



A REPORT ON  
ONE WEEK SHORT TERM TRAINING PROGRAM ON  
COMPUTER AIDED DESIGN USING  
**SOLIDWORKS**



ORGANIZED BY



**Gujarat Technological University**

IN COLLABORATION WITH





- Design, Manufacturing and Product Development is the complete set of activities needed to bring new technologies and service to the marketplace.
- This training is designed to provide practical tools necessary to transform the product ideas of Entrepreneurs into a marketable and commercially viable product.
- The goal of this course is to teach you how to use the SolidWorks mechanical design automation software to build parametric models of parts and assemblies and how to make simple drawings of those parts and assemblies.

**How to Apply**

The applicants are required to send completely filled in attached application form (also downloadable from Institute website) to reach the coordinators on or above 31st Dec. 2015

- Number of participants for the course will be limited to Hundred only. The Participants will be selected on "first-come-first-served" basis out of the eligible applicants.
- Incomplete application forms will not be entertained.
- For online registration use following link <https://goo.gl/ROMeuV>

**Organizing Committee**

**Patron**  
Shri Rajendra Shah  
Chairman, SAL Technical Campus

**Advisory Committee**  
Dr. Rupesh Vasani, Director  
Ms. Nileema Shah, AGM

**Convener Advisory Committee**  
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Prof. D. C. Solanki  
Dr. A. A. Pujara

**Coordinators**  
Prof. Nayana Gandhi  
Prof. J. P. Dataniya

**Co-ordinators**  
Prof. S. D. Patel  
Prof. D. V. Modi  
Prof. D. M. Nayak

**Important Dates**

Last date of receiving applications.  
**31<sup>st</sup> December, 2015**  
Intimation to the participants  
**2<sup>nd</sup> January, 2016**  
Course duration  
**4 to 8 January 2016**

**Important Instruction**

- Please note that confirmation email is sent to registered email, please check your email regularly.
- Travel and accommodation expense have to be borne by participants themselves.
- Participant has to arrange for his/her stay/accommodation.

**Address of Correspondence**

**Mechanical Engineering Department**  
SAL Technical Campus  
Opp. Science City, Bhadaj, Sola Road,  
Ahmedabad – 380060

**For Further Details Contact**

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One week  
short term training Program on  
**Computer Aided Design using  
SOLIDWORKS**  
**January 4-8, 2016**  
Organized By  
**Gujarat Technological University**

In Collaboration with  
**SAL** **KHODIYAR**  
TECHNICAL CAMPUS CAD Center (P) Pvt. Ltd.

SAL Technical Campus Opp. Science City,  
Bhadaj, Sola Road, Ahmedabad – 380060  
[www.sal.edu.in](http://www.sal.edu.in)  
Email – [salstpsolidworks2016@gmail.com](mailto:salstpsolidworks2016@gmail.com)  
**Mechanical Engineering Department**

## ABOUT SAL TECHNICAL CAMPUS by Shri Nilima Shah (G.M)



Established in 2009 by Adarsh Foundation, SAL Group of Institute offering graduate and post graduate programs in Engineering, Pharmacy, MBA and Architecture Engineering in total having 6 colleges and 11 branches. SAL Group of Institute is affiliated to GTU and approved by AICTE, New Delhi.

SAL Technical Campus is awarded by The Times of India as No. 2 Emerging Engineering Institute in India. SAL Technical Campus is managed by technically experienced and well qualified team under leadership of Shri Rajendra Shah, Chairman. The Campus has grown

steadily and is imparting quality technical education to young engineers. The Institute have well experienced, highly qualified and dedicated faculty for committed education.



## **DEPARTMENT OF MECHANICAL ENGINEERING information given by HOD mechanical Prof. S. M. Bhatt**



The department of Mechanical Engineering offers Degree course in Mechanical Engineering, Automobile Engineering, Mechatronic and Postgraduate programs in Thermal Engineering and Design Engineering. The Department have state of the art well equipped laboratories and one of the best computing facilities

Our initiatives are aimed to transform technical engineering education and build careers of our students. We give equal emphasis on fundamental studies, practical exposure and industrial orientation. The students also carry out their projects at the leading industries which give them exposures to live industry problems/activities. Our students are proving to be better engineers not only in industries but also in the field of research for that we have establish incubation & research center in SITER.

### **Inspirational Speech given**

**By Prof. P.D.SOLANKI (Principal, G.E.C, GODHARA)**



Prof. P.D.SOLANKI Principal from government engineering college Godhra gave inspirational speech and shared their knowledge and views about use of computer software's and use of solid works in field of mechanical worldwide and he also explained students by comparing the conventional engineering with latest technological engineering with the use of computer and mechanical software's that how engineering became easier than conventional

manufacturing and designing and said that students and engineers of this generation must learn software's like solid works.

### **Solid works information given by Shree Nimesh Patel (Director- Khodiyar, CAD)**



Solid Works (stylized as SOLIDWORKS), is a solid modeling computer-aided design (CAD) and computer-aided engineering (CAE) software program that runs on Microsoft Windows. The Solid Works is produced by the assault Systems – a subsidiary of Assault Systems, S. A. based in Vellzy, France-Since 1997. Solid Works is currently used by over 2million engineers and



designers at more than 165,000 companies worldwide. Its user base ranges from individuals to large corporations and covers a very wide cross-section of manufacturing market segment. Solid Works software allows you to test and revise product design easily, so you can get design work done 20-30% faster. Not only is Solid Works easy to learn and use, it offers unmatched compatibility with AutoCAD software and other CAD systems. Solid Works software lets you construct production ready drawings automatically from 3D models, without drawing a single line or arc. With Solid Works, you can eliminate time-consuming drawing view creation, manipulation and maintenance. Each modification that you make is reflected accurately throughout all associated videos, sheets and drawings.

## **COURSE CONTENT**

• Transition • Essentials • Advanced Part Modelling • Assembly Modelling • Surface Modelling • Sheet Metal • Module Design • Weldments • Drawings

## **COURSE SCHEDULE AND CONTENT**

<b>DATE</b>	<b>CONTENT</b>
4/1/2016	User interface, sketch introduction basic part modeling (extrude, extrude cut, hole wizard), all type of pattern, sweep feature, static simulation
5/1/2016	Shelling, rib, editing sketch, fillet expert, design library, assembly, explode, model view, section view
6/1/2016	Feature in context, locking, smart component, smart fasteners, assembly features, hole series
7/1/2016	Multi body design, curves, solid surface hybrid model, weldment, sheet metal, molding
8/1/2016	drawing sheet, title block, dimensions, assembly drawing views, broken out, exploded view



## Photos for inaugural function and Registration



## Teaching session





## What is solid works??

SolidWorks mechanical design automation software is a feature-based, parametric solid modelling design tool which takes advantage of the easy to learn Windows™ graphical user interface. You can create fully associative 3-D solid models with or without constraints while utilizing automatic or user defined relations to capture design intent.

## Why solid works????

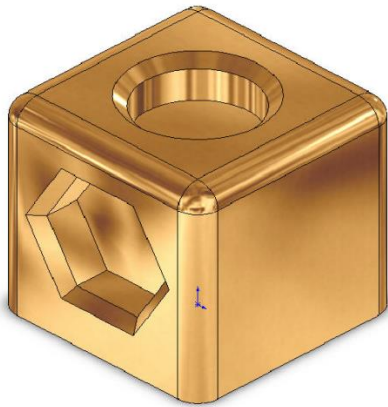
A powerful 3D design solution for rapid creation of parts, assemblies and 2D drawings with minimal training. Application-specific tools for sheet metal, weldments, surfacing, mold tool and die make it easy to deliver best-in-class designs. It introduces data management, photo realistic rendering, and a sophisticated components and parts library. Efficiency and innovation increase with the solution that is used by millions of designers. A no-compromise solution for the engineer who wants it all starting with powerful simulation and design validation tool sets, as well as advanced wire and pipe routing functionality.

It's mainly sub-divided into three parts:

- 1) **Parts**
- 2) **Assembly**
- 3) **Drawing**



## Create Parts



### Stages in the Process

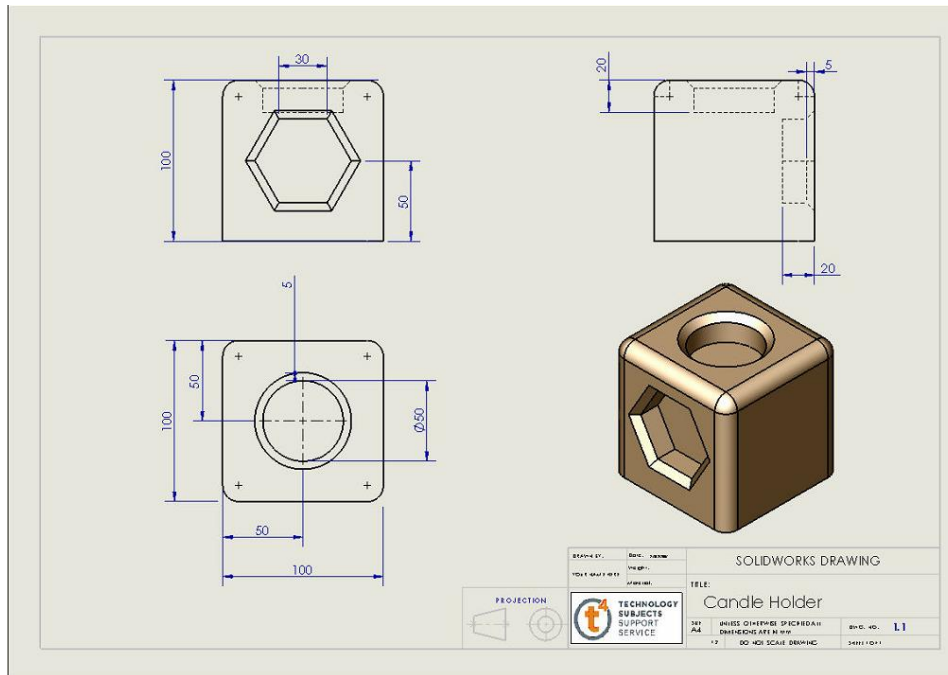
**Create a New part document:** New parts can be created in inch, millimeter or other units. Parts are used to create and hold the solid model.

**Sketch the profile:** Sketches are collections of 2D geometry that are used to create solid features. These include lines, circles and rectangles.

**Applying Sketch relations and dimensions:** Geometric relationships such as horizontal and vertical are applied to the sketch geometry. Dimension size the geometry while the relations restrict the movement of the entities.

**Extruding the sketch:** Extruding uses the 2D sketch to create a 3D solid feature.

## Create a Drawing

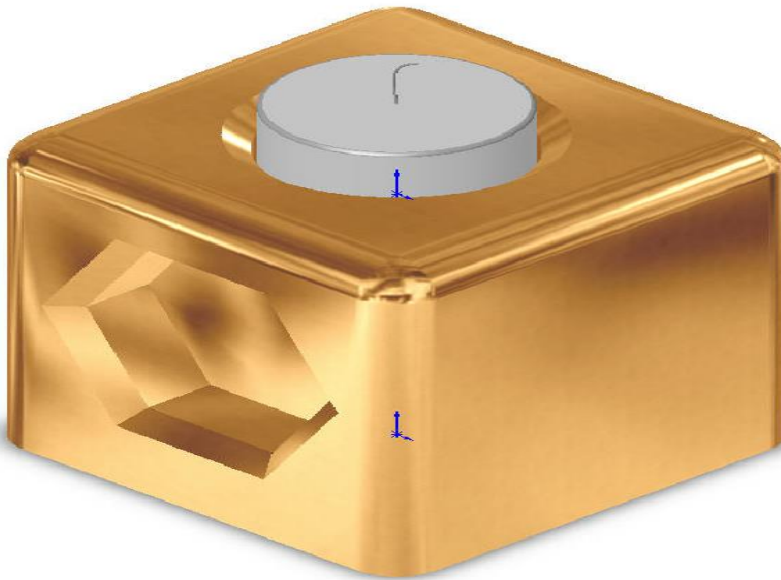


## Stages in the Process

1. Click on Make a drawing in the Standard Icon Toolbar.
2. Select Drawing A4L (standard size of the page)
3. Position the Front Elevation on the drawing sheet and Left click.
4. Move Mouse to the Left of the Front Elevation to Create the Side Elevation
5. Move Mouse Under the Front Elevation to Create the Plan View / Top View
6. Move Mouse up to the Left Diagonal of the Front View to create the isometric view. Hold down the Ctrl key and position the view under the Side Elevation.
7. For making any sort of changes in any of the view or all the views Hold Down the Ctrl Key and Select all Drawing Views
8. Smart dimensions can be used to apply any missing dimensions manually.
9. Save and Close your Drawing.



## Create an Assembly

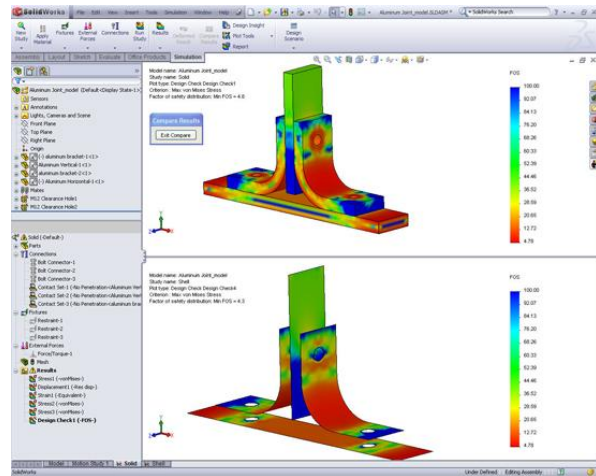
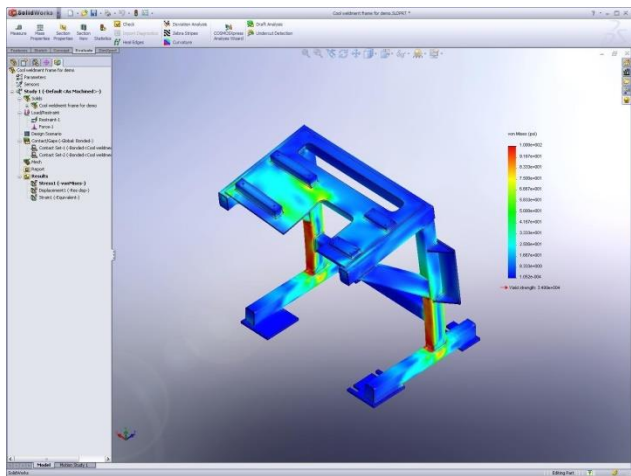


### Stages in the Process

1. Select Make assembly icon from the standard toolbar icons.
2. Select the Candle holder and then select the Green tick to place the Candle Holder in an Assembly.
3. Tile Windows Horizontally and then Drag and Drop the Candle into the Assembly leave float in midair.
4. Add mates to position the Candle in the Holder.
5. Select the different relations of the faces until the mates are fully defined for e.g.: Select the bottom face of the candle and the top face of the inside the hole and apply a coincident mate.
6. After creating the assembly save the document

## SIMULATION:

After completion of all the above processes properly the simulation of the above part/parts can be done. Which shows all the properties comprising of virtual real-world environments to test your product designs before manufacture. Test against a broad range of parameters during the design process, such as durability, static and dynamic response, assembly motion, heat transfer, fluid dynamics, and plastics injection molding.



The results includes:-

- 1) Structural simulation,
- 2) Fatigue simulation,
- 3) Motion simulation,
- 4) Thermal simulation,
- 5) Vibration simulation,
- 6) Fluid Flow simulation, etc.;



# Valedictory function



## Votes of thanks given by Prof. Nayana Gandhi- Coordinator STTP Solid works.



Honorable Nilima Madam, Respected Director Dr. Rupesh Vasani sir, our most valued invited guests Prof P. D. Solanki sir. Nimeshbhai, Jigneshbhai, Arun Dubey sir, our HOD Prof S. M. Bhatt sir and Prof. D. C. Solanki sir, Faculties and PARTICIPANTS, It's my privilege to have been asked to propose a vote of thanks on this occasion.

*On behalf of SAL TECHNICAL CAMPUS I would like to place on record our heartily thanks to our management and trustee Shree Nilima Madam our Director Dr. Rupesh Vasani, for perfect logistic support, guidance and cooperation.*

*A SPECIAL THANKS to Director Khodiyar Group of Institute Shree Nimeshbhai and Shree Jigneshbhai for their support and cooperation for STTP on SOLID WORKS.*

*Finally on my own behalf extend a very hearty vote of thanks to Prof .P.D.Solanki for gracing your important work and sharing with us your finding and opinion today(Valedictory) and on inaugural function.*

*A big thanks to Prof.S.M.Bhatt and Prof.D.C.solanki Prof.H.R.Shah Dr.Devang Shah and Dr.A.A.Pujara for their cooperation and support whenever required.*

Never think that some super-man or the hero you fantasize is going to come and save you...

**"It is YOU and only YOU who can help/protect yourself."**