

**INDIVIDUAL COURSE DETAILS**

&lt; ITEC &gt;

&lt; Skill Development in Electronics for TVET Trainers and Planners &gt;

<b>A. Name of the Institute</b>	<b>NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH TARAMANI, CHENNAI – 600 113. [Ministry of Education, Government of India] Taramani, Chennai – 600 113, INDIA.</b>
<b>B. Title of the Course</b>	<b>Advanced Certificate Course On “Skill Development in Electronics for TVET Trainers and Planners”</b>
<b>C. Course Duration</b>	Weeks : 4  Start Date : 22.02.2024    End Date:20.03.2024
<b>D. No. of days of Training</b>	Days: 28
<b>E. Eligibility Criteria for Participants</b>  1. Educational Qualification  2. Work Experience  3. Age Limit  4. Target Group	Applicants for this course must have a degree or diploma in engineering / technology or in any vocational field  5 years and above  25-45 years  Administrators /Trainers/ Planners/ Engineers / Polytechnic and Engineering College Teachers and with relevant discipline
<b>F. Aims &amp; Objectives of the Course</b>	<ul style="list-style-type: none"> <li>• Develop industry inclined TVET Curriculum for Technical Education (Electronics)</li> <li>• Setup Automation lab using PLC and SCADA</li> <li>• Develop graphical environment and Virtual Instruments for industries using LabVIEW</li> <li>• Plan for solar and wind energy to develop green environment</li> <li>• Understand Industry 4.0 and Cyber Physical systems</li> <li>• Design Economically home automation using Arduino and Raspberry pi with sensors</li> </ul>
<b>G. Details of Content of the Course / Training Schedule (pl attach a simple thematic / day-wise schedule (topics covered)).</b>	<b>I Scope of the Programme:</b>  Electronic Circuits and Systems have applications in a wide range of products including audio and video entertainment, home appliances, medical instruments,

automobile and Industrial applications. The human resource requirements include installation, servicing and maintenance personnel. TVET has an important role to play in technology diffusion through transfer of knowledge and skills. Rapid technological progress has had and continues to have significant implications for TVET. Understanding and anticipating changes has become crucial for designing responsive TVET systems and, more broadly, effective skills policies. The TVET institutions provide the needed human resource to meet these requirements. The trainers and planners of TVET programmes in electronics need practical skills and theoretical knowledge in modern electronic system. This program aims at providing these skills for TVET personnel. The Industrial Automation like PLC and SCADA, Sensors, LabVIEW Programming, different boards like Arduino and Raspberry pi form the basis of today's electronic system. With this background, this programme is designed with the following objectives.

## **II Objectives of the Programme:**

- Develop industry inclined TVET Curriculum for Technical Education(Electronics)
- Setup Automation lab using PLC and SCADA
- Develop graphical environment and Virtual Instruments for industries using LabVIEW
- Plan for solar and wind energy to develop green Building Concept
- Design Economically home automation using Arduino and Raspberry pi with Sensors

The participants should have good knowledge in reading, writing and spoken English.

The instructions will be in English.

## **III Curriculum of the Programme:**

- Industry inclined TVET Curriculum for Technical Education(Electronics)
- Automation using PLC and SCADA
- Graphical environment and Virtual Instruments for industries using LabVIEW
- Solar and wind energy systems
- Arduino and Raspberry pi with MEMS
- Concepts of home automation
- Principles of remote monitoring system for Industries

	<ul style="list-style-type: none"> <li>• Strategy for health monitoring system in agricultural sector</li> </ul> <p><b>IV INSTRUCTIONAL STRATEGIES:</b> Lecture – Practical hands on sessions- Discussions - Demonstrations - Assignments - Seminar - Video lessons - Field visits.</p> <p><b>V INDUSTRIAL VISITS PLANNED</b></p> <ul style="list-style-type: none"> <li>• Orchid Chemicals &amp; Pharmaceuticals Ltd Chennai</li> <li>• Fortran Cirkits, Chennai</li> <li>• Vi Microsystems Pvt Ltd Chennai</li> <li>• National Institute of Wind Energy, Chennai</li> </ul> <p><b>VI CERTIFICATE</b> At the end of the programme, candidates will be awarded Certificate on “Skill Development in Electronics for TVET Trainers and Planners”.</p> <p><b>VII OUTCOME:</b> The participants will gain the knowledge and skills in latest technologies to meet the challenges of TVET.</p>
<p><b>H. Mode of Evaluation of Performance of the ITEC Participant</b></p>	<p>The performance of the participants will be regularly assessed through Assignments, Practical sessions, group activities and project work</p>
<p><b>I. Platform for delivery of online course (wherever applicable)</b></p>	<p>----</p>
<p><b>J. Name of the Department</b></p>	<p><b>Electrical Electronics and Communication Engineering, NITTTR, Chennai</b></p>
<p><b>K. Name of Coordinator</b></p>	<p>Dr.G.A.Rathy, Professor, EECE Department</p> <p>Dr.P.Sivasankar, Professor, EECE Department</p>
<p><b>L. Resource persons</b></p>	<p>Dr G.Kulanthaivel Professor, EECE , Head, CIA, NITTTR, Chennai</p> <p>Mr.B. Saravanan Founder, BrixEn Hi Tech Pvt Ltd Chennai</p> <p>Mr. Domini John Bentech Training Pvt Ltd, Chennai</p> <p>Mr Rajesh Raman Progyaan, Chennai</p> <p>Mr.A.Vijayabalan Managing Director, Transun Energy systems, Chennai</p> <p>Mr. Aravind Balaji, Application Engineer, Vasee Electronics, Chennai</p> <p>Dr. P. Kanagavel, Director, Training Division, NIWE, Chennai</p>