REDESIGNED MODULES FOR THE SECTOR

OF

PRINTING

UNDER

MODULAR EMPLOYABLE SKILLS (MES)

Revised in – 2014

By

Ministry of Labour & Employment
Directorate General of Employment & Training

GENERAL INFORMATION FOR BOOK BINDER

Name of Sector	**Printing**
Name of Module	**Book Binder**
MES Code	**PRI701**
Duration of Course	**500 Hrs**
Entry Qualification of Trainee	Minimum 8th standard passed and 14 Years of Age
Unit size (No. Of trainees)	20
Power Norms	6kW
Space Norms (Workshop and Class Room)	60 sq.meter.
Instructors Qualification	Degree in Printing Technology with one year Experience **OR** Diploma in Printing Technology with three years Experience **OR** NTC/ NAC in Printing and Allied Trades with five years of Experience
Desirable	Craft Instructor Certificate (CIC)

Course Contents for Module Book Binder

Practical Competencies	Underpinning Knowledge (Theory)
✓ Familiarization with the general tools and equipment used in printing industry,	✓ History of printing, comparative analysis of different printing processes
✓ Rules of imposition, Simple imposing scheme and its relation to the type of folding methods applicable, Lining up table, Lay out sheets preparation	✓ Simple imposing scheme and its relation to the type of folding methods applicable upto 16 pages
✓ Handling and care of raw materials, (Paper, boards, inks, lubricants), Safety hazards, preventive measures and safety precautions for usage of various operations and chemicals, pollution control etc	✓ Standard Paper sizes, Indian and British. Divisions, sub- divisions, kinds, qualities and its suitability to different printing jobs. Handling and care of printed and unprinted paper.
✓ Practice on Various book binding techniques / Stitching machines etc.	✓ Classification of various book binding methods: Hand sewn, Machinery sewn, section sewn, Direct perfect binding, with or without side glue etc.
	✓ Storage of various materials use in bindery shop
✓ Cleaning/lubricating and general maintenance of the machinery & Equipment	✓ Structure of Book and various book binding methods. Styles of binding.
✓ Standard folding / standard folding schemes of 16 pages	✓ Material used in Binding - paper, board, book cloth leather, handling, care, sizing etc.
✓ Gathering and collating, signatures, their use for making up a book.	✓ Paper- Standard sizes - divisions and subdivisions, kinds and qualities, handling & care of printed and un-printed sheets of paper
✓ Stitching - hand and wire stitching, Side and centre stitch ✓ Spiral binding of different types.	✓ Machinery & Equipment used in Binding - Guillotine, three sides trimmer, perforating, etc - handling, care and safety precautions.
✓ Sewing , Tape, cord, swan - in swing, over casting, ✓ Forwarding operations, Case making and finishing Operation : ✓ Rounding and backing, tipping knocking and counting	✓ Folding - standard folding schemes upto 16 pages
✓ All kinds of End papers pasting, adhesives its preparation and use	✓ Gathering and collating, signature and their use
✓ Use of Guillotine machine (3 side trimmer) and safety precautions. ✓ Adhesives its preparation and use	✓ Stitching & sewing, hand and machine methods.
✓ perforating, numbering, eyeleting , equipment used and handling and precautions	✓ End paper, kinds and purpose
✓ Flush binding, Case binding	✓ Forwarding operations, Case making and

	finishing Operation : ✓ Rounding and backing, tipping knocking and counting backing, case making by hand, tools required .
✓ Edge decoration - Guiding, Marbling, Colouring, Tinting ✓ indexing, tabbing, gold tooling, Blind tooling	✓ Tipping and pasting of plates, maps etc.

Terminal Competency: The person would be able to supervise/work in various departments in the modern printing press independently in book binding department

List of Tools and Equipment Book Binder

Sl. No.	Description of items	Quantity
1	Wire stitching machine 1" (2.5 cm)	2
2	Screw press (2 different sizes)	1 each
3	Paper cutting machine, size (90 cm.) or three knife trimmer	1
4	Wooden planks (size 2'/1') (60 x 30 x 2.5 cm)	As required
5	Needle for sewing	As required
6	Bone knife for folding	5
7	Spiral binding machines	2
8	Nipping Press	1
9	Hand numbering machine	1
10	Perforating machine (60 cm), (treadle type)	1
11	Punching machine (with a set of punches)	2
12	Eyeleting and punching machine	1
13	Corner cutting machine (treadle type)	1
14	Creasing machine	1
15	Board cutter	1
16	Paper cutting knives	5
17	Scissors	10
18	Hammer	4
19	Bodkins	5
20	Pairing knives (for leather)	5
21	Brushes 25 mm., 50 mm., 100 mm. (In equivalent metric sizes) available	5 each
22	Steel rule (60 cm)	10
23	Racks for paper	2
24	Work table (240 x 120 x 75 cm)	4

GENERAL INFORMATION FOR SUPERVISOR-BOOK BINDING

Name of Sector	**Printing**
Name of Module	**Supervisor -Book Binding**
MES Code	**PRI702**
Duration of Course	**500 Hrs**
Entry Qualification of Trainee	Minimum 10th standard passed and 14 Years of Age
Unit size (No. Of trainees)	20
Power Norms	6kW
Space Norms (Workshop and Class Room)	60 sq.meter
Instructors Qualification	Degree in Printing Technology with one year Experience **OR** Diploma in Printing Technology with three years Experience **OR** NTC/ NAC in Printing and Allied Trades with five years of Experience
Desirable	Craft Instructor Certificate (CIC)

Course Contents for Module Supervisor-Book Binding

Practical Competencies	Underpinning Knowledge (Theory)
ubrication system & application of measuring tools ✓ Lubricants: practice on lubrication system used in Binding machines, kinds and methods. ✓ Seasoning of boards & Papers etc..	✓ Lubricants: Lubrication system used in printing machines, kinds and methods
dvanced Computer operating systems, complex imposing & Application graphic design ✓ Handling and operating the Computer, using desktop bars, start button, menus and help menus. Installation of windows and software etc. ✓ Practice in complex imposing schemes and its relation to the type of folding methods applicable on different kind of printing work on sheet work and half sheet work, upright, oblong, work and turn, work and tumble, work and twist. Inset & outset sections.	✓ Paper testing, physical and chemical properties of paper. Blistering & folding strength, GSM, ph value, sizing material, conditioning etc. ✓ Complex imposing scheme and its relation to the type of folding methods applicable on different kind of printing work on sheet work and half sheet work, upright, oblong, work and turn, work and tumble, work and twist. Inset & outset sections
etting of electronic & computerized controls on machines and operation troubles ✓ Practice and settings of various electronics and computerized devices in advanced machines. ✓ Operating trouble relating to various Bindery departments: causes and remedies.	✓ Advanced bindery machines for automatic folding. ✓ Automatic case making machines. ✓ Automatic sewing Machines ✓ Automatic numbering machines. ✓ Lamination and spiral binding machine.
ress Administration - Docketing, record keeping, production planning and quality control. ✓ Practice on costing various kinds of jobs using scientific methods based daily docket system ✓ Maintaining all records relating to the press. Filling up and maintenance of various press records ✓ Lay out planning of various departments of bindery shop. ✓ Project based printing industrial visit	✓ Lay out planning of various departments of print shop ✓ Costing, estimating and accountancy by using daily docket system etc ✓ Quality controls, Production planning and control S Brief descriptions of printers' laws and press administration

Terminal Competency: The person would be able to supervise/work in various departments in the modern printing press independently in book binding department

Tools and Equipment list in Supervisor- Book Binding

No.	Description of items	
1.	Wire stitching machine 1" (2.5 cm)	1
2.	Screw press (2 different sizes)	1 each
3.	Paper cutting machine, size (90 cm.) or three size trimmer	1
4.	Wooden planks (size 2'/1') (60 x 30 x 2.5 cm)	4
5.	Needle for sewing	As required
6.	Bone knife for folding	3
7	Spiral binding machines	1
8	Nipping Press	1
9.	Hand numbering machine	3
10.	Perforating machine (60 cm), (treadle type)	1
11.	Punching machine (with a set of punches)	1
12.	Eyeleting and punching machine	2
13.	Corner cutting machine (treadle type)	1
14.	Creasing machine	1
15.	Board cutter	1
16.	Paper cutting knives, hand	3
17.	Scissors	5
18.	Hammer 250 gm.	3
19.	Bodkins	6
20.	Pairing knives (for leather)	3
21	Brushes 25 mm., 50 mm., 100 mm. (In equivalent metric sizes) available	1 each
22	Steel rule (60 cm)	6
23	Racks for paper	As required
24	Work table (240 x 120 x 75 cm)	4
25	Desktop computer with latest configuration along with UPS & furniture	10
26	Laser printer	2
27	Proofing machine	1
28	Plotter (A1 size)	1
29	Inkjet colour printer	2

GENERAL INFORMATION FOR PRINTING OPERATOR

Name of Sector	**Printing**
Name of Module	**Printing Operator**
MES Code	PRI703
Duration of Course	**1000 Hrs**
Entry Qualification of Trainee	Minimum 8th standard passed and 14 Years of Age
Unit size (No. Of trainees)	20
Power Norms	6kW
Space Norms (Workshop and Class Room)	60 sq.meter
Instructor's Qualification	Degree in Printing Technology with one year Experience **OR** Diploma in Printing Technology with three years Experience **OR** NTC/ NAC in Printing and Allied Trades with five years of Experience
Desirable	Craft Instructor Certificate (CIC)

Course Contents for Module Printing Operator

ractical Competencies	Underpinning Knowledge (Theory)
Familiarization with tools and equipment & safety Practices ✓ Familiarization with the general tools and equipment used in printing industry, Safety hazards, preventive measures and safety precautions for usage of various operations and chemicals, pollution control etc. ✓ Handling and care of raw materials; upkeep of various types of plate-surface, deep etch, pre -sensitized and wipe on plates.	✓ History of printing, comparative analysis of different printing processes ✓ Lithographic plates, its various types, handling and care. ✓ Use of various types of measuring equipment, gauges etc., their use and relevance to Off-set printing
Computer Operating System & Principle of Graphic Design ✓ Handling and operating the Computer, using desk-top bars, start button, menus and help menus. ✓ Principle of graphic design and its simple applications.	✓ Standard Paper sizes, Indian and British. Divisions, sub- divisions, kinds, qualities and its suitability to different printing jobs. ✓ Handling and care of printed and unprinted paper

Printing Surfaces, Ink & Measuring Tools
✓ Familiarization with various printing surfaces
  like litho-stone plates made of zinc, copper, Aluminum and pre-sensitized plates, their care and handling procedure.
✓ Handling, care and use of various types of
  measuring gauges like Hygrometer, Brume thermometer, Densitometer etc.
✓ Preparing tint, shades, matching and mixing
  of ink; Tack, length, flow and use of reducer
  and drier
	✓ Printing Ink, Component of different types of inks, tints, shades, matching and mixing of ink; Tack, length, flow and use
	✓ Colour: Colour theory & its Principles, theory of colour separation, filter, sequence of colour printing, Black printer of reducer and drier
	✓ Theory of dot formation: Highlight and Shadow

Imposing System ✓ Rules of imposition, Simple imposing scheme and its relation to the type of folding methods applicable, Lining up table, Lay out sheets preparation.	✓ Simple imposing (work & turn and work & tumble) scheme and its relation to the type of folding methods applicable upto 16 pages, and 32 pages.
✓ Handling, care and maintenance of machines, equipment and other materials used for plate making, lubrication, overhauling	✓ Brief history of printing, comparative, analysis of different printing processes
✓ Familiarization of Printing surface -	✓ Measuring gauges, Hydrometer,

Litho-stone, metals - zinc, aluminum, copper-their care & use, Lining - up table. Layout ✓ sheets - preparation	densitometer etc. , their handling, care and use.
✓ Grinding of metal plates - equipment and materials their use, plate graining machine, handling and care.	✓ Plate graining - equipment and materials used - quality of the grain
✓ Solutions for plate making - surface and deep- etch plates - materials used, prepare on and handling, Measuring meters. ✓ Plate making - surface and deep-etch plates, Nyloprint and dry offset plates, outline of chemicals and solutions used for plate making, use of Whirler	✓ Plate making - surface and deep-etch plates, Nyloprint and dry offset plates, outline of chemicals and solutions used for plate making, use of Whirler
✓ Plate making - Equipment and materials, whirler, printing - down frame etc. their use.	✓ Plates-metals used - aluminum, zinc, and copper, properties, their handling, care and use, pre-sensitized plates.
✓ Cleaning, lubrication and general maintenance of machine and equipments. ✓ Routine maintenance/ daily/ weekly/ monthly & preventive maintenance, up keep and maintenance of tools & disposal of wastage.	✓ Light sources - kinds, exposure - printing - down frame use.
✓ Plates for surface and deep-etch processes, kinds of processed plates, their care, handling and use, Bi & Tri metal plates, Nyloprint Plates, Micro plates for dry offset pre-sensitized plates. Baking of PS ✓ Plates.	✓ General care and maintenance of plate making equipment, Temperature and humidity controls, Effects on plates.
✓ Exposure: Factor governing exposure time, image formation - treatment and control	✓ Safety practices: Health Hazards ✓ Routine maintenance/ daily/ weekly/ monthly & preventive maintenance, up keep and maintenance of tools & disposal of wastage
✓ Surface preparation – graining, counter etching, coating, Exposing, Developing, Washing and gum up, thin dry and fan dry. Pollution control. Use of technova sheets	✓ Use of technova sheets
✓ Familiarization with the tools and equipment and machinery used in offset printing process,	✓ Equipment and material used for making various Off-set plates, photo-chemical process for plate making for use in Off-set Machines.
✓ Cleaning, lubrication & general maintenance of machinery &	✓ Lithographic plates, its various types, handling and care.

equipments.	
✓ Classification of various components of the Offset Machines	✓ Rollers-kinds, setting, cleaning, preparation, treatment, handling and storage
✓ Sheet fed Offset printing machines - single and multi colour - basic configuration, handling and care, preparation for printing, fixing the plate, lays setting , setting of inking and dampening system, - initial and actual setting, setting of feeders. Handling, care and fixing of blanket.	✓ Various types of Off-set Printing Machines- both single and multi colour.
✓ Rollers-kinds, setting, cleaning, preparation, treatment, handling and storage.	✓ General care and maintenance of plate-making and litho offset printing machine and equipment.
✓ Dry offset printing / Flexography)on various kinds of material.	✓ Dry (Flexography printing on various kinds of material)
✓ Registration device.	✓ Registration device.
✓ Handling and care of Off-set Printing Machine, preparing the machine for printing by fixing the plate, set right the inking and dampening system, setting of manual/ automatic feeder.	✓ Types of offset printing Dry & Wet,
✓ Running defects	✓ Running defects: causes and remedies.
✓ Setting and adjustment of plate for line and half tone work.	✓ Defective plates- causes and remedies, running problems
✓ Familiarization with the tools and equipment and machinery used in Off-set Web perfector multi colour Machine printing process.	✓ Equipment and material used for making various Off-set plates, photo-chemical process for plate making for use in Off-set Machines.
✓ Cleaning, lubrication & general maintenance of Off-set Web perfector multi colour Machine machinery and equipment.	✓ Lithographic plates, its various types, handling and care.
✓ Classification of various components of the Off-set Web perfector multi colour machine	✓ Rollers-kinds, setting, cleaning, preparation, treatment, handling and storage
✓ Off-set Web perfector multi colour Machine - basic configuration, handling and care, preparation for printing, fixing the plate, lays setting, setting of inking and dampening system, - initial and actual setting, setting of feeders. Handling, care and fixing of blanket.	✓ Various types of Off-set Web perfector multi colour machine
✓ Setting of electronic, computerized machine controls : Electronic eye, for	✓ Setting of electronic, computerized machine controls : Electronic eye, for

colour registration, Web detector, numbering, folding, trimming etc.	colour registration, Web detector, numbering, folding, trimming etc
✓ Rollers-kinds, setting, cleaning, preparation, treatment, handling and storage. Alignment of cylinders.	✓ General care and maintenance of plate-making and Off-set Web perfector multi colour Machine and equipments.
✓ Safety practices: Preventive measures.	
✓ Dry offset printing / Flexography) on various kinds of material.	✓ Dry (Flexography printing on various types on different kinds of material)
✓ Registration device.	✓ Registration device.
✓ Handling and care of Off-set Printing Machine, preparing the machine for printing by fixing the plate, set right the inking and dampening system, setting of manual/ automatic feeder.	✓ Types of offset printing Dry & Wet,
✓ Safety hazards, preventive measures and safety precautions for usage of various chemicals used in screen printing.	✓ Equipment and materials used in retouching work, retouching desk, illuminating lighting and viewing, factors affecting colour judgment.
✓ Preparation of raw material, like various printing inks, screen and other miscellaneous makes, preparation of various printing surfaces	✓ Printing surfaces- outline screen printing processes, composing (DTP), stencils and designs.
✓ Preparation of screen by direct process using direct coating material and indirect process (transfer process)- pigment paper, screen cloth. Exposing photographic plates and films for screen printing.	✓ Safety hazards, preventive measures and safety precautions for usage of various chemicals used.
✓ Storage of screens - precautions for cleaning & storing the screen, line screen, screen angle, screen distance, dot formation, contact screens.	✓ Photographic materials, plates and films, emulsions, preparation, handling and care.
✓ Arrangement for colour separation using scanner.	✓ Use of screen sheets, tint laying and their maintenance.
✓ Preparation of different types of jigs and frames for bolting clothes	✓ Equipment and materials used in preparation of jigs and frames, bolting cloth, printing table, different adhesives used, handling and care.
✓ Storage of films, size of film, use of positive films, humidity control of the process room, developing, and washing the exposed films, adhering the stencil to the mesh and drying. Stripping off the backing film, cleaning off used stencil using different methods	✓ Screen printing processes, storing of films, sizes, using positive films, how to expose develop and edit etc.
✓ Preparation of different screen material	✓ Effect of humidity on the film coating, hardening of the film, developing of the exposed film, transferring the stencil selection of mesh for bolting cloth to be

	printed on different material.
✓ **Introduction of machines and mechanical screen printing**	
✓ Practice for operating the Computer, Installing Windows, using desk-top bars, start button, menus and help menus.	✓ Introduction to Desktop Publishing, its origin
✓ Creating, deleting and renaming folders, short cuts, starting an application, shut-down and restart, work with zip-files, search file, rename file, viewing disk space , Using Note Pad, MS Word, inserting picture, working with image, paint brush, character map, symbol tools.	✓ Components of Desktop Publishing, System, the traditional Publishing , and Publishing under PC environment.
✓ Practice on computer, page composition, scanning text and picture using scanner, preparation of films on image setter, Font style, size, Super script and Sub script, use of special character, text editing, Selecting word, paragraph, indenting/tabs, find and change dialog box, text re-composition	✓ Concept of publishing, creating publishing page. System of page folding with different options (single fold, double fold, reverse side fold), scanning photos & images.
✓ Types of file formats e.g. GIF, JPG & PDF files, Importing and Exporting pallet control, colour pallets, style, master page pallet, removing master page pallet, removing master page objects from page	✓ Computer application in pre-press work. Composing, scanning, colour mixing, image processing etc.
✓ Making tables, editing data in table .Use of Ruler Guide, column guide and library, Importing/Exporting filing, stroking frames, arranging, text wrapping.	✓ Use of Page Maker Software. Application of Page Making, use of DTP features, introduction & application of Adobe in designing.
✓ Use Page Maker software for designing cover page of Books, creating book with publishing software , Charts, Linking large graphics, make positive films for screen-printing.	✓ Concept & features of Corel Draw, graphics, concept of layer pallet , applications.
✓ Use of Corel Draw , special effects on graphics, text, importing / exporting graphics	✓ Concept of bitmaps, vector graphics, use of plotter and its application
✓ Practice on Adobe Illustrator, Photoshop and create various printing effects, retouching photographs, convert modified picture for DTP. Use Plotter	✓ Concepts of Photoshop and its application.

✓ Use of Web Cam / Digital camera, use them for DTP work.	✓ Introduction to digital photographic technology, use of web camera and digital camera. Theory of Dot formation.

Terminal Competency: The successful candidate will be able to:

1. The operator will be able to operate the Off-set Machine for printing
   Both single, multicolour, dry machines jobs**.**
2. The operator will be able to operate the Off-set Web perfector multi
   Colour Machine for printing multicolour , dry machines
   (Flexography/nylography) jobs.
3. The operator will be able to make off-set plates ready to printing.
4. Operate the Computer and do the page setting / composing using DTP
   Software.
5. Perform the Screen Printing operation.

List of Tools and Equipment:

Sl. No.	Description of item	Quantity
1	Computer of latest specification	10
2	Software: Page Maker and other standard software.	5
3	Laser printer	2
4	Plate storage cabinet	As required
5	Lining up table - size Double Demy or equivalent	As required
6	Plate drying cabinet 30x40 cm with 2.5 cm slots.	As required
7	Densitometer	1
8	Ink slab 50x50 cm	2
9	Fire Extinguisher	2
10	Hydrometer(heavier than water)	2
11	Timer	2
12	Dry & wet bulb	As required
13	Steel rule, graduated	5
14	Gloves	20
15	Scalpel handle with blade No. 3 blade No. 3	10
16	Densitometry (Ref lection & transmission type)	1
17	Drafting machine,	1
18	Magnifying glass (+8)	5
19	Cupboard steel	As required
20	Ems scale,	2
21	Set squares (18 inch Size)	5
22	Tool Kits of standards make	5
23	Wooden working table with sunmica top 5,x3, sizes.	4
24	Hygrometer	2
25	Ink: Different types of ink, cyan. Magenta, yellow, black, white, Drier and reducer	As required
26	Paper: Different types of paper, card sheets	As required
27	Printing Plates: Zinc, Copper, Aluminum, pre-sensitized, Master.	2 each
28	Acetate sheets	As required
29	Lining up table of appropriate size	As required
30	Printing Down frame with built in mercury vapour lamps	5
31	Glass Jar / Container (For keeping / mixing solution)	4
32	Measuring Cylinder - different sizes	As required
33	Enamel / Glass funnel	5
34	Hydrometer for measuring Beaume	2
36	Sink (180 cm X 750 cm X 20 cm.)	2
37	Room Thermometer	1
39	Steel Rule graduated	10
40	Micrometer (0-25 mm), (25-50 mm)	2 each
41	Vernier Caliper	2
42	Spatula - long & small size	1 each
43	Image remover	As required

44	Densitometer	1
49	Development Tray	5
51	Re- touching table - 50 X 75 cm	1
52	Heater 1500 watt	2
53	Rubber Squeezer 30 cm	2
55	Pre sensitized (PS) plates of different sizes,	As required
56	Pre grained plates.	As required
57	Wipe on plates A & B Sensitizer. Plate developer, Finisher, Uni gum, Sponge	As required
58	PS developer, correcting liquid solution, Brush, Acetate lay out sheets	As required
59	Single colour offset printing machine with automatic feeder and accessories.	1
60	Multi colour offset printing machine with automatic feeder and accessories	1
61	Machines Tools. (Standard set).	As required
62	Roller cleaning machines, cleaning liquids.	1
63	Roller racks	As required
64	Ink slab and pallet knives.	As required
66	Primary inks, cyan, magenta, yellow, white, black	As required
67	Reducer, drier, extender,	1 each
68	Lubricating oils. Oil can.	As required
69	Fountain solution, sponges, linen cloth,	As required
71	ph tester Electronics	1
72	Work bench and table standard size.	2
73	Various types of Papers, cards	As required
74	Other printing material	As required
75	Chemicals used on machines and rollers.	As required
76	ph Strips.	As required
77	Off-set Web perfector multi colour Machine and accessories .	1
78	Machines Tools. (Standard set).	As required
79	Roller cleaning machines, cleaning liquids.	1
80	Roller racks	As required
81	Ink slab and pallet knives.	As required
82	Gloves	20
83	Primary inks, cyan, magenta, yellow, white, black	As required
84	Reducer, drier, extender,	As required
86	Frames - different sizes	As required
87	Screens - silk or other material - different sizes, Squeeger	As required
88	Variety of ink- water waste, solvent free inks, permanent acrylic and textile inks	As required
89	Water resistant masking tape- one inch wide	As required
90	Screw driver, old newspapers, sheet of cardboards etc.	As required
91	Scrub brush, scissors, small lamp or lamp chord with standard socket, 150 Watt incandescent bulb.	4 each
92	Cellotape, paper towel, 9" x 12" piece of glass, rubber gloves etc.	As required
	Hardware	
93	Desktop computer with minimum configuration - Pentium IV	10

	Processor 2.66 GHz 512 MB DDR RAM, 80 GB HDD 3.5" FDD 52 X CD Drive(ComboR/RW), 15" SVGA color Monitor with 32 MB Graphic Adopter, 3 button Mouse, 105 keys key board and built-in speakers and mic., modem card , optical Scroll mouse or higher version	
94	Laser Printer Colour	1
95	Scanner Digital	1
96	10 Port Hub	As required
97	Ethernet cords 10X 100 mpbh	As required
98	UPS 05 KVA	1
99	Air Conditioner 1.5 ton	2
100	Telephone Line (for internet)	As required
101	Room temperature thermometer	1
102	Fire extinguisher	2
103	Digital Camera (4.2, 5.1, M Pixel)	1
104	Web Camera	1
	SOFTWARE	
105	MS Office latest version	As required
106	Adobe Page Maker latest version, Oral Draw, Photoshop Macromedia Products	As required
107	Anti Virus Latest version	As required
108	Algol/Chalontika/1-Leap/Leap Office (An one of these or any other multi lingual software latest version)	As required
109	Fact/Talley/ACE, Ex-Engine (any one of these or any other financial Accounting software latest version	As required
	FURNITURE	
110	Straight back revolving & adjustable chairs (computer Chairs)	20
111	Computer Tables	10
112	Printer Tables	1

GENERAL INFORMATION FOR <u>Supervisor for Printing Sector (Except Book Binding)</u>

Name of Sector	**PRINTING OPERATOR**
Name of Module	**Supervisor for Printing Sector (Except Book Binding)**
MES Code	PRI704
Duration of Course	**500 Hrs**
Entry Qualification of Trainee	Minimum 8th standard passed and 14 Years of Age+ completed PRI703 module
Unit size (No. Of trainees)	20
Power Norms	6kW
Space Norms (Workshop and Class Room)	60 sq.meter.
Instructor's Qualification	Degree in Printing Technology with one year Experience **OR** Diploma in Printing Technology with three years Experience **OR** NTC/ NAC in Printing and Allied Trades with five years of Experience
Desirable	Craft Instructor Certificate (CIC)

Course Contents for Module Supervisor for Printing Sector (Except Book Binding) (PRIR704)

Practical Competencies	Underpinning Knowledge (Theory)
ubrication system & application of measuring tools ✓ Lubricants: practice on lubrication system used in printing machines, kinds and methods. ✓ Practice on various types of measuring gauges like Hygrometer, Brume thermometer, Densitometer, intensity meter, exposure meter etc.	✓ Lubricants: Lubrication system used in printing machines, kinds and methods ✓ Colour: Masking techniques, additive and subtractive theory
dvanced Computer operating systems, complex imposing & Application of graphic design ✓ Handling and operating the Computer, using desktop bars, start button, menus and help menus. Installation of windows and software etc. ✓ Principle of graphic design and its applications ✓ Practice in complex imposing schemes and its relation to the type of folding methods applicable on different kind of printing work on sheet work and half sheet work, upright, oblong, work and turn, work and tumble, work and twist. Inset & outset sections. Computerized System Planning, Disposal of wastage, Routine maintenance/daily/weekly/monthly and preventive maintenance, up keeping and maintenance of machinery and tools	✓ Paper testing, physical and chemical properties of paper. Blistering & folding strength, GSM, ph value, sizing material, conditioning etc. ✓ Complex imposing scheme and its relation to the type of folding methods applicable on different kind of printing work on sheet work and half sheet work, upright, oblong, work and turn, work and tumble, work and twist. Inset & outset sections ✓ Computerized System Planning Scanning of Line drawing, half tone pix, screen ruling as per paper to be used for printing, direct imposing of pages on computer using prescribed software, imposing scheme for different style of binding.
etting of electronic & computerized controls on machines and operation troubles ✓ Practice and settings of various electronics and computerized devices in advanced machines. ✓ Operating trouble relating to various printing departments: causes and remedies.	✓ Miscellaneous work on printing machines: set on wet printing, embossing, bronzing, metal printing, U.V aqua coating, ornamentation, grain direction of paper Printers' science, Temperature and relative humidity: effects on pate and paper. Advantages of air-conditioning
ress Administration - Docketing, record keeping, Production planning and quality control ✓ Practice on costing various kinds of jobs using scientific methods based daily docket system ✓ Maintaining all records relating to the press. Filling up and maintenance of various press records ✓ Lay out planning of various departments of print shop. ✓ Project based printing industrial visit	✓ Lay out planning of various departments of print shop ✓ Costing, estimating and accountancy by using daily docket system etc ✓ Quality controls, Production planning and quality control ✓ Brief descriptions of printers' laws and press administration

Terminal Competency: The person would be able to supervise/work in various departments in the modern printing press independently like:

i) Desk Top publishing Operating,
ii) Offset Plate Making,

iii)   Offset Machine Operating,

Silk Screen Printing

List of Tools and Equipment for
Supervisor for Printing Sector (Except Book Binding)

Sl.No.	Description of item	Quantity
1	Computer of latest specification	10
2	Software: Page Maker and other standard software.	As required
3	Laser printer	1
4	Plate storage cabinet	As required
5	Lining up table - size Double Demy or equivalent	4
6	Plate drying cabinet 30x40 cm with 2.5 cm slots.	As required
7	Densitometer	2
8	Baum meter	2
9	Intensity meter	1
10	exposure meter	1
11	Ink slab 50x50 cm	4
12	Fire Extinguisher	2
13	Hydrometer	1
14	Timer	1
15	Dry & wet bulb	2
16	Steel rule, graduated	10
17	Gloves	20
18	Scalpel handle with blade No. 3 blade No. 3	3
19	Densitometry (Ref lection & transmission type)	1
20	Drafting machine,	2
21	Magnifying glass (+8)	5
22	Cupboard steel	As required
23	Ems scale,	4
24	Set squares (18 inch Size)	5
25	Tool Kits of standards make	As required
26	Wooden/retouching working table with sunmica top 5,x3, sizes.	4
27	Hygrometer	2
	Standard Raw- Material	
1	Ink: Different types of ink, cyan. Magenta, yellow, black, white, Drier and reducer	As required
2	Paper: Different types of paper, card sheets	As required
3	Printing Plates: Aluminum, pre-sensitized, Master.	As required
4	Mobile oil, grease, turpentine oil, kerosene oil	As required

LIST OF TRADE COMMITTEE MEMBERS

Sl. No.	Name & Designation Sh/Mr/Ms.	Organization	Mentor Council Designation
Members of Sector Mentor council			
1.	A. D. Shahane, Vice-President, (Corporate Trg.)	Larsen & Tourbo Ltd., Mumbai:400001	Chairman
2.	Dr. P.K.Jain, Professor	IIT, Roorkee, Roorkee-247667, Uttarakhand	Member
3.	N. Ramakrishnan, Professor	IIT Gandhinagar, Gujarat-382424	Member
4.	Dr. P.V.Rao, Professor	IIT Delhi, New Delhi-110016	Member
5.	Dr. Debdas Roy, Asstt. Professor	NIFFT, Hatia, Ranchi-834003, Jharkhand	Member
6.	Dr. Anil Kumar Singh, Professor	NIFFT, Hatia, Ranchi-834003, Jharkhand	Member
7.	Dr. P.P.Bandyopadhyay Professor	IIT Kharagpur, Kharagpur-721302, West Bengal	Member
8.	Dr. P.K.Ray, Professor	IIT Kharagpur, Kharagpur-721302, West Bengal	Member
9.	S. S. Maity, MD	Central Tool Room & Training Centre (CTTC), Bhubaneswar	Member
10.	Dr. Ramesh Babu N, Professor	IIT Madras, Chennai	Member
11.	R.K. Sridharan, Manager/HRDC	Bharat Heavy Electricals Ltd, Ranipet, Tamil Nadu	Member
12.	N. Krishna Murthy Principal Scientific Officer	CQA(Heavy Vehicles), DGQA, Chennai, Tamil Nadu	Member
13.	Sunil Khodke Training Manager	Bobst India Pvt. Ltd., Pune	Member
14.	Ajay Dhuri	TATA Motors, Pune	Member
15.	Uday Apte	TATA Motors, Pune	Member
16.	H B Jagadeesh, Sr. Manager	HMT, Bengaluru	Member
17.	K Venugopal Director & COO	NTTF, Peenya, Bengaluru	Member
18.	B.A.Damahe, Principal L&T Institute of Technology	L&T Institute of Technology, Mumbai	Member
19.	Lakshmanan. R Senior Manager	BOSCH Ltd., Bengaluru	Member
20.	R C Agnihotri Principal	Indo- Swiss Training Centre Chandigarh, 160030	Member

Mentor			
21.	Sunil Kumar Gupta (Director)	DGET HQ, New Delhi.	Mentor
Members of Core Group			
22.	N. Nath. (ADT)	CSTARI, Kolkata	Co-ordinator
23.	H.Charles (TO)	NIMI, Chennai.	Member
24.	Sukhdev Singh (JDT)	ATI Kanpur	Team Leader
25.	Ravi Pandey (V.I)	ATI Kanpur	Member
26.	A.K. Nasakar (T.O)	ATI Kolkata	Member
27.	Samir Sarkar (T.O)	ATI Kolkata	Member
28.	J. Ram Eswara Rao (T.O)	RDAT Hyderabad	Member
29.	T.G. Kadam (T.O)	ATI Mumbai	Member
30.	K. Mahendar (DDT)	ATI Chennai	Member
31.	Shrikant S Sonnavane (T.O)	ATI Mumbai	Member
32.	K. Nagasrinivas (DDT)	ATI Hyderabad	Member
33.	G.N. Eswarappa (DDT)	FTI Bangalore	Member
34.	G. Govindan, Sr. Draughtsman	ATI Chennai	Member
35.	M.N.Renukaradhya, Dy.Director/Principal Grade I.,	Govt. ITI, Tumkur Road, Banglore, Karnataka	Member
36.	B.V.Venkatesh Reddy. JTO	Govt. ITI, Tumkur Road, Banglore, Karnataka	Member
37.	N.M.Kajale, Principal,	Govt. ITI Velhe, Distt: Pune, Maharashtra	Member
38.	Subrata Polley, Instructor	ITI Howrah Homes, West Bengal	Member
39.	VINOD KUMAR.R Sr.Instructor	Govt.ITI Dhanuvachapuram Trivendrum, Dist., Kerala	Member
40.	M. Anbalagan, B.E., Assistant Training Officer	Govt. ITI Coimbatore, Tamil Nadu	Member
41.	K. Lakshmi Narayanan, T.O.	DET, Tamil Nadu	Member
Other industry representatives			
42.	Venugopal Parvatikar	Skill Sonics, Bangalore	Member
43.	Venkata Dasari	Skill Sonics, Bangalore	Member
44.	Srihari, D	CADEM Tech. Pvt. Ltd., Bengaluru	Member
45.	Dasarathi.G.V.	CADEM Tech. Pvt. Ltd., Bengaluru	Member
46.	L.R.S.Mani	Ohm Shakti Industries, Bengaluru	Member