedictory Function and Distribution of Certificates



**Hands-on Training Sessions**

During the valedictory session on 24<sup>th</sup> March, 2018, Dr. Satya Meher, Professor of Mechanical Engineering suggested students to be specific with the programmes to be participated and be specialized with that only. Multi-tasking may not suit at all the times. He advised students to be more focused towards their goal.

Mr. Mahendra Ganna and Mr. Sharath Chandra readily accepted to give internships for a maximum of 5 students after undergoing a tool test at their organization. All the students shown interest towards the internships also. They readily accepted to assist our students in their projects and future career aspects.

At the end certificates were distributed to the participants and feedback was collected from them. All the participants felt that the sessions are very beneficial to them and interested to participate in many more events like this.

A total of 66 members participated in the two days short term training programme on "Conceptual Design and Innovative Manufacturing using solid works". The skills learnt will be helpful to explore SOLIDWORKS in the development of innovative products and maximize their productivity and focus on innovation to create products better, faster, and more cost-effectively.