PG Diploma in CAD/CAM

Objective of the Course:
The course is aimed at giving exposure to and enhancing the knowledge and skills of fresh graduate engineers and engineers involved in the operation use of CNC machines, CAD/CAM packages and for those who want to provide training to others in this area. It gives exposure and on hand experience in the field of CAD/CAM, Industrial Robots, CNC machines, FMS & CIM.

Learning Outcomes:
The participants will be able to:
- Understand the concepts of CAD and CAD tools
- Design and drafting of Part Modelling and Assembling Modellings in 2D and 3D models, and structural & thermal analysis
- Understand the working of CNC Machines, Robots, Machine Vision
- Design and machine using CAD/CAM packages like Creo (Pro/Engineer) Surface Design and Machining using Creo (ProEngineer)
- Design cell level in FMS and CIM
- Hand-on exposure to real life CIM environment
- Understand advanced features of CAD/CAM

Expected Job Roles:
AutoCAD Design Engineer

Duration of the Course (in hours) 720 hrs / 24 Weeks

Appr. Fees (INR): Rs.68,000/- (Service Tax Extra)

Minimum eligibility criteria and prerequisites if any
a. BE / B.Tech in Mechanical/Production Engineering or equivalent
b. Candidates who have appeared in the qualifying examination and awaiting results may also apply

Outline of the Course

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<tr>
<th>S. No</th>
<th>Topic</th>
<th>Minimum No. of Hours</th>
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<tbody>
<tr>
<td>1.</td>
<td><strong>Computer Aided Design</strong></td>
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<td>• Fundamentals of CAD, 2D Modelling,</td>
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<td>• 3D Modelling: Concepts, Wireframe, Surface, and Solid Modelling</td>
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<td>• Part Modelling, Part Detailing, Feature Based Modeling, Free form modeling, Assembling modeling, and Drafting</td>
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<td>• Analysis: model evaluation: behavioral modeling, model checking, and design editing. Three types of analysis : Structural, Motion and Thermal</td>
<td>310</td>
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### Short Term Courses – NIELIT

| 2. | **Computer Aided Manufacturing**  
• Fundamentals of NC/CNC, NC Part Programming, Conventional versus CNC Machines, NC Programming through CAD/CAM, Chucking and Turning Centres, Machining Centres, Maintenance and Trouble Shooting of CNC Machine Tools  
• 2D and 3D Machining sequences like Volume mill, boundary mill, Pocketing, Lathe operations and all relevant machining sequences for Lathe and Milling. CNC Machines | 240 |
| 3. | **Computer Integrated Manufacturing**  
| 4. | **Project Work** | 120 |

|  | Theory/ Lecture Hours: | 280 |
|  | Practical/ Tutorial Lecture Hours: | 440 |
|  | Total Hours: | 720 |

### Books recommended for reference and reading:

**REFERENCES**

2. CADCAM Principles, Practice and Manufacturing Management by Chris McMahon and Jimmie Browne.
3. Computer Integrated Manufacturing by Roger Hannam
4. Robotics for Engineers by Yoram Koren
7. Manuals of CNC Machines (Denford), Manuals of Robots (Mitsubishi, and Eshed Robetic), Manuals of AutoCAD, MasterCAM and Creo.

In addition manufacturer’s device data sheets and application notes are to be referred to get practical application oriented information.

| Group Code: | CADD | Group Name: | AutoCad / Instrumentation |
| Course Code: | PG02 | Course Name: | PG Diploma in CAD/CAM |