Siemens center of Excellence

VASIREDDY VENKATADRI INSTITUTE OF TECHNOLOGY
Approved by AICTE, Affiliated to JNTUK
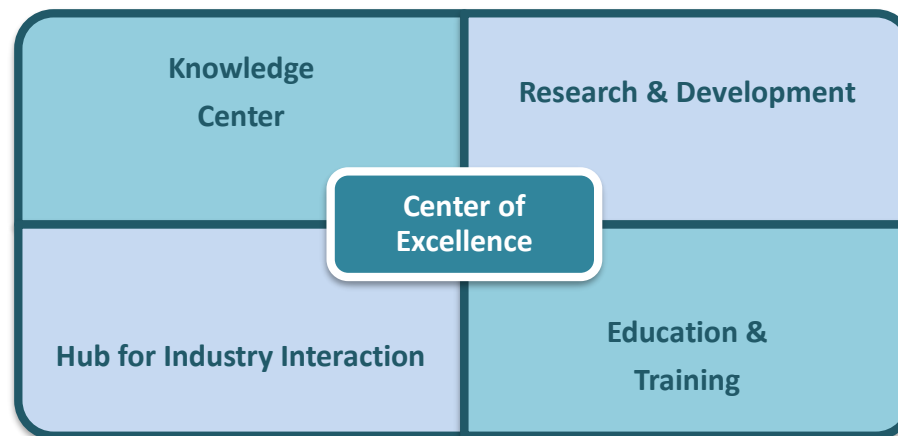Nambur, PedaKakani Mandal, Guntur Dist. – 522508.

SIEMENS CENTER OF EXCELLENCE

Government of Andhrapradesh; Siemens Industries Software (India) Pvt. Ltd.; DesignTech Systems Ltd., India; and VVIT have jointly established "Centre of Excellence (COE) in Industrial Automation" for skill up gradation of Engineering students and professionals of this regime.

The major objectives are:

1. To develop of latest and open technology laboratories
2. To promote research and innovation for practicing industries
3. To promote industry-academia interfacing.
4. Bridge gap between Industry needs and available Skills through Industry oriented learning

SIEMENS has established 15 laboratories which are fully equipped with high tech machinery and tools and Licensed Software like NX Academic, CAD, CAM, Technomatix, Rob Cad etc... The Center also offers around 65 short-term courses and training modules on Product Design, Validation, Electrical M/C and Automation etc.

Knowledge Center	Research & Development
Center of Excellence	
Hub for Industry Interaction	Education & Training

Activities at Center of Excellence

Siemens center of Excellence Labs

S.NO	Name of the Lab
1	Product Design and Validation Laboratory
2	Advanced Manufacturing Laboratory
3	Test and Optimization Laboratory
4	Test and Optimisation Workshop
5	Rapid Prototyping Laboratory
6	CNC Programming Laboratory
7	CNC Machines Laboratory
8	Robotics Laboratory
9	Automotive Body Repair Laboratory
10	Automotive Paint Laboratory
11	Lift Installation and Maintenance Laboratory
12	Electrical & Energy Studies Laboratory
13	Automation Laboratory
14	Mechatronics Laboratory
15	Process Instrumentation Laboratory

SIEMENS CENTER OF EXCELLENCE EQUIPMENT COST

S.NO	Name of the Lab	Approximate Equipment Cost (CR)
1	Product Design and Validation Laboratory	6CR
2	Advanced Manufacturing Laboratory	6CR
3	Test and Optimization Laboratory	4CR
4	Test and Optimisation Workshop	1.5CR
5	Rapid Prototyping Laboratory	1CR
6	NC Programming Laboratory	0.7CR
7	CNC Machines Laboratory	1CR
8	Robotics Laboratory	4CR
9	Automotive Body Repair Laboratory	0.5CR
10	Automotive Paint Laboratory	0.5CR
11	Lift Installation and Maintenance Laboratory	0.3CR
12	Electrical & Energy Studies Laboratory	1.5CR
13	Automation Laboratory	1CR
14	Mechatronics Laboratory	6CR
15	Process Instrumentation Laboratory	1CR
	TOTAL	35CR

LIST OF STUDENTS & COURSES COMPLETED IN SIEMENS CENTER OF EXCELLENCE

S.No	Program	No.of students Completed
1	Essentials for NX-Designer	491
2	Synchronous and parametric Design Modeling	193
3	ROBCAD	139
4	Drafting Essentials	132
5	Turning NC-Controller Program	102
6	Advance Simulation Process	87
7	Intermediate NX Design and Assemblies	75
8	Motion Advanced	19
9	SHEET METAL	9
	Total	1247

LIST OF STUDENTS & COURSES COMPLETED IN SIEMENS CENTER OF EXCELLENCE

S.NO	BRANCH	Batch	Name Of the Center	Program	Start date	End Date	REGISTERED	FAIL	PASS
1	MECH	2014	C2/COE/DSGN/0001	Essentials for NX-Designer	14-Nov-2016	25-Nov-2016	29	2	27
2	MECH	2014	C2/COE/DSGN/0002	Essentials for NX-Designer	14-Nov-2016	25-Nov-2016	30	3	27
3	MECH	2015	C2/COE/DSGN/0003	Essentials for NX-Designer	29-Nov-2016	3-Mar-2017	30	2	28
4	MECH	2015	C2/COE/DSGN/0004	Essentials for NX-Designer	29-Nov-2016	14-Mar-2017	30	3	27
5	MECH	2015	C2/COE/DSGN/0005	Essentials for NX-Designer	1-Dec-2016	7-Mar-2017	29	1	28
6	MECH	2015	C2/COE/DSGN/0006	Essentials for NX-Designer	1-Dec-2016	5-Mar-2017	30	4	26
7	MECH	2013	C2/COE/DSGN/0007	Essentials for NX-Designer	1-Dec-2016	7-Mar-2017	30	5	25
8	MECH	2013	C2/COE/DSGN/0008	Essentials for NX-Designer	1-Dec-2016	6-Mar-2017	30	3	27
9	MECH	2014	C2/COE/DSGN/0009	Essentials for NX-Designer	1-Dec-2016	4-Mar-2017	30	0	30
10	MECH	2014	C2/COE/DSGN/0010	Essentials for NX-Designer	29-Nov-2016	1-Mar-2017	30	1	29
11	MECH	2013	C2/COE/DSGN/0011	Essentials for NX-Designer	5-Dec-2016	7-Mar-2017	25	2	23
12	MECH	2013	C2/COE/DSGN/0012	Essentials for NX-Designer	13-Dec-2016	20-Feb-2017	27	0	27
13	MECH	2014	C2/COE/DSGN/0013	Synchronous Modeling and Parametric Design	1-Feb-2017	1-Mar-2017	21	0	21
14	MECH	2014	C2/COE/DSGN/0014	Synchrinous and parametric Design Modeling	2-Feb-2017	4-Mar-2017	23	0	23
15	MECH		C2/COE/DSGN/0015	NC-NUMERICAL CONTROL PROGRAMING	7-Mar-2017	cancelled	24	24	0
16	MECH	2013	C2/COE/DSGN/0016	Advance Simulation Process	8-Mar-2017	17-Mar-2017	18	2	16
17	MECH	2013	C2/COE/DSGN/0017	Synchronous and parametric Design Modeling	9-Mar-2017	14-Mar-2017	24	3	21
18	MECH	2013	C2/COE/DSGN/0018	Advance Simulation Process	28-Mar-2017	3-Apr-2017	20	1	19
19	MECH	FDP VVIT	C2/COE/DSGN/0019	Essentials for NX-Designer	1-Apr-2017	22-Apr-2017	20	0	20
20	MECH	OTHERS	C2/COE/DSGN/0020	Essentials for NX-Designer	18-Apr-2017	24-Apr-2017	27	0	27
21	MECH	OTHERS	C2/COE/DSGN/0021	Advance Simulation Process	19-Apr-2017	24-Apr-2017	27	0	27
22	MECH	2015	C2/COE/DSGN/0022	Synchronous Modeling and Parametric Design	20-Apr-2017	6-May-2017	28	0	28
23	MECH	2015	C2/COE/DSGN/0023	Synchronous Modeling and Parametric Design	20-Apr-2017	4-May-2017	25	0	25
24	MECH	2015	C2/COE/DSGN/0024	Synchronous Modeling and Parametric Design	20-Apr-2017	4-May-2017	28	0	28
25	MECH	OTHERS	C2/COE/DSGN/0025	NC-NUMERICAL CONTROL PROGRAMING	28-Apr-2017	6-May-2017	17	0	17

LIST OF STUDENTS & COURSES COMPLETED IN SIEMENS CENTER OF EXCELLENCE

S.NO	BRANCH	Batch	Name Of the Center	Program	Start date	End Date	REGISTERED	FAIL	PASS
26	MECH	2014	C2/COE/DSGN/0026	Motion Adavanced	10-May-2017	12-May-2017	19	0	19
27	MECH	2014	C2/COE/DSGN/0027	Drafting Essentials	8-May-2017	13-May-2017	18	0	18
28	MECH	APSSDC	C2/COE/DSGN/0028	Design &Simulation using NX	15-May-2017	20-May-2017	25	0	25
29	MECH	2016	C2/COE/DSGN/0029	Essentials for NX-Designer	13-Jun-2017	17-Jun-2017	26	0	26
30	MECH	2016	C2/COE/DSGN/0030	Essentials for NX-Designer	13-Jun-2017	20-Jun-2017	25	0	25
31	MECH	2015	C2/COE/DSGN/0031	ROBCAD	14-Jun-2017	20-Jun-2017	30	0	30
32	MECH	2015	C2/COE/DSGN/0032	Turning NC-Controller Program	14-Jun-2017	21-Jun-2017	26	3	23
33	MECH	2015	C2/COE/DSGN/0033	Drafting Essentials	19-Jun-2017	24-Jun-2017	30	2	28
34	MECH	2014	C2/COE/DSGN/0034	RobCad	23-Jun-2017	30-Jun-2017	30	2	28
35	MECH	2014	C2/COE/DSGN/0035	Drafting Essentials	24-Jun-2017	1-Jul-2017	29	8	21
36	MECH	2014	C2/COE/DSGN/0036	Turning-NC- Control Programing	27-Jun-2017	3-Jul-2017	26	3	23
37	MECH	2016	C2/COE/DSGN/0037	Essentials for NX-Designer	3-Jul-2017	5-Aug-2017	29	18	11
38	MECH	2015	C2/COE/DSGN/0038	Intermediate NX Design and Assemblies	3-Jul-2017	5-Aug-2017	24	15	9
39	MECH	2015	C2/COE/DSGN/0039	Intermediate NX Design and Assemblies	4-Jul-2017	4-Aug-2017	30	8	22
40	MECH	2015	C2/COE/DSGN/0040	Intermediate NX Design And Assemblies	4-Jul-2017	5-Aug-2017	23	7	16
41	MECH	2015	C2/COE/DSGN/0041	Intermediate NX Design And Assemblies	4-Jul-2017	5-Aug-2017	30	2	28
42	MECH	2016	C2/COE/DSGN/0042	Essentials for NX-Designer	3-Jul-2017	5-Aug-2017	24	16	8
43	MECH	2014	C2/COE/DSGN/0043	Robcad	10-Jul-2017	15-Jul-2017	30	7	23
44	MECH	2014	C2/COE/DSGN/0044	Turning-NC- Control Programing	10-Jul-2017	15-Jul-2017	23	2	21
45	MECH	2014	C2/COE/DSGN/0045	RobCad	25-Jul-2017	29-Jul-2017	29	1	28
46	MECH	2014	C2/COE/DSGN/0046	Turning-NC- Control Programing	25-Jul-2017	2-Aug-2017	29	11	18
47	MECH	2012&2013	C2/COE/DSGN/0047	ROBCAD	16-Aug-2017	4-Sep-2017	34	4	30
48	MECH	2015	C2/COE/DSGN/0048	Drafting Essentials	7-Sep-2017	9-Oct-2017	25	4	21
49	MECH	2015	C2/COE/DSGN/0049	Drafting Essentials	7-Sep-2017	9-Oct-2017	30	3	27
50	MECH	2015	C2/COE/DSGN/0050	SHEET METAL	7-Sep-2017	9-Oct-2017	30	21	9
51	MECH	2015	C2/COE/DSGN/0051	Drafting Essentials	7-Sep-2017	10-Oct-2017	23	6	17
52	MECH	2016	C2/COE/DSGN/0052	Synchrinous and parametric Design Modeling	7-Sep-2017	10-Oct-2017	24	14	10
53	MECH	2016	C2/COE/DSGN/0053	Synchrinous and parametric Design Modeling	7-Sep-2017	9-Oct-2017	19	8	11
54	MECH	2016	C2/COE/DSGN/0054	Synchrinous and parametric Design Modeling	6-Sep-2017	10-Oct-2017	17	3	14
55	MECH	2016	C2/COE/DSGN/0055	Synchrinous and parametric Design Modeling	16-Sep-2017	10-Oct-2017	20	8	12
56	MECH	OTHERS	C2/COE/DSGN/0056	Essentials for NX-Designer	9-Nov-2017	20-Nov-2017	16	5	11
57	MECH	OTHERS	C2/COE/DSGN/0057	Essentials for NX-Designer	9-Nov-2017	20-Nov-2017	15	4	11
58	MECH	2016	C2/COE/DSGN/0058	Essentials for NX-Designer	2-Dec-2017	6-Dec-2017	29	1	28
						MECHANICAL	1489	242	1247

1.Product Design and Validation Lab

NX Nastran is a finite element solver that analyzes stress, vibration, structural failure/durability, heat transfer, noise/acoustics and flutter/aeroelasticity.

➢Stress and dynamics analysis on components and assemblies using finite element analysis(FEA)

➢ Thermal and fluid analysis using computational fluid dynamics (CFD)

➢Kinematics and dynamic analysis of mechanisms (multibody dynamics)

➢Acoustics analysis using FEA or a boundary element method (BEM)

➢1D CAE, or mechatronic system simulation, for multi-domain mechatronics system design

➢Mechanical event simulation (MES)

➢Control systems analysis

➢Simulation of manufacturing processes like casting, molding and die press forming

➢Optimization of the product or process

2. Advanced Manufacturing Lab

The major objectives are:

1. To investigate advanced manufacturing processes to improve quality and productivity in industry.
2. To provide inputs on robotic techniques for industrial and health care applications
3. To provide full set of capabilities to drive manufacturing activity that helps make better products

Course contents:

The students will be Trained on Planning , Simulation and Production Capabilities

1. CAM
- NX Manufacturing Fundamentals
- Turning Manufacturing Process
- Fixed Axis and Multi-Axis Milling

2. Digital Manufacturing
- Process Designer for General Assembly
- Process Designer for Body-In- White Processing
- RobCAD Adv Modelling & Kinematic

3. Product Life Cycle Management
- Using Teamcenter
- Mockup
- Integration for NX users
- Schedule Manager
- Managing Requirements using Teamcenter

Requirements & Duration:
1. Familiarty with basics of Manufacturing Fundamentals.
2. Each course Duration 24-40 Hours.
3. The Number of students for the Lab is 30

3&4.Test and Optimization Lab & Workshop

The major objectives are:

1.To offer a complete portfolio for durability, noise and vibration testing, including solutions for acoustic, rotating machinery, structural dynamics testing,.

2.To offer the right balance between ease-of-use and functional flexibility

Test Lab
-Vibration Measurements and Analysis
-Experimental Modal Testing and Analysis
-Noise Measurements and Analysis

LMS Imagine.Lab helps you drive virtual, intelligent system design all along the design cycle. It offers all the necessary tools to create, manage and use models and data, answering various model-based systems engineering needs. It effectively deals with the specific challenges associated with mechatronic system simulation.

LMS Virtual.Lab is an integrated suite of finite element, boundary element and multi-body modeling software that simulates real-life performance of mechatronic systems. It allows you to quickly build complex models and accurately study structural integrity, noise, sound, vibration, correlation to test results, system dynamics and durability performance, optimizing designs long before prototyping.

5.Rapid Prototyping Lab

The major objectives are:

1.To Develop physical objects that are automatically constructed with the aid of additive manufacturing technology
2.To offer the right balance between ease-of-use and functional flexibility

6.NC Programming Lab

The major objectives are:

1.To Train the students on manual CNC programming
2.To simulate CNC program before real time execution

Course contents:

The students will be Trained on

General

1.process planning, tool selection and safety.
2. subprograms for a range of popular controllers

Manufacturing

1.Turning -NC Numerical control programming
2.Milling -NC Numerical control programming

Requirements & Duration:
1.Familiarty with basics of Manufacturing Fundamentals.
2.Each course Duration 40 Hours.
3.The Number of students for the Lab is 24-30

7.CNC Machine Lab

The major objectives are:

1.To manufacture a real time product using CNC machine controlled by program
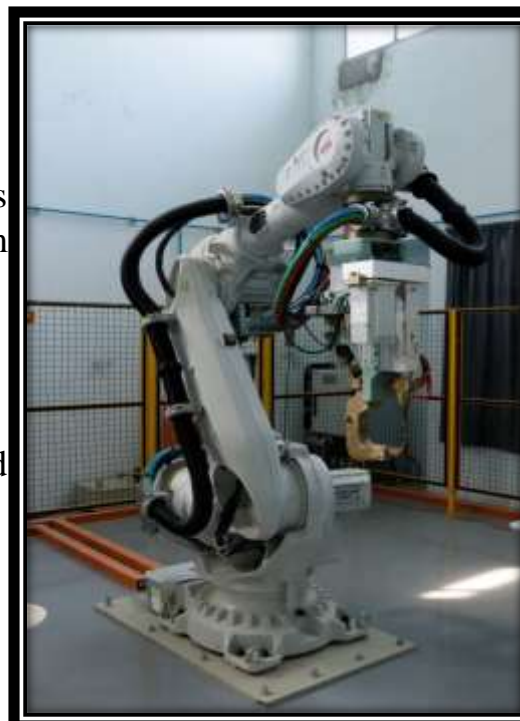
8. Robotics lab

The major objectives are:

1.To demonstrate entry-level knowledge and skills required for the safe operation of Robot to perform welding ,pick and place and other applications

Course contents:

The students will be Trained on ABB -Use and Programming of Industrial Robots
-Robotic Spot Welding Cell – Spot Welding
 Application
-Robotic Arc Welding Cell – Arc Welding
 Application
-Robotics Pick and Place Cell – Material
 Handling Application

9. Automotive body Repair Lab

The major objectives are:

1.To demonstrate entry-level knowledge and skills required for the safe operation of tools and equipment necessary to perform repairs on modern automobiles.

Course contents:

The students will be Trained on

- -Occupational Safety & Health
- - Hand Tools
- - Power Tools
- - Systems of Measurement
- - Fasteners
- - Cutting Tools
- - Taps and Dies
- - Hand Reamers
- - Basic Electrical
- - Basic Electronics
- - Introduction to Heat Treatment

Requirements & Duration:

1.Familiarty with basics of Automobile Engineering.
2.Each course Duration 40 Hours.
3.The Number of students for the Lab is 30

10. Automotive Paint Lab

The major objectives are:

1.To train the students on Auto body painting through class room / hands on live lab training.

Course contents:

The students will be Trained on

1.Color Matching
2.Preparation
     -Equipment
     -Safety
     -Paint Surface Smoothening
     -Surface Cleaning
3.Painting
     -Surface Priming
     -Primed Surface Smoothening
     -Finish Paint Spray
     -Curing

Requirements & Duration:

1.Familiarty with basics of Automobile Engineering.
2.Each course Duration 40 Hours.
3.The Number of students for the Lab is 30

11. Lift Installation & Maintenance Lab

The major objectives are:

1.To train the students on Lift Installation & Maintenance using PLC programming for controllers .

Course contents:

The students will be Trained on

    -Mechanical Installation of Elevators
    -Electrical Elevator mechanic
    -PLC programming for controllers

Requirements & Duration:

1.Familiarty with basics of PLC programming .
2.Each course Duration 40 Hours.
3.The Number of students for the Lab is 30

12. Electrical & Energy Efficiency Lab

The major objectives are:

1.To understand basic function as well as physical properties of electrical components like motor control unit and all LV switch gears..

SINAMIC 6RA80 DC,G120AC DRIVES

TIMER & DELAY

SOFT STARTER

STAR DELTA STARTER

AIR CIRCUIT BREAKER

AIR CIRCUIT BREAKER WITH PROFIBUS COMMUNICATION

SIMO CODE

TYPE II COORDINATION

13. Automation Lab

The major objectives are:

1.To understand the role of programmable logic controller in automobile, manufacturing industries and process industries.

2.To understand the integrated interface for programming with CPU as well as HMI communication.

SIMATIC S7-1200 TRAINING KIT

SIMATIC S7-300 TRAINING KIT

14.Mechatronics Lab

The major objectives are:

1. To understand the basic function as well as physical properties of electrical, Mechanical and pneumatic components used in different Industries..
2. To understand automated assembly process and automation for manufacturing steps of feeding, material testing, transportation and handling, pressing and storing.
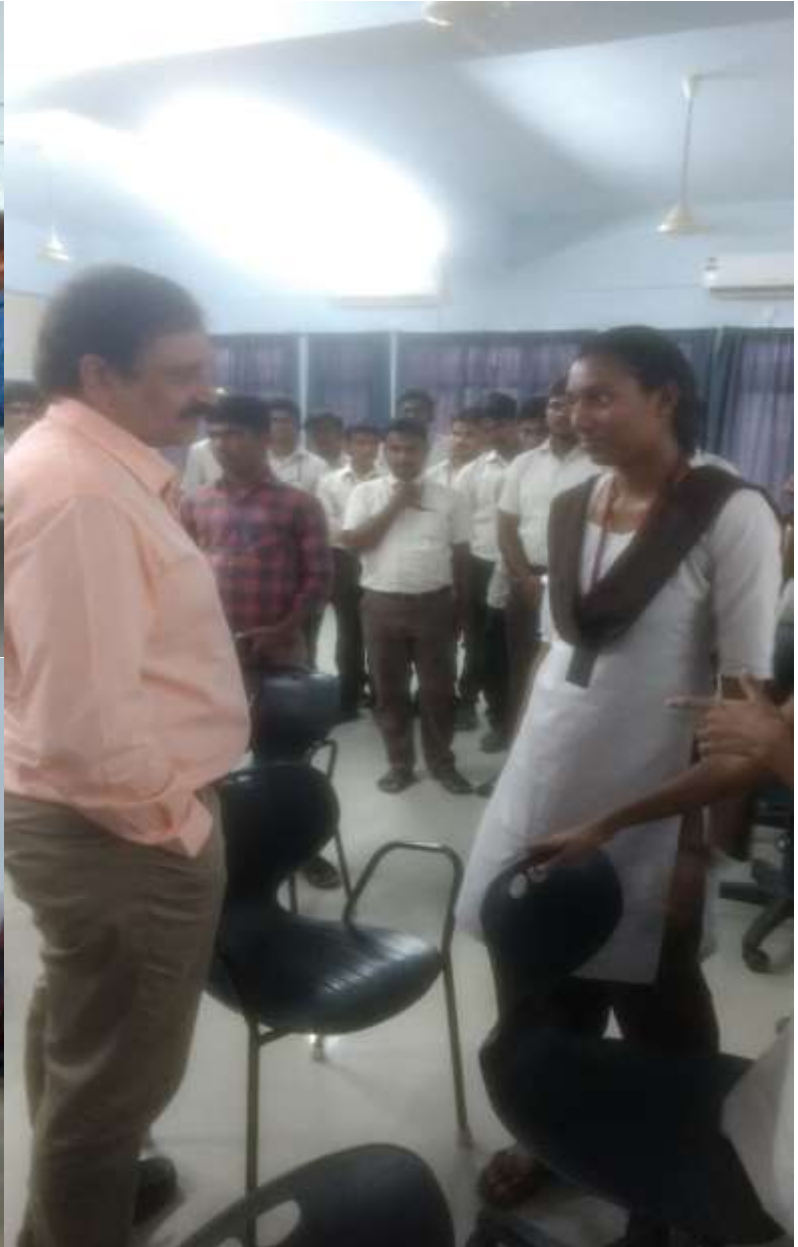
15. Process instrumentation Lab

The major objectives are:

1.To understand the various instruments and their function.(temperature, pressure, volumetric and mass flow measurements, level detection)

2.To understand automation of entire production process in manufacturing units using these instruments.

**SIMATIC PCS-7 CONTROLLER
(S7-400 PLC BASED HARDWARE)**