

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

3rd 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	Indices: Laws of indices related problems. Quadratic Equation: Introduction, solution of simple Quadratic equation and related problems.	21	1	Elasticity: Stress, strain, Modulus of elasticity, elastic limit, Hooks law, young's modulus.	21
2	Solution of simple A.C. circuit with R.L.C. Calculation of power factor etc.		2	Material: Introduction, types and properties. Uses of Conducting, Semi-conducting and insulating materials.	
3	A.C Waveform Calculation: Calculation of r.m.s, average, instantaneous value, peak value. Peak to peak value, Frequency and wavelength calculation and their relationship		3	Magnetism: Magnetic material, magnetic field, flux density, magnetic moment, m.m.f. Reluctance, permeability, susceptibility, electromagnet, solenoid and its practical applications.	
4	Series And Parallel Connection of Electrical and Electronic components: 1. Calculation Series and parallel connection of Resistors. 2. Calculation Series and parallel connection of Capacitors. 3. Calculation Series and parallel connection of Inductors. 4. Calculation Series and parallel connection of Batteries. Conversion of power flow to H.P. Calculation of KVA.		4	Pressure:- Pneumatic pressure, PSI, bar, atmospheric pressure, pressure gauge and absolute pressure..	

4th Semester
Workshop Calculation and Science

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

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