DRAFT SYLLABUS FOR PRESS WORK - I

Name of the Course: Diploma in Printing Technology	
Course Code:	Semester: Third
Duration: 16 Weeks	Maximum Marks: 100
Teaching Scheme	Examination Scheme
Theory: **3** hrs/week	Internal Examination: 20
Tutorial: **1** hr/week	Assignment & Attendance: 10
Practical: 6 hrs/week	End Semester Exam:70
Credit: 3	

Aim:

Getting the output through a printing machine is the most important operation for completing the print production. This subject known as Presswork - I is one of the key subject to make a clear and sound knowledge in some of the major print production systems and supplies. This will enable the students to make judgement about the aspect of printing, particularly the selection of a particular process to choose for a specific print production.

Objective: The students will be able to

(i) understand the basic and clear classification of all kinds of printing processes;
(ii) understand the details divisions and subdivisions of letterpress printing machines, their applications and uses, characteristics and identifications of their products- merits and demerits of various letterpress machines;
(iii) understand the principal mechanism of various letterpress and sheet-fed machines, their constructional differences in the printing unit and operational features;
(iv) understanding the various feeding and delivery mechanism in printing machines;
(v) appreciate the relational aspects of various materials used in presswork.

Pre-Requisite: Elementary knowledge of Basic Printing & Production

Contents:

Group-A		Hrs/unit	Marks
Unit 1	**Relief Printing** 1.1 Classifications of various relief printing machines, their applications and uses, characteristics of the products. 1.2 Details of divisions and subdivisions of letterpress printing machines, their applications and uses, characteristics and identifications of their products- merits and demerits of various letterpress machines General unit wise division of a printing machine.	10	10
Unit 2	**Letterpress Machines** 2.1 Letterpress platen m/c-kinds-purposes-working principal of printing unit construction- construction of inking unit-different operation to run a job like packing, positioning, feeding etc. 2.2 Various packing and make ready methods used in letterpress printing – overlay, interlay, underlay, hard soft and medium packing- use and applications	10	10

Group B **Unit 3**	**Letterpress Sheet-Fed Cylinder Machines** 3.1 Stop cylinder machines – principles, operational features. 3.2 Single revolution machines - principles, operational features. 3.3 Two revolution machines - principles, operational features. 3.4 Comparison of Stop, Single and Two revolution machines.	10	10
Unit 4	**Automatic Feeders & Delivery System** 4.1 Feeders- advantage and disadvantage-friction, suction and combination-front and back separation-various detectors and paper control on ramps- front and side lay, ionised air blower bar. 4.2 Delivery – kinds-fly, carriage and chain delivery-joggers-control of printed delivered sheets	09	10
Group C **Unit 5**	**Flexography Press Work** 5.1 Features, classification of various presses. 5.2 Various unwinding and rewinding units, printing units. 5.3 Inking arrangements, anilox roller. 5.4 Characteristics of ink and substrates.	15	15
Unit 6	**Web-Fed Machine** 6.1 Web tension control. 6.2 Splicer. 6.3 Compensator.	10	15
		64 hrs	70marks

Name of Author	Title of the Book		Name of the Publisher
1. C.S.MISRA	LETTERPRESS PRINTING (VOL – I & II)		
2. J.PAGE CROUCH	FLEXOGRAPHY PRIMER		
3. BANKS	PAPER IN PRINTING PROCESS		
4. GANDERTON	CYLINDER PRESSES		

5. GANDERTON	MACHINE PROBLEMS		
6. DONNAC. MULVIHILL	FLEXOGRAPHY PRIMER		

CONTACT PERIODS: 64 **INTERNAL ASSESSMENT: 06** **TOTAL PERIODS: 70**

Examination Scheme:

a) Internal Examination Marks: 20
b) End Semester Examination Marks: 70
c) Attendance + Assessment + Interaction : 10

Full Marks: 100

End Semester Examination Marks: 70

Group	**Unit**		**Objective**	**Marks/Qs**	**Total Marks**
		To be set	**To be answered**		
A	1 & 2	10	Any 20Qs	01	20
B	3 & 4	05	-		
C	5 & 6	10	-		
Group	**Unit**		**Subjective**	**Marks/Qs**	**Total Marks**
A	1& 2	02	Any five Qs	10	05x10
			Taking atleast		=50
			One from each		
			Group		
B	3 & 4	03	-	-	-
C	5 & 6	05	-	-	-

Note 1: Teachers' Assessment will be based on performance on given assignments.

Note 2: Assignments may be given on all the topics covered in the syllabus.

PRE-PRESS REPRO TECHNIQUE

Name of the Course: Diploma in Printing Technology	
Course Code:	Semester: Third
Duration: 16 Weeks	Maximum Marks: 100
Teaching Scheme	Examination Scheme
Theory: **3** hrs/week	Internal Examination: 20
Tutorial: NIL	Assignment & Attendance: 10
Practical: 3 hrs/week	End Semester Exam:70
Credit: 3	

Aim:

In the recent past the pre-press operations have gone through sea changes. The advent of Computer aided system is the main reason of it. Before printing with the printing units all the printing elements should be processed systematically through Prepress Reproduction Technique. The aim of this subject is to provide the students with the knowledge and skill of the said technique.

Objective: The students will be able to

(i) understand the various light-sensitive emulsion & processing
(ii) understand the half-tone reproduction technique
(iii) appreciate the digital imaging concept
(iv) understand the light & colour theories

Pre-Requisite: Elementary knowledge of Basic Printing & Production

Contents:

Group-A		Hrs/unit	Marks
Unit 1	**LIGHT SENSITIVE EMULSION & PROCESSING** 1.1 Study of silver based photographic emulsions 1.2 Studies of non-silver based emulsion viz., Diazo, Polymer 1.3 Study of development, stop bath, fixation, chemicals and their functions. 1.4 Study of manual and automatic film processing techniques 1.5 Study of Reproduction, Intensification & Chemical Reversal Process. 1.6 Study of basic densitometry, characteristic curve, gamma, & Densitometer.	10	10
Unit 2	**HALF-TONE REPRODUCTION** 2.1 Introduction and necessity of screen in reproduction processes. 2.2 Different type of halftone screens viz., Glass ruled and vignette contact screen, screens for special effects 2.3 Study of halftone screen theories 2.4 Study of Moiré pattern & Rosette pattern 2.5 Halftone negatives & Positives. 2.6 Study of high light dropout, duotones, Line-tone combination 2.7 Different types of Scanner i.e., PMT based and CCD based scanners and their functions.	10	15

Group B **Unit 3**	**LIGHT & COLOUR** 3.1 Nature of light, Electromagnetic spectrum, illumination & ideal illuminants for Repro-photo work. 3.2 Perception of colour, properties of colour, colour temperature. 3.3 Fundamental characteristics of colour, Hue, Saturation, Brightness, Colour space, Measurement of colour, Spectrophotometer. 3.4 Study of different colour synthesis viz., Additive synthesis, Subtractive synthesis, Colour Triangle, Complementary colours, Colour printing principle.	10	15
Unit 4	**COLOUR REPRODUCTION — SEPARATION & CORRECTION** 4.1 Basic principles of colour separation, filters & filter factors, its absorption & transmission qualities. 4.2 Methods of colour separation. 4.3 Electronic colour separation technique. 4.4 Necessity of colour correction, Principles of colour & tonal correction. 4.5 Study of manual correction procedure through dye retouching, staging & dot etching 4.6 Study of Photographic correction procedure i.e. Photographic Masking.	10	10
Group C **Unit 5**	**REPRODUCTION PHOTOGRAPHY** 5.1 Conventional Horizontal & Vertical Process camera 5.2 Flat Colour & Process Colour 5.3 Gray balance, UCR & GCR	04	10
Unit 6	**PROOFING** 6.1 Photographic Proofing 6.2 Electrostatic- Laser Proofing 6.3 Thermal Proofing 6.4 Inkjet Proofing	04	10
		48	70

Name of Author	Title of the Book		Name of the Publisher
1. Basics of Reprography / Tyrell, 2. Advance in Colour Reproduction /	Basics of Reprography Advance in Colour Reproduction		GATF GATF

GATF 3. Lithographers' Manual / GATF 4. Graphic Reproduction Photography / J W Burden 5. GATF World / Printing Times	Lithographers' Manual Graphic Reproduction Photography Printing Times		GATF GATF

CONTACT PERIODS: 48 **INTERNAL ASSESSMENT: 06** **TOTAL PERIODS: 54**

Examination Scheme:

d) Internal Examination Marks: 20
e) End Semester Examination Marks: 70
f) Attendance + Assessment + Interaction : 10

Full Marks: 100

End Semester Examination Marks: 70

Group	**Unit**		**Objective**	**Marks/Qs**	**Total Marks**
		To be set	**To be answered**		
A	1 & 2	10	Any 20Qs	01	20
B	3 & 4	10	-		
C	5 & 6	05	-		
Group	**Unit**		**Subjective**	**Marks/Qs**	**Total Marks**
A	1 & 2	04	Any five Qs Taking atleast One from each Group	10	05x10 =50
B	3 & 4	03	-	-	-
C	5 & 6	03	-	-	-

Note 1: Teachers' Assessment will be based on performance on given assignments.

Note 2: Assignments may be given on all the topics covered in the syllabus.

TYPESETTING & COMPOSITION

Name of the Course: Diploma in Printing Technology	
Course Code:	Semester: Third
Duration: 16 Weeks	Maximum Marks: 100
Teaching Scheme	Examination Scheme
Theory: **3** hrs/week	Internal Examination: 20
Tutorial: **1** hr/week	Assignment & Attendance: 10
Practical: **4** hrs/week	End Semester Exam:70
Credit: 3	

Aim:

Every printed product consists of Text portion and illustrations, with the former occupying a predominant portion. Knowledge of text setting methods and equipment used for setting text that is broadly termed "Typesetting & Composition" therefore very essential. The aim of this subject is to study Typesetting & Composition as an important part of Print production techniques, to enable the students to make judgement about the aspect of printing, particularly in relation to the requirements of designing the printed products. This will cover development of typesetting methods, preparation for typesetting, typesetting inputs and outputs, planning and proofing. On successful completion of the course, the students will be in a position to**:** —

Objective: The students will be able to

(i) Understand the basic factors for Typesetting;
(ii) Understanding the Methods of Composition;
(iii) Understand the role of Computer assisted composition;
(iv) Understand the proof reading marks and techniques;
(v) Appreciate the role of page make-up and assembly in print production;
(vi) Understand the role of Proofing;
(vii) Appreciate the role of Planning & Production.

Pre-Requisite: Elementary knowledge of Basic Printing & Production

Contents:

Group-A		Hrs/unit	Marks
Unit 1	**ESSENTIAL FACTORS FOR TYPE SETTING** 1.1 Factors to be considered before composing 1.2 How to select typefaces for text composing 1.3 Style of the house 1.4 Handling of Manuscript 1.5 Terminology, Composing room equipment & materials 1.6 Copy fitting 1.7 Typographic Measurement & different type faces	10	15
Unit 2	**MECHANICAL COMPOSITION (LINOTYPE & MONOTYPE)** 2.1 Working principles & Overview 2.2 Keyboard (Linotype), Matrix releasing and distributing mechanism 2.3 Keyboard (Monotype) and caster	04	05

Unit 3	**COMPUTER ASSISTED COMPOSITION** 3.1 Working Principles & Overview of Phototypesetting Composition 3.2 Introduction to Desk top Publishing system 3.3 Components of a Desk top Publishing system – Computers, Monitors, Mouse, and Laser Printers. 3.4 Fonts – How Computers handle Fonts, Bitmapped & Outlined Fonts & its management. 3.5 Application-Style, justification, Left Alignment, Right Alignment, Centre setting, Tabs, Pagination, Graphics rendering etc. 3.6 Word Processing software 3.7 Page Layout software	25	20
Group-B			
Unit 4	**PROOF READING** 4.1 Qualities of Proof readers 4.2 Standard proof reading marks 4.3 General rules for Proof- reading	05	05
Unit 5	**PAGE MAKE-UP & ASSEMBLY** 5.1 Essential know-how for page make up 5.2 Kinds of make up 5.3 Different parts of a book	06	05
Group-C			
Unit 6	**PROOFING** 6.1 Reflex method 6.2 Transfer method 6.3 Thermo graphic method 6.4 Photographic Contact Printing 6.5 Electrostatic method 6.6 Diazo method 6.7 Laser & Inkjet method	10	15
Unit 7	**PLANNING & PRODUCTION** 7.1 Progression of work in Letter Assembly dept. 7.2 Factors affecting work flow 7.3 Scheduling and Progress	04	05

Name of Author	Title of the Book		Name of the Publisher
1. D. Wooldridge	Letter Assembly in Printing		Focal Press
2. B. D. Menderatta	Composing &Typography Today		Printek Publications New Delhi – 110055
3. James Felci & Ted Nace	Desktop Publishing Skills		Focal Press
4. BPIF	Printing Office Procedure		BPIF
5. P. Kipphan	Handbook of Print Media		Springer, 2002

CONTACT PERIODS: 54 **INTERNAL ASSESSMENT: 06** **TOTAL PERIODS: 60**

Examination Scheme:

g) Internal Examination Marks: 20
h) End Semester Examination Marks: 70
i) Attendance + Assessment + Interaction : 10

Full Marks: 100

End Semester Examination Marks: 70

Group	**Unit**		**Objective**	**Marks/Qs**	**Total Marks**
		To be set	**To be answered**		
A	1, 2 & 3	12	Any 20Qs	01	20
B	4 & 5	06	-		
C	6 & 7	07	-		
Group	**Unit**		**Subjective**	**Marks/Qs**	**Total Marks**
A	1, 2 & 3	04	Any five Qs	10	05x10
			Taking atleast		=50
			One from each		
			Group		
B	4 & 5	03	-	-	-
C	6 & 7	03	-	-	-

Note 1: Teachers' Assessment will be based on performance on given assignments.

Note 2: Assignments may be given on all the topics covered in the syllabus.

Printer's Material Science-I

Name of the Course: Diploma in Printing Technology

Course Code:	Semester: Third
Duration: 16 weeks	Maximum Marks: 100
Teaching Scheme	Examination Scheme
Theory: 3 hrs per week	Internal Examination: 20 marks
Tutorial: 2 hrs per week	Assignment: 10 marks
Practical: Nil	End Semester Examination: 70 marks
Credit: 3	

Aim: To make students acquainted with all the physicochemical processes that require monitoring and close control in different printing processes for good quality printing.

Objective: The students will be able to

1. Differentiate between lyophobic and lyophilic colloids used in different printing processes.
2. Identify the different polymeric substrates used for printing.
3. Select inks and adhesives for suitable printing and printed substrates respectively.
4. Prepare Fountain solution with fountain concentrate by correct dosage to avoid press problems.
5. Measure total hardness and conductivity of water to determine whether the water available is suitable for the printing process and take proper steps to make it suitable for the process.
6. Identify printing problems that arise from the use of inks with higher or lower viscosity than
   that required for the particular printing process.
7. Determine the pH of fountain solution, ink, adhesive or paper if need arises.
8. Take necessary precautions to safeguard himself and the environment from adverse effects of chemicals and wastes generated in the workplace.

Pre-requisite: 1. Elementary knowledge of Atomic structure, Chemical Bonding, Polymer, pH, Hardness of Water and Surface Tension (taught in first semester).

Detail Course Content

Unit	Topic Group A	Hrs/unit	Marks
Unit I **Colloids**	1.1 Definition 1.2 Classification 1.3 Properties 1.4 Stability 1.5 Differences between the two classes of colloids 1.6 Differences between sol, emulsion and gel 1.7 Different types of emulsion and their applications in printing processes 1.8 Thixotropic gel- characteristics and use in offset printing 1.9 Suitability of colloids as sensitised plate and film coatings, desensitizing materials, printing inks and adhesives	**6**	**5**
Unit 2 **Polymer**	2.1 Properties and uses of natural polymers used in the printing industry 2.2 Properties and uses of synthetic polymers used in the printing industry 2.3 Surface treatment of polymeric materials for subsequent printing 2.4 Properties of vulcanized rubber 2.5 Synthetic rubbers used in flexographic plate making 2.6 Properties of rubber blankets used in offset presses 2.7 Properties of materials used to make inking and dampening rollers – desirable hardness, problems arising from incorrect hardness 2.8 Introduction to photopolymers – their properties 2.9 Application of photopolymers in image carriers	**6**	**5**
Unit 3 **Metals**	3.1 Choice of metals for surface preparation of image carriers 3.2 Characteristics of aluminium, copper, chromium, zinc 3.3 Choice of metals in bimetal and multimetal plates	**4**	**5**

	3.4 Materials used for graining and their characteristics		
Unit 4 **Lubricants**	4.1 Definition 4.2 Types of lubricants 4.3 Constituents and additives 4.4 Characteristics – adhesion, wettability 4.5 Uses	**2**	**5**
Group B			
Unit 5 **Surface Tension**	5.1 Cohesive and adhesive forces 5.2 Surface tension and surface energy 5.3 Angle of contact 5.4 Surface tension and angle of contact 5.5 Surface tension and wetting 5.6 Surfactant and Wetting agents 5.6 Wetting of ink pigments by ink vehicle 5.7 Wetting of non-image area of lithographic plate by fountain solution 5.8 Wetting of printing substrates by printing inks 5.9 Wetting of adherends by adhesives during lamination of printed products	**8**	**10**
Unit 6 **Viscosity**	6.1 Definition, unit and instruments used to measure viscosity of different printing inks 6.2 Desirable viscosity ranges of printing inks for different printing processes 6.3 Relation between viscosity and temperature 6.4 Problems encountered on using very high viscosity inks in sheet fed and offset printing process 6.5 Problems encountered on using very low viscosity inks in web fed offset printing process 6.6 Viscosity of adhesives used in laminating printed materials	**8**	**10**

Unit 7 **pH**	7.1 pH scale, range of acidity and alkalinity 7.2 pH of fountain solutions, optimum range required, problems encountered when pH is higher or lower than the optimum range. 7.3 Optimum pH of printing inks, problems encountered when pH is higher or lower than the optimum range. 7.4 pH of paper, problems encountered when pH is higher or lower than the optimum range. 7.5 pH of adhesives used in laminating printed materials, optimum value required, problems encountered when pH is higher or lower than the optimum value.	**8**	**10**
Unit 8 **Conductivity**	8.1 Definition, unit and instrument used to measure conductivity of water/solution 8.2 Optimum conductivity of water used in the printing industry 8.3 Causes of high conductivity of water 8.5 Necessity of measurement of conductivity of water in the printing industry	**6**	**5**
Unit 9 **Electrolysis**	9.1 Constituents of electrolytic bath 9.2 Effect of time, temperature, current and voltage 9.3 Anodising 9.4 Copper and chromium electroplating	**4**	**5**
Group C			
Unit 10 **Water**	10.1 Uses of water in the printing industry 10.2 Characteristics of water required for use in the printing industry – hardness, pH, conductivity 10.3 Total hardness of water 10.4 Problems of using very hard water in the printing industry 10.5 Problems of using very soft water in the printing industry 10.6 Removal of hardness from water by ion-exchange process	**6**	**10**

Unit 11 **Fountain Solution**	11.1 Functions of fountain solution 11.2 Composition of fountain solution 11.3 Characteristics of fountain Solution - hardness, pH, conductivity, temperature 11.5 Dosage of fountain solution 11.6 Problems due to improper formulation 11.7 Printing problems due to over-dosage of fountain solution 11.8 Printing problems due to under-dosage of fountain solution	**6**	**5**
Unit 12 Safety, Health & Environment	12.1 Environmental pollution-air, water, noise 12.2 Chemical hazards and safety precaution 12.3 Waste management	**6**	**5**

EXAMINATION SCHEME

a) Internal Examination Marks : 20
b) End Semester Examination Marks : 70
c) Assignment : 10
Full Marks = 100

End Semester Examination Scheme : Marks – 70

Group	Unit	Objective			
		To be set	To be answered	Marks per Qs	Total Marks
A	1-4	8	Any 20 Qs	1	20
B	5-9	10			
C	10 -12	6			
Subjective					
A	1-4	2	1 Qs from Group A, 2 Qs from Group B and 1 Qs from Group C	**5**	5x10=50
B	5-9	4			
C	10 -12	2			

Note 1 : Teacher's assessment will be based on performance on given assignments
Note 2 : Assignments may be given on all the topics covered in the syllabus.

Text Book:

Name of Author	Title of the Book	Name of the Publisher
Tulika Das	Chemistry in Printing, 2nd Edition	Barnana Prakashani, 2011

Reference Books:

Name of Author	Title of the Book	Name of the Publisher
N.R.Elred & T. Scarlet	Chemistry for the Graphic Arts	GATF, 1992
R. Blair, Editor-in-Chief, M.D. Thomas Ed	The Lithographer's Manual	GATF, Inc., 1988
G.R. Marshall	An Introduction to Science for Printers	William Heinmann Ltd., 1963
F. Pateman and L.C. Young	Printing Science	Sir Isaac Pitman and Sons Ltd., 1963
P.J. Hartsuch	Chemistry of Lithography	Lithographic Technical Foundation Inc., 1961

Presswork Workshop I (LAB)

Name of the Course: Diploma in Printing Technology	
Course Code:	**Semester: Third**
Duration: : Seventeen weeks/Semester	**Maximum Marks: 150**
Teaching Scheme	**Examination Scheme: Continuous Evaluation**
Theory: Nil hrs./week	Mid Semester Exam.: Nil
Tutorial: Nil hrs./week	Attendance & Teacher's Assessment : 100 Marks
Practical: 6 hrs./week	End Semester Exam: 50Marks
Credit: 4	
Aim: To impart practical knowledge in Work Shop/Lab related with course of study.	
Objective: Student will able to	
Sl. No.	
1.	Know basic Press Workshop Technology & Processes.
2.	Read and interpret Print Production Workflow.
3.	Identify, select, & use of various tools, equipment & software.
4.	Operate, control different machines & equipment.
5.	Inspect the job for specified dimensions.

6.	Produce jobs as per specified dimensions.		
7.	Adopt safety practices (tools, jobs & personal) while working on various machines.		
8.	Acquaint with the chronological operational processes involving in the jobs.		
9.	Care & maintenance of the tools & machines.		
Pre-Requisite:			
Sl. No.			
1.	Elementary knowledge of Presswork Printing		
2.	Metrological aspects		
Contents: **CONTINUOUS INTERNAL ASSESSMENT OF 150 MARKS IS TO BE CARRIED OUT BY THE TEACHERS THROUGHOUT THE SEMESTER WHERE MARKS ALLOTTED FOR ASSESSMENT OF SESSIONAL WORK UNDERTAKEN IN 3RD SEMESTER IS 75. DISTRIBUTION OF MARKS IN 3RD SEMESTER: PERFORMANCE OF JOB– 05; LABORATORY NOTEBOOK – 10, ATTENDANCE – 10.** **EXTERNAL ASSESSMENT (END SEMESTER EXAM) OF 50 MARKS** SHALL BE HELD AT THE END OF THE FOURTH SEMESTER ON THE ENTIRE SYLLABI. ONE JOB PER STUDENT FROM ANY ONE OF THE JOBS DONE IS TO BE PERFORMED. JOB IS TO BE SET BY LOTTERY SYSTEM. **DISTRIBUTION OF MARKS: ON SPOT JOB – 20; VIVA-VOCE – 30** **Unit: 1,2,3, & 4** **TOTAL PERIODS: 96 (16 Weeks) + 6 (1 Week) = 102 (17 Weeks)** **Practical Class – 96 hrs/16 weeks & Evaluation 6 hrs/1 week**		Hrs./Unit 40/Unit 1 24/Unit 2 12/Unit 3 20/Unit 4	Marks 50 50 20 30
		96 Hrs	150

Presswork Workshop I

Unit:

1. Shop talk & Familiarisation with various machines -

   Letterpress, Flexography, Gravure & Small Offset workshop

   Making charts and layouts of the machine department.
2. Working on Automatic stop cylinder machine –

   familiarisation with different units – setting of feeders with pawl and ratchet system for various types and thickness of paper, setting of inking system with control measure, examining and changing of rollers, ink flow adjustment, setting of rollers, fixing the under lay Practice on Letterpress sheet fed machines.
3. Air Compressor and accessories – Demonstration & Shop talk.
4. Static Electricity, Progressive Proof, Process Inks, Qualities of Papers by the help of AV Systems.

Typesetting & Composition Lab

Name of the Course: Diploma in Printing Technology			
Course Code:		**Semester: Third**	
Duration: : Seventeen weeks/Semester		**Maximum Marks: 100**	
Teaching Scheme		**Examination Scheme: Continuous Evaluation**	
Theory: Nil hrs./week		Mid Semester Exam.: Nil	
Tutorial: Nil hrs./week		Attendance & Teacher's Assessment : 50 Marks	
Practical: 4 hrs./week		End Semester Exam:50Marks	
Credit: 3			
Aim: To impart practical knowledge in Work Shop/Lab related with course of study.			
Objective: Student will able to			
Sl. No.			
1.	Know basic Typesetting Composition Processes.		
2.	Read and interpret Print Production Planning.		
3.	Identify, select, & use of various tools, equipment & software.		
4.	Operate, control different machines & equipment.		
5.	Inspect the job for specified dimensions.		
6.	Produce jobs as per specified dimensions.		
7.	Adopt safety practices (tools, jobs & personal) while working on various machines.		
8.	Acquaint with the chronological operational processes involving in the jobs.		
9.	Care & maintenance of the tools & machines.		
Pre-Requisite:			
Sl. No.			
1.	Elementary knowledge of Basic Printing		
2.	Type & typography , paper sizes		
Contents: **CONTINUOUS INTERNAL ASSESSMENT OF 50 MARKS IS TO BE CARRIED OUT BY THE TEACHERS THROUGHOUT THE SEMESTER WHERE MARKS ALLOTTED FOR ASSESSMENT OF SESSIONAL WORK UNDERTAKEN IN EACH SEMESTER IS 25. DISTRIBUTION OF MARKS IN 3RD SEMESTER: PERFORMANCE OF JOB– 10; LABORATORY NOTEBOOK – 10, & ATTENDANCE – 05.** **EXTERNAL ASSESSMENT (END SEMESTER EXAM) OF 50 MARKS** SHALL BE HELD AT THE END OF THE THIRD SEMESTER ON THE ENTIRE SYLLABI OF . ONE JOB PER STUDENT FROM ANY ONE OF THE JOBS DONE IS TO BE PERFORMED. JOB IS TO BE SET BY LOTTERY SYSTEM. **DISTRIBUTION OF MARKS: ON SPOT JOB – 20; VIVA-VOCE – 30** **Unit: 1,2,3 &4** **TOTAL PERIODS: 64 (16 Weeks) + 4 (1 Week) = 68 (17 Weeks)** **Practical Class – 64 hrs/16 weeks & Evaluation 4 hrs/1 week**		Hrs./Unit 14/Unit 1 05/Unit 2 05/Unit 3 40/Unit 4	Marks 20 05 05 70
		64 Hrs	100

Typesetting & Composition Lab

Unit:

1.0 PRACTICE ON HAND COMPOSING

Study of different fonts / quoins / quads and other composing materials
Composing a block/passage, tabular matter, more than one point in a line
Proofing and correction

2.0 DEMONSTRATION ON MECHANICAL COMPOSING MACHINES

Monotype Keyboard & Caster

3.0 DEMONSTRATION ON LINE CASTING MACHINE

Linotype Casting mechanism
Releasing and assembling of matrices and space bands
Distributing mechanism

4.0 APPRECIATING ELECTRONIC COMPOSITION FOR PRINTING PURPOSES

Introducing page making Software – The utilities – Understanding page maker windows – Using the tool book and control box – Creating a new file – Page dimensions – Orientation – Start page number – Number of page and master page formulation – Option – double side publication – Opening a file/publication – Directories/driver/open/close/saving a file – Import/export – Using different filters – Correcting unknown words – Text and paragraph formatting – Using fonts – Selecting sizes – Changing the leading – Changing the width of characters – Changing the tracking characters – Tab setting – Apply styles – Selecting paragraphs to format – Proving a background for reverse – Sending an object to the back – Bringing an object to the front – Rounding corners/rules/boxes – Bullets and numbering – Drop caps and other utilities – Running header and footer – Printing a publication – Print to copies / collate / reverse / proof / all (pages) / ranges / Both / even / odd / size / orientation / tile / manual / auto / scale / reduce to fit.

Pre-press Repro Lab

Name of the Course: Diploma in Printing Technology	
Course Code:	**Semester: Third**
Duration: : Seventeen weeks/Semester	**Maximum Marks: 100**
Teaching Scheme	**Examination Scheme: Continuous Evaluation**
Theory: Nil hrs./week	Mid Semester Exam.: Nil
Tutorial: Nil hrs./week	Attendance & Teacher's Assessment : 50 Marks
Practical: 4 hrs./week	End Semester Exam:50Marks
Credit: 3	
Aim: To impart practical knowledge in Work Shop/Lab related with course of study.	

Objective: Student will able to			
Sl. No.			
1.	Know basic Reproduction Photographic Processes.		
2.	Read and interpret Print Production Planning.		
3.	Identify, select, & use of various tools, equipment & software.		
4.	Operate, control different machines & equipment.		
5.	Inspect the job for specified dimensions.		
6.	Produce jobs as per specified dimensions.		
7.	Adopt safety practices (tools, jobs & personal) while working on various machines.		
8.	Acquaint with the chronological operational processes involving in the jobs.		
9.	Care & maintenance of the tools & machines.		
Pre-Requisite:			
Sl. No.			
1.	Elementary knowledge of Basic Printing		
2.	Process Camera, Block & Plate, Colour		
Contents: **CONTINUOUS INTERNAL ASSESSMENT OF 50 MARKS IS TO BE CARRIED OUT BY THE TEACHERS THROUGHOUT THE SEMESTER WHERE MARKS ALLOTTED FOR ASSESSMENT OF SESSIONAL WORK UNDERTAKEN IN EACH SEMESTER IS 25. DISTRIBUTION OF MARKS IN 3RD SEMESTER: PERFORMANCE OF JOB– 10; LABORATORY NOTEBOOK – 10, & ATTENDANCE – 05.** **EXTERNAL ASSESSMENT (END SEMESTER EXAM) OF 50 MARKS** SHALL BE HELD AT THE END OF THE THIRD SEMESTER ON THE ENTIRE SYLLABI OF . ONE JOB PER STUDENT FROM ANY ONE OF THE JOBS DONE IS TO BE PERFORMED. JOB IS TO BE SET BY LOTTERY SYSTEM. **DISTRIBUTION OF MARKS: ON SPOT JOB – 20; VIVA-VOCE – 30** **Unit: 1,2,3 &4** **TOTAL PERIODS: 64 (16 Weeks) + 4 (1 Week) = 68 (17 Weeks)** **Practical Class – 64 hrs/16 weeks & Evaluation 4 hrs/1 week**		Hrs./Unit 14/Unit 1 05/Unit 2 05/Unit 3 40/Unit 4	Marks 25 25 25 25
		64 Hrs	100

Pre-press Repro Lab

UNIT: 1

1. Acquainting with working of different process camera & accessories.
2. Halftone Negative making with different screens and Positive making after necessary corrections.
3. Combination line and halftone negative making.
4. Line-tone combined positive making by double printing method in the contact printer.

Unit: 2

5. Colour separation negative making from colour original (Indirect process).
6. Preparation of screened positives from colour separation negative.
7. Tone reproduction, contact photography and use of contact screen.
8. Introduction to flatbed scanner, image setter and auto film processor.

Unit: 3

9. Retouching of Halftone negative and positive.
10. Chart making and analysis of colour of the colour copy.
11. Manual colour correction with application of dye.
12. Staging of monochrome half-tone negatives/positives.

Unit: 4

13. Dot etching of the black and white positives.
14. Tone correction on half tone colour positives.
15. Demonstration of Black &White/Colour planning and Imposition.
16. Scanning & Colour correction

Professional Practice I (Material Quality Control Lab)

Name of the Course: Diploma in Printing Technology

Course Code:	Semester: Third
Duration: 16 weeks	Maximum Marks: 50
Teaching Scheme	Examination Scheme
Theory: Nil	Internal Assessment: 25 marks
Tutorial: Nil	
Practical: 3 hrs per week	End Semester Examination: 25 marks
Credit: 2	

Aim: To make students acquainted with all the physical and chemical tests of materials used in different printing processes.

Objective: The students will be able to

9. Carry out physical tests of paper.
10. Check the pH and conductivity of fountain solution to avoid press problems.
11. Determine the flow characteristics ink.
12. Identify common printing problems related to ink and paper.

Detail Course Content

Experiment No.	Name of the Experiment
1	Determination of pH of 1. Fountain solution with pH meter. 2. Paper with pH meter

2	
3 4	Determination of conductivity of 1. Water with conductivity meter 2. Fountain solution with conductivity meter
5 6 7 8 9	Paper testing 1. Grammage 2. Paper caliper 3. Density 4. Bursting strength 5. Grain
10 11 12 13	Ink Testing 1. Ink flow properties 2. Determination of viscosity of liquid ink with viscometer 3. Measurement of pigment dispersion with grind gauge 4. Resistance to acid and alkali
14	Visual defects on print products 1. Scumming 2. Tinting 3. Slurring 4. Chalking