

Syllabus for the subject  
of  
**WORKSHOP  
CALCULATION & SCIENCE**  
(For 3rd & 4th semester)

Under  
**CRAFTSMEN TRAINING SCHEME (CTS)**

For the trades of

1. Information & Communication Technology System Maintenance
2. Information Technology

**Re-Designed**

**in**

**2015**

**By**

**Government of India**

**Ministry of Skill Development & Entrepreneurship**

**Directorate General of Training**

**CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE**

**Block - EN - 81 SECTOR - V, SALT LAKE CITY, KOLKATA - 700 091**

**3<sup>rd</sup> semester**  
**Workshop Calculation and Science**  
**For the Trades of**

1. Information & Communication Technology System Maintenance
2. Information Technology

Calculation			Science		
Sl. No.	Description	Hrs.	Sl. No.	Description	Hrs.
1	<p><b>Indices:</b> Laws of indices related problems.</p> <p><b>Quadratic Equation:</b> Introduction, solution of simple Quadratic equation and related problems.</p>	21	1	<p><b>Elasticity:</b> Stress, strain, Modulus of elasticity, elastic limit, Hooks law, young's modulus.</p>	21
2	Solution of simple A.C. circuit with R.L.C. Calculation of power factor etc.		2	<p><b>Material:</b> Introduction, types and properties. Uses of Conducting, Semi-conducting and insulating materials.</p>	
3	<p><b>A.C Waveform Calculation:</b> Calculation of r.m.s, average, instantaneous value, peak value. Peak to peak value, Frequency and wavelength calculation and their relationship</p>		3	<p><b>Magnetism:</b> Magnetic material, magnetic field, flux density, magnetic moment, m.m.f. Reluctance, permeability, susceptibility, electromagnet, solenoid and its practical applications.</p>	
4	<p><b>Series And Parallel Connection of Electrical and Electronic components:</b></p> <ol style="list-style-type: none"> <li>1. Calculation Series and parallel connection of Resistors.</li> <li>2. Calculation Series and parallel connection of Capacitors.</li> <li>3. Calculation Series and parallel connection of Inductors.</li> <li>4. Calculation Series and parallel connection of Batteries.</li> </ol> <p>Conversion of power flow to H.P. Calculation of KVA.</p>		4	<p><b>Pressure:-</b> Pneumatic pressure, PSI, bar, atmospheric pressure, pressure gauge and absolute pressure..</p>	

**4<sup>th</sup> Semester**  
**Workshop Calculation and Science**

- 1.Information & Communication Technology System Maintenance  
2.Information Technology

Sl. No.	Description	Hrs.	Sl.No.	Description	Hrs.
1	<b>Network:</b> Calculation of Network, Speed, Bandwidth, Baud Rate IP Addressing and Subneting Mask calculation DSL speed calculation.	21	4	<b>Quality Control:</b> Quality control standard in workshop, concept of 5s and Kaizen	21
2	<b>Mobile Billing:</b> Calculation of Mobile billing and internet billing.		5	<b>Wi-Fi:</b> Standard of Wi-Fi Network. Antenna and its type.	
3	<b>Simple and Compound Interest:</b> Calculation of SI and Compound interest, percentage gain, Profit and Loss calculation.		6	<b>Data Encryption:</b> Encryption and Decryption technique.	
				<b>Data Communication:</b> Communication Technique, CSMA/CD.	
				<b>Cyber Security:</b> Rules of Cyber Security	