

Syllabus For the trade  
of  
**LITHO-OFFSET MACHINE MINDER**  
(SEMESTER PATTERN)  
UNDER  
CRAFTSMAN TRAINING SCHEME

Designed in: 2013

By  
Government. of India  
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE  
Directorate General of Employment & Training  
Ministry of Labor & Employment  
EN 81, SECTOR – V, SALT LAKE CITY,  
Kolkata – 700 091.

*List of members attended the Workshop to finalize the syllabi of existing CTS into Semester Pattern held from 6<sup>th</sup> to 10<sup>th</sup> May'2013 at CSTARI, Kolkata.*

Sl. No.	Name & Designation	Organisation	Remarks
1.	R.N. Bandyopadhyaya, Director	CSTARI, Kolkata-91	Chairman
2.	K. L. Kuli, Joint Director of Training	CSTARI, Kolkata-91	Member
3.	K. Srinivasa Rao, Joint Director of Training	CSTARI, Kolkata-91	Member
4.	L.K. Mukherjee, Deputy Director of Training	CSTARI, Kolkata-91	Member
5.	Ashoke Rarhi, Deputy Director of Training	ATI-EPI, Dehradun	Member
6.	N. Nath, Assistant Director of Training	CSTARI, Kolkata-91	Member
7.	S. Srinivasu, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
8.	Sharanappa, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
9.	Ramakrishne Gowda, Assistant Director of Training	FTI, Bangalore	Member
10.	Goutam Das Modak, Assistant Director of Trg./Principal	RVTI, Kolkata-91	Member
11.	Venketesh. Ch. , Principal	Govt. ITI, Dollygunj, Andaman & Nicobar Island	Member
12.	A.K. Ghate, Training Officer	ATI, Mumbai	Member
13.	V.B. Zumbre, Training Officer	ATI, Mumbai	Member
14.	P.M. Radhakrishna pillai, Training Officer	CTI, Chennai-32	Member
15.	A.Jayaraman, Training officer	CTI Chennai-32,	Member
16.	S. Bandyopadhyay, Training Officer	ATI, Kanpur	Member
17.	Suriya Kumari .K , Training Officer	RVTI, Kolkata-91	Member
18.	R.K. Bhattacharyya, Training Officer	RVTI, Trivandrum	Member
19.	Vijay Kumar, Training Officer	ATI, Ludhiana	Member
20.	Anil Kumar, Training Officer	ATI, Ludhiana	Member
21.	Sunil M.K. Training Officer	ATI, Kolkata	Member
22.	Devender, Training Officer	ATI, Kolkata	Member
23.	R. N. Manna, Training Officer	CSTARI, Kolkata-91	Member
24.	Mrs. S. Das, Training Officer	CSTARI, Kolkata-91	Member
25.	Jyoti Balwani, Training Officer	RVTI, Kolkata-91	Member
26.	Pragna H. Ravat, Training Officer	RVTI, Kolkata-91	Member
27.	Sarbojit Neogi, Vocational Instructor	RVTI, Kolkata-91	Member
28.	Nilotpall Saha, Vocational Instructor	I.T.I., Berhampore, Murshidabad, (W.B.)	Member
29.	Vijay Kumar, Data Entry Operator	RVTI, Kolkata-91	Member

## General information

1. **Name of the Trade** : LITHO-OFFSET MACHINE MINDER
2. **NCO Code No.** :
3. **Duration** : 1 Year ( 2 semesters)
4. **Power Norms** : 4 Kw
5. **Space Norm** : 96 sq. mtr
6. **Entry Qualification** : Passed 10th class examination
7. **Unit Strength** : 16 Trainees
8. **Instructor's/Trainer's Qualification:** (i) Diploma in Litho-Offset Machine Minder  
+ 2 year Experience  
(ii) NTC Litho-Offset Machine Minder trade  
under NCVT and 3 years experience in  
relevant field.
9. **Desirable qualification** : Preference will be given to a candidate  
with Craft Instructor Certificate

**Note:** At least one Instructor must have degree /Diploma in the relevant experience.

**SYLLABUS FOR THE TRADE OF LITHO-OFFSET MACHINE MINDER UNDER C.T.S**

**Duration: Six months**

**First Semester**

**Semester Code: LMM: SEM I**

Week no.	Trade Practical	Trade Theory
1-3	Handling and care of materials and equipment for litho-graphic plate making and litho-offset printing, Apron/Boiler suit correct working posture. Cleaning, lubrication and general maintenance of machinery and equipment.	Brief history of printing. Comparative analysis of different printing process. Printing surfaces – outline of preparation for all processes.
4-7	Lining-up table, layout sheets – preparation and use.	Lithographic plate and printing machinery – outline of history and development. Photomechanical process, classification, equipment and materials used for plate making and offset printing.
8	Measuring gauges – Use and application of Hydrometer, boume thermo-metre, densitometer, etc. handling, care and use of Chemical balance machine and handling, PH Meter sensitivity guide and Step wedge.	<ul style="list-style-type: none"> <li>- Use of automatic plate processor, their care and handling.</li> <li>- Use of Step and Repeat machine, their care and handling.</li> </ul>
9-11	Graining of metal plates and preservation equipment and materials – their use, plate graining machine and handling care.	Different type of plates: Study of aluminum plates, photo polymer plates, multimeter plates. P.S. and wipe on plates – their properties and use.
12-14	Solutions of plate making – surface and deep-etch plates – materials used, preparation and handling.	Lining-up table, layout sheets, imposition, punch register, use of step wedges, sensitivity guide, etc. – handling and use.
15-19	Plates making by surface process kind and deep-etch process – kinds, their care, handling and use, pre-sensitized plates.	Plate graining equipment and type of materials used – chemical, mechanical, sand blast, electro-grain, etc. – quality of the grain.
20-22	Proofing press-practice in checking of color density with densitometer.	Plate making – surface and depth-etch plates, outline of chemical and solutions used for plate-making, coating of plate for light sensitivity – use of whirler – P.S. Plates, wipe on plates, photopolymer plates, multimetallic plates, xerographic polyester plates.
23-24	Use of pre-maker ready equipment and their care.	Light source – kinds, exposure – printing – down frame and their effective uses. Use of photo-integrator, inverse-square law, law of reciprocatation.
25	Project work / Industrial Visit (optional)	
26	Examination	

## SYLLABUS FOR THE TRADE OF LITHO-OFFSET MACHINE MINDER UNDER C.T.S

Duration: Six months

Second Semester

Semester Code: LMM: SEM II

Week no.	Trade Practical	Trade Theory
1-10	Two-color perfecter Offset Printing Machine (sheet fed) – handling and care, preparation for printing – fixing the plate and blanket, setting the lays, damping, inking, automatic feeders, setting and adjustment of cylinders, printing of line, half tone and multi-color work, jogging and fanning paper, use of pre-make ready equipment.	Measuring gauges, hydrometer, hygrometer, densitometer, room thermometer, etc., their handling, care and use. Proof and transfer process by proofing – kinds, mechanical and operational features, hand transferring of images. Printing machines for litho-offset printing – kinds, mechanical and operational features, inking and damping systems. Rollers – kinds, setting, cleaning, handling and storage, nap roller – preparation and treatment.
11-21	Practice on two unit web offset printing machine with folder attachment setting, adjustment and taking out prints.	Paper – standard sizes, division and sub-division, kinds, qualities. Seasoning of papers and paper calculation. Ink-kinds, qualities. Problems in plate making/printing and their remedies. Safety – hazards in plate making and machine rooms – preventive measures including fire-safety.
22-24	Project work.	
25	Revision	
26	Final Examination.	

### SOCIAL STUDIES

The syllabus has already been approved and is same for all the trades including the trades of plate-maker cum impositor & Litho-offset Group under Craftsman Training Scheme.

Note :- 1. Trade committee revised the syllabus of Litho-offset machine minder trades and recommended the new name of trade as "Litho-Offset Machine Minder" also semester system introduced.

TRADE: LITHO OFFSET MACHINE MINDER

LIST OF TOOLS & EQUIPMENT

Sl no	Item	Qty. in Nos.
1.	Two colour perfecter offset printing machine with automatic feeder accessories and computerised control system: size – Demy or equivalent.	1 No..
2.	Web offset printing machine with folder attachment size or equivalent with automatic feeder, accessories.	1 No.
3.	Lining up table – size: double demy or equivalent.	1 No.
4.	Vacuum printing – down frame, with metal halide lame size: Demy or equivalent with auto control and computerised.	1 No.
5.	Whirler machine – size: Demy or equivalent with speed control.	1 No.
6.	Plate graining machine – size: double Demy or equivalent.	1 No.
7.	Glass jar or container (for keeping / mixing solution).	8 Nos
8.	Measuring cylinder – different sizes.	12 Nos
9.	Enamelled / glass funnel.	12 Nos
10.	Hydrometer for measuring beaume.	2 Nos
11.	Timer.	2 Nos
12.	P.V.C. sink (180 cm. x 750 cm. x 20 cm.)	1 No.
13.	Room thermometer.	1 No.
14.	Hygrometer.	1 No.
15.	Steel Rule, graduated	2 Nos
16.	Micrometer	2 Nos
17.	Vernier calliper.	2 Nos
18.	Spatula – long and small size.	4 each
19.	Pumice stone	1 No.
20.	Densitometer (reflection type)	1 No.
21.	Enamel bowls.	2 Nos
22.	Magnifying glass (x 8)	4 Nos
23.	Cupboard steel (height 185 cm.)	1 No.
24.	Instructor table.	1 No.
25.	Instructor chair.	1 No.
26.	Fire extinguisher.	2 Nos
27.	Roller stand Demy size	1 No.
28.	Ink Slab 50 x 50 cm.	1 No.
29.	Development tray	2 Nos
30.	Plate drying cabinet 30 x 40 cm. with 2.5 cm. slots.	1 No.
31.	Plate storage cabinet	2 Nos
32.	Heater 1500 watt	1 No.
33.	Rubber squeezer 30 cm.	1 No.
34.	Black board.	1 No.