



# CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY (CIPET)

(formerly known as Central Institute of Plastics Engineering & Technology (CIPET))

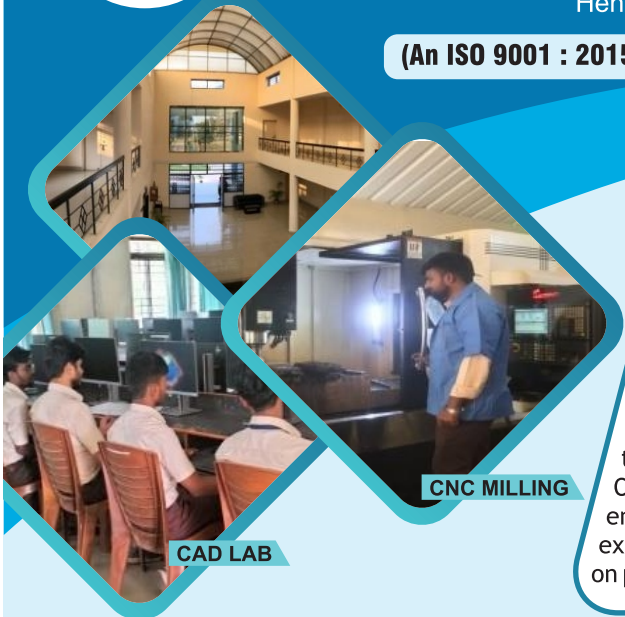
## CENTRE FOR SKILLING AND TECHNICAL SUPPORT (CSTS)

Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. Of India.  
Hehal, Ranchi – 834005 • Ph. : 0651-2999713



(An ISO 9001 : 2015 Certified Institution)

E-Mail : ranchi@cipet.gov.in • Website: www.cipet.gov.in



CAD LAB

CNC MILLING

CIPET is a premier national institute in India with state of art facilities in design CAD/CAM CAE, Mould Manufacturing plastic processing and Plastic Testing. CIPET institute is fully devoted to skill development, technology support service, Academic and research(STAR) for the polymer and allied industries in India.

CIPET Ranchi CAD department is Established with the aim of providing CAD/CAM/CAE training of highest quality to the students. Our centre provide the right learning environment for software exposure with the expert faculties. The student get exposure on professional on live Industrial Projects.



INJECTION MOULDING M/C

## JOB ORIENTED- CAD /CAM /CNC & INDUSTRIAL TRAINING PROGRAMS

### CAD – CAM LAB



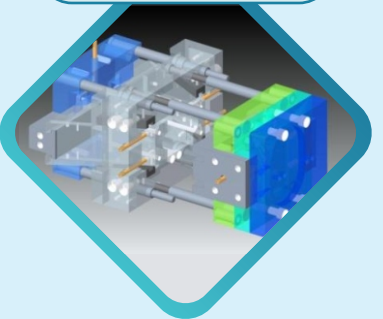
### TOOL ROOM TRAINING



### PRODUCT DESIGN



### MOULD DESIGN



### CAD PROGRAMS

- Auto CAD Mech./ Civil
- UG-NX/ CATIA
- Master CAM

### CNC/CAM PROGRAM

- Basic Programming & Operations on CNC
- Milling/ Lathe
- CAM Using Unigraphics

### INDUSTRY ORIENTED

- Plastic Product Design & Mould Design
- CNC Program Generation & Machining.
- 2D to 3D Drawing Conversion
- Hard Copy to Soft Copy Drawing Conversion
- Jigs & Fixture Design

### IN PLANT/ PROJECT WORK

- Offered for Pre Final/ Final Year Students
- Exposure On Industrial Projects (Offered Along with CAD programs)

### FACILITIES

- Hostel Accommodation
- Individual workstation for each trainee

### ELIGIBILITY

B.E./B.tech/ Diploma/ITI in Mechanical/ Production/ Polymer/Automobiles/ Mould Designer & Industrial Person Etc.

### DISCOUNT

Discount for CIPET Alumni or group of 10 Persons

### REGISTRATION ON FIRSTCOME FIRST SERVE BASIS

For Further Details Contact : Joint Director & Head, CIPET : CSTS, Hehal, Ranchi – 834005  
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E-mail : ranchi@cipet.gov.in, cadcamcae-ranchi@cipet.gov.in • Website : www.cipet.gov.in



# CAD/CAM/CNC - COURSE CONTENTS

## Design and Drafting through AUTOCAD

**Duration :** 1 Month

**Two Dimensional Drawing:** Drawing Creation, Dimensioning, Modifying, Editing, Viewing & Setting Tools. **Draw Tools:** Line, Polyline, Spline, Ray, Circle, Arc, Rectangle, Polygone, Ellipse, Ellipse Arc. **Modify Tools:** Erase, Copy, Move, Rotate, Scale, Offset, Trim, Rectangular Array, Circular Array, Path Array, Fillet, Chamfer, Join, Explode. **Annotation Tools:** Linear Dimensioning, Radial Dimensioning, Text, Mtext, Dimensions, Leaders, Block Reference, Hatches, Mleaders.

**Three Dimensional Drawing:** Surface Creation and Editing Tools, Solid Creation and Editing Tools, UCS, Rendering

## CAD /CAM Using Unigraphics-NX12.0

**Duration:** 1 Month

**Modeling:** Drawing basics & product design, Introduction, Sketch, Curve, Curve Operations, Form Features, Feature Operations, Synchronous Modeling, Layers, UDF, Macros, and Relations.

**Assembly:** Assembly of Components, Exploded Views, Sequencing, Context Control, Top down & Bottom up Assemblies, Checking Assembly for Interference. **Drafting:** Creating & Editing of Drawing Sheets, Views, Dimensioning, Annotations, Symbols, Part Lists. Creation of Operation-Creating a New Operation, Tool Creation and Selection, Tool Path Settings, Step Over and Scallop Height, Depth per Cut, Cutting Parameters, Avoidance, Speeds and Feeds.

**Program Generation and Verification-** Generating Program Tool Path Display, Tool Path Simulation, Gouge Check. **Operation Methods -** Roughing, Semi-Finishing, Finishing Profile, Finishing Contour Surface, Flooring. **Post Processing-Creating** CLSF, Post Processing.

## CAD Using Catia V5-6R 2019

**Duration:** 1 Month

**Modeling:** Introduction to Sketcher, Constraints, Sketch Based Features, Dress up Features, Transformation Features, Associating Bodies with Boolean Operations, Reference Elements, Modifying Features.

**Assembly:** Creating Assembly, Manipulating Components, Assembly Constraints, Exploded View, Clash Checking, Assembly Feature Creation, Using Mechanical Standard Parts, Top Down Assembly

**Drafting:** Generative Drafting, Interactive Drafting, Creating views, Sectioning, Dimensioning, Labeling, Editing views.

**Surface:** Generative Sha. - Design-Basic Surface, Sweit Surface, Editing• , Advanced Surface, Surface Based Feature in Part Design

## Basic Programming & Operations on CNC Lathe

**Duration:** 1 Month

**CNC BASICS:** Part Program Formats, Miscellaneous and Preparatory Functions, Structure of CNC Program.

**CNC LATHE:** Basic Programming for CNC Lathe on Facing, Turning, Step Turning, Grooving, Boring, Drilling, Threading, Internal Boring.

## Basic Programming & Operations on CNC Milling

**Duration:** 1 Month

**CNC BASICS:** Part Program Formats, Miscellaneous and Preparatory Functions, Structure of CNC Program.

**CNC MILLING:** Basic Programming for CNC Milling on linear and circular Interpolation, Programming using Sub-Program, Circular/Rectangular Pocket Milling Operation, Drilling Operation on PCD, Profile Milling Operation using ATC option and with cutter Radius compensation.

## In-Plant/Internship/Industrial workshop

**Duration:** 4 weeks/6 weeks/8 weeks/1day/2 days

CIPET:CSTS – RANCHI are providing In-pant/Internship/Industrial exposure to students in the field of TOOL ROOM/DESIGN/ELECTRICAL, PROCESSING, TESTING etc. so that students get benefitted in real working environment.

## Basic Electrical and Industrial Wiring

**Duration:** 1 Month

Electric current - conductors - insulators Semi-conductors - Wires/Cables - Electric potential - Resistance - Ohm's Law - Resistances in series and parallel simple problem. Work-power-Energy: Definitions of work, power & energy simple problems on power & energy - problems on energy consumption and monthly billing- DC, A.C. power. B.I.S. Symbols used for electrical accessories. **1-Phase & 3-Phase power supply-** Fundamentals of Single phase & Three Phase System. Types of load in AC circuits. Phase Sequence, Electrical Degree. Line Voltage, Phase Voltage, Line current, Phase current, Impedance, Power, Active power, Reactive power, Apparent power, Power factor, Concept of Star & Delta connection etc.