# PROFORMA FOR ITEC Courses 2017-18

## Annexure -I

<table>
<thead>
<tr>
<th>NAME OF THE INSTITUTE</th>
<th>HEAD OF THE INSTITUTE</th>
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</table>
| **MSME-TOOL ROOM, HYDERABAD Central Institute of Tool Design (A Govt. of India Society – Ministry of MSME)** | **NAME** : Shri Shujayat Khan  
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<table>
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<tr>
<th>WEBSITE</th>
<th><strong>24 HOURS EMERGENCY CONTACT NUMBERS / AFTER OFFICE / HOLIDAYS</strong></th>
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</thead>
</table>
| [www.citdindia.org](http://www.citdindia.org) | **NAME** : Shri M. Uday Kumar /Shri. K. Ramesh Babu/ Shri S.Anjaneyulu  
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**Proposed Training Courses to be conducted for the year 2017 – 18**

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<th>Course Title</th>
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<td>3 D Modeling and Surfacing Using Catia Software</td>
<td>05th June, 2017 to 11th August, 2017</td>
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<td>2</td>
<td>CNC Programming Using MasterCam Software</td>
<td>17th August, 2017 to 23rd October, 2017</td>
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<td>3</td>
<td>Design of Sheet Metal Forming Tools with Creo Parametric Software</td>
<td>17th August, 2017 to 23rd October, 2017</td>
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<td>4</td>
<td>Programmable Logic Controllers for Advanced Automation</td>
<td>30th October, 2017 to 5th January, 2018</td>
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<td>5</td>
<td>Mechatronics &amp; its Applications</td>
<td>11th January, 2018 to 19th March, 2018</td>
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3D Modeling and Surfacing using CATIA Software

05th June, 2017 to 11th August, 2017

Duration: 10 Weeks

Intake Capacity: 15

Course Fee:

a) Rs. 35,000/- per participant for fellowships under ITEC/SCAAP/TCS

b) US $ 3,500/- per participant for other agencies.

Admission Requirements:

Degree or Diploma in Mechanical Engineering or its equivalent.

Synopsis:

The Course is aimed for Design engineers for updating their skills in the area of 3D Modeling & Surfacing of various products.

Course Contents:

- Introduction to Catia, View tool bar, mouse functions,
- Sketch tool: Profile tools tool bar, operations toolbar, Constraints, etc
- Part modeling:
- Sketch based features: pad, pocket, Shaft, groove, hole, fillets etc.
- Reference elements(point, line, plane)
- Advanced Part modeling: Rib, Slot, Multi section solid, Remove Multi section solid, Boolean operations etc..
- Wire frame and Surfaces modeling: Creation of Wire frames.
- Creation of Surfaces. Advanced Surface modeling: Sweep, multi section surface etc..
- ASSEMBLY:
- Top Down Assembly, Bottom Up Assembly Concepts
- Drafting: Creation of views, dimensioning, annotation’s etc..
- Case study, over view and discussion.
CNC Programming Using Master Cam Software

17th August, 2017 to 23rd October, 2017

Duration: 10 Weeks  Intake Capacity: 15

Course Fee:
   a) Rs. 35,000/- per participant for fellowships under ITEC/SCAAP/TCS
   b) US $ 3,500/- per participant for other agencies.

Admission Requirements:
Degree or Diploma in Mechanical Engineering or its equivalent.

Synopsis:
The Course is aimed for Production engineers for updating their skills in the area of Manufacturing of various products.

Course Contents:
• Introduction to CNC Programming.
• Introduction to G – Codes, M- Codes etc..
• 2D programming, Sub Routines, Machine Cycles etc..
• MasterCam:
  o Design: Wireframe Modelling – Creating of points, Arcs, Lines, Fillets etc.
  o Solid Modelling – Extrude, Revolve, Sweep, Loft etc..
  o Surface Modelling – Ruled / Lofted, Revolved, Offset, Net, Fence etc..
  o Milling: 2D – Milling – Contour Mill, Drill, pocket Mill, Face Mill etc..
  o 2D High Speed: Core Mill, Area Mill, rest ill, Blend Mill etc..
  o 3D- Milling: Surface Rough – parallel, Project, Flow Line, Contour, etc..
  o Surface finishing: – parallel, Project, Flow Line, Contour, etc
  o Transforming Toolpaths, Trimming Tool Paths.
  o Lathe Machining: Facing, Roughing, Finishing, Threading, Drilling, Grooving etc.
  o Case study, over view and discussion.
Design of Sheet Metal Forming Tools with Creo Parametric Software

17th August, 2017 to 23rd October, 2017

Duration: 10 Weeks                        Intake Capacity: 15

Course Fee:
   a) Rs. 35,000/- per participant for fellowships under ITEC/SCAAP/TCS
   b) US $ 3,500/- per participant for other agencies.

Admission Requirements:
Degree or Diploma in Mechanical Engineering or its equivalent.

Synopsis:
The Course Theory and Design Practice presents a systematic approach in the development of various Press-Tools for sheet metal industry.

Course Contents:
   • Theory of shearing, Force Analysis, Economic Strip layouts.
   • Various Press-Tool Operations.
   • Design Criteria of Shearing Dies. viz.
   • Design approach of Bending, Forming Dies.
   • Design Criteria of Draw-dies.
   • Selection of Presses – Application – Types of Presses.
   • USE of Standard DIE-SETS and Elements.
   • Design Concepts of special blanking Tools.
   • Modern Trends in metal forming.
   • Faults and Remedies.
   • Design Exercises – Case Studies.
   • Application of Creo Parametric Software for Design of Sheet Metal Forming Tools.
Programmable Logic Controllers for Advanced Automation

30th October, 2017 to 05th January, 2018

Duration: 10 Weeks  Intake Capacity: 15

Course Fee:
  a)  Rs. 35,000/- per participant for fellowships under ITEC/SCAAP/TCS
  b)  US $ 3,500/- per participant for other agencies.

Admission Requirements:
  Degree or Diploma in Mechanical/ Production/ Electrical/ Electronics/ Instrumentation/ Automobile Engineering or its equivalent.

Synopsis:
  The Course is aimed for Programming in PLC for controlling Automation systems.

Course Contents:
  • Advantages of a PLC compared to conventional controls such as electrical, electro-pneumatic or electro-hydraulic controls.
  • Function of the System components of a PLC
  • Commissioning a PLC – Criteria for the use of mechanical, optical, capacitive and inductive proximity sensors.
  • Circuit development – Circuit diagram design – Communication between the Personal computers and PLCs. Programming in Ladder Diagram, Function Chart and Statement List.
  • Development of sequence and logic control systems. Defining appropriate control systems for a given control task. Modification of programmes by inserting or deleting control commands.
  • Programming of counter functions – Programming of Timer functions. Display and modification of the status of the functional components and error messages in the PLC test system.
  • Design and development of logic and sequence controls in combination with display and output elements.
Mechatronics & its Applications

11th January, 2018 to 19th March, 2018

Duration: 10 Weeks

Intake Capacity: 25

Course Fee:
   a) Rs. 35,000/- per participant for fellowships under ITEC/SCAAP/TCS
   b) US $ 3,500/- per participant for other agencies.

Admission Requirements:
   Degree or Diploma in Mechanical/ Production/ Electrical/ Electronics/ Instrumentation/ Automobile Engineering or its equivalent.

Synopsis:
   The Course is aimed for upgrading the skills in development of Automation systems.

Course Contents:
   - Applied Industrial Hydraulics: Control valves, Accessories, Pumps, Circuits, Electro Hydraulics, Proportional Hydraulics, Servo Hydraulics, PID Controls.
   - Mechanical Engineering, Materials, Heat treatment & Machining Processes
   - Applied Electrical & Electronic controls including microprocessors & programmable logic controllers.
   - Mechanisation, Exposure on NC & CNC and CAD/CAM, Robotics and their applications for automation, Flexible manufacturing systems
   - Practical demonstration in the laboratories.