

**SYLLABUS FOR THE POST OF TRADE INSTRUCTOR GR II IN PRINTING
TECHNOLOGY IN TECHNICAL EDUCATION DEPARTMENT**

CAT NO:246/2023

No. of Modules : 10

Total Marks : 100

1	History & development of Printing	19
2	Sheetfed Offset presses	18
3	Design fundamentals	6
4	Colour	6
5	Image assembly	10
6	Computer - basics	4
7	Digital imaging	11
8	Paper	7
9	Ink and press room chemicals	7
10	Finishing operations	12
	<i>TOTAL MARKS</i>	100

Detailed Syllabus

<i>Sl. No.</i>	<i>Topic</i>	<i>Marks</i>
1	i	
	History & development of Printing	5
	Press development	
	Platen, Flatbed, Rotary presses	
	Offset presses	
	Offset duplicator	
	Two cylinder and Three cylinder presses	
	Multi colour presses	
	Blanket to blanket	
	Web offset presses	
	ii	
	Major Printing Processes	
	Printing with master	
	Relief Printing - Nature of image and non image areas	
	Flexographic printing	3
	Applications	
	Units of a flexo press	
	Types of flexo plates	
	Kiss impression	
	Intaglio Printing - " "	3
	Gravure - applications	
	Advantages and disadvantages	

	Cylinder preparation methods		
	Screen Printing - " "		3
	Advantages & limitations		
	Stencil preparation methods		
	Squeegee types		
	Screen printing inks		
	Automation in screen printing		
	Printing on cylindrical surfaces		
	Lithography - " "		
	Principle of lithography		
	Invention of lithography & offset		
iii	Printing without master		
	Digital printing methods		5
	Inkjet		
	Laser		
	Thermography		
	Magnetography		
	Ionography		
	Applications of digital printing		
	Advantages of digital printing		
2	i	Sheetfed Offset presses	6
		Four units of an offset press	
		Infeed unit - Function, parts	
		Registration unit - Function, parts	
		Printing unit - Function, parts	
		Three systems in printing unit	
		Cylinder system	
		Dampening system	
		Inking system	
		Delivery unit - Function, parts	
		Waterless offset	
		Multi colour sheetfed press	
		Monitoring and control system	
		Press console	
		Quality control devices	
		GATF	
		Roller and blanket problems and adjustments	
	ii	Sheetfed offset operations	6
		Feeding the sheets - fanning, jogging	
		Registering the press sheet - lay adjustments	
		Delivery adjustments	
		Preparing the printing unit	
		Adjusting inking unit & dampening unit	
		Attaching the plate, starting up	
		Inking the plate, press proofing	
		Attaining ink water balance	
	iii	Web offset presses	6
		Units - Infeed, Printing, Delivery	
		Components of web presses	
		Roll stand, dancer roller, splicer, web tensioner etc.	
		Types of web presses- B2B, CIC, Inline etc.	

3	i	Automation on offset printing- CIP3 etc. Design fundamentals Alphabet design Font families Point size Principles of design Design steps Single colour and multicolour paste up Line & tone, half tone Half tone screens Three areas on a continuous tone image	6
4	i	Colour What is light Electro magnetic spectrum Colour theories - Additive & Subtractive colours Colour system Colour gamut HSV Screen angles Colour correction - UCR & GCR	6
5	i	Image assembly Stripping, flat Imposition - types Proofing - purpose & types of proofing	4
	ii	Platemaking Equipment for platemaking Exposure systems Calibration (light source) Lithographic printing plates Base plate materials Thickness of plates Graining and its purpose Types of plates - Surface, sub surface, PS, photopolymer etc.	6
6	i	Computer - basics Hardware, software Input, output devices Data storing Computer network Storage devices Digital workflow	4
7	i	Digital imaging Raster & vector Digital halftones FM & AM screening Trapping File formats Image input methods Types of scanners Digital cameras	5
	ii	Digital pre-press Word processing software	6

	Page layout software	
	Illustration and image editing software	
	Digital half tones	
	FM & AM screening	
	Trapping	
	Kerning, tracking, leading, formatting	
	CTP	
	Different types	
	Imaging systems	
8	i Paper	7
	Paper making process	
	Paper characteristics	
	Grain direction	
	Paper problems	
	Paper recycling	
	Types of paper	
	Basis weight & M weight	
	Reams	
	Paper sizes - International & Conventional sizes	
	Paper calculation	
9	Ink and press room chemicals	
	i Ink manufacturing	5
	Ingredients of ink	
	Properties of ink	
	Ink problems	
	Systems for specifying ink	
	Pantone Matching System	
	ii Chemicals used in printing	2
	Dampening solution & pH	
	Other chemicals used in presses	
10	i Finishing operations	12
	Cutting device	
	Equipment used for binding and finishing	
	Folding operation	
	Binding	
	Classification of binding	
	Finishing methods	

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper

