



SIEMENS

Solution Partner:

● ***DesignTech***

Technology for designing the future



GOVT. TOOL ROOM & TRAINING CENTRE
BENGALURU, MYSURU, KALABURAGI AND DANDELI

CENTRE OF EXCELLENCE

Skill Development, Entrepreneurship & Livelihood Department (SDEL)
Government of Karnataka

To emerge as an International Centre of Excellence in Research, Training and Application on all aspects of Tooling Technology - from Concept to End Product.



OUR VISION

To continuously Improve the Teaching - Learning Process through innovative approaches and adopt state-of-the-art Training methodologies so as to meet all needs of the stake holders and be the leader.



OUR MISSION

Customer Relationship

Commit

Connect

Collaborate

Create

Confirm

Government Tool Room & Training Centre is a premier Tool Room and Training Centre established by Government of India & GoK with the assistance of DANIDA, Government of Denmark, in the year 1972. The centre is situated at Rajajinagar, Industrial Estate, Bengaluru and is now functioning as an autonomous institution under the Department of Skill Development Entrepreneurship & Livelihood, Government of Karnataka. GTTC offers high quality professional training programmes related to Design, Analysis, Manufacturing of Dies, Moulds and Manufacturing of Precision Components. GTTC offers training programmes at various levels with a view to address the ever growing demand for qualitative technical manpower for diverse manufacturing environments.

Facilities:

GTTC has state - of - the - art highly sophisticated manufacturing facilities in service centre ranging from 3 to 5 axis high speed CNC Machining Centers, CNC Turning Machines, CNC Turn - Mill centres, CNC Jig Grinding, CNC Spark Erosion, CNC Wire EDM, CMM, Profile Projector, High Power Lasers for Cutting & Engraving and other conventional supporting machinery and equipments.

GTTC is recognized as Scientific & Industrial Research Organisation [SIRO] by Government of India, Ministry of Science & Technology to carry out research activities in Tooling, Design & Manufacturing.

Government of Karnataka has established 22 GTTC centres 1. Bengaluru, 2. Mysuru, 3. Hassan, 4. Mangaluru, 5. Kalaburagi, 6. Belagavi, 7. Dandeli, 8. Hospete, 9. Harihara, 10. Hubballi, 11. Kudalasangama, 12. Madduru, 13. Kanakapura, 14. Lingasuguru, 15. Gundlupete, 16. Kaduru, 17. Humnabad, 18. Kolar, 19. Tumakuru, 20. Shivamogga, 21. Gowribidanuru, 22. Chikkodi across the state to provide skilled manpower and technical services to existing and emerging industries. Further construction of 05 new GTTC centres at Udipi, Chitradurga, Koppal, Yadagir and Gokak is under progress.

The main objectives of Tool Room:

- To conduct Industry Oriented Technical Training Programme to youth with Employable skills.
- To assist MSME units in technological upgradation by providing quality toolings.
- To provide highly skilled work force to Industries of various Sectors.

The main activities of GTTC:

- Offering Hands on Experience in Long - term, Short - term and need based Training programs.
- Design and Manufacturing of Press tools, Dies for Sheet Metals and Plastics Parts, Jigs & Fixtures, etc.,
- Manufacturing of Critical and Precision components for Aeronautical and Defence sectors, etc.

Long-term Courses:

The centre is conducting following courses, which is approved by Government of Karnataka and All India Council for Technical Education (AICTE), New Delhi.

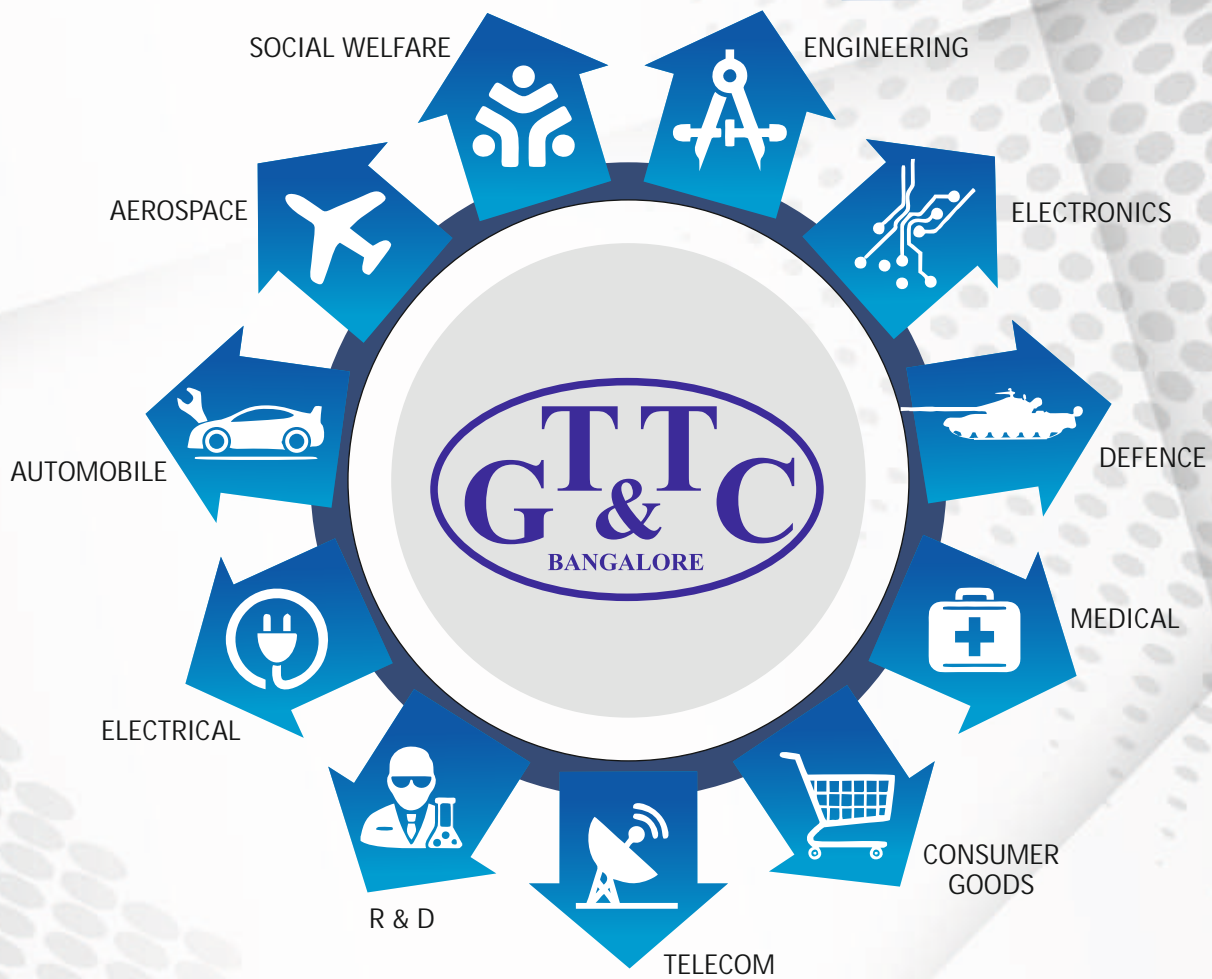


Sl. No.	Name of Course	Qualification	Duration of course	Intake per Year	Remarks
1	Diploma in Tool & Die Making	10th Std	4 Years	1340	From 22 centres.
2	Diploma in Mechatronics	10th Std	4 Years	170	Bengaluru, Gowribidanuru, Chikkodi centres.
3	Diploma in Precision Manufacturing	10th Std	4 Years	180	At 6 centres : Bengaluru, Mysuru, Mangaluru, Kalaburagi, Belagavi, Hubballi.
4	Diploma in Electronics & Communication (only for girls)	10th Std	3 Years	50	Bengaluru centre.
5	M.Tech in Tool Engineering	B.E	2 Years	36	Bengaluru, Mysuru centres.
6	Post Diploma in Tool Design	Diploma/ BE	1 Year	180	At 6 centres: Bengaluru, Mysuru, Kalaburagi, Belagavi, Hubballi and Harihara.
Total				1956	

Short-Term Courses:

GTTC offers skill training programs for ITI, Diploma and BE candidates to enhance the skills in Design, Manufacturing and Automation fields viz., CNC Programming and Operation ,CAD, Solid Works, CAM, PRO-E, Unigraphics, CNC Maintenance, PLC Programming, Hydraulic & Pneumatics ,Control systems, Sensors and its Applications, Lasers for Industrial Applications, Industrial Electronics, Mechatronics etc.

"GTTC has trained more than 70000 candidates in various Long & Short-term Skill Development Training Programs." The candidates are working in reputed industries in India and Overseas and some of our alumni have become successful entrepreneurs.



ACHIEVEMENTS OF GTTC

The development works Executed by GTTC for various Public / Private sector organisation and R&D institutions are given below:

- Hydraulic System Line replacement units like: Shuttle Valves, Non-Return Valves, Hydraulic Release Valves, Charging Valves for LCA Aircraft (Tejas)
- Fuel System Line Replacement Units like Inward/ Outward Relief Valves, Two Piston Flap Valves for LCA Aircraft (Tejas)
- Inspection Fixtures for Primary and Secondary Heat Exchangers for ADA.
- Environmental Control System like: Primary Heat Exchanger, Secondary Heat Exchanger, Reheater Heat Exchanger, Gimbal Assembly with Venturi and Gimbal Joints for LCA Aircraft (Tejas).
- Aircraft Mounted Accessories Gear Box (AMAGB) for LCA Aircraft (Tejas).
- Fire Extinguisher Bottle for LCA Aircraft (Tejas).
- Air to Air refueling parts for LCA Aircraft (Tejas).
- Camera Mounting Fixture for HAL.
- Fins for NAL.
- Precision components for Satellites to ISRO & its Sister Concern - LEOS, ISTRAC, LPSC, VSSC, MCF.
- Design & Manufacture of Press tools for BHEL, HAL, BEL, KAVIKA, L&T, AMC Cookware, CIFCO, Amalgamations Repco, etc.
- Design & Manufacture of Precision Plastic Moulds for HLL, BEL, PRICOL, CDOT, KS&DL, BESCOM, TOYOTA, GE Electricals, KRONE Communication, Pregna International, Phil Corporation, Reva Industries, Cinch Connectors, etc.
- Design & Manufacture of Pressure Die Casting Dies for Philips, UCAL, TVS, BAJAJ, LML, Lucas TVS, Hindustan Motors, Sundaram Clayton etc.
- Manufacture of Precision Blow Moulds for SIDEL France.
- Fabrication of high Precision Components for CABS, SAMEER, ECIL, BEML, RMP, BDL, L&T, etc.

Placement Sectors

- Aerospace and Defence
- Automotive
- Electro-Mechanical and Consumer Goods
- Heavy Engineering
- Industrial Automation
- Power and Energy



ABOUT COE

Centre of Excellence Centre [CoE]

Government of Karnataka through Commerce & Industries Department has taken a initiative to establish Centre of Excellence, for the first time at Government Tool Room & Training Centre [GTTC] and now under Skill Development, Entrepreneurship & Livelihood, GoK, GTTC with Siemens Industry Software India Pvt., Ltd., (SISW), established 4 Centres of Excellence (CoEs) at GTTC - Bengaluru, Mysuru, Kalaburgi & Dandeli.

Siemens harnesses its global best-in-class technology and manufacturing expertise through CoE centres to nurture excellence in the field of technical education. Siemens aims to bridge the gap between industry requirements and output from the current technical education system, by providing solutions that make technical institutes get better aligned with industry needs and produce students who are better industry-ready.

The Four CoEs will address high-tech industry segments viz., Automotive, Industrial machinery, Industrial automation, Aerospace & Defence and Renewable energy. The collaboration will train students on relevant industry processes and help create industry-ready trained personnel. This will attract better career opportunities for students and will eventually foster further

industrial development in the state of Karnataka. The CoEs are unique in their ability as they will be able to stitch together the virtual world of engineering and manufacturing simulation with the physical world of product development and manufacturing.

The industry specific short-term skill training programs will be offered at GTTC - Mysuru, Kalaburagi, Dandeli and Bengaluru centres. Computer Aided Design [CAD], Computer Aided Manufacturing [CAM], Project Life Cycle Management [PLM], Metrology & Measurements, Automation, Mechatronics, Robotics, CNC Turning, CNC Milling, Design & Validation, 3D Printing [Rapid Prototype].

The above skill training programmes are offered for the benefit of ITI, Diploma, and Engineering Students and placement assistance is provided to the successful candidates after completion of training period. Apart from this CoE will offer Skill Enhancement Training programs for working professionals in Industry/Institutions. Capable students who complete the courses with merit will be assisted for placement in suitable positions in industry by Siemens Industry Software - Design Tech Systems Pvt. Ltd.,

CoE

The objective behind establishing Siemens Centre of Excellence is to provide training to ITI, Diploma & Engineering students as well as faculty on world class electro-mechanical technologies from Siemens. The training at CoE's are imparted by Siemens certified training partner, Design Tech Systems Ltd.

These trainings will greatly benefit the student community in educating them on the latest technologies which is used in the Industry. Participants will acquire latest relevant knowledge and best practices of Industries. The employability of students shall increase by certification from Globally renowned Siemens.

Deliverables of CoE

To Impart technical skills, value based education to students and to enable them to face the demands of the Industry through Industry Oriented Training with contemporary learning methodologies.

To Support the academicians who are looking forward to take the advantage of the open up global market and research in the contemporary technology.

To Benefit the researchers in understanding the Industry related problems.

To Provide a platform for consultancy in various Technological areas such as Mechanical, Instrumentation, Electrical, Electronics & Communication, Automobile and Bio-Medical Engineering.

The objective of the SIEMENS is to bridge the gap between Institution & Industries



Challenges Faced by Organisation

- Large investment in time, effort & money to train students
- 6-18 months before recruits become productive
- Students attrition post training for better salary packages

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.

CoE LABORATORIES

Product Design &
Validation Lab

Advanced
Manufacturing Lab

Test & Optimization
Lab

Metrology Lab

CNC Machine Lab

Rapid Prototyping
Lab

Robotics Lab

Automation Lab

Mechatronics Lab

Process
Instrumentation
Lab

Renewable Energy

Internet of Things

CNC Controller Lab

DIAS 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 Assemblies
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

DM LABS

Robo CAD Basics

Robo CAD Advanced

Modelling & Kinematics

Process Designer

Process Simulate

Electronics & Automation Lab

Automation Labs

Basics of PLC
Basics of SCADA
HMI & Networking

Mechatronics Labs

Basic
Mechatronics

Process Instrumentation Labs

Basics of Process
Instrumentation
SIMATIC 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, Digital Fundamentals and troubleshooting Techniques with System Approach. It benefits students of all streams to acquire hybrid Technical Skills.

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

Process Optimization & 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
- 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



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

Modules Offered

- Robo CAD Basics
- Robo CAD Adv. modelling
- Kinematics
- NX CAM
- 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 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
- Simulation Lab

NC programming and CNC Machine Lab



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

Major equipment / software:

Sinumerik 8080, Sinumerik 8280, Sinumerik 8280 Controllers for both Turning & Milling, 2 Axis TURNING Machine with 8 station 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 process used to produce scaled model of a physical part or assembly using three dimensional CAD data. Construction of the part or assembly is done using 3D printing or additive.

Rapid prototyping is commonly used in new business models and application architectures to check the product shape, assemblies, production in case of limited quantity / small batches

Major equipment

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

Modules Offered

- NX Basic Design & RPT

Robotics Lab



Robotics 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, participants will be taught on working principles of programming and application of Robotics.

Major equipment software

- Robotic Pick and Place Cell
- Robotic Arc Welding Cell
- Robotic Spot Welding Cell
- Rob CAD, ABB Robot Studio simulation and offline Programming Software.

Modules Offered

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

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 571200 with KTP700 comfort touch panel & 57-300 test kit with TP700 comfort touch panel Siemens 11A Portal V13/V14.

Modules Offered

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

Process Instrumentation



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, Temperature Transmitter, SIMATIC PCS7, PDM V8.2/9.0

Modules Offered

- Basics of Process Instrumentation
- Basics of PCS - 7

Students Academic Project

- Students can utilize SIEMENS CoE laboratories for their academic projects in various domains like CAD, CAE, Prototyping, CNC machines, Automation & Electrical labs and guidance can be given by the domain experts.
- CoE labs will be exclusively made available for students academic projects.
- Interested students can register on GTTC website online.
- Guidance can be given to the short listed projects after screening.
- Further details will be updated to the Principals and HoDs of the respective colleges.

Industrial Visits

Industrial visits will be arranged for students to get the real time experience of software and the equipment used in SIEMENS CoE labs.

Faculty Develop Program (FDP)

The Program will provide excellent opportunity for Faculty of Mechanical, EEE, ECE, Instrumentation, Automobile Engineering disciplines.

Offered Course for FDP:

Basic NX Design and Simulation, Digital Manufacturing and Industrial Robotics, CNC Programming and Machining, Industrial Automation and Electrical & Energy Studies.

Internship Program

To Upgrade skills to International standards through Industry Oriented Training with SIEMENS learning methodologies and to make participant industry-ready upon completion of the course.

The Program will provide excellent opportunity for Students of Mechanical, EEE, ECE, Instrumentation, Automobile Engineering disciplines.

GTTC - COE centres

- Government Tool Room & Training Centre**
Plot No. 93 & 94, Belagola Industrial Area,
Off K.R.S Road, Mysuru – 570 016.
- Government Tool Room & Training Centre**
Plot.No.1,KSSIDC Industrial Estate, Ambewadi,
Dandeli-581 325.
- Government Tool Room & Training Centre**
Mahatma Basaveshwara Road,
Darshanapura layout, Kalaburagi - 585 101.
- Government Tool Room & Training Centre**
Rajajinagar Industrial Estate, Bengaluru - 560 010.


Contact Details

Centre	Contact Person	Phone Number	e-mail
Mysuru	Mr. K.L. Prakash	9480690813	coegtcmys@gmail.com
	Dr. Ramesha. N	9141629594	
	Mr. L.G. Sannamani	9141629599	
	Mr. Ravishankar. R	9141630300	
Kalaburagi	Mr. Mohan Rathod	8453302396	coegtcklb@gmail.com
	Mr. Jairaj T Nargund	8722822497	
Dandeli	Mr. Ashok Walikar	9035589999	coegttcdan@gmail.com
	Mr. Dharmendra	9449356647	
Bengaluru	Mr. Munir Ahmed Khatib	9141629566	coegttcblr@gmail.com
	Mr. M.N. Pundareekaksha	9141629585	

Email:md.gttc@gmail.com, gttcmngtrg@gmail.com
Website:www.karnataka.gov.in/gttc

SL. No.	BASIC COURSE (100 HRS)	SL. No.	ADVANCED CERTIFICATION COURSES (300 HRS)	SL. No.	SPECIALIZATION COURSES (600 HRS)
1	Advanced Manufacturing (Certificate Course in Advanced Manufacturing)	1	<ul style="list-style-type: none">Advanced ManufacturingProduct Design and Validation (Advanced Certification in CAD-CAM)	1	<ul style="list-style-type: none">Advanced ManufacturingProduct Design and Validation (Specialization in CAD-CAM- CAE- PLM)
2	Advanced Manufacturing (Certificate Course in PLM with Installation)	2	<ul style="list-style-type: none">Advanced ManufacturingProduct Design and Validation (Advanced Certification in CAD-PLM)	2	<ul style="list-style-type: none">Advanced ManufacturingProduct Design and ValidationTest & Optimization (Specialization in CAD- CAE- PLM- NVH)
3	Advanced Manufacturing (Certificate Course in PLM with Data Modelling)	3	<ul style="list-style-type: none">Advanced ManufacturingProduct Design and Validation (Advanced Certification in CAD-CAE)	3	<ul style="list-style-type: none">Advanced ManufacturingRobotics (Specialization in Robotics – Robo CAD,Programming & Application)
4	Advanced Manufacturing (Certificate Course in PLM with Mock ups and Scheduler)	4	Advanced Manufacturing (Advanced Certification in Tecnomatix Flow & Process)		
5	Automation	5	Advanced Manufacturing (Advanced Certification in Tecnomatix Process & Rob CAD)		
6	CNC Controller	6	<ul style="list-style-type: none">AutomationMechatronicsProcess Instrumentation		
7	CNC Controller CNC Machine				
8	Process Instrumentation	FEE STRUCTURE			
9	Product Design and Validation (Certificate Course in CAD - Part & Synchronous Modelling)	SL. No.	COURSE	HRS	FEE(Rs.)
10	Product Design and Validation (Certificate Course in CAD - Modelling & Assemblies)	1	BASIC COURSE	100	4000.00
11	Product Design and Validation (Certificate Course in CAD - Modelling and Drafting)	2	ADVANCED CERTIFICATION COURSES	300	8000.00
12	Product Design and Validation (Certificate Course in CAD - Mechanical Freeform Modelling)	3	DOMAIN SPECIALIZATION COURSES	600	16000.00
13	Product Design and Validation (Certificate Course in CAE)	50% Fee CONCESSION for : SC, ST, WOMEN, MINORITY and Physically Challenged Candidates (PCC)			
14	Renewable Energy				
15	Test & Optimization				
16	Advanced Manufacturing				
17	Automation Mechatronics				
18	Internet of Things				
19	Metrology				

APPLICATION FORM

	GOVT. TOOL ROOM & TRAINING CENTRE								Affix PHOTO (passport size)		
	Centre :										
	Course :										
	Duration :										
Application No. :											
NOTE: Fill all the particulars in BLOCK LETTERS and enclose photocopies of relevant documents											
NAME (As per 10 th Std. Marks card)											
Gender											
Date of Birth / Age											
Father's / Mother's / Guardian's Name											
Educational Qualification: [Please tick in appropriate box]			Branch		Completed		Not Completed				
					<input type="checkbox"/>		<input type="checkbox"/>				
Year of passing											
Aadhar Card Number											
Category [Please tick in appropriate box]			SC	ST	I	IIA	IIB	IIIA	IIIB	GM	PCC
Work Experience, if any											
Address for Communication											
State											
Phone number <small>Land line with STD Code / Mobile :</small>											
Email Id:											
Date:			Signature of Candidate				Signature of Parent/Guardian				
<u>For Office use only</u>											
Course fee: Rs.							Date:				
Remarks:											
Receipt No :		Amount:		Clerk/Staff		Principal/In-charge Officer					

