

Syllabus for the subject

of

WORKSHOP CALCULATION & SCIENCE

(For 3rd & 4th semester)

Under

CRAFTSMEN TRAINING SCHEME (CTS)

(For Mechanic Air-conditioning Plant)

Re-Designed

in

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By

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Directorate General of Training

CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE

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

**Syllabus for Workshop Sc. and calculation
For Mechanic Air-conditioning Plant
3rd Semester**

Sl. no	Topics	Hrs.
1.	Elementary geometry Geometric properties. Line, angle, triangle and circle.	42
2.	Mensuration --Area of square, triangle, Area of circle and ellipse	
3.	Calculation of area of triangle, polygon etc	
4.	Calculation of Volume & weight of simple solid bodies.	
5.	Volume & weight of regular cone sphere.	
6.	Volumes & weight of simple hollow bodies	
7.	Simple machines Effort & Load, mechanical advantage, velocity ratio, efficiency of machines	
8.	Relationship between mechanical advantage, velocity ratio, efficiency of machines.	
9.	Simple machines such as Pulley block, inclined plane, simple wheel and axle, differential wheel and axle ,simple screw jack,	
10.	Stress- Strain graph. Modulus of Rigidity. Poisson's Ratio, Bulk modulus, Related problems.	
11.	Methods of finding centre of gravity figures, & centre of gravity of certain geometrical figures.	
12.	Study of Matter, mass. Volume Density & specific gravity. Related Problems,	
13.	General laws of Thermodynamics 1st & 2nd laws, Mechanical equivalent of heat.	
14.	Revision	
15.	Examination	

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For Mechanic Air-conditioning Plant

4th Semester

Sl. No.	Topics	Hrs.
1.	Graph-object & use of graph, Rules of plotting, graph interpolation	42
2.	The plotting of coordinates, Representation of simple equation.	
3.	Hygrometry, properties of Air relative and absolute humidity and other Properties.	
4.	Heat load calculations of Air Conditioning plant. Calculation of volume of room, various heat loads, A.C Tonnage calculation and vice versa.	
5.	Estimating and costing Applied problems.	
6.	Heights and Distances. Angle of elevation, Angle of Depression.	
7.	Heat Treatment, Function of heat treatment, Critical temperature, Different processes of heat treatment. Annealing, Normalizing, Hardening, Tempering, Case hardening.	
8.	Corrosion, corrosive. Action due to electrolytic and galvanic corrosion. Corrosion protection	
9.	Revision	
10.	Examination	