

**Scheme of Teaching and Examination for
VI Semester DIPLOMA in MECHANICAL ENGINEERING (PRINTING TECHNOLOGY)**

THEORY

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME		EXAMINATION - SCHEME					
			Periods per Week	Periods in one Session (Year)	Hours of Exam.	Terminal Exam. (A) Marks	Final Exam. (B) Marks	Total Marks (A+B)	Pass Marks Final Exam.	Pass Marks in the Subject
1.	Professional Studies & Entrepreneurship	00601	06	60	03	20	80	100	26	36
2.	Binding & Finishing – II	34602	06	60	03	20	80	100	26	36
3.	Printing Process – II	34603	06	60	03	20	80	100	26	36
4.	Accountancy Casting & Estimating	34604	04	50	03	20	80	100	26	36
5.	Elective*		06	60	03	20	80	100	26	36
	Advance Pre-Press	34605A								
	Advance Press-Work	34605B								
	Advance Printer's Science	34605C								
Total:-			28						500	

PRACTICAL

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME		EXAMINATION – SCHEME					
			Periods per Week	Periods in one Session (Year)	Hours of Exam.	Marks Internal Exam (A)	Marks External Exam (B)	Total Marks (A+B)	Pass Marks Final Exam.	Pass Marks in the Subject
6.	Pre-Press	34606	04	50	03	10	40	50	16	21
Total:-			04						50	

SESSIONAL

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME		EXAMINATION - SCHEME			
			Periods per Week	Periods in One Session (Year)	Marks of Internal Examiner (X)	Marks of External Examiner (Y)	Total Marks (X+Y)	Pass Marks in the Subject
7.	Professional Studies & Entrepreneurship	00607	04	50	20	30	50	25
8.	Elective		06	60	20	30	50	25
	Advance Pre-Press	34608A						
	Advance Press-work	34608B						
	Advance printer's Science	34608C						
9.	Project Work & Its presentation in Seminar	34609	--	--	40	60	100	50
Total:-			10		200			

Total Periods per Week	42	Total Marks = 750
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PROFESSIONAL STUDIES & ENTREPRENEURSHIP

Subject Code 00601	Theory			No of Period in one session : 60		
	No. of Periods Per Week			Full Marks	:	100
	L	T	P/S	Annual Exam.	:	80
	06	-	-	Internal Exam.	:	20

Rationale:

The paper has been introduced to achieve dual purpose for the students. Firstly, this course provides the basics of Professional management and secondly it also prepares the student to develop self reliance by becoming an entrepreneur.

This makes them conversant with their duties and responsibility to make them successful in their career building by developing profession expertise.

Objectives:

With the input provided in this paper, the students will be able to :-

- Acquire basic knowledge of management.
- Understand the various area of management such as human resources, marketing, finance and commercial aspect, production & material management etc.
- Understand the benefit of becoming an entrepreneur.
- Handle a project efficiently and independently.
- To avail subsidies / grants / loan etc. from various of agencies.

PART-I: PROFESSIONAL STUDIES

TOPIC:

01 – INTRODUCTION:

- 01.01 Professional Ethics: [05]
Definition, Objective, Right & Wrong, Duty & Obligation
- 01.02 Management: [05]
Definition, Function and Objectives.
- 01.03 Leadership: [05]
Definition, Types – Autocratic, Democratic and Laissez – faire, Functions and Characteristics of Leadership.
- 01.04 Motivation : [05]
Definition, Types and Importance / Benefits
- 01.05 Forms of Business organization: [05]
Sole proprietorship, Partnership, Joint Stock company and Co-operative Societies.
- 01.06 Supervisor's/Technician's role: [05]
Concept of supervisory management, career needs, Role of Technicians in an organization.

PART-II: ENTREPRENEURSHIP

TOPIC:

02 – INTRODUCTION:

- 02.01 Entrepreneurship: [10]
Concept, Characteristics of a successful entrepreneurship, basic ingredients of entrepreneurship:
1. Finance 2. Technology 3. Sales and Marketing
- 02.02 Project Report: [10]
Meaning, Project Identification, Project Selection, Contents of a project Report, Techno-Economic Feasibility Report (TEFR), Market Survey.

02.03 Sources of Finance: [05]
Government, Commercial Banks, Financial institutions:
SIDBI – Small Industries development Bank of India
SFC – State Financial Corporations
IDBI – Industrial Development Bank of India
IFCI – Industrial Finance Corporation of India
ICICI – Industrial Credit Investment Corporation of India

02.04 Acts : [05]
Indian factories Act 1948 (Main Provision Only)
Consumers Protection Act 1986 (Main Provision Only)

03 – PROJECT WORK:

As elaborated in Sessional Paper (00607).

Books Recommended :

1. Essential of Management, Tata McGraw Hill, Publishing Company Ltd., New Delhi. - Herald Koonz & Cyril O' Donnel.
2. Business Organization and Management, S. C. Chand and Company (Pvt.) Ltd., Ram Nagar, New Delhi - M. C. Shukla.
3. Managerial Economics, Sultan Chand & Sons, New Delhi - R. L. Vashney & K. L. Maheshwari
4. Project Appraisal and Follow up, Govind Prakashan, Mumbai. - D. P. Sharda
5. Modern Marketing Management, Progressive Corporation Pvt. Ltd., P51, Mahatma Gandhi Road, Bombay-400 001 - Dr. Rustam S. Davar
6. A hand book for new entrepreneurs (with special reference to science and technology target group) - Entrepreneurship Development Institute of India, 83-A, Swastic Society Navrangpura, Ahmedabad, PIN-380 009.

Reference Books :

1. Leadership in Organisation - Published by I.S.T.E. Mysore
2. Motivation - Published by I.S.T.E. Mysore
3. Motivation - I.I.T. Kanpur - Published by I.S.T.E. Mysore
4. A Hand book on Project Appraisal and follow up, Govind Prakashan, 204, Saraswati Kunj, 90, S. V. Road, Goregoan, Bombay-400 062. - D. P. Sarda
5. Bihar Industrial Policy - Government of Bihar, Department of Industries.
6. Entrepreneurship Guide - Bihar State Financial Corporation, Fraser Road, Patna-800 001.

BINDING & FINISHING II

Subject Code 34602	Theory			No of Period in one session : 60		
	No. of Periods Per Week			Full Marks	:	100
	L	T	P/S	Annual Exam.	:	80
	6	-	-	Internal Exam.	:	20

Rationale & Objective:

This core subject deals with the special binding systems and automatic binding system, Advancements in binding process in taking place portion in a press. Therefore, knowledge of this subject is very essential.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Account Bookbinding.	(05)
02	Banding.	(05)
03	Account Book Finishing.	(05)
04	Publishers Binding.	(05)
05	Alternative.	(05)
06	Book, Repairing Work.	(05)
07	Loose-leaf mechanism and mechanical systems of binding.	(05)
08	Mechanical Binding.	(05)
09	Automation in Bindery.	(05)
10	Materials consumption and calculation.	(05)
11	Estimating.	(05)
12	Production Control.	(05)
Total :		(60)

CONTENTS:

<u>TOPIC: 01 – ACCOUNT BOOKBINDING:</u>	[05]
Account book and paper, sewing, pasting spine gluing, spilt boards, tacketting, spring back, cuttings and attaching the boards, covering, full leather.	
<u>TOPIC: 02 – BANDING:</u>	[05]
Single, Double, Double Straight, Russia.	
<u>TOPIC: 03 – ACCOUNT BOOK FINISHING:</u>	[05]
<u>TOPIC: 04 – PUBLISHERS BINDING:</u>	[05]
Folding, Binding, Gathering, Sewing, Spine Gluing, Trimming, Edge Decoration, Rounding and Booking.	
<u>TOPIC: 05 – ALTERNATIVE:</u>	[05]
Forwarding techniques, board cutting and cloth cutting cover decoration casing in, Pressing.	
<u>TOPIC: 06 – BOOK, REPAIRING WORK:</u>	[05]
Pulling a book, Removing old groove, dry and net cleaning washing mending.	
<u>TOPIC: 07 – LOOSE-LEAF MECHANISM AND MECHANICAL SYSTEMS OF BINDING:</u>	[05]
Inter-screw, ring metal, universal metal, end lock metal, prong metal, metal back ledger. Covering loose leaf mechanisms.	

TOPIC: 08 – MECHANICAL BINDING: [05]

TOPIC: 09 – AUTOMATION IN BINDERY: [05]

Folding machine, binding machine, gathering machine, wire stitching machine, thread stitching and looping machine, three-knife book trimmers, continuous trimmers book back gluing machine.

Rounding and backing machine, back-lining machine. Lining up and head binding machine, case-making machine, automatic case making machine, back forming machine, casing-in machine, processing machine, types and suitability of machines for various classes to work.

TOPIC: 10 – MATERIALS CONSUMPTION AND CALCULATION: [05]

Calculation of paper, calculation of boards, estimating covering materials.

TOPIC: 11 – ESTIMATING: [05]

Thread, tape, cord, stitching wire and adhesives.

TOPIC: 12 – PRODUCTION CONTROL: [05]

Production control departmental planning and layout, modern production techniques and work-flow sequence.

PRINTING PROCESS - II

Subject Code 34603	Theory			No of Period in one session : 60		
	No. of Periods Per Week			Full Marks	:	100
	L	T	P/S	Annual Exam.	:	80
	6	-	-	Internal Exam.	:	20

Rationale & Objective:

It is a core subject of printing technology, It is essential for students to learn about the basics of various printing processes. Process photography, techniques of printing surface preparation and printing machines.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Introduction to different printing surface.	(15)
02	Introduction to letterpress printing machine.	(10)
03	Introduction to offset printing machines & Gravure Printing Machine.	(15)
04	Introduction to screen-printing.	(10)
05	Different kinds of rollers.	(10)
Total :		(60)

CONTENTS:

TOPIC: 01 – INTRODUCTION TO DIFFERENT PRINTING SURFACE. : [15]

- 01.01 Introduction to ‘Preparing a composed surface’.
- 01.02 Introduction to ‘Photoengraved surface’(Block making).
- 01.03 Introduction to ‘Offset Plate-making’.
- 01.04 Introduction to ‘Gravure Surface’.
- 01.05 Introduction to ‘Screen-making’.

TOPIC: 02 – INTRODUCTION TO LETTERPRESS PRINTING MACHINE: [10]

Classification features and uses of letterpress machines. Merits and demerits.

TOPIC: 03 – INTRODUCTION TO OFFSET PRINTING MACHINES & GRAVURE [15]

PRINTING MACHINE:

Classification, features, uses, merits and demerits.

TOPIC: 04 – INTRODUCTION TO SCREEN-PRINTING: [10]

TOPIC: 05 – DIFFERENT KINDS OF ROLLERS: [10]

ACCOUNTANCY, COSTING & ESTIMATING

Subject Code 34604	Theory			No of Period in one session : 60			
	No. of Periods Per Week			Full Marks		:	100
	L	T	P/S	Annual Exam.		:	80
	6	-	-	Internal Exam.		:	20

Rationale & Objective:

All productive activities in an industry are motivated by profit in an industry are motivated by profit. An accountant analyses the financial aspect of a business to give a correct picture as to whether it is running on profit or at a loss, as well as how that profit has been made or that loss sustained.

People in printing management should be able to do this evaluation with a view to enhancing the profit or eliminating the loose of an organisation.

Costing and Estimating:- Printing supervisors, owners of printing supervisors, owners of printing presses and so on have to study costing for the purpose of cost recovery and cost control. The study of a scientific system of costing will give them proper guidance as to how the maximum utilization of the resources of the factory can be achieved and do away with waste of time and money.

In an extremely competitive market, scientific estimating can guarantee the meaningful survival of a printing organisation by enabling it to forecast correctly and judiciously the estimated cost of jobs, the overhead expenditure of a business, and the amount of profit to be made from each job.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
Accountancy		
01	Accountancy.	(05)
Costing & Estimating		
02	Basic objects of Costing in Production Process.	(10)
03	Element of Cost.	(10)
04	Cost Sheet.	(10)
05	Estimating for Printing.	(10)
06	Estimating Labour operation on work rate and time-rate system.	(10)
07	Estimating materials and outwork.	(05)
Total :		(60)

CONTENTS:

ACCOUNTANCY

TOPIC: 01 – ACCOUNTANCY: **[05]**

Definition, object of accountancy, double entry system, explanation of terms, first principles of double entry.

COSTING AND ESTIMATING

TOPIC: 02 – BASIC OBJECTS OF COSTING IN PRODUCTION PROCESS: **[10]**

Job and Process costing, Fixed & Variable Cost, Time-rate and work rate Costing and Estimating System.

<u>TOPIC: 03 – ELEMENT OF COST:</u>	[10]
Recovery of Labour Cost, materials, out work and overhead Expenses.	
<u>TOPIC: 04 – COST SHEET :</u>	[10]
Cost Accounting, Cost Control in Printing..	
<u>TOPIC: 05 – ESTIMATING FOR PRINTING:</u>	[10]
Outline of British Printing Industries federation system of Costing.	
<u>TOPIC: 06 – ESTIMATING LABOUR OPERATION WORK RATE AND TIME-RATE SYSTEM:</u>	[10]
Changeable operation in printing, their production standard and rates.	
<u>TOPIC: 07 –ESTIMATING MATERIALS AND OUTWORK.</u>	[05]
Over head expenses.	

ADVANCE PRE-PRESS

Subject Code 34605A	Theory			No of Period in one session : 60		
	No. of Periods Per Week			Full Marks	:	100
	L	T	P/S	Annual Exam.	:	80
	6	-	-	Internal Exam.	:	20

Rationale & Objective:

Pre-press is the most sensitive area in the printing trade. The final quality of a Printing mainly depends upon the state of the pre-press technology. Image setting, scanning and advance plate making techniques are the key areas here which need special attention.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Plate making chemistry.	(10)
02	Coating and processing.	(10)
03	Scanning.	(10)
04	Operating procedure.	(10)
05	Page make up techniques.	(10)
06	Offset Printing Machine.	(10)
Total :		(60)

CONTENTS:

TOPIC: 01 – PLATE MAKING CHEMISTRY: **[10]**

Surface chemistry of oleophilic image areas; hydrophilic non-image areas; effects of chemical changes; combination exposure and multiple exposure.

TOPIC: 02 – COATING AND PROCESSING: **[10]**

Wipe on, deep etch processes; presensitised plates; PVA and bimetal process; copperised, aluminium deepetch plates; operations by automatic plate processors, Different light sources; characteristics of light sensitive coating materials; other related equipments.

TOPIC: 03 – SCANNING: **[10]**

Basic principles; black and white scanner; laser screening; optical system; Screen Angle; colour removal, scanner operated vignette, Colour correction, Sharpness, Sizing, Resolution, Digital Retouching; saving picture files.

TOPIC: 04 – OPERATING PROCEDURE: **[10]**

Cylinder cleaning; transparency mounting; multiple transparency mounting; cylinder Changing setting vertical resolution; setting exposure; select units; formal and colour; scanning.

TOPIC: 05 – PAGE MAKE UP TECHNIQUES: **[10]**

Text files and graphic files; integration and editing; interactive graphic techniques; positioning; scaler and guide; lines for drawing and positioning; menu driven software attire of packagemaker; colour separation in DTP; computer graphics; graphic card; word processing; software; laser printers.

TOPIC: 06 – OFFSET PRINTING MACHINE: **[10]**

Plate making techniques for printing, Plastic plates, Metal plates, Direct image plates, PS plates, Wipe on plates, Punch register system.

ADVANCE PRESS WORK

Subject Code 34605B	Theory			No of Period in one session : 60		
	No. of Periods Per Week			Full Marks		: 100
	L	T	P/S	Annual Exam.		: 80
	6	-	-	Internal Exam.		: 20

Rationale & Objective:

For faster printing works and works of huge quantities such as Newspapers, magazine etc. Web-fed machines are required. These machines are also suitable for multi-colour works. This subject deals with the one rational features if Web-fed presses of relief printing, Planographic Printing and intaglio printing. Knowledge of this subject is very essential for a diploma holder.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Web-fed Printing Machines for Relief Printing Process.	(15)
02	Web-offset single or multi-colour Machines.	(15)
03	Gravure Printing.	(15)
04	Screen Printing	(15)
Total :		(60)

CONTENTS:

TOPIC: 01 – WEB-FED PRINTING MACHINES FOR RELIEF PRINTING PROCESS: [15]

- 1.1 Letterpress rotaty machines-various types, units, feeding system, tension, control, delivery system, sheeters, inking system, registration control system, automatic pasters. Automatic detectors.
- 1.2 Flexographic printing machine feeding and delivery system sheeters, ink setting, two-colour registration control, make-ready techniques, printing faults and remedies.

TOPIC: 02 – WEB-OFFSET SINGLE OR MULTI-COLOUR MACHINES: [15]

- 2.1 Various types and sizes, feeding and delivery systems, inking and dampening system web tension control, web detectors, registration control, auto-pasters, printing unit.
- 2.2 Conversion units for in line operations numbering, perforation, punching.
- 2.3 Drying of printed sheets-various methods.
- 2.4 Various types of plate and blanket used, make-ready operations.

TOPIC: 03 – GRAVURE PRINTING: [15]

- 3.1 Sheet and web-fed presses-classification, construction.
- 3.2 Mounting of cylinders, minor corrections on cylinders, pre-proofing.
- 3.3 Presswork operation.
- 3.4 Automatic controls and detectors.
- 3.5 Gravure printing faults and remedies.

TOPIC: 04 – SCREEN PRINTING: [15]

- 4.1 Frames and other materials used.
- 4.2 Stencil system.
- 4.3 Screen cleaning.
- 4.4 Dry equipments.
- 4.5 Inks, solvents minners, cieahers and retarders.

ADVANCE PRINTER'S SCIENCE

Subject Code 34605C	Theory			No of Period in one session : 60			
	No. of Periods Per Week			Full Marks		:	100
	L	T	P/S	Annual Exam.		:	80
	6	-	-	Internal Exam.		:	20

Rationale & Objective:

The student will learn the scientific approach to the different printing materials. He will also learn about the testing of material for quality control. The subject will make the student to learn about the chemical reactions involved in the various stages of Reproduction Photography, Surface Preparation, Presswork etc.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Introduction.	(10)
02	Material Control.	(15)
03	Printing/Photographic materials.	(15)
04	Substrates.	(10)
05	Material Management.	(10)
Total :		(60)

CONTENTS:

TOPIC: 01 – INTRODUCTION: **[10]**

Definition of quality; scope of quality control, its meaning a purpose; setting up quality control programmes.

TOPIC: 02 – MATERIAL CONTROL: **[15]**

Working out specification and laying standards for materials to be used in printing. inspection and testing of all incoming materials as a part of quality control; developing check list for inspection of materials.

TOPIC: 03 – PRINTING/PHOTOGRAPHIC MATERIALS: **[15]**

Basic ingredient of light sensitive emulsion and their function; developers, ingredients and their functions, different developer their suitability, chemical for after treatment; characteristics of Printing inks for different printing processes.

TOPIC: 04 – SUBSTRATES: **[10]**

Metals and metal foils used in printing; their physical and chemical properties; physical & chemical properties of monomers; polymers.

TOPIC: 05 – MATERIAL MANAGEMENT: **[10]**

Procurement of printing materials; determination of specification for quality; buying procedure; inventory control; storage of paper, board, ink & other materials.

PRE-PRESS

Subject Code 34606	Practical			No of Period in one session : 50		
	No. of Periods Per Week			Full Marks	:	50
	L	T	P/S	Annual Exam.	:	40
	-	-	2	Internal Exam.	:	10

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Scanning of Line original.	
02	Scanning of Halftone & colour originals.	
03	Setting and uses of text files and graphic files.	
04	Editing of text matter.	
05	Preparation of text matter with the combination of graphics.	

Total : (50)

PROFESSIONAL STUDIES & ENTREPRENEURSHIP

Subject Code 00607	Sessional			No of Period in one session : 50		
	No. of Periods Per Week			Full Marks	:	50
	L	T	P/S	Annual Exam.	:	30
	-	-	04	Internal Exam.	:	20

Rationale:

The paper has been introduced to achieve dual purpose for the students.

Firstly, this course provides the basics of Professional management and secondly it also prepares the student to undertake independent venture by becoming an entrepreneur.

This makes them conversant with their duties and responsibility to make them successful in their career building.

Objectives:

With the input provided in this paper, the students will be able to :-

- Acquire basic knowledge of management.
- Understand the area of management such as human resources, marketing, finance and commercial aspect.
- Understand the benefit of becoming an entrepreneur.
- Handle a project efficiently and in dependently.

To prepare a Project Report on any of the followings:

<u>S.No.</u>	<u>Topics</u>
01	Project Identification and formulation Report.
02	Project Profile/Pre-feasibility Report.
03	Techno-economical Feasibility Report (TEFR).
04	Market Survey Report.

CONTENTS

S.NO. TOPICS

TOPIC – 01 : PROJECT IDENTIFICATION AND FORMULATION REPORT:

- ◆ Introduction.
- ◆ Collection of Data.
- ◆ Compilation of Data.
- ◆ Analysis and Assimilation of Data.
- ◆ Product Selection.
- ◆ Report Finalisation and Report Writing.

TOPIC - 02 : PROJECT PROFILE/PRE-FEASIBILITY REPORT :

- ◆ Introduction of the product.
- ◆ Market.
- ◆ Man Power (Personnel Required).
- ◆ Manufacturing Process.
- ◆ Plant and Machinery.

- ◆ Cost of Project.
- ◆ Means of Finance.
- ◆ Cost of Production.
- ◆ Annual Turnover.
- ◆ Profit.
- ◆ Profit on Investment.

TOPIC – 03: TECHNO-ECONOMICAL FEASIBILITY REPORT (TEFR).

- ◆ Introduction on product.
- ◆ Market Prospects and Marketing.
- ◆ Location.
- ◆ Manufacturing Programme and Annual Turnover.
- ◆ Manufacturing Process.
- ◆ Cost of Project.
- ◆ Means of Finance.
- ◆ Requirement of Raw materials, Consumables, Utilities and Working Capital.
- ◆ Organisational Structure, Management and Man Power.
- ◆ Project Implementation Schedule.
- ◆ Profitability and Cash Flow.

TOPIC - 04 : MARKET SURVEY REPORT:

- ◆ Data Collection & Processing through Primary & Secondary Sources- Questionnaire method, e-mail, by post, by phone.
- ◆ Present Status.
- ◆ Growth of the Industry.
- ◆ Import and Export.
- ◆ Present market Demand.
- ◆ Forecast.
- ◆ Future Prospect/Scope.
- ◆ Market Segmentation.

Books Recommended:

1. Essential of Management, Tata McGraw Hill, - Herald Koonz & Cyril O' Donnel. Publishing Company Ltd., New Delhi.
2. Business Organisation and Management, S. C. Chand - M. C. Shukla and Company (Pvt.) Ltd., Ram Nagar, New Delhi
3. Managerial Economics, Sultan Chand & Sons, New - R. L. Vashney & K. L. Maheshwari Delhi
4. Project Appraisal and Follow up, Govind Prakashan, - D. P. Sharda Mumbai.
5. Modern Marketing Management, Progressive - Dr. Rustam S. Davar Corporation Pvt. Ltd., P51, Mahatma Gandhi Road, Bombay-400 001

6. A hand book for new entrepreneurs (with special reference to science and technology target group) - Entrepreneurship Development Institute of India, 83-A, Swastic Society Navrangpura, Ahmedabad, PIN-380 009.
7. Student discipline - Published by I.S.T.E. Mysore
8. Communication Skill - Published by I.S.T.E. Mysore
9. Decision Making - Published by I.S.T.E. Mysore
10. Pollution Control in Industry - Published by I.S.T.E. Mysore
11. S.S.M. in Environmental Engineering - Published by I.S.T.E. Mysore
12. Leadership in Organisation - Published by I.S.T.E. Mysore
13. Small Enterprise Management - Published by I.S.T.E. Mysore
14. Motivation - Published by I.S.T.E. Mysore
15. Fundamentals of Environmental Pollution - Krishnan and Kannan
16. Enviromental Engineering, T.T.T.I., Madras - Tata Mcgraw Hill
17. Motivation I.I.T. Kanpur - Published by I.S.T.E. Mysore
18. Mine Management - V.N. Singh, Bangle Prining Press Ranchi
19. Hand book on Project Appraisal and follow up, Govind Prakashan, 204, Saraswati Kunj, 90, S. V. Road, Goregoan, Bombay-400 062. - D. P. Sarda
20. Bihar Industrial Policy - Government of Bihar, Department of Industries.
21. Entrepreneurship Guide - Bihar State Financial Corporation, Fraser Road, Patna-800 001.
22. Management Economics, S. Chand & Sons, 4792/23, Dariaganj, New Delhi-110 002. - R. L. Varshney & G. L. Maheshwari
23. Management Principles & Practices, S. Chand & Sons, 4792/23, Dariaganj, New Delhi-110002. - L. Prasad & S. S. Gulshan

ADVANCE PRE-PRESS

Subject Code 34608A	Sessional			No of Period in one session : 60		
	No. of Periods Per Week			Full Marks	:	50
	L	T	P/S	Annual Exam.	:	30
	-	-	3	Internal Exam.	:	20

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Preparation of offset plates with the help of combination and multiple exposure system.	
02	Preparation of colour scanned positive from the bromide prints and colour transparencies.	
03	Setting and preparation of image colour correction by the table top scanner.	
04	Preparation an making of a flexo plate.	
05	Setting and uses of text files and graphic files.	
06	Editing of text matter.	
07	Preparation of text matter with the combination of graphics.	
08	Use of a laser printer and its maintenance.	
		Total : (60)

ADVANCE PRESS WORK

Subject Code 34608B	Sessional			No of Period in one session : 60			
	No. of Periods Per Week			Full Marks		:	50
	L	T	P/S	Annual Exam.		:	30
	-	-	3	Internal Exam.		:	20

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Simple Imposition Scheme.	
02	Setting feeders for various thickness and sizes for sheet and web printing of single and multicolour webs.	
03	Mounting of plates, Blanket.	
04	Setting of Ink & water, Register control on Printing machine, Setting Delivery system.	
05	Setting feeders, printing of single and multicolour works, mounting cylinder, setting ink, register control on Gravure Printing machine.	
06	Make ready and printing of line & halftone, one and multicolour work.	
07	Preventive maintenance of printing machine.	
Total :		(60)

ADVANCE PRINTER'S SCIENCE

Subject Code 34608C	Sessional			No of Period in one session : 60		
	No. of Periods Per Week			Full Marks	:	50
	L	T	P/S	Annual Exam.	:	30
	-	-	3	Internal Exam.	:	20

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Testing printing ink for opacity, drying bleeding emulsification.	
02	Testing paper and board for Printing.	
03	Test relating to folding, creasing, bursting, tensile strengths.	
04	Dying & bleeding test.	
05	Quality check for film & chemicals.	
Total :		(60)

PROJECT WORK AND ITS PRESENTATION IN SEMINAR

Subject Code 34609	Sessional			No of Period in one session :		
	No. of Periods Per Week			Full Marks	:	100
	L	T	P/S	Annual Exam.	:	40
	-	-	-	Internal Exam.	:	60

Rationale :

The project work and seminar is an important subject for a diploma holder technician. The course is designed to help a student develop Self Confidence. Skill in report writing to analyse design, estimating and costing, deciding a process etc, the course will also help in developing communication skill and learning to learn the process in a student. The student will develop the skill of quality documentation is an important activity for a diploma holder technician.

Objective:

The student will be able to:

- Select a problem from industry.
- Analyse the Problem.
- Develop logical approach to solution of a Problem.
- Design of a product.
- Make estimation of materials, operation and calculate cost of the product.
- Manufacture/fabricate the product in the workshop.
- Test the product to check for failure.
- Prepare a project report (Typed / Computer printed).
- Present in the form of a Seminar.

CONTENTS :

A student is required to make report in any one of department :

<u>S.No.</u>	<u>Topics</u>
01	Costing Estimating Department.
02	Pre-Press work
	(a) Composing.
	(b) Scanning.
	(c) Process Camera.
	(d) Imagesetting.
	(e) Processing.
	(f) Platemaking.
03	Press Work
	(a) Preventive maintenance.
	(b) Printing.
	(c) Finishing.

REPORT PRESENTATION:

A report must include:

<u>S.No.</u>	<u>Topics</u>
01	An introduction to industrial training.
02	Printing – An art.
03	Organisation/Institution details.
04	Specification.
05	Raw material and their source of supply.
06	Handling of Records for costing & estimating purposes.
07	Maintenance of records for costing & estimating purposes.
08	A study in working of various department.
09	Operation of various machine & equipment.
10	Quality control

SEMINARS :

The Project Report should consist of :-

01	Introduction.
02	Problem statement.
03	Background of Industry.
04	Organisational setup.
05	General Environment of problem.
06	New technology.
07	Quality control.
08	Department functioning.
09	Reason.
10	Solution.
11	Any other suggestion.

NOTE:-

Project work in ideal condition should be done individually. If it not possible then it can be done in group of not more than five students.