

APEX HI-TECH INSTITUTE

TRAINING CALENDER 2017-18

[Dear stake holders of Skill India mission.](#)

On behalf of entire team at Apex Hi Tech Institute, I take this opportunity to wish you a happy New Year 2017..! I have immense pleasure to share with you that we are at the threshold of rejuvenation at Apex Hi Tech Institute as result of all the efforts made by our team in the past few years here. As you are aware, this Institute was set-up by the erstwhile Directorate General of Employment & Training, under Ministry of Labour & Employment in the year 1993 with assistance from IDA (International Development Agency, part of World Bank).

With the inception of Ministry of Skill Development & Entrepreneurship in the year 2016, this Institute is working under the guidance of Directorate General of Training, MSDE specially formed for implementing the Skill Development Initiatives framed by the present Union Government.

This Institute is mandated with upgrading and updating the skills of workforce in four specialized emerging skill sectors like CNC Maintenance, Communication Technology, Renewable Energy and Mechatronics. Accordingly, this Institute is well equipped with modern facilities in the above skill segments.

One of the cardinal roles of this Institute is to assess the training needs of ITI Instructors across the country and identify the emerging fields of Technology for inclusion in the ITI curricula.

As such, a number of training programs, identifying the core industrial needs in these sectors have been prepared by our officers in consultation with Industry experts, Institution Management Committee members and academicians for the year 2017-18. All these programs are of short duration with an aim of improvising skill levels of an Individual gradually, through level structured training programs, so that at the end of all levels in a particular sector, he/she will be competent enough with the skills required for the Industry.

It is therefore requested to go through this training calendar and explore the possibility of utilizing our services for the betterment of your personnel. It will be our pleasure to discuss with you, in case of any customized requirements for your esteemed organization.

Come, see, explore our Institute and let us be a party committed to skill India..!

AHI – The Manager for Instructor Training Network of ITIs

Apex Hi-Tech Institute, Bangalore, commonly known as AHI, Bangalore, has been set up by the Directorate General of Employment & Training (DGE&T), Ministry of Labour & Employment, under Government of India in the year 1993 with assistance from IDA (International Development Agency, part of World Bank). AHI currently under the umbrella of Ministry of Skill Development & Entrepreneurship and is situated in Industrial suburb, Yeshwantpur, Bangalore adjacent to ESIC Hospital. AHI, Bangalore is one of the pioneer Institutes of national interest in skill development initiatives. It is attached with most modern facilities in Communication Technology, Mechatronics, CNC Maintenance and Green Technology areas for training of ITI Instructors, Industry sponsored and private participants.

One of the cardinal roles of this Institute is to assess the training needs of ITI instructors, Identify the emerging fields of technology for inclusion in ITI curricula.

The faculty trained in India & Abroad with their vast experience imparts training in the above core areas and have planned a number of courses which are of short term duration, offering regular & customized training to nourish the skills of manpower at Industry and related staff of Government/Private ITI's.

Being a Hi-Tech institute, AHI, Bangalore is already catering to the training needs of industries. All India Radio, Army base workshop, BEL, BHEL, HAL, INS Valsura, INS Shivaji, NMDC, DRDO, DGQA, SBC, Naval Dockyard, Naval base, BIAL, BDL etc. are some of the leading establishments who have partnered in the success story of this institute.

All the State Governments are requested to utilize the services of AHI in developing their instructors to further enhance their knowledge and skills so as to contribute better in their workplace.

AHI seeks whole hearted co-operation from all stakeholders in building a better tomorrow under skill development initiatives.

Let us be a party committed to excel!

team @ apex hitech, Bangalore

About Us

Apex Hi-Tech Institute (AHI) is a core Institute of Directorate General of Training (DGT) for high level demand driven training with definite and distinct focus, to provide innovative training in the field of technical and vocational education by identifying cutting edge technologies and practices of excellent teaching and learning environment.

Apex Hi-Tech institute provides a link between industries and institution by offering the best quality training for the aspiring graduates from technical Institutions and providing trained skilled artisans to the industries in the emerging technological area.

AHI offers high quality training programs to strengthen the training capacity of ITI instructors and provides training support in vocational education and supervisory development. AHI also offers a range of training programmes to engineers, supervisors, technicians and workmen from the industries.

AHI provides outstanding hands-on training using Industry's most vital platforms of the day in the niche domains like CNC Maintenance, Precision Measurement, Mechatronics, Embedded System Technology, Communication Technology, Green Technology and Drives & Control. All the laboratories are fully equipped with exclusively designed state-of-the-art equipment for the benefit of trainees.

Being a Premier Institute, AHI is entrusted with training, in MIS (Management Information System) portal for the State Project Implementation units, ITI Principals and Administrators to use this MIS Application software.

AHI is credited with the honour of successfully conducting and coordinating the All India Crafts Instructors Training Scheme (CITS) counseling.

Our Strength

Well-furnished four storey Hi-Tech building at a sprawling green campus at Yeshwantpur industrial suburb, near the ESIC Hospital provides the right ambience for learning. The institute hosts well-planned Hi-Tech lecture halls with audio-visual communication aid, library, spacious laboratories, conference hall, board-room and elevator facility. Moderate hostel facilities are also available in the campus. The Institute has association with industries for industrial exposure to the participants.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) - flagship scheme of the Ministry of Skill Development & Entrepreneurship (MSDE). The objective of this Skill Certification Scheme is to enable a large number of Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood.

Faculty Expertise

Apex Hi-tech institute is a World Class Institute and accordingly the faculty members are dedicated and dynamic in imparting the training with special skills and in depth knowledge. Our faculty members are highly qualified and trained in India and abroad, possessing excellent training skills to meet and match the trainee's requirements.

Distance Learning Program

The Directorate General of Employment and Training (DGE&T) under Ministry of Labour & Employment has initiated a Distance Learning Program to train the ITI Instructors to cope up with the rapid change in technology in the sphere of their Sectors/Trades through Hub and Spokes (Nodes) model.

In this regard, 10 Hubs and 194 Spokes throughout India have been identified. These spokes are selected at the district Headquarters in the ITIs of different states and hubs are identified from DGT field institutes.

Apex Hi-Tech Institute has been identified as one of the Hubs, catering to the needs of Karnataka, Kerala and Union Territories of Andaman & Nicobar Islands and Lakshadweep.

AHI under this program has set up a modern studio, with all facilities to conduct various programs to be relayed to all Spokes, while all the spokes are provided with necessary equipment and broadband connection. These spokes receive the programs on a big screen so that around 30 instructors per spoke from nearby Government and Private ITIs (up to 200 KM) can participate and benefit from the interactive training.

Institute Management Committee (IMC)

As per the DGT letter no. MSDE-2/6/2015-MES/IS dated 22nd September 2015 from Director (SDI &CFI), it was observed that majority of the short term courses being run by the DGT institutes do not attract trainees in large numbers resulting the low utilization of machinery and human resources available in the institutes. Further, such courses are also not popular amongst the industry. These institutes were set up with the objective to train manpower for meeting the requirement of the industry and therefore it is felt that institutes should run such courses which fulfill the need of the industry and aspiration of youth. In this regard, Institute Management Committee (IMC) will play an important role in ascertaining the requirement of the industry in terms of manpower.

As per the guidelines issued by DGT, the Chairman of the IMC should be from the industry and the Director of the Institute will be the Member Secretary. The members of this IMC are being selected from Industry partners, Institutions dealing with skill Training, Technical Education Departments dealing with Craftsmen Training Scheme (CTS), Universities and Engineering Colleges.

Our Advisory Committee is robust enough with Our Potential and Dynamic IMC members. Courses are designed and structured by incorporating their valuable suggestion and guidance.

The Main functions of IMC

- Reviewing of short term courses and addition of new courses/deletion of existing unpopular courses
- Replacement of old machines, equipment & software and procurement of new machines & equipment based on the new courses.
- Projection of faculty required. New faculty will be hired on contractual basis.
- Introducing production-cum-training activities.
- Introducing part-time/week end courses in more popular/demanding areas.

IMC Members of AHI

Sl. No.	Name & Designation	Organisation	Position in IMC
1	Shri K. Venugopal, Director	NTTF	Chairman
3	Shri Sathya Shankar, Director	AHI, MSDE	Convener
4	Shri Eswar Naik, Additional Director	DET, Karnataka	Member
5	Shri G. Kalyana Sundaram, Sr. Administrative Officer (HRD)	BHEL	Member
6	Shri V.G. Yoganath, Scientist - 'E'	CMTI	Member
7	Shri D. Peter Immanuel, Chief Executive Officer	Aerospace & Aviation Sector Skill Council (AASSC)	Member
8	Shri KLH Raya, Secretary	KRESMA	Member
9	Shri D Suresh Kumar	Bhoruka Steel & CII	Member
10	Shri Prithvi, Secretary	BCIC	Member
11	Shri Shankar Narayanan	Siemens	Member
12	Shri D. Murugan, Manager	ABB India Ltd.	Member
13	Shri Harish N Nachnani, National Sales Manager	Festo Controls Pvt. Ltd.	Member

CNC Maintenance Lab

Course Coordinator: Shri. Hemant D.Ganjare, Deputy Director of Training

[E-Mail: hemant_ganjare@rediffmail.com]

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CNC01	CNC Machine and its Fundamentals	Level 1	1 Week	17.04.17 03.07.17 28.08.17 23.10.17 01.01.18 29.01.18	21.04.17 07.07.17 01.09.17 27.10.17 05.01.18 02.02.18	<ul style="list-style-type: none">• Introduction to CNC Machines• Constructional Features of CNC Machine• Elements of CNC Machines: Mechanical like Bed, Saddle, Tool Post, Spindle, LM Guideways, Ball screws, , Electrical & Electronics like Servo Motors, feedback devices and Control System• Tool Materials & Tool Holders, Inserts• G- Codes and M-Codes	As a Marketing Executive/Assistant in CNC Manufacturing Industries.
CNC02	Programming and Simulation with Sinutrain ShopTurn for CNC Lathe	Level 2	1 Week	24.04.17 06.11.17 05.02.18	28.04.17 10.11.17 09.02.18	<ul style="list-style-type: none">• Fundamental Principles of NC Programming for CNC Lathe• Program Format & Basic Motion commands• Stock removal cycles, Grooving and Thread Cutting Cycles with Simulation Practice using Siemens Sinutrain ShopTurn (4.7 SP2 HF1)	As a CNC Programmer for Lathe in Manufacturing, Automotive, Aviation Industries.

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CNC03	Programming and Simulation with Sinutrain ShopMill for CNC Milling	Level 2	1 Week	10.07.17 04.09.17 08.01.18	14.07.17 08.09.17 12.01.18	<ul style="list-style-type: none"> • Fundamental Principles of Programming for CNC Milling • Program Format & Basic Motion commands Programs for Face Milling, Spigot, Pocketing, drilling, Peck drilling cycles with Simulation Practice using ns Siemens Sinutrain ShopMill (4.7 SP2 HF1) 	As a CNC Programmer for Milling in Manufacturing, Automotive, Aviation Industries.
CNC04	CNC Turning with SIEMENS 828 D SL - Setting and Operation	Level 3	1 Week	01.05.17 13.11.17 12.02.18	05.05.17 17.11.17 16.02.18	<ul style="list-style-type: none"> • Axis designation & Coordinate System • Practice on Machine for JOG, MDI, ZRN, SBK,AUTO, Cycle Start, Spindle ON/OFF, Feed/Speed Override, Emergency stop • Fundamental Principles for Tool and work offset setting with Practice on Machine, • Program editing, execution and metal cutting to produce the final component. 	As a CNC Operator for Lathe / Milling machine in Manufacturing, Automotive and Aviation Industries.
CNC05	CNC Milling with FANUC 0i- MATE MD - Setting and Operation	Level 3	1 Week	31.07.17 30.10.17	04.08.17 03.11.17		
CNC06	CNC Milling with SIEMENS 828 D SL - Setting and Operation	Level 3	1 Week	17.07.17 11.09.17 15.01.18	21.07.17 15.09.17 19.01.18		
CNC07	CNC Turn-Mill Centre with FANUC 0i-TB - Setting and Operation	Level 3	1 Week	22.05.17 09.10.17	26.05.17 13.10.17		

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CNC08	CNC Machine Maintenance	Level 4	1 Week	03.04.17 24.07.17 05.03.18	07.04.17 28.07.17 09.03.18	<ul style="list-style-type: none"> • Trouble shooting of Mechanical Sub-assemblies in Turning Centre/ Milling Centre • Overview of Machine Parameters and its Setting, Initialization of the NC parameters related to servo setting, setting the default values, setting parameters related to spindle motor. 	As a CNC Maintenance / Service Engineer/ technician in Manufacturing, Automotive, Aviation, CNC Machine Manufacturing Industries.
CNC09	Alarm and Fault diagnostics of CNC Lathe with SIEMENS 828 D Control	Level 4	1 Week	18.09.17 26.03.18	22.09.17 30.03.18	<ul style="list-style-type: none"> • Diagnostics of Break down Alarms in CNC Turning centre/ Milling Centre with different controls. • Communication Procedures of CNC systems, Procedure for loading the logic from Memory Card (Flash Card/RS232) to CNC System & Vice-versa 	
CNC10	CNC System Commissioning and Maintenance - SIEMENS 828 D Control	Level 4	1 Week	15.05.17 19.02.18	19.05.17 23.02.18		
CNC11	CNC System Commissioning and Maintenance – FANUC 0i-MD Control	Level 4	1 Week	07.08.17 20.11.17 12.03.18	11.08.17 24.11.17 16.03.18		

CNC Maintenance Lab -Long Term Course

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CNC12	CNC Lathe Operator	4 Weeks	29.05.17	23.06.17	<ul style="list-style-type: none"> • Introduction to CNC Machines • Constructional Features of CNC Lathe Machine • Elements of CNC Lathe Machines, like Mechanical, Electrical & Electronics and Control System • Practice on Machine using G- Codes and M-Codes • Principles of NC Programming, Program Format & Basic Motion commands, Stock removal cycles, Grooving and Thread Cutting Cycles with Simulation Practice • Axis designation & Coordinate System, Practice on Machine for JOG, MDI, ZRN, SBK,AUTO, Cycle Start, Spindle ON/OFF, Feed/Speed Override, Emergency stop • Fundamental Principles for Tool and work offset setting with Practice on Machine, program editing, execution and metal cutting to produce the final component. • Safety precautions maintenance aspects of CNC Machine • Loading of CNC data & backup through Flash card/USB. 	CNC Lathe Operator in Manufacturing, Automotive, Aviation, CNC Machine Manufacturing Industries.

eSign Framework - This initiative would enable users to digitally sign a document online using Aadhaar authentication.

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CNC13	CNC Milling Operator	4 Weeks	27.11.17	22.12.17	<ul style="list-style-type: none"> • Introduction to CNC Machines • Constructional Features of CNC Milling Machine • Elements of CNC Milling Machines, like Mechanical, Electrical & Electronics and Control System • Practice on Machine using G- Codes and M-Codes • Principles of NC Programming, Program Format, CNC program for plane Milling, contour Milling, slot, spigot, drilling, reaming, Tapping using G-code programming & graphical programming / cycles • Axis designation & Coordinate System, Practice on Machine for JOG, MDI, ZRN, SBK, AUTO, Cycle Start, Spindle ON/OFF, Feed/Speed Override, Emergency stop • Work offset setting with Practice on Machine, program editing, execution and metal cutting to produce the final component. • Safety precautions maintenance aspects of CNC Machine • Loading of CNC data & backup through Flash card/USB. 	CNC Milling Operator in Manufacturing, Automotive, Aviation, CNC Machine Manufacturing Industries.

Eligibility: Candidates with Degree / Diploma / ITI from relevant trade.

Mechatronics Lab

Course Coordinator: Smt.D.Subhashree, Deputy Director of Training

(E-Mail: subha_2678@yahoo.com)

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
MECH01	Material Handling System using Siemens S7-300 PLC	Level 1	1 week	03.04.17 05.06.17 18.07.17 28.08.17 30.10.17 08.01.18 19.02.18 12.03.18	07.04.17 09.06.17 21.07.17 01.09.17 03.11.17 12.01.18 23.02.18 16.03.18	<p>After the completion of the course, trainee will be able to</p> <ul style="list-style-type: none"> • write the logic for the ladder program • will be in a position to analyze the electrical & ladder diagram • understand the panel wiring • do design circuits for real time processes 	<p>Trainees will be placed as Automation Engineer/PLC Engineer in industries like cement, power, cement, pharma, steel, oil, automobile, beverages</p>
MECH02	Process Visualization & Control using HMI & Drives	Level 2	1 week	10.04.17 24.07.17 04.09.17 06.11.17 15.01.18	14.04.17 28.07.17 08.09.17 10.11.17 19.01.18	<p>After the completion of the course, trainee will be able to</p> <ul style="list-style-type: none"> • design HMI screen • control devices from the operator panel • do screen navigation (switch over from screen to screen) • set authorization (passwords) for different category people like operator, supervisor, etc. • monitor trends, set alarms, etc. 	<p>After completion participants will get opportunities as a Design Engineer/Automation Engineer in industries like cement, power, cement, pharma, steel, oil, automobile, beverages</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
MECH03	SCADA Programming using WinCC	Level 3	1 week	17.04.17 12.06.17 31.07.17 11.09.17 13.11.17 22.01.18 26.02.18 19.03.18	21.04.17 16.06.17 04.08.17 15.09.17 17.11.17 25.01.18 02.03.18 23.03.18	<p>After the completion of the course, trainee will be able to</p> <ul style="list-style-type: none"> • design screen by placing objects from library • control devices from graphic designer screen • do screen navigation i.e. switch over from screen to screen • set authorization (passwords) for different category people like operator, supervisor, etc. • monitor trends, set alarms, etc. 	<p>After completion participants will be able to design the scada system for any industry like power, cement, pharma, steel, oil, automobile with the available objects (library) enabling monitoring & control of the entire process</p>
MECH04	Industrial Automation using Allen Bradley SLC 500	Level 1	1 week	24.04.17 27.06.17 07.08.17 18.09.17 20.11.17	28.04.17 30.06.17 11.08.17 22.09.17 24.11.17	<p>After the completion of the course, trainee will be able to</p> <ul style="list-style-type: none"> • write the logic for the ladder program • will be in a position to analyze the electrical & ladder diagram • understand the panel wiring • do design circuits for real time processes 	<p>After completion, participants will gain expertise in PLC programming & understand the hardware wiring, & design automation products (Home/Industrial)</p> <p>They will be placed as Automation Engineer/PLC Engineer in industries like cement, power, cement, pharma, steel, oil, automobile, beverages</p>

eHospital- This initiative enables people to avail services like online registration, payment of fees and appointment, online diagnostic reports, checking on the availability of blood online, etc.

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
MECH05	Scada Programming using RSView32	Level 2	1 week	01.05.17 03.07.17 14.08.17 03.10.17	05.05.17 07.07.17 18.08.17 06.10.17	<p>After the completion of the course, trainee will be able to</p> <ul style="list-style-type: none"> • design screen by placing objects from library • control devices from graphic designer screen • do screen navigation i.e. switch over from screen to screen • set authorization (passwords) for different category people like operator, supervisor, etc. • monitor trends, set alarms, etc 	<p>After completion participants will be able to design the scada system in PC for any industry like power, cement, pharma, steel, oil, automobile with the available objects(library) enabling monitoring & control of the entire process</p>
MECH06	Hydraulics & Pneumatics in Mechatronics	Level 1	1 week	08.05.17 21.08.17 04.12.17 05.02.18	12.05.17 24.08.17 08.12.17 09.02.18	<p>After the completion of the course the trainees will be able to</p> <ul style="list-style-type: none"> • understand & analyze hydraulic & pneumatic circuits used in industries • know the working of Hydraulic & Pneumatic components • design hydraulic & pneumatic circuits 	<p>Trainees will get placement as Automation Engineer/Project Engineer in industries like power, cement, pharma, steel, oil, automobile, beverages, Dairy</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
MECH07	Data Acquisition using LabView	Level 1	1 week	23.10.17 11.12.17 12.02.18 05.03.18	27.10.17 15.12.17 16.02.18 09.03.18	<p>After completion of the course the trainees will be able to</p> <ul style="list-style-type: none"> understand the working of various sensors like Thermocouple, RTD, Proximity sensors & design circuits incorporating these sensors mainly for control circuits evaluate and select sensors for a given application based on accuracy, resolution, response time, and other relevant static/dynamic specifications Use data acquisition software, NI Lab VIEW to collect and analyze data from a mechanical /electronic system 	<p>Trainee will be gaining expertise on LabView Programming and sensor interfacing and will get placement in Colleges, Industries using LabView software like BEL,Honeywell,Bosch etc.</p>
MECH08	Industrial Sensors & Controllers	Level 1	1 week	10.07.17 09.10.17	14.07.17 13.10.17	<p>After completion of the course the trainees will be able to</p> <ul style="list-style-type: none"> understand the working of various sensors like Thermocouple, RTD, Proximity sensors & design circuits incorporating these sensors mainly for control circuits understand the closed loop control system(PID Controllers) and design feedback circuits 	<p>Participants will be able to design and develop sensor circuits,& do projects using sensor interfacing & do real time projects.</p> <p>Participants will get job easily in industries like automobile, steel, pharma, cement,oil as Project Engineer</p>

Bharat Net- Under this initiative, a high-speed digital highway will connect all 250,000 gram panchayats of the country. This is the world's largest rural broadband project using optical fibre.

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
MECH09	Mechatronics Maintenance	Level 1	1 week	27.11.17 29.01.18	30.11.17 02.02.18	<p>After completion of the course the trainees will be able to</p> <ul style="list-style-type: none"> troubleshoot & do the maintenance of mechatronic systems, analyse the problems Analyse the ladder diagram in Mechatronics system(Integration of PLC in CNC) Hydraulics & Pneumatics in CNC Drives connectivity with the system understanding operator panel interface understand Industrial communication protocols 	Participants will get job easily in industries like automobile, steel, manufacturing, cement as Project Engineer/Maintenance Engineer

Mechatronics Lab – Long Term Course

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
MECH 10	Certificate course on Industrial Automation (Level 1,2 & 3)	3 Weeks	18.07.17 08.01.18	04.08.17 25.01.18	<p>After completion of the course the trainee</p> <ul style="list-style-type: none"> will be able to design system by selecting PLC, Input/output devices to control devices from HMI Screen to control process from SCADA software 	Participants will gain substantial knowledge on PLC,HMI,SCADA and will be confident of PLC programming, designing industrial processes mainly required in any automation industry eg. Cement,steel,paper,pharma,oil refinery, automobile, manufacturing etc.

Eligibility: Candidates with Degree/Diploma/ITI from relevant trade

Green Technology

Course Coordinator: Shri. C.Ramasubramanian, Deputy Director of Training

[E-Mail: crsmddtahiblore@gmail.com]

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
GT1	Installation & commissioning Skills of Solar PV system	1	1 Week	03.04.17 01.05.17 03.07.17 31.07.17 30.10.17 27.11.17	07.04.17 05.05.17 07.07.17 04.08.17 03.11.17 30.11.17	<p>After the training, the trainee will be able to</p> <ul style="list-style-type: none"> • Identify the components of Solar PV (SPV) Electrical system • perform Installation of SPV system • Test SPV system • Commission SPV system • Prepare documents and records of installation and commissioning 	<p>Placement , Self-employment , direct sale in market (trade), Entrepreneurship (Business opportunity) and maintenance in renewable energy industries such as Solar panel manufacturing Solar PV plant integration companies Solar DC products such as lantern, mobile charger, DC fan, FM radio etc Solar inverter and battery industries Solar agricultural products</p>
GT2	Designing, Testing & maintenance of Solar PV system	2	1 Week	10.04.17 10.07.17 06.11.17	13.04.17 14.07.17 10.11.17	<p>After the training, the trainee will be able to</p> <ul style="list-style-type: none"> • Design SPV system • Test and troubleshoot SPV system • Maintain SPV system • Promote small, medium and mega SPV projects 	<p>Solar water heater Solar cooker Structures for mounting panels Accessories</p>

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
GT3	Entrepreneurship Development in Renewable energy sector	3	1 Week	17.04.17 15.05.17 17.07.17 14.08.17 13.11.17 11.12.17 08.01.18	21.04.17 19.05.17 21.07.17 18.08.17 17.11.17 15.12.17 12.01.18	<p>After the training, the trainee will be able to</p> <ul style="list-style-type: none"> Analyze Government energy policies and draw a solar project plan Explore business opportunities in Renewable energy sector Select institution assisting entrepreneurship Prepare project report for startup initiatives Arrange for loans Manage a small business Start a small scale industry 	<p>Placement , Self employment , direct sale in market (trade), Entrepreneurship (Business opportunity) and maintenance in renewable energy industries such as Solar panel manufacturing Solar PV plant integration companies Solar DC products such as lantern, mobile charger, DC fan, FM radio etc Solar inverter and battery industries Solar agricultural products Solar water heater Solar cooker Structures for mounting panels Accessories</p>
GT4	Testing & maintenance of Hybrid Electrical system	2	1 Week	08.05.17 07.08.17 04.12.17	12.05.17 11.08.17 08.12.17	<p>After the training, the trainee will be able to</p> <ul style="list-style-type: none"> Design hybrid electrical system Test and troubleshoot hybrid system Maintain hybrid system Orient the customer to optimum use of hybrid electrical system 	

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
GT5	Installation, testing & maintenance of Solar Thermal system	1	1 Week	26.12.17 05.03.18	29.12.17 09.03.18	<p>After the training, the trainee will be able to</p> <ul style="list-style-type: none"> • Install solar thermal applications such as solar water heater, solar cooker etc • Test solar thermal applications • Maintain solar thermal applications 	<p>Placement , Self employment , direct sale in market (trade), Entrepreneurship (Business opportunity) and maintenance in renewable energy industries such as Solar panel manufacturing Solar PV plant integration companies Solar DC products such as lantern, mobile charger, DC fan, FM radio etc Solar inverter and battery industries Solar agricultural products Solar water heater Solar cooker Structures for mounting panels Accessories</p>
GT6	Renewable Energy Harnessing and saving Electricity	2	1 Week	01.01.18 12.03.18	05.01.18 16.03.18	<p>After the training, the trainee will be able to</p> <ul style="list-style-type: none"> • perform analysis of different methods of Renewable Energy Harnessing • site survey of renewable energy sources • comparison of methods of generating electricity • estimate cost effective benefits of renewable energy sources 	

Centre of Excellence on Internet of Things (IoT) - IoT will help the citizens in services like transport system, electricity, waste management, smart cities, smart health services etc.

Green Technology Lab – Long Term Course

Sl.No	Course Name	Duration in Week(s)	Modules	From	To
1	Solar PV system & Entrepreneurship	3 weeks	GT1, GT2 and GT3	03.04.17 01.05.17 03.07.17	21.04.17 19.05.17 21.07.17
2	Hybrid Electrical system & Entrepreneurship	3 weeks	GT1, GT4 and GT3	31.07.17 30.10.17 27.11.17	18.08.17 17.11.17 15.12.17
3	Solar Thermal system & Entrepreneurship	3 weeks	GT5,GT6 and GT3	26.12.17 05.03.18	12.01.18 23.03.18

Electrical Drives and Control Lab

Course Coordinator: Shri. C.Ramasubramanian, Deputy Director of Training
(E-Mail: crsmddtahiblore@gmail.com)

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
EDM 1	Electrical Drives and Maintenance	1	1 week	29.05.17 27.06.17 21.08.17 09.10.17 29.01.18 26.02.18	02.06.17 30.06.17 24.08.17 13.10.17 02.02.18 02.03.18	After the training, the trainee will be able to perform operation, control and maintenance of Electric drives	Placement in Electrical drive industries, CNC machine Industries, automation industries etc.

Eligibility: Candidates with Degree/Diploma/ITI from relevant trade

Communication Technology Lab

Course Coordinator : Smt.Priya S, Assistant Director of Training

(E-Mail: spriya.akrishnan@gmail.com)

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CT01	Electronic Circuit Designing	1	1 week	24.04.17 04.09.17 23.10.17 19.02.18	28.04.17 08.09.17 27.10.17 23.02.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Practice different biasing for the Semiconductor Devices • Design DC power supplies • Design & Test of Amplifiers, Oscillator and Power electronics circuit • Designing digital circuits, Simplifying Expressions and Implementations • Design of combinational circuits And Sequential circuits -counters. • Build & Test various applications of Analog and digital Circuits • Design circuits using software 	<p>Trainees will get Placement as a Circuit Designer/Designer Assistant to design, develop, test and manufacture in Electronics, Defence, Medical, Automotive and consumer electronics Industries</p> <p>They may upgrade their Technical skills and knowledge by taking up higher level courses CT03 & CT04</p>
CT02	Linear ICs and its Application	2	1 week	01.05.17 26.02.18	05.05.17 02.03.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Design linear & Nonlinear Application of Op-amp. Test ADC & DAC • Design & Test PLL for AM detection, FM detection, FSK • Design circuits using Timer IC • Design & Test various IC voltage regulator, F/V and V/F • Designing circuits using software 	

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CT03	Electronic Circuit Simulation using OrCAD	3	1 week	08.05.17 11.09.17 08.01.18 05.03.18	12.05.17 15.09.17 12.01.18 09.03.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Create a Schematic Design • Edit the Part Editor • Work on Multiple Schematic Project • Process a Design, Generate a BOM • Create a Cross reference parts report generation • Do Design Rule Check, Simulate a Design • Perform various Analysis and validation for analog/digital/mixed signal circuit using Cadence OrCAD Capture & PSpice software 	As a PCB Designer/ PCB Designer Assistant in wide range of Private and public sector organizations in all electronic industries, ranging from telecommunication, design & manufacturing, defence & Aerospace, medical , automotive and consumer electronics or self-employment
CT04	PCB Designing using OrCAD	4	1 week	15.05.17 18.09.17 15.01.18 12.03.18	19.05.17 22.09.17 19.01.18 16.03.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Prepare Schematic modification for PCB Design, PCB Editor Netlist creation, Script file creation • Floor planning, placing components, mounting holes • Do Routing and Physical Rule Check • Design processing for Artwork/ Gerber File creation. • Do Graphical Design implementation for PCBs using Cadence OrCAD PCB Editor 	

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CT05	SCILAB for Signal & Image Processing (Open source software equivalent to MATLAB)	3	1 week	06.11.17 01.01.18	10.11.17 05.01.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Work on SCILAB Environment • Write commands for Scalar, vector & Matrix Operations. • Write script files & function files • Write Programs for user defined and special function • 1D & 2D plots Write Programs for 1D signal and 2D. • Compile & Debug the Programs • Do I/O operation using images. • Develop Image processing applications 	Trainees can work as a SCILAB Programmer/Developer for testing, application development and support in Companies deal with computer vision, Automotive, robotics, industries and academic projects.
CT06	Testing of Analog and Digital Communication system	3	1 week	03.04.17 03.10.17 13.11.17 26.12.17	07.04.17 06.10.17 17.11.17 29.12.17	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Test different Analog modulation and demodulation schemes. • Build & Test Pulse modulation and types – sampling – PCM -Delta– TDM & FDM • Test Digital system, coding and decoding , ASK,FSK,PSK,QPSK Applications • Measurement of Antenna Parameters • Testing of Antennas, Antenna Array, Microstrip Antennas • Testing Microwave components • Generation of microwave by Klystron and Gunn diode circuits 	<p>Trainees will get opportunities as a Test/Maintenance Engineer/Maintenance Assistant in wide range of Private and public sector organizations in all telecommunication industries.</p> <p>They may upgrade their Technical skills and knowledge by taking up higher level courses CT08 & CT09</p>

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CT07	Maintenance of Electronic and Communication Equipment	3	1 week	10.04.17 09.10.17 20.11.17 04.12.17 26.03.18	13.04.17 13.10.17 24.11.17 08.12.17 30.03.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Perform Failure Analysis – Failure rare, MTTF, MTBF, MTTR and Availability. • Understand Reliability and Quality • Identify Electronic components and failures – Reason for failure • Handle various Testing and measuring instruments • Understands the importance of Maintenance, Methods of maintenance – PM and CM • Do Fault diagnosis, fault location & fault detection – fault finding aids. • Prepare Documents and records-Safety 	<p>Trainees will get opportunities as a Test/Maintenance Engineer/Maintenance Assistant in wide range of Private and public sector organizations in all telecommunication industries.</p> <p>They may upgrade their Technical skills and knowledge by taking up higher level courses CT08 & CT09</p>
CT08	GSM and CDMA Mobile Communication	4	1 week	17.04.17 27.11.17 18.12.17 22.01.18 05.02.18 19.03.18	21.04.17 30.11.17 22.12.17 25.01.18 09.02.18 23.03.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Understand the Evolution of 1G, 2G, 3G and 4G. • Understand the GSM and CDMA Network architecture, GPRS/EDGE • Test different signals from the GSM mobile & CDMA system. • Understand BTS – Equipment – Testing - Maintenance • Testing of Wireless modulation techniques - Bluetooth 	<p>Trainees will get opportunities from mobile operators as a Test/Maintenance Engineer/ Maintenance Assistant to maintain the different equipment in Mobile Tower site.</p>

Module	Module Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CT09	Testing of Fiber Optic Communication system	4	1 week	11.12.17 29.01.18 12.02.18	15.12.17 02.02.18 16.02.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Understand Elements of an optical fiber • Identify different Fiber Optic Cables and Connectors • Connectors - Connectorization Process - Reflection and Polishes • Prepare fiber for splicing – Perform Splicing – Methods. • Handle various Testing and measuring instruments • Understands the fiber Maintenance and Safety Aspects. 	Trainees will get opportunities as a Fiber optics Test/Maintenance Engineer/ Maintenance Assistant to test and maintain the fiber link for the telecommunication companies.

Communication Technology Lab – Long Term Course

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CT10	Electronic System Designing (Modules: CT01,CT02, CT03,CT04)	4 weeks	24.04.17 19.02.18	19.05.17 16.03.18	<p>On completion of the training, trainees will be able to</p> <ul style="list-style-type: none"> • Design, develop & Test various applications of Analog and digital Circuits. • Perform various Analysis for analog/digital/mixed signal circuit using Cadence OrCAD Capture & PSpice software. • Do Graphical Design implementation for PCBs using Cadence OrCAD PCB Editor. 	Trainees will get Placement as a Circuit Designer/Designer Assistant or as PCB Designer/ PCB Designer Assistant to design, develop, test and manufacture in all electronic System Manufacturing Industries or self-employment

Eligibility: Candidates with Degree/Diploma/ITI from relevant trade

Embedded System Lab

Course Coordinator: Shri. Raju Kannam, Assistant Director of Training
(E-Mail: raju.kannams@gmail.com)

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
ES01	Embedded Systems Programming using 8051 Microcontroller	1	1	03.04.17 15.05.17 26.06.17 31.07.17 23.10.17 11.12.17 12.02.18	07.04.17 19.05.17 30.06.17 04.08.17 27.10.17 15.12.17 16.02.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Write Assembly level programs. • Compile & debug the programs using cross-compiler like Keil C51 tools. • Download Hex files using C51 programmer. • Interfacing of LED, Switches, Buzzers, DC motor, Stepper motor with microcontroller in assembly language. • Develop the applications using 8051 family of microcontrollers. • Develop a sample project of Automatic Street Light controller based on vehicle movement using ALL. 	<p>Students can become Embedded application developer for academic projects.</p> <p>They may update and upgrade their skills by undergoing training on ES02 to ES06 courses, so as to be own entrepreneurs on automation technology or get placement in Electronic & Automation industries.</p>
ES02	C programming for Embedded Systems.	2	1	10.04.17 22.05.17 03.07.17 07.08.17 30.10.17 04.12.17 19.02.18	14.04.17 26.05.17 07.07.17 11.08.17 03.11.17 08.12.17 23.02.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Write C programs for different real time scenarios of embedded applications. • Compile and debugging the code in windows, Linux OS. • Develop the code for applications in embedded C language. • Develop a C code for sample project of Automatic Street Light controller based on vehicle movement. 	<p>Students can join as Embedded application programmer in automation industries, Microcontroller manufacturing industries. They may update and upgrade their skills by undergoing training on ES03 to ES06 courses, so as to be own entrepreneurs or get placement in Electronic & Automation industries.</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
ES03	Embedded system programming for sensors & wireless devices.	3	1	17.04.17 29.05.17 10.07.17 28.08.17 06.11.17 01.01.18 26.02.18	21.04.17 02.06.17 14.07.17 01.09.17 10.11.17 05.01.18 02.03.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Write Assembly level/C programs for interfacing different types of Sensors like Temperature, LDR, IR, and Smoke. • Write Assembly level/C programs for interfacing different peripherals like 4x4 keypad, LCD, 7-segment display, ADC, LED display. • Write C programs for interfacing different types of wireless devices like GSM,GPS,RF, Bluetooth, ZIGBEE. • Compile & debug the programs using cross-compiler like keil C51 tools. • Download Hex files using corresponding programmer. • Develop the applications based on sensors and wireless devices. • Develop a sample project of Home appliances control by using mobile phone. 	<p>Students can join as Embedded developer for medical electronics companies like Siemens, Automotive industries like Bosch, Volvo etc.</p> <p>They may update and upgrade their skills by undergoing training on ES04 to ES06 courses, so as to be own entrepreneurs on automation technology or get placement in Electronic & Automation industries.</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
ES04	ARM7 Microcontroller Programming.	4	1	24.04.17 12.06.17 17.07.17 04.09.17 09.10.17 13.11.17 08.01.18 05.03.18	28.04.17 16.06.17 21.07.17 08.09.17 13.10.17 17.11.17 12.01.18 09.03.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Write Assembly level programs for LPC2148 controller by using RISC instruction set. • Compile & debug the programs using cross-compiler like keil ARM tools. • Download Hex files using corresponding programmer. • Develop the interfacing of LED, Switches, Buzzers, DC motor, Stepper motor, LCD, 4x4 keypad, 7-Segment display with ARM7 microcontroller in C language. • Develop the applications using ARM7 microcontrollers. • Develop a sample project where in Robot is programmed for following fixed path. 	<p>Students can join as Embedded application developer for Automation industries, and Home appliance development companies like LG, Samsung, and Intel, where ARM processor is used.</p> <p>They may update and upgrade their skills by undergoing training on ES05 to ES06 courses, so as to be own entrepreneurs on automation technology or get placement in Electronic & Automation industries.</p>
ES05	Embedded Application development by using Arduino.	4	1	11.09.17 20.11.17 22.01.18 12.03.18	15.09.17 24.11.17 26.01.18 16.03.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Write embedded C programs for AVR microcontrollers. • Compile & debug the programs using AVR studio. • Download Hex files using AVR programmer. • Develop the applications using Arduino boards. • Develop a sample project of Home automation system using Arduino. 	<p>Students can start their own development center for embedded applications.</p> <p>They may update and upgrade their skills by undergoing training on ES06 course, so as to be own entrepreneurs on automation technology or get placement in Electronic & Automation industries.</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
ES06	Embedded Linux & its Porting.	5	1	01.05.17 19.06.17 24.07.17 18.09.17 27.11.17 29.01.18	05.05.17 23.06.17 28.07.17 22.09.17 01.12.17 02.02.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Understand the Linux OS structure, & Kernel. • Write programs for shell scripting. • Create static & dynamic libraries as components. • Create the process & able to develop the communication among different process by IPC concepts. • Understand about ARM cortex boards like WEGA, Raspberry Pi etc. • Load Primary boot loader & MBL into new ARM board. • Load Kernel on to ARM board. • Customize RFS and load it on to ARM board based on application requirement. 	<p>Students can join as Embedded Engineer in Mobile manufacturing industries and Home appliance development companies like LG, Samsung, Celkon, Micromax etc.</p> <p>They may update and upgrade their skills by undergoing training on Device Drivers, Android system development, so as to be own entrepreneurs on automation technology</p>
ES07	Digital Circuit Design using Verilog.	1	1	18.12.17 05.02.18 19.03.18	22.12.17 09.02.18 23.03.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Design, simulate and synthesize and digital hardware with Verilog. • Design combinational and sequential logic • Synthesize logic and state machines • Run a timing simulation using Verilog libraries • How to build models using loops, assignment, process statements, if and case statements. 	<p>Students can join as digital Hardware designer in Electronic industries.</p> <p>They may update and upgrade their skills by undergoing training on System verilog, ASIC design. So as to be own entrepreneurs on hardware design.</p>

Embedded Systems Lab – Long Term Course

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
ES08	Embedded System Application Developer (Modules: ES01,ES02, ES03,ES04, ES05,ES06)	6 weeks	23.10.17 12.02.18	30.11.17 23.03.18	<p>After the training, trainees will be able to</p> <ul style="list-style-type: none"> • Write programs in Assembly language for 8051(8-bit) microcontroller & ARM7 (32-bit) microcontroller. • Compile & Debug the programs by using Keil compiler. • Download the programs into microcontroller using Flash magic. • Develop the embedded applications based on sensors & wireless devices. • Load the boot loader into RAM cortex boards. • Load the kernel into ARM boards. • Customize RFS and load into ARM board based on the application. • Project development as per the student's selection. 	Students can join as Embedded Developer in Electronics Industries, Automobile industries, Mobile manufacturing industries and Medical Electronics industries.

Eligibility: Students of ITI/DIPLOMA/BE/BTECH
Instructors from ITI/DIPLOMA/BE/BTECH.

Precision Measurement Lab

Course Coordinator: Smt. M.Rajeswari /Assistant Director of Training (E-Mail : raji.vadt@gmail.com)

I Dimensional Metrology sector –PMDM

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMDM-01	Mechanical Measurement and Inspection Techniques	1	1	03.04.17 05.06.17 07.08.17 23.10.17 08.01.18	07.04.17 09.06.17 11.08.17 27.10.17 12.01.18	<p>At the end of this course Participants will be able to</p> <ul style="list-style-type: none">• Handle vernier caliper, micrometers, and Height gauges, Inspection gauges and protractors.• Perform Linear measurement (Ist order)using Vernier caliper to LC - 0.02 mm accuracy and Micrometer for LC -0.01 mm, measuring of inside and outside depth using vernier and micrometer, caliper (Conventional and Digital) as per the Standards.• Compare the Measurements of records for repeatability and Accuracy.• Perform Angular measurements using Bevel Protractor and Profile Projector and maintain the record of repeatability and accuracy to 1-5‘.• Measurement of component and marking of component using Height gauge.etc Building of Slip gauges for calibration /Inspection	QC Inspector/Metrology inspector in manufacturing Industries where QC is a major role.

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMDM-02	Limits, Fits and Tolerance.	1	1	10.04.17 12.06.17 30.10.17 22.01.18	14.04.17 16.06.17 03.11.17 26.01.18	<p>After undergoing the programme, the participants will be able to :</p> <ul style="list-style-type: none"> • Read the Drawings and calculate the limits and tolerance zone for the components /assembly to be manufactured. • Apply Systematic Procedure for calculating limits for a given tolerance class. • Inspect and Measure the dimension of the manufactured part for the limit and Tolerance IT 01 to IT18 as per International standards. • Calculate the fundamental deviation and tolerance grade in the drawing for production. • Apply 3 types of fits and allowance for engineering applications as given in drawing and standards. • Limits, fits and Tolerance calculation for Hole and shaft as per IS an ISO standards. 	<p>Students and fresh graduates will be employable fit as QC Inspector/Metrology inspector in manufacturing Industries where QC is a major role.</p> <p>Upgrades skill for engineers/operators/shop floor personnel already working in the manufacturing Industry in Production field.</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMDM-03	Fundamentals Of Geometric Dimensioning & Tolerance (GD&T)	1	1	17.04.17 19.06.17 28.08.17 06.11.17 29.01.18	21.04.17 23.06.17 01.09.17 10.11.17 02.02.18	<p>At the end of the course Participants gain the competency to</p> <ul style="list-style-type: none"> • Read the GD&T Drawings and Ability to interpret GD&T Feature control frames for Tolerance symbols and values as per ASME 14.5 • Compare the benefits of using GD&T tolerance to old tolerance method for holes and shaft Assembly • Measure the geometrical parameters circularity, Straightness, Cylindricity ,Flatness on CMM and Form Tester. • Identify the datums and Types of datums, measuring tolerance with reference to datum. 	<p>Students and fresh graduates will be employable fit as</p> <p>Quality Engineer/QC Inspector /Metrology engineer /Design Engineer</p> <p>In manufacturing Industries - Assembly ,production, Quality control and Metrology</p> <p>Also Fresh graduates can be employable as Application Engineer/Executive in Metrology Equipment manufacturing Industry.</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMDM-04	Geometrical Measurements using CMM and RMM	2	1	24.04.17 04.09.17 13.11.17 05.02.18	28.04.17 08.09.17 17.11.17 09.02.18	<p>Trainee enables to: At the end of the course, the Participants will be able to:</p> <ul style="list-style-type: none"> • Setup, calibrate a Probe by reference sphere using CMM. • Selection of Qualified probes for different measurements & setting up the same on CMM. • Use of DMIS software for interfacing with CMM, Measuring analysis etc. • Measure, Analyze, and Create a Inspection Report based on CAD model created by DMIS software for component for GD&T tolerance. • Exercise Care and maintenance of CMM machine and Probes during operation and on. • Operate RMM machine and Perform Rotational and rectilinear alignment. • Measurement of Geometrical parameters (Form, profile, Orientation, Location and Run out) using RMM . • Data recording and Inspection report by TIM software interfacing with RMM. 	<p>Quality Inspector /Metrology Engineer.</p> <p>Application Engineer-Industrial Metrology</p> <p>CMM operator in Manufacturing Industries.</p>

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMDM-05	Advanced GD&T Measurements	3	1	03.07.17 11.09.17 20.11.17 12.02.18	07.07.17 15.09.17 24.11.17 16.02.18	<p>At the End of this course ,participants will be able to</p> <ul style="list-style-type: none"> • Apply dimensioning standards an engineering drawing as per ASME 14.5 • Compare difference between a rigid and a flexible (non-rigid) part and Identifying requirements for Tolerancing parts measured in the restrained state. • Implement special considerations for datum usage on restrained (non-rigid parts) • Calculate advanced applications of form controls and datum system for its misconceptions and errors. • Interpreting specialized datum feature applications • Implement modifier usage in tolerance of position applications • Use composite position Tolerancing and multiple single-segment position Tolerancing for Shaft Assembly. 	<p>Product design Engineer/ QC Inspector /QC engineer /metrology engineer in Manufacturing Industries.</p> <p>Also Fresh graduates can employable fit as Application Engineer/Executive in Metrology Equipments manufacturing Industry.</p>

ELIGIBILITY

Students/Instructors from Engineering college/Diploma/ITI, **Inspectors, and Supervisory Personnel** involved in the functions of Product Design, Process Planning, Production, Assembly and Quality Assurance from Machine Tool, Automobile, Tool Rooms, Defence & Railway establishments.

Precision Measurement Lab - I Quality Sector Program –PMQM

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMQM-01	Principles & Practices Of Quality Management (P&PQM)	3	1	15.05.17 17.07.17 09.10.17 04.12.17 26.02.18	19.05.17 21.07.17 13.10.17 08.12.17 02.03.18	<p>Participants gain the competency on</p> <ul style="list-style-type: none"> • Apply the Benefits of “Quality Management” in workplace. • Be conversant with the application and implementation of various Quality Improvement techniques such as; Performance Measurement, QC & SQC. • Interpretation of ISO9001 	QA Inspector /QA Manager
PMQM-02	Statistical Process Control & Basic 7 QC Tools	3	1	22.05.17 24.07.17 11.12.17 05.03.18	26.05.17 28.07.17 15.12.17 09.03.18	<p>After going through this programme , the participants will be able to</p> <ul style="list-style-type: none"> • Construct and Interpret Control charts, Histograms and Pareto charts • Skill in calculating and interpreting Cp, Cpk . • Confidence in choosing the right SPC chart for a data set. • Apply 7 QC tools for the statistical calculation. • DO’s and Don’ts for implementing SPC. 	QA Manager Quality Supervisor/Inspector QA Engineer.

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMQM-03	Measurement of Uncertainty in Metrology	3	1	08.05.17 10.07.17 18.09.17 27.11.17 19.02.18	12.05.17 14.07.17 22.09.17 30.11.17 23.02.18	At the end of this course participants will be able to <ul style="list-style-type: none"> • Measure Linear and angular measurements using vernier and Micrometer. • Measure Cosine error, Parallax error, deformation error and geometric errors on slip g08es and bore g08es. • Calculate combined uncertainty and estimated uncertainty for repeatability exercise • Calculate uncertainty of mitutoyo vernier with NABL standards. 	Calibration technician – metrology Calibration engineer/metrology Quality Inspector

ELIGIBILITY : Students/Instructors from Engineering college/Diploma/ITI, QC Inspectors, Managers, Engineers, QA Inspector/QA managers and Supervisory Personnel involved in the functions of Product Design, Process Planning and Quality Assurance from Machine Tool, Automobile, Tool Rooms, Defence & Railway establishments.

Course Code	Course Name	Level	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
PMQM-03	TRAINING of Trainers on QMS/QCC tools	1	1	29.05.17 31.07.17 18.12.17 12.03.18	02.06.17 04.08.17 22.12.17 16.03.18	<ul style="list-style-type: none"> • After undergoing this programme Participants/ITI Instructors gain the concepts of QMS and QCC. • Practice Metrology and Measurement Assurance, QC and QA, SQC and 7 QC Tools. • 5s and Kaizen • TPM, Lean Thinking. 	This course is mainly for trainers of any training institutes and workers of any industry and other Govt. Organizations. On completion of this course the trainee will be able to develop better training skills

ELIGIBILITY: Instructors from Govt/Pvt Institutes to gain the Knowledge of concepts of QMS and QCC and their Importance

Precision Measurement Lab – Long Term Course

Certificate Course on Industrial Metrology Inspection

This Certificate Course aims to provide the young engineers with the complete technical knowledge on metrology and quality in order to bridge the gap between theory and practice to make them ready for industry. The objective of this program is to provide a strong foundation on the science of measurements for engineers who are about to graduate/ graduates/ practicing engineers.

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CCIM-01	Certificate Course on Industrial Metrology Inspection	4 weeks	05.06.17 08.01.18	26.06.17 02.02.18	<ul style="list-style-type: none"> • Trainees gain the competency for the role of Quality Inspector/Metrology Engineer and can deliver the responsibilities in Metrology area. • Measuring and handling of Instruments and G08es –Vernier, Micrometer, calipers and fixed ,slip g08es • Reading of engineering drawing, Dimensioning and tolerancing as per ASME standards. • Implementing Limits, fits and calculate the tolerance for Hole and shaft assembly as per ISO and ISI standards. • Reading and understanding GD&T Drawings compared with Old Tolerance method • Operation of CMM and RMM for 2D and 3D inspection • Measuring Surface Roughness and recording • Practice on 5s and kaizen and follow the TPM, TQM standards in the Industry. 	<ul style="list-style-type: none"> • Students and fresh graduates will be employable as Quality Engineer/QC Inspector /Metrology engineer /Design Engineer • In manufacturing Industries - Assembly shop,production,Quality control and Metrology • Also Fresh graduates can employable as Application Engineer/Executive in Metrology Equipments manufacturing Industry.

Eligibility: Candidates with Degree/Diploma/ITI from relevant trade pass out and Undergoing

Information Technology Lab

Course Coordinator: Shri.V.Babu, Deputy Director of Training

(E-mail:valluru.babu@nic.in)

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
IT-01	Web Designing using HTML 5 and CSS	1 Week	05.06.17 04.09.17 08.01.18 05.03.18	09.06.16 08.09.17 12.01.18 09.03.18	On completion of the course the trainee will be able to; <ul style="list-style-type: none">• Write a simple coding in notepad and saving as HTML, opening file in explorer to get the output• coding using Tags – Heading Tags <h1>, <h2> etc., Paragraph Tags <p1>, <p2> etc., Line break tag
, center - <center<, horizontal lines - <hr>, Preserve </pre>• Write CSS coding with elementary selector, id selector, class selector, grouping selector.• Write CSS coding for Inclusion, Embedded CSS, Inline CSS, External CSS, CSS Rules, CSS measurements• Write CSS codes for making colours, backgrounds, fonts, Text, Images• Linking of CSS, properties of HTML tables using CSS, borders, margins, lists, padding• Write CSS coding for cursor property, outlines, dimensions, scroll bars, positioning• Create layers, pseudo classes, pseudo elements, rules, filters, Media	After completion of this course the trainee will be able to get employment in IT&ITES Industries and freelance web site developer and can also upgrade their skills after undergoing training on IT-02 and IT-03

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
IT-02	Dynamic Web Designing using PHP	2 Weeks	12.06.17 11.09.17 15.01.18 12.03.18	23.06.17 22.09.17 25.01.18 23.03.18	<p>On completion of this course the trainee will be able to;</p> <ul style="list-style-type: none"> • Install the Web Server, PHP and My SQL. • Embedding the PHP code on a page, Outputting dynamic text, the operational trail, Inserting code comments • Explore Data Types - Variables, Strings, String functions, Numbers part one: Integers, Numbers part two: Floating points, Arrays, Associative arrays, Array functions, Booleans, NULL and empty, Type juggling and casting, Constants • Declare the variables • Print by using echo and print statements and Display variables. • Write PHP coding using Control Structure, Logical Expressions, If statements, Else and else-if statements, Logical operators, Switch statements, Loops While loops, For loops, For each loops, Continue, Break and array pointers. • Write PHP coding by using user defined Functions- Defining functions, Function arguments, Returning values from a function, Multiple return values, Scope and global variables, Setting default argument values • Build Web Pages with PHP, Links and URLs, Using GET values, Encoding GET values • Encode for HTML, Including and requiring files, Modifying headers, Page redirection, 	After completion of this course the trainee will be able to get employment in IT&ITES Industries and self-employment as Web Developer

					<p>Output buffering</p> <ul style="list-style-type: none"> • Work with Forms and Form Data, Building forms, Detecting form submissions, Single-page form processing, Validating form values • Practice on - Problems with validation logic, Displaying validation errors, Custom validation functions, Single-page form with validations • Create a database, Creating a database table, CRUD in My SQL • Populate My SQL database, Relational database tables, Populating the relational table • Use PHP to Access My SQL, Database APIs in PHP • Connect My SQL with PHP, Retrieving data from My SQL • Access My SQL, Working with retrieved data, Creating records with PHP • Update and deleting records with PHP, SQL injection, Escaping strings for My SQL, Introducing prepared statements 	
IT-03	Dynamic Web Designing Using Python	2 Weeks	27.06.17 23.10.17 29.01.18	07.07.17 03.11.17 09.02.18	<p>On completion of this course, the trainee will be able to;</p> <ul style="list-style-type: none"> • Write Python programs using variable and Data Types, Operators, Conditional Statements If, If-else and Nested if-else • Practice Looping, For While and Nested loops • Practice Control Statements - Break , Continue, Pass • Practice String commands • Practice list commands • Practice Tuple commands 	After completion of this course the trainee will be able to get employment in IT&ITES Industries and self-employment as Web site Developer

					<ul style="list-style-type: none"> • Practice Dictionaries • Practice Functions Defining a function, Calling a function, Types of functions, Function Arguments, Anonymous functions, Global and local variables. Modules Importing module, Math module Random module, Packages and Composition <ul style="list-style-type: none"> • Input-Output Printing on screen, Reading data from keyboard, Opening and closing file Reading and writing files and Functions • Exception-Handling Exception, Exception Handling Except clause, Try ? finally clause User Defined Exceptions 	
IT-04	Object Oriented Programming with Core Java	2 Weeks	10.07.17 06.11.17 12.02.18	21.07.17 17.11.17 23.02.18	Object Oriented Programming with Core Java <ul style="list-style-type: none"> • Understand to object oriented programming, Differentiate between C & Java, Java features, JVM. Simple Java program. Command line argument. • Data type, type casting, operators (Arithmetic, increment, decrement. relational, logical, bit wise, conditional) and expressions, Mathematical functions • Decision making and branching (if...else, else if, switch), looping, classes, class hierarchies, • Objects and methods, constructors, wrapper classes, nesting of methods, overriding methods. • final class, visibility control, • Arrays, strings and vectors, 	After completion of this course the trainee will be able to get employment in IT&ITES Industries and self-employment as Application Developer

					<ul style="list-style-type: none"> • Inheritance, interfaces, packages; • Multithreaded programming, extending thread, life cycle of thread, using thread methods, thread priority. Synchronization • Exception-Handling fundamentals. Exception types. try, catch, throw, finally, user defined exception. Java applet. • AWT controls (Button. Labels, Combo box, list and other Listeners), string handling (only main functions), graphic programming (line, rectangles, Circle and ellipses). 	
--	--	--	--	--	--	--

Eligibility : Instructors of COPA Trade, Passed out of NCVT in COPA Trade, Diploma in Computer Application, BCA, BSc (Computer Science or IT), MCA, MSc (Computer Science or IT), B.E/B.Tech (Computer Science/Information Technology)

CAD Lab

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
CAD-01	Auto-CAD (Civil)	2 Weeks	03.04.17 31.07.17 04.12.17	13.04.17 11.08.17 15.12.17	Introduction to Auto CAD, installation of Auto CAD, Demonstration of different menus, CAD tool Bars for rapid learning and designing, <u>Practice on -</u> draw menus, construct menus, modify menus, plan, elevation and side views, civil drawing and architecture, various dimensions, hatching, arrays, symbols for electrical fitting, making foundation and steps, plan door and windows, development of arches, Flemish bond, English bond Practice on making single bed room plan Practice of making single bed room plan (including fitting of electrical fittings)Practice on making double room plan Practice on making double room plan (including fitting electrical fittings)	After completion of this course the trainee will be able to get employment in Real Estates and Construction Sector and also self-employment as freelance draughtsman
CAD-02	Digital Prototyping using Auto-CAD (Mechanical)	2 Weeks	17.04.17 14.08.17 18.12.17	28.04.17 24.08.17 29.12.17	Introduction to Auto-CAD, Practice on coordinate system, Practice on Draw commands, practice on Modify commands, practice on change properties, practice on Dimensioning commands, Practice on Block and Layers, 3-D Modeling, practice on 3-D modeling, practice on 3-D primitive modeling	After completion of this course the trainee will be able to get employment in Manufacturing sector and self-employment as freelance draughtsman

Eligibility : Instructors of COPA Trade, Passed out of NCVT in Draughtsman Civil, Draughtsman Mechanical and Architectural Assistant trades, Diploma in Civil/Mechanical, B.E/B.Tech

Soft Skills

Course Co-ordinator: Shri.V.Babu, Deputy Director of Training

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
MDP-01	Management Development Programme	1 Week	24.07.17 25.09.17 20.11.17 26.02.18	28.07.17 28.09.17 24.11.17 02.03.18	7 Habits of Highly Effective People, Stress Management, Conflict Management, Effective Leadership Skills, Team Building, Transactional Analysis, Development of Interpersonal Skills, Communication Skills, Time Management, Motivational Techniques, Decision Making and Problem Solving, Attitude Development	This course is mainly for Principals/Managers and Supervisors working in ITIs/Industries and other Govt. Organisations. On completion of this course the trainee will be able to develop better managerial skills

Eligibility : Principals/Vice Principals and Training Officers of ITIs or any Training Institute/Managers, Supervisors of Industry or organization

Course Code	Course Name	Duration in Week(s)	From	To	Course Synopsis	Job Opportunities
SK-01	Soft Skills & Presentation Skills	1 Week	01.05.17 28.08.17 01.01.18 26.03.18	05.05.17 01.09.17 05.01.18 30.03.18	Role & responsibility of Trainers, Psychology of Learning, The ADDIE Instructional Design Model, Role of Audio Visual Aids in Training, Planning of Effective Training Programme, Designing of curriculum, Different types of Training Methods and Question & Questioning Techniques, Evaluation of Training, Effective Communication Skills, Motivational Techniques, Stress Management, Time Management	This course is mainly for Instructors of ITIs/trainers of any training institutes and workers of any industry and other Govt. Organizations. On completion of this course the trainee will be able to develop better training skills

Eligibility: Trainers of any Training Institute or Supervisors/Training Managers of any Industry or organization

COURSE FEE DETAILS

Courses	Category	Tuition fee
Short Term Courses /Regular Courses	Candidates sponsored from Medium and large scale industries in Public and Private sector	Rs. 2,000/- per Trainee per Week
	Candidates sponsored from Small Scale Industries (SSI) & Private Candidates	Rs. 1,000/- per Trainee per Week
	Candidates nominated by Government department such as Railways, Defence etc.	Rs. 1,250/- per Trainee per Week
	Candidates sponsored from Educational Institutes like Polytechnic/Engg. Colleges and other related Technical Institutions etc.	Rs. 1,000/- per Trainee per Week
Tailor-made Courses	Candidates sponsored from Medium and Large Scale Industries in Public and Private Sector	Rs. 4,000/- per Trainee per Week
	Candidates nominated by Government department such as Railways, Defence etc.	Rs. 2,500/- per Trainee per Week
	Candidates sponsored from Educational Institutes like Polytechnic/Engg. Colleges and other related Technical Institutions etc.	Rs. 2,000/- per Trainee per week
Application & Registration Fee : Rs. 100/-		
Gymkhana Fee Regular Course Rs. 10/-per Trainee, for Tailor made Course Rs. 15/- per Trainee		
Hostel Facilities Rs. 100/- per day (Moderate Accommodation).Subject to the availability		

Training is an investment, not expenditure

2017

January							February							March							April						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
1	2	3	4	5	6	7				1	2	3	4				1	2	3	4							1
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31					26	27	28					26	27	28	29	30	31	23	24	25	26	27	28	29	
																					30						
May							June							July							August						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
	1	2	3	4	5	6					1	2	3							1			1	2	3	4	5
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31				25	26	27	28	29	30	23	24	25	26	27	28	29	27	28	29	30	31			
													30	31													
September							October							November							December						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
					1	2	1	2	3	4	5	6	7				1	2	3	4						1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30	24	25	26	27	28	29	30		
																		31									

