SIEMENS

Ingenuity for life

Solution Partner :

DesignTech

Technology for designing the future

Department of Higher Technical Education
& Skill Development,
Government of Jharkhand

SIEMENS

CENTRE OF EXCELLENCE

About CoE

The objective behind establishing Siemens Centres of Excellence is to provide trainings to Engineering, and Diploma students as well as faculty on world class electro-mechanical technologies from Siemens. The trainings at COEs are imparted by Siemens certified training partner, DesignTech Systems Ltd. These trainings will greatly benefit the students community by educating them on the latest technologies being used in the industry. Participants will acquire new industry relevant knowledge, and learn industry best practices. Globally recognized Siemens certification after the completion of training shall increase students' employability.

Deliverables of SIEMENS Centre of Excellence

- Impart technical skills, value based education to students, so as to enable them to face the demands of the industry through Industry Oriented Training with Contemporary learning methodologies.
- Support the academicians who are looking forward to take the advantage of the open up global market and research in the contemporary technology.
- Benefits the researchers in understanding the industry related problems.
- Provide a platform for consultancy in various Technological areas such as fields like Mechanical, Instrumentation, Electrical, Electronics & Communication, Automobile and Biomedical Engineering.

The Objective of SIEMENS Project is to Bridge the Gap Between Institution & Industries

Weak Education System

- Out Dated Engineering Concepts
- No Vocational experience/interaction
- Outdated tools in labs
- Faculty not equipped with industry trends & practices

Challenges Faced by Industry

- Large investment in time, effort & money to train students
- 6–18 months before recruits become productive
- Student attrition post training for better salary packages
- Affects competitiveness of companies

SIEMENS Project Initiatives

- Bridges gap between industry needs and available Skills through industry oriented learning
- Enable institutes to improve quality of education
- Provide state-of-the-art tools to match industry standards
- Student Training in Industry skills

CoE Laboratories

Product Design and Validation Lab	Advanced Manufacturing Lab	Test and Optimization Lab and Workshop	NC Programming Lab	CNC Machine Lab
Rapid Prototyping Lab	Robotics Lab	Automation Lab	Electrical & Energy studies Lab	Process Instrumentation Lab
Mechatronics Lab	Lift Installation Lab	Automotive Body Repair Lab	Automotive Paint Lab	

Mechanical Labs

CAD Labs
- Essentials for NX Designers
- Synchronous Modelling & Parametric Design
- Drafting Essentials
- Intermediate NX Design & Assemblies
- NX Sheet Metal
- Mechanical Free - form Modelling
- Large Asssemblies Management
- Routing Mechanical
- Routing Electrical
- Mold Wizard

CAE Labs
- Advanced Simulation Process
- Advanced Simulation Solutions
- Motion Simulation
- NX Thermal & Flow Analysis
- Advanced Thermal & Flow Analysis
- Laminate Composites
- Introduction to Finite Element Analysis with NX
- NX Response Simulation
- NX Nastran Advanced Non - Linear

LMS Labs
- Vibration Measurements & Analysis
- Experimental Model Testing & Analysis
- Noise Measurements & Analysis
- Samcef
- Imagine lab
- Acoustics NVH Simulation Course
- Multibody Dynamics & Durabililty

DM Labs
- Robcad Basics
- Robcad Advanced
- Modelling & Kinematics
- Process Designer
- Process Simulate

Robotics Labs
- Basic Robotics
- Material Handling Robot
- Arc Welding Robot
- Spot Welding Robot

PLM Labs
- Using Teamcenter
- Mock-Up
- Integration with NX
- Visualisation

CNC Labs
- TURNING - NC Programming
- MILLING - NC Programming
- Basic Turning - Sinumerik Operate 828D 840Dsl
- Basic Milling - Sinumerik Operate 828D 840Dsl

RPT Labs
- NX Basic Design & RPT

Electrical & Electronics Labs

Automation Labs
- Basics of PLC
- Basics of SCADA
- HMI & Networking

Electrical Labs
- Basics of Induction Motor
- Basics of AC / DC Drives
- Basics of Low Voltage Switch Gear - 1
- Basics of Low Voltage Switch Gear - 2

Mechatronics Labs
- Basic Mechatronics

Process Instrumentation Labs
- Basics of Process Instrumentation
- SIMATIC PCS - 7

Product Design and Validation Lab

The course will be modular, open, and scalable with design and engineering solutions.
It includes Multiphysics simulations, static and dynamic stress analysis, computational fluid dynamics (Cfd), finite element analysis (Fea), thermal analysis, system-level dynamic analysis and composites analysis.

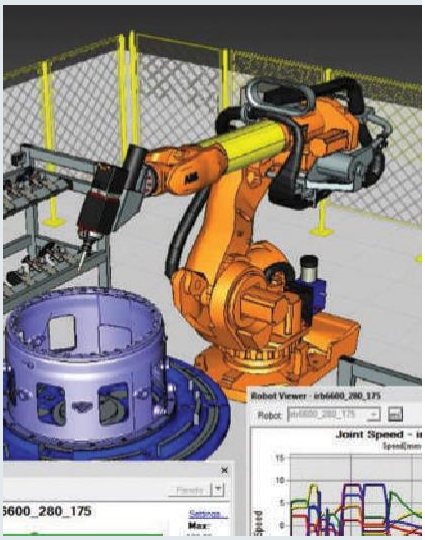
Modules Offered

- Essentials for NX designers
- Synchronous Modelling and Parametric design
- Intermediate NX Designs and Assemblies
- Mechanical Freeform Modelling Project and Practice

Specialized Modules

- Large Assemblies Management
- Routing Mechanical
- Routing Electrical
- Mold Wizard

Advanced Manufacturing Lab



Advance Manufacturing Lab offers courses for manufacturing planning, planning validation via simulation & production interface.
Digital manufacturing systems allow manufacturing engineers to create the complete definition of a manufacturing process in a virtual environment, including Tooling, Assembly Lines, Work Centers, Facility Layout, and Ergonomics.

Modules Offered

- RobCAD Basics
- RobCAD Adv modelling & Kinematics
- NX CAM Turning Manufacturing Process

Specialized Modules

- Advanced Simulation Process
- Motion Simulation
- Laminate Composite
- Introduction to Finite Element Analysis with NX

Test and Optimization Lab

This Lab offers a unique combination of simulation software, mobile and lab testing systems to address functional performance, Engineering challenges of Manufacturing Industries. LMS Test Lab offers you a complete, integrated solution for test-based engineering that combines high speed multi-channel data acquisition with a full suite of integrated testing, analysis and report generation tools.

Special Modules

- LMS Test.Lab Preparatory
- LMS Test.Lab- Signature Testing and Analysis
- LMS Test.Lab - Modal Testing and Analysis
- 1D Simulation Using Imagine.Lab

NC Programing and CNC Machine lab

Subtractive manufacturing Process, TURNING-MILLING CNC Programming, Operating & Machining.

Major equipment/software:

Sinumerik 808D, Sinumerik 828D, Sinumerik 828D Controllers for both Turning & Milling, 2 Axis TURNING Machine with 8 Tools capable Turret, 3 Axes CNC Vertical Milling Machine with Automatic Tool changer (ATC).

Modules Offered

- Turning NC Programming
- Milling NC Programming

Specialized Modules

- Operating and Machining on CNC Turning Machine
- Fixed Axis and Multi Axis Milling
- Operating and Machining on CNC Milling Machine

Rapid Prototyping Lab

Rapid prototyping is a group of techniques used to quickly fabricate a scale model of a physical part or assembly using three-dimensional CAD data. Construction of the part or assembly is usually done using 3D printing or additive layer manufacturing technology. Rapid prototyping is commonly applied in software engineering to try out new business models and application architectures.

Major equipment

- SST 1200es-3D Printer available for ABS+ Polymer

Modules Offered

- NX Basic Design & RPT

Robotics Lab

Robots play an important role in the manufacturing industry, ensuring that the quality of the product is not compromised and the production volumes are met. In the Robotics Lab, we would be teaching the participants to understand the working principles of a Robot, how to program it and use it to an application.

Major equipment software

- Robotic Pick and Place Cell
- Robotic Arc Welding Cell
- Robotic Spot Welding Cell
- RobCAD, ABB Robot Studio simulation and Offline Programming Software.

Modules Offered

- Basic Robotics
- Material Handling Robot
- Arc Welding Robot
- Spot Welding Robot

Electrical & Energy Studies Lab

Participants are trained on Induction Motor overhauling, Speed control of AC/DC motors with Drives & Parameterization through Software, Product selection based on application requirement, Diagnostic & troubleshooting strategies.
Switchgear training kits imparts knowledge on Air Circuit Breakers, Timers and Relay, Soft Starter, Star Delta Starter, Type-II Co-ordination, Intelligent Motor Management, Power Monitoring etc.

Equipment & Software

SINAMICS G120 AC DRIVE KIT with 0.25 HP motor, SINAMICS DC MASTER DRIVE KIT, Soft Starters, MCCB,ACB, Energy Saving Kit, Type-II Coordination Kit, Timers and Relays, SIMOCODE PRO V, PAC 4200

Specialized Modules

- Basics of Induction motor
- Basics of LVSG-1
- Basics of LVSG-2
- Basics of AC/DC drives

Automation Lab

The Automation Lab imparts skills & knowledge on complete factory automation with PLC, HMI, SCADA and Industrial Communication-Networking. Participants are trained on concept of automation, programming of PLC, Screen designing, setting up communication with PROFINET, Diagnostic & troubleshooting strategies.

Equipment & Software

Siemens S71200 with KTP700 Basic touch panel & S7-1500 test kit with TP700 comfort touch panel Siemens TIA Portal V13/V14

Modules Offered

- Basics of PLC
- Basics of SCADA
- Basics of HMI & Networkinng

Process Instrumentation Lab

The Process Instrumentation Lab enables Participants to work on Advanced Automation using Distributed Control Systems (DCS) and understanding the working of the various process equipment in Plants.

Equipment & Software

Magnetic Flow Meter, Mass Flow Meter, Ultrasonic Flow Meter, Ultrasonic Level Transmitter, Absolute pressure Transmitter, Radar Level Transmitter, TH-300 Temperature Transmitter, SIMATIC PCS7, PDM V8.2/9.0

Modules Offered

- Basics of Process Instrumentation
- Basics of PCS - 7

Mechatronics Lab

The Mechatronics Lab imparts expertise in the field of Mechatronics system/process. Participants are trained on various Electrical Components, Mechanical Components, Pneumatics, and Digital Fundamentals troubleshooting Techniques with System Approach. It benefits students from all streams to have cross field knowledge.

Equipment & Software

Modular Automation and Production System (MAPS 6S), 5 Individual Station of MAPS-6S, Siemens S7-1200 PLC's, Diagnostic Kit 2006, Siemens TIA Portal V13.

Specialized Modules

- Basics of Mechatronics

Contact detail

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