

**DIPLOMA IN PRINTING TECHNOLOGY (ONE YEAR
COURSE)**

CURRICULUM

SEMESTER- I

S.No.	Name of the subject	No. Periods /Week	No. of periods /Month
1.	Printing Systems	05	75
2.	Printing Materials	04	60
3.	Image Processing	04	60
4.	Flexo, Gravure &Screen Printing	04	60
5.	Book Binding &Finishing	04	60
6.	English-I	03	45
7.	Computer Fundamentals Lab	06	90
8.	Sheet fed offset Lab	06	90
9.	Book Binding &finishing Lab	06	90

No. of Periods per Day = 07

No. of Periods per week = 42

SEMESTER- II

S.No.	Name of the subject	No. Periods /Week	No. of periods /Month
1.	Design &Layout Preparation	04	60
2.	Sheet fed &Web offset	05	75
3.	Publishing Software	04	60
4.	Electronic Colour Separation	04	60
5.	Modern Plate Making Techniques	04	60
6.	English-II	03	45

No. of Periods per Day = 04

No. of Periods per week = 24

“Industrial Training” in afternoons.

I-SEMESTER

SEMESTER –I

ENGLISH-I

Subject Title : English-I

Subject Code

Periods per Week : 03

Periods per Semester : 45

Time Schedule

Sl No	Major Topics	No. of Periods	Weightage of Marks	No of Short Answers	No of Long Answers
1	Vocabulary	5	13	1	1
2	Grammar	30	31	7	1
3	Reading	10	10	-	1
4	Writing	30	40	-	4
5	English in Action	15	16	2	1
			110	10	08

Introduction

Globalization has ushered in an era of opportunities for those who have the necessary competencies. Effective communication is one among them. This shift demands strengthening of English in polytechnics. In C-14 Curriculum the focus is on the special English needs of technician studies and training. This course aims at integration of the four fold language abilities viz., listening, speaking, reading and writing. The use of English for learning technical subjects and for performing technical functions like, writing reports, giving instructions and interpreting graphics is of great importance. Therefore the curriculum C-14 focuses on improving communicative abilities equipping the students to become industry- ready and employable.

General Objectives

On completion of this course the student will be able to:

Build their vocabulary in the direction of their future needs

2.0 Learn various grammatical structures

3.0 Read and comprehend English and understand the details and draw inferences

4.0 Learn to be competent in various forms of written communication (writing composition and data interpretation)

5.0 Practice spoken communication suited to various situations.

Specific Instructional Objectives

1.0 Extend their vocabulary in the direction of their future needs

- 1.1 Locate words, learn spellings, understand meanings
- 1.2 Pronounce words intelligibly
- 1.3 Find synonyms and antonyms
- 1.4 Use affixation
- 1.5 Comprehend meanings of words by understanding meanings of roots

2.0 Learn various grammatical structures

- 2.1 Identify and use nouns
- 2.2 Identify and use pronouns
- 2.3 Use the present tense
- 2.4 Use the past tense
- 2.5 Use the future tense
- 2.6 Identify and use adjectives
- 2.7 Identify and use adverbs
- 2.8 Use prepositions
- 2.9 Use linkers
- 2.10 State basic sentence structures
- 2.11 Construct different types of sentences
- 2.12 Frame questions to elicit information
- 2.13 Frame questions for conformation
- 2.14 Use active voice
- 2.15 Use passive voice

- 2.16 Use direct speech
- 2.17 Use indirect speech
- 2.18 Identify and correct errors

3.0 Read and comprehend English

- 3.1 Identify the main ideas
- 3.2 Identify the specific details
- 3.3 Draw inferences
- 3.4 Give contextual meanings of the words
- 3.5 Perceive tone in a text

4.0 Learn to excel in various forms of written communication (writing composition and data interpretation)

- 4.1 Identify components of a good paragraph
- 4.2 Write types of paragraphs
- 4.3 Distinguish between formal and informal letters
- 4.4 Write personal letters
- 4.5 Write leave letters
- 4.6 Write official letters
- 4.7 Write letters of complaints
- 4.8 Prepare a resume
- 4.9 Write a cover letter
- 4.10 Write short messages
- 4.11 Report incidents
- 4.12 Report experiments
- 4.13 Report Industrial visits
- 4.14 Write work done statements

- 4.15 Write maintenance reports
- 4.16 Make notes using Cue method and Mapping method
- 4.17 Summarize Paragraphs
- 4.18 Present and Interpret Data from flow charts, tree diagrams, bar graphs, tables, pie charts

5.0 Practice spoken communication suited to various situations.

- 5.1 Use appropriate expressions to greet and take leave
- 5.2 Use proper expressions to make requests
- 5.3 Use apt expressions for asking and giving directions
- 5.4 Use suitable expressions to seek and offer suggestions
- 5.5 Use suitable expressions to state intentions
- 5.6 Use suitable expressions to state feelings
- 5.7 Use appropriate expressions to state agreement and disagreement
- 5.8 Use proper expressions to make complaints
- 5.9 Use suitable expressions to express obligations

1 Course Material

The textbook prepared by the faculty of English of Polytechnics in AP.

2 Reference Books

1. Essential English Grammar (Intermediate Level) Raymond Murphy
2. Learn English (A Fun Book of Functional Language, Grammar and Vocabulary)
Santanu Sinha Chaudhuri
3. Grammar Builder (Entire Series) Oxford University Press
4. High School English Grammar (Revised Edition) Wren and Martin
5. Sentence skills with Readings (fourth Edition, Tata McGraw Hill)
John Langan, Paul Langan
6. Word Power Made Easy Norman Lewis

PRINTING SYSTEMS

Subject Title	:	Printing Systems
Subject Code	:	
Periods per Week	:	05
Periods per semester	:	75
Credits	:	04

TIME SCHEDULE

UNIT	MAJOR TOPICS	No. of Periods	Weightage of marks	Short type	Essay type
1.	Different printing methods	13	26	2	2
2.	Image carriers	13	26	2	2
3.	Impression and ink transfer methods	14	26	2	2
4	Proofing methods	10	16	2	1
5	Suitability of jobs for various printing processes	10	16	2	1
	TOTAL	60	110	10	08

OBJECTIVES:

On completion of this subject the student should be able to

1.0 Different Printing Methods

1.1 To tell different methods of printing

- 1.2 To define the principles of letterpress, offset, gravure, flexography, screen, digital and other printing processes viz., Screen Printing, thermography, Digital printing.
- 1.3 To identify jobs suitable for the major printing processes
- 1.4 To explain the characteristics of all the major printing processes

2.0 Image carriers

- 2.1 To indicate different printing surfaces used for Letterpress, Offset, Gravure, Flexography and Screen Printing.
- 2.2 To explain about Albumin plates, wipe on Plates, Deep etch plates and Presensitised plates
- 2.3 To describe chemical etching, electronic engraving and laser engraving used for preparing Gravure printing surface.
- 2.4 To explain about Rubber plates and photopolymer plates used for preparing image carrier for Flexography process.
- 2.5 To tell about Direct coating of screen, Chromalin and Five Star methods used for preparing image carrier for screen printing.
- 2.6 To identify tools, equipment and materials used for above printing processes.
- 2.7 To explain stripping techniques and imposition schemes.

1.0 Impression and ink transfer methods

- 1.1 To explain impression methods of all major printing processes.
- 1.2 To describe ink transfer methods adopted in major printing processes
- 1.3 To identify the role of impression surface in each process.
- 1.4 To explain the role of anilox roller, doctor blade, squeegee used in Flexography, Gravure and Screen Printing respectively.
- 1.5 To explain how ink is transferred from surface to substrate.

4.0 Proofing methods

- 4.1 To define Soft proof and Hard proof

- 4.2 To relate different resolutions from computers
- 4.3 To identify remote proofing
- 4.4 To identify printers used for taking hard proofs
- 4.5 To explain about ink jet proofing and thermal proofing
- 4.6 To explain about dye sublimation
- 4.7 To describe press proofs

5.0 Suitability of jobs for various printing processes

- 5.1 To relate suitability of jobs for each printing process
- 5.2 To differentiate major printing processes on the basis of suitability of jobs for each process.
- 1.3 To discuss and argue about the suitability of certain jobs for each process.

COURSE CONTENTS

UNIT 1 Different printing methods

Principles - Characteristics of -Letter Press Printing - Offset Printing - Gravure Printing - Flexography Printing- Other processes – Screen Printing – thermography - Digital printing.

UNIT 2 Image carriers

Introduction to Surface preparation for Offset Printing – Albumin plates- wipe on Plates-Deep etch plates - Presensitised plates-Gravure Printing Process- Introduction to Chemical etching- Electronic engraving - laser engraving-Flexography Process – Rubber plates-Polymer Plates- Screen Printing – Direct coating of screen-Chromolin and five-star film methods-Tools and equipments and materials used for surface- preparation of above processes-Stripping techniques- Imposition Schemes.

UNIT 3 Impression and ink transfer methods

Letter press printing machines-Offset and lithographic machines-Gravure printing-Ink transfer from gravure cylinder-Role of impression roll-Flexography printing - role of anilox

roller- Ink transfer from flexo plate-Screen Printing - porous nature of screen-Method of squeezing ink through image areas.

UNIT 4 Proofing methods

Soft Proofing - Proof from computer monitors of different resolutions from low end to high end - remote proofing - Hard proofing- inkjet proofing-thermal proofing-dye sublimation proofing- colour proofing- press proofs.

UNIT 5 Suitability of jobs for various printing processes

Suitability of jobs for letterpress printing process- Suitability of jobs for offset printing- Suitability of jobs for gravure printing-Suitability of jobs for flexo printing-Suitability of jobs for Screen Printing-Suitability of jobs for Digital printing

REFERENCE BOOKS: 1. Lithographers manual- GATF- 9th edition

1. Printing technology – J. Michael Adams, David.

PRINTING MATERIALS

Subject title : Printing Materials

Subject code :

Periods per week : 04

Total periods per Semester : 60

TIME SCHEDULE

S. No	Major Topics	Periods	Weightage of marks	Short Answer Questions	Essay type Questions
1.	Materials used for graphic reproduction	11	13	1	1
2.	Print-from Materials (Image Carriers)	12	19	3	1
3.	Print-on Materials (Substrates)	12	31	2	2½
4.	Print-with Materials (Inks and other coatings)	15	31	2	2½
5.	Print-finish Materials (Binding materials)	10	16	2	1
Total		60	110	10	08

OBJECTIVES:

- To learn various light sensitive materials used in pre press
- To identify different materials used for print-from surface like Letterpress and Flexography
- To identify the metals and materials used for offset
- To understand the metals used for gravure surface preparation
- To study the materials used for screen process
- To identify different substrates used for print-on purposes for major printing processes
- To identify materials used for print-with purposes

- To learn various types of adhesives, securing and covering materials used for binding purpose
- To identify print finishing materials

Unit I Materials used for graphic reproduction

- Light sensitive materials in graphic reproduction
- Photographic light sensitive materials and its classification
- Classification of silver based light sensitive materials
- Silver less photographic materials
- Other light sensitive materials in graphic reproduction
- Physical structure of photographic film
- Film speed

Unit II Print-from Materials (Image Carriers)

- Metals and materials used for relief process – Letterpress and Flexography – UV Plates for Letterpress – Rubber and polymer plates for Flexo
- Metals and materials used for offset process – Aluminum, copper, zinc photopolymer, polyester plates
- Metals used for gravure cylinders – Copper, Chromium and Nickel
- Materials used for Screen Printing – Nylon, silk, metal mesh

Unit-III Print-on Materials (Substrates)

- Paper, board, plastics, tin sheets for Offset
- Raw materials used for paper manufacturing
- Choice of appropriate paper for different printing processes
- Standardization of paper and Indian standard paper sizes
- Classification of paper
- Paper and board testing

Unit-IV Print-with Materials (Inks and other coatings)

- Different kinds of inks
- Composition printing ink
- Manufacturing of printing inks
- Different methods of ink drying
- General characteristics of printing ink
- Classification of ink according to their use in different printing processes
- Terminology used in printing inks
- Necessary information to be furnished to the ink maker while ordering the ink

Unit-V Print-finish Materials (Binding materials)

- Adhesives - nature, classification, advantages and limitations
- Securing materials – threads, tapes, stitching wire and sewing cords
- Covering materials – paper, board, leather, plastic, and woven materials like Rexine and Calico
- Finishing materials – gold leaf, silver foil, colour foils, edge decorations materials

IMAGE PROCESSING

Subject title : **Image Processing**

Subject code :

Periods per week : **04**

Periods / Semester : **60**

UNIT	MAJOR TOPICS	No. of Periods	Weightage of marks	Short type	Essay type
1	Types of Originals - Process Room Equipment	15	29	3	2
2	Line and Halftone Photography	15	26	2	2
3	Photographic Chemistry	10	26	2	2
4	Film Processing	10	16	2	1
5	Contact Photography	10	13	1	1
	TOTAL	60	110	10	08

OBJECTIVES:

On completion of this subject the student should be able to

1.0 Types of Originals - Process Room Equipment

- 1.1 Categorize types of Originals used for Reproduction.
- 1.2 Discuss the Basics of Light and Colour and its importance in Printing.
- 1.3 Describe different types of process cameras
- 1.4 Explain Digital Cameras

2.0 Line and Halftone Photography

- 2.1 List out important camera operations
- 2.2 Review line and halftone photography
- 2.3 Define different halftone screens

3.0 Photographic Chemistry

- 3.1 Define different photographic materials
- 3.2 Classify Film processing chemicals
- 3.4 Employ Densitometers

4.0 Film Processing

- 4.1 Define types of Films
- 4.2 Identify processing operations
- 4.3 Apply Computer to Film Technology
- 4.4 Automatic Film Processing

5.0 Contact Photography

- 5.1 Reproduce negatives and positives in Contact printer
- 5.2 Discuss Contact Printing
- 5.3 Define Basic Contacting Procedure
- 5.5 Select the correct exposure

COURSE CONTENTS:

1. Types of Originals - Process Room Equipment

Types of Originals -Line Original, Continuous-tone Original, Halftone Original and Colour Original- Types of process cameras and enlargers- Light and colour- Digital cameras.

2. Lines and Halftone Photography

Line Reproduction – Steps in Line Negative Reproduction-Halftone Photography – Highlight, Middle tone and Shadow areas, Halftone Screens, Screen angle, Screen Resolution, Steps in Halftone Reproduction using Scanner- Halftone screens, FM and AM screens

3. Photographic Chemistry

Photographic materials –Properties, latent image mechanisms - Day light films-Film processing chemicals - Developing, stop bath, fixing, washing and drying - Density measurement

4. Film Processing

Types of Films, Film structure, Film Processing steps - Manual and Automatic Film Processing-CTF Workflow, Computer to Film Technology and automatic film Processor.

5. Contact Photography

Applications of contact printing-Basic principles, advantages and disadvantages of contact printing- basic contacting procedures-Determining the correct exposure.

Reference Books

- Reproduction photography for Lithography - Eric. Chambers, GATF
- Graphic Reproduction Photography - J. W. Burden, Focal press, London
- Hand book of modern Halftone Photography - Perfect Graphic A Demarset, U.S.A.
- Sensitometry for photographers, focal press, London.
- Graphic Reproduction Photography - James Walter Burden.
- Introduction to Prepress – Hugh M. Speirs.
- Line Photography - Karl Davis Robinson.I.
- The Graphic Reproduction Survival Manual - Geoff Wrnkley.
- The Graphic Arts Studio Manual - Bert Braham.
- Chemistry for the Graphic Arts - Nelson R. Eldred

FLEXO, GRAVURE AND SCREEN PRINTING

Subject title : **Flexo, Gravure and Screen Printing**

Subject code :

Periods per week : **04**

Total periods per Semester : **60**

TIME SCHEDULE

S. No	Major Topics	Periods	Weightage of marks	Short Answer Questions	Essay type Questions
1.	Flexographic Principles and Plate Surface Preparation	08	13	1	1
2.	Flexographic Press work	12	21	2	1 ½
3.	Study and Preparation of Gravure Image Carrier – Doctor Blade and its care	08	13	1	1
4.	Inks for Gravure Process	07	13	1	1
5.	Materials used in Gravure Process	07	13	1	1
6	Slitting & Rewinding Machine – Equipment used (Or Quality Control –	08	16	2	1

	Defects) And Remedies				
7	Screen Printing	10	21	2	1 ½
Total		60	110	10	08

Objectives

On completion of this subject the student should be able to

1.0 Flexographic Principles And Plate Surface Preparation

- 1.1 Recall the principle of Flexography
- 1.2 Explain the preparation of flexo plates and their mounting methods
- 1.3 Compare the making of rubber plates and photopolymer plates
- 1.4 Explain plate mounting methods
- 1.5 Discuss handling of plates
- 1.6 Describe storage of plates

2.0 Flexographic Press Work

- 2.1 Recall three units of a flexo press
- 2.2 Explain the construction of Plate Cylinder, Impression Cylinder and Anilox Roll
- 2.3 Express qualities required for paper and ink
- 2.4 Explain controlling system
- 2.5 Describe Inking system
- 2.6 Identify different press types, viz., Stack, CIC and Inline

2.7 Explain about inks, solvents used for flexographic printing

2.0 Study and Preparation of Gravure image carrier – Doctor Blade and its care

3.1 Explain gravure cell structure

3.2 Identify different types of cells

3.3 Explain construction of gravure cylinder

3.4 Discuss transfer of image on the gravure cylinder by direct and carbon tissue method

3.5 Explain chemical etching, electronic engraving and laser engraving

3.6 Tell precautions to be taken for cylinder preparation

3.7 Explain electroplating of gravure cylinder

3.8 Describe the nature, use and maintenance of doctor blade

4.0 Inks for Gravure Process

4.1 Explain manufacture of gravure

4.2 Identify the ingredients of gravure inks

4.3 Explain solvents used in gravure process

4.4 Describe the methods of solvent recovery

5.0 Materials used in Gravure Process

5.1 Identify different substrates used for gravure process

5.2 Explain about each substrate with respect to its characteristics and properties

6.0 Slitting & Rewinding Machine – Equipment used for Quality Control – Defects And Remedies

6.1 Explain the purpose of a Slitting and Rewinding Machine

6.2 Describe the working of Slitting and rewinding Machine

6.3 Identify different types of equipment used for quality control in gravure printing

- 6.4 Identify the defects that occur during gravure printing
- 6.5 Indicate remedies for overcoming defects

7.0 Screen Printing

- 7.1 Recall Mesh
- 7.2 Identify mesh election
- 7.3 Employ selection of squeegee
- 7.4 Explain scree pre treatment
- 7.5 Define screen tensioning
- 7.6 Identify screen printing machine
- 7.7 Explain Container Screen Printing, Flat bed Hinged Frame (Automatic), Rotary Screen Printing, Carousal Printing Machines
- 7.8 Identify screen printing inks
- 7.9 Explain properties of screen printing inks
- 7.10 Indicate applications of screen printing

COURSE CONTENTS

Unit I - Flexographic Principles And Plate Surface Preparation

Principle of Flexographic Printing Process-Surface preparation-Techniques of making molded rubber plate and polymer plates-Plate mounting methods-handling-storage of plates.

Unit II - Flexographic Press Work

Printing units of flexography press-Construction and description-Flexographic printing machines-Plate cylinder and impression cylinder-Paper and ink qualities and controlling system-Inking system - fountain roller-Anilox roller-Types of inking system-Press types-Stack, common impression and inline presses-Ink and solvents used for Flexographic printing.

Unit III – Study and Preparation of Gravure image carrier – Doctor Blade and its care

Detailed study of Gravure cell structure-Different types of cells – Varying in depth, area, and depth and area-Construction of gravure cylinder-Transfer of image on the gravure cylinder – Direct and Carbon tissue method-Chemical etching-electronic engraving-Laser engraving-Precautions to be taken during preparation of gravure cylinder-Techniques of surface finishing – electroplating of gravure cylinder with Chromium and Nickel-Nature-use and maintenance of doctor blade

Unit IV – Inks for Gravure Process

Manufacture of gravure inks-Ingredients of gravure inks-Variou solvents used in gravure process-Solvent recovery methods

Unit V – Materials used in Gravure Process

Different kinds of substrates used for printing by Gravure Process like PVC, PVA, BOPP, Foil, Film, Paper, Board etc-Characteristics and properties required for substrates

Unit VI – Slitting & Rewinding Machine – Equipment used for Quality Control – Defects and Remedies

The purpose and working of a Slitting and Rewinding Machine-Variou types of equipment used for quality control-Identifying the defects during printing-Suggest remedies

Unit VII – Screen Printing

Mesh-Squeegee Selection-Screen pre treatment-Screen Tensioning-Screen Printing Machines- Container Screen Printing-Flat bed Hinged Frame (Automatic)-Rotary Screen Printing-Carousal Printing Machines-Screen Printing Inks–Types-Properties-Screen Printing Applications

Reference Books :

Flexographic principles and practice, Flexographic Technical Associations, Inc. New York, 1980. Rotogravure and Flexographic printing presses. By Herbert L. Weies, Converting Technology Corporation, 4771, N. Bartlett Drive, Milwaukee, WI, 53211, USA. Modern Gravure Technology, Harry B Smith, Pira International, U.K. Screen process printing, John Stephens, Blue Print, An Imprint of Hapman & Hall, London. Flexography Primer GATF. Screen Process Printing – by John Stephens, Blue Print, Handbook Of Print Media by Helmut Kipphan, Screen Printing Primer – by Samuel Ingram, GATF

POST PRINTING OPERATIONS

Subject Title : **Post Printing Operations**

Subject Code :

Periods per week : **04**

Total Periods per Semester : **60**

TIME SCHEDULE

S. No	Major Topics	Periods	Weightage of marks	Short Answer Questions	Essay type Questions
1.	Introduction to Binding and Finishing	10	16	2	1
2.	Materials used in Binding	14	26	2	2
3.	Methods of Binding & Modern Commercial Binding	14	26	2	2
4.	Forwarding Operations	10	16	2	1
5.	Automation in Binding	12	26	2	2
Total		60	110	10	08

Objectives

On completion of this subject the student should be able to

1.0 Introduction to Binding

- 1.1 Describe History of book binding
- 1.2 Classification of Book Binding
- 1.3 End Paper
- 1.4 Binding and Finishing Tools
- 1.5 Define GSM system

2.0 Materials used in Binding

- 2.1 Ware House
- 2.2 Covering Materials
- 2.3 Reinforcing Materials
- 2.4 Securing Materials
- 2.5 Adhesives
- 2.6 Book Finishing Materials

3.0 Methods of Binding & Modern Commercial Binding

- 3.1 Explain Styles of Book covering – Hard cover – Paper back – Thermally Activated binding
- 3.2 Explain Letterpress Binding
- 3.3 Explain and compare Stationery Binding with Publisher's Binding
- 3.4 Explain and compare Loose leaf Binding with Adhesive Binding
- 3.5 Describe Edge Decoration

3.6 Describe Conservation and Restoration

4.0 Forwarding Operations

4.1 Cutting

4.2 Folding

4.3 Creasing

4.4 Perforating

4.5 Die Cutting and Slitting Operations

5.0 Automation in Binding

5.1 Programmable Cutting Machine

5.2 Folding Machine

5.3 Wire Stitching Machine

5.4 Rounding and Backing Machine

5.5 Gathering Machines

COURSE CONTENT

UNIT - I Introduction to Binding

History of book binding - Earlier books; Classification of Book Binding- Quarter Bound Book, Half Bound Book – Old Style and New style, Full bound Book; End Paper – Types and Uses – Single End Paper, Made End Paper, Reinforced End Paper, Cloth Joint End Paper; Zig Zag End Paper; Paper – Various sizes of Conventional and ISO papers – Their sub divisions – GSM system.

UNIT - II Materials used in Binding

Ware House, Types of Ware House – white Paper ware house, Printed paper ware house; Covering Materials – Binding cloth, Buckram Cloth, Rexene leather, Paper fabric, PVC; Reinforcing Materials – Mull Cloth, Calico Cloth, Tapes and cords; Securing Materials – Thread,

Wire, Metal and Plastic Units; Adhesives – Paste, Glue, Synthetic Adhesive, Hot melt, Gum;
Book Finishing Materials – Gold leaf, Blocking foil

UNIT - III Methods of Binding & Modern Commercial Binding

Explain Styles of Book covering – Hard cover – Paper back – Thermally Activated binding;

Explain Letterpress Binding; Explain and compare Stationery Binding with Publisher's Binding;

Explain and compare Loose leaf Binding with Adhesive Binding; Describe Edge Decoration;
Describe Conservation and Restoration

UNIT - IV Forwarding Operations

Cutting, Trimming, Difference between Cutting and Trimming, Folding – Types of Folding –
Folding to paper, Folding to print, Lump folding; Creasing, Gathering, Collating,
Binder's/Collating mark, Inserting; Perforating - Types of Perforating, Punching and Drilling,
Numbering – Horizontal numbering and vertical numbering; Die Cutting and Slitting operations

UNIT - V Automation in Binding

Programmable Cutting Machine and its Operations – machine bed, Clamp, Back guage, Knife
and safety mechanisms; Folding Machine and its operations – Buckle folding, knife folding and
combination folding stations; Wire Stitching Machine and its Operations – wire unwind, wire
straightened, cutter block; Rounding and Backing Machine and its operations; Gathering
Machines and its operations

Reference Books:

Modern Book Binding by Alex J. Vaughan
Finishing Process in Printing by A.G. Martin
Manual of Book Binding by W. Johns
Folding in Practice – by Alfred Furler
Printing and Die Cutting - by Vanessa Bailey
HAnd Book of Print Media – by Helmut Kippan Ed., Heidelberg
Introduction to Printing and Finishing – by Hugh M. Spiers
What the Printer should know about paper – by Lawrence A. Wilson
Printing Technology – by Michael Adams J. and Penny Ann Dohn

COMPUTER FUNDAMENTALS PRACTICE LAB

Subject Title	:	Computer Fundamentals Practice Lab
Subject Code	:	
Periods/Week	:	06
Periods per Semester	:	90

SPECIFIC OBJECTIVES

On completion of this subject the student would be able to

1. Identify the various components of a Computer system
2. Differentiate between hardware and software
3. State the functions of each component of a computer a system
4. State the configuration of a computer system
5. Identify the various peripherals
6. Know how to open an application program
7. Know how to create a folder in a specified location
8. Open MS-word and identify the components on the screen
9. Create a document using MS-word and save it
10. Create a table using MS-Word and save it
11. Create mailing letters using mail merge tool of MS-word
12. Open MS-Excel and identify the components on the screen
13. Create a Worksheet in MS-Excel and save it
14. Generate a Chart using the data in Excel-worksheet
15. Automate calculations in a worksheet using formula
16. Sort and filter data in a worksheet
17. Create a simple Power point presentation for a small topic
18. Backup required files and folders to a CD-ROM

19. Introduction to the internet technology and imparting training to use searching of required sites and using e-Mails etc..

COURSE CONTENT:

1. Study of a computer system
2. Familiarise with basic MS-WINDOWS facilities like opening programs, searching, creating folders, copying and shifting data, etc.
3. Create a formatted word document using MS-Word
4. Familiarise with spell checker facility of MS-Word
5. Print the Word document using page setup and Print facilities
6. Create a soft copy of a given table using MS-Word
7. Create mailing letters for a given information using MS-Word
8. Create a soft copy of the given statistical data using MS-Excel
9. Generate Appropriate Chart for the statistical data using MS-Excel
10. Generate the soft copy of a worksheet using formula facility of MS-Excel
11. Create a soft copy of a simple database using Excel. Run sort and filter facilities for the database
12. Create a power point presentation for a simple technical topic using MS- PowerPoint
13. Create a backup CD for a data using NERO or similar CD writing software
14. Create an user account on the Internet and e-mail and sending a document to from a given e-mail address. To another e-Mail ID as attachment.
15. Using different search engines finding required sites to collect information on engineering related topics including down loading the contents.

BOOK BINDING AND FINISHING

Subject Title : **Book binding and finishing**

Subject Code

Periods per week : **06**

Periods per semester : **90**

OBJECTIVES

- ❖ To study the tools equipments and machines in the lab.
- ❖ To identify different binding materials
- ❖ To practice jogging and counting the sheets
- ❖ To practice folding the sheets
- ❖ To prepare end papers
- ❖ To practice stitching and covering books.
- ❖ To operate paper cutting machines
- ❖ To operate stitching machines and perforating machines
- ❖ To operate numbering machines
- ❖ To prepare files and bill books

EXERCISES

1. Introduction and identification of binding tools, equipments and machines.
2. Practicing of folding jogging and counting of sheets
3. Different methods of inserting and guarding of sheets
4. Preparation of end papers
5. Stitching of books, attaching wrappers, glowing, tipping-on methods
6. Operating paper cutting, board cutting machines
7. Working with perforating machines, stitching Machines
8. Operating gathering machine and using equipments
9. Book sewing methods.
10. Preparing bill books, files and letter heads

SHEET FED OFFSET MACHINE-LAB

Subject Title	:	Sheet Fed Offset Machine-Lab
Subject Code	:	
Periods / Week	:	06
Periods / Semester	:	90

OBJECTIVES:

- To learn lubrication of machines
- To carry out pre makeready operations
- To learn fixing and removal of the plate and the blanket
- To prepare fountain solutions
- To set dampening rollers
- To set ink fountain and inking rollers
- To carry out makeready operations
- To learn ink roller wash ups and dampening roller cleaning
- To acquaint with safety precautions to be observed while working on machines

EXERCISES

1. Lubrication and maintenance of Offset machines
2. Premake-ready operations of offset printing machines.
3. Adjustment of automatic feeders for single sheet feeding.
4. Preparation of offset plate for mounting on the cylinder.
5. Preparation and fitting of offset blanket.
6. Care and treatment of offset blanket in use.
7. Preparation of fountain solution and plate etches for use.
8. Preparation of dampening rollers.
9. Adjustment of inking and dampening rollers.
10. Ink fountain setting.
11. Make-ready and printing two-colour work of line and halftone.
12. Ink roller wash-up.
13. Dampener cleaning.
14. Preparing the plate for storage.
15. Safety precautions while working on machines.

II-SEMESTER

DESIGN & ADVERTISING IN PRINT MEDIA

Subject Title : **Design & Advertising in Print Media**

Subject Code :

Periods per Week : **04**

Periods/Semester : **60**

Sl. No.	Major Topics	Periods	Weightage of Marks	Short Answer Questions	Essay Type Questions
1	Introduction to Typographic Design And Advertising	13	21	02	1½
2	Role of Typography in Design	09	16	02	01
3	Designing aspects of Book, Magazine and News Paper	18	31	02	2½
4	Design of Miscellaneous Printed Products	08	16	02	01
5	Operations and functions of an Advertising Agency	12	26	02	02
Total		60	110	10	08

Objectives:

On completion of this subject the student should be able to

1.0 Introduction to Typographic Design and Advertising

- 1.1 Define the term typographic design
- 1.2 Analyze the need for design,
- 1.3 Explain the role of various elements of Design
- 1.4 Define the term Balance,
- 1.5 Define the term Contrast,
- 1.6 Define the term Harmony,
- 1.7 Define the term Unity,
- 1.8 Define the term Texture,
- 1.9 Differentiate among the terms Line, Shape, Rhythm,
- 1.10 Define the term Repetition,
- 1.11 Differentiate between the terms Optical Center and Geometric Centre
- 1.10 illustrate the world of Print media advertising
- 1.13 Define Advertising
- 1.14 Explain types of advertising
- 1.15 Describe the history of advertising
- 1.16 Illustrate advertising through the ages
- 1.17 Explain the role of printing presses in Advertising

2.0 Role of Typography in Design

- 2.1 Discuss the typographic fundamentals (Type faces, families and Series)
- 2.2 Define point system
- 2.3 Compare among different composing methods
- 2.4 Describe the importance of Legibility and Readability
- 2.5 Demonstrate various stages of layout preparation and integration

2.6 Explain proof reading marks and check list

2.7 Apply margins in a page layout

2.8 Describe typography and art work

3.0 Designing Aspects of Book, Magazine and News Paper

3.1 Explain book parts, their design & procedure

3.2 Explain magazine design – types of magazines

3.3 Describe newspaper (front page elements)

3.4 Name various newsletters and house journals

4.0 Designs for Miscellaneous Printed Products

4.1 Explain design aspects of leaflets,

4.2 Classify different pamphlets,

4.3 Classify different catalogue,

4.4 Classify different brochures,

4.5 Name booklets,

4.6 Classify different labels.

4.7 Classify different technical literature

4.8 Name types of cartons

5.0 Operations and functions of an Advertising agency

5.1 Explain the structure and functioning of an Ad company

5.2 Analyze the workflow of an Ad creation

5.3 Identify soft wares and parameters used by an Agency

5.4 Describe the qualities of an Advertiser

COURSE CONTENT

Unit I: Introduction to Typographic Design and Advertising

Definition – Need for design, Elements of Design – Balance, Contrast, Harmony, Unity, Texture, Line, Shape, Rhythm, Repetition, Optical Center and Geometric Centre, Introduction to Advertising,

Illustrate the world of Print media advertising, Define Advertising, Explain types of advertising, Describe the history of advertising, Illustrate advertising through the ages

Explain the role of printing presses in Advertising

Unit II: Role of Typography in Design

Typographic fundamentals (Type faces, families and Series)

Point System

Different composing methods

Importance of Legibility and Readability

Layout preparation – various stages and integration

Proof reading – Marks – Check List

Page Layout and Margins

Typography and Art work

Unit III: Designing Aspects of Book, Magazine and News Paper

Book Design – parts - procedure

Magazine Design – types of magazines

Newspaper (Front Page Elements)

News Letters – House Journals

Unit IV: Design for Miscellaneous Printed Products

Design aspects of – Leaflets, pamphlets, Catalogue, brochures, Booklets, Labels, labels, technical literature, cartons

Unit V: Operations and functions of an Advertising agency

Structure and functioning of an Ad company-Workflow of an Ad creation-Softwares and parameters used by Agency-Describe the qualities of an Advertiser

REFERENCE BOOKS

1. Desk Top Design 2nd Edition by Brain cookman
2. Desk Top Publishing Design basics published by Alan Holmes
3. Printing Industry by Victor Strauss
4. Wells, Burnett and Moriarty; ‘Advertising: Principles & practice’; Prentice Hall Inc.,

SHEET FED OFFSET MACHINES

Subject title	:	Sheet fed Offset Machines
Subject code	:	
Periods per week	:	05
Total periods per Semester	:	75

OBJECTIVES:

On completion of this subject the student should be able to

1.0 Offset Lithographic Presses

- 1.1 Describe Basic principles of Offset Printing.
- 1.2 Explain Construction/Structure of a sheet fed press.
- 1.3 Explain various press configurations
- 1.4 Explain Single colour press, Multicolour press, Perfecting press, Satellite type press, Common impression cylinder press.
- 1.5 Describe Small Offset press and
- 1.6 Tell about Proofing press.

2.0 Printing Unit

- 2.1 Define plate cylinder.
- 2.2 Explain the blanket cylinder.
- 2.3 Explain impression cylinder, transfer cylinder, delivery cylinder.
- 2.4 Explain cylinder setting on a Bearer contact press, and Non-Bearer contact Press.
- 2.5 Describe paralleling Blanket cylinder to Impression cylinder.
- 2.6 Identify different safety measures in the Pressroom.
- 2.7 Explain the offset Blanket - Structure, types of blankets.
- 2.7 Illustrate the working requirements of Blankets

- 2.8 Explain about blanket selection.
- 2.9 Discuss the care of Blankets.
- 2.10 Employ blanket mounting.
- 2.11 Explain about Recovering from a Blanket smash and use of slightly damaged blankets.

3.0 Inking and Dampening

- 3.1 Classify the inking system
- 3.2 Explain the construction of a typical inking system.
- 3.3 Describe setting ink rollers, setting form roller to oscillator, setting form roller to plate.
- 3.4 Express inking system and its problems.
- 3.5 Demonstrate the Dampening System and construction of conventional dampening systems.
- 3.6 Illustrate the continuous-flow dampening system.
- 3.7 Explain dampening solutions and its importance, Its composition, alcohol and alcohol substitutes.
- 3.8 Identify pH of a dampening solution.
- 3.9 Illustrate the setting of rollers in conventional dampening system.
- 3.10 Explain Metering dampening on conventional system.
- 3.11 Discuss operating problems of dampening systems.

4.0 Sheet Handling, Controlling And Transferring

- 4.1 Express the purpose of automatic sheet feeders.
- 4.2 Classify friction feeders- single-sheet feeder, Stream feeder.
- 4.3 Identify front and back sheet separation systems.
- 4.5 Describe pile loading.
- 4.6 Feed Board sheet control devices.
- 4.7 Practice setting the feed board devices, front lays and side lay and their types.

- 4.8 Explain sheet detectors and trip systems.
- 4.9 Classify types of grippers.
- 4.10 Describe sheet insertion devices - Types and principles, direct system, swing-arm system, rotary drum system, overfeed system.
- 4.11 Apply care and attention to grippers.
- 4.12 Explain sheet Transfer and delivery System.
- 4.13 Categorize the types of sheet transfer - Chain transfer, single drum, and three drum transfer systems.
- 4.14 Define transfer cylinders.
- 4.15 Operate delivery section - sheet decurler – joggers.
- 4.16 Identify sheet guiding devices.
- 4.17 Identify delivery assist devices.
- 4.18 Describe suction slow - down rollers.
- 4.19 Explain blow down wedges.
- 4.20 Describe anti-set off spray equipment.
- 5.0 Make-ready and the Machine Run**
- 5.1 Explain pre make ready procedures.
- 5.2 Describe make ready procedure for single colour.
- 5.3 Discuss extra precautions required for make ready.
- 5.4 List different make ready types.
- 5.5 Demonstrate how to prepare the press for run.
- 5.6 Explain inking system - wash-up.
- 5.7 Practice cleaning the dampening system.
- 5.8 Check work order instructions.
- 5.9 Set sheet handling devices.
- 5.10 Install the plate.

- 5.11 Make trial impressions-examining the trial impressions, image registering and positioning.
- 5.12 Check quality of print, ink and water balance, colour of print.
- 5.13 Explain printing defects and their remedy.
- 5.14 Discuss make-ready procedure for multi colour printing.
- 5.15 Describe the selection of colour sequence for multi colour printing.
- 5.16 Classify the types of sheet distortion.
- 5.17 Indicate the ideal condition of paper for registering purposes.
- 5.18 Run the machine for production.
- 5.19 Explain the inspection of press sheets, random check-up.
- 5.20 Control press functions during pressrun.
- 5.21 Analyse quality control during the pressrun.
- 5.22 Use densitometry, colour control bars, controlling colour during the pressrun.
- 5.23 Employ pressroom lighting and standard viewing conditions.

1.0 Introduction to Web Offset Printing Press

- 1.1 Explain structure and type of presses - In-line press, stack press, Blanket to Blanket, common impression.
- 1.2 Describe infeed, printing unit, Drying, Chilling, Folding and Delivery.
- 1.3 Define blanket to blanket printing.
- 1.4 Compare plate cylinder, blanket cylinder and Gap-less cylinder.

2.0 Make-ready and Feeding Unit

- 2.1 Explain infeed - Types of reel stands, automatic splicers, preparing a splice, dancer roller.
- 2.2 Explain reel braking method.
- 2.3 Identify image and web control: Side lay, back up, slitting.
- 2.4 Illustrate colour registering and web tensioning.

- 2.5 Describe feeder - Preset feeder, Vacuum belt sheet forwarding system.
- 2.6 Indicate motorized side-lay control.

3.0 Printing Unit

- 3.1 Explain inking and Dampening - motorized adjustment of ink zones and ink metering cylinder.
- 3.2 Appraise water cooled oscillating roller
- 3.3 Discuss ink wash up device.
- 3.4 Identify remote ON/OFF dampening system and dampening solution control.
- 3.5 Explain printing unit - Automatic plate clamping.
- 3.6 Indicate adjustment of circumferential and lateral register.
- 3.7 Explain printing pressure adjustment.
- 3.8 Explain automatic blanket and impression cylinder wash-up device.
- 3.9 Identify dryer and chill rolls: Types of dryers, types of chill roll pumping.
- 3.10 Define and explain computer print control, press monitoring.
- 3.11 Explain pre selection of operation in the press.

4.0 Delivery Unit

- 4.1 Explain folding - Web folding principles, folder types, cut off length, pinless folder.
- 4.2 Describe delivery - Automatic setting of powder spray length.
- 4.3 Explain IR and UV dryers.
- 4.4 Explain and compare auxiliary equipments - Sidelay sensors, web break detectors, anti-static devices, perforators, Imprinters, fountain solutions recirculation and refrigerating system, sheet cleaners, plate scanner, Ink agitator, Fountain height monitor, ink consumption computer, Air curtain.

Course content

Unit I - Offset Lithographic Presses

Basic principles of Offset Printing-Construction/Structure of a sheet fed press-Variou press configurations -Single colour press, Multicolour press, Perfecting press, Satellite type press, Common impression cylinder press-Small Offset press and-Proofing press.

Unit II - Printing Unit

Plate cylinder-Blanket cylinder-Impression cylinder, transfer cylinder, delivery cylinder-Cylinder setting on a Bearer contact press, and Non-Bearer contact Press-Paralleling Blanket cylinder to Impression cylinder-Safety measures in the Pressroom-The Offset Blanket - Structure, types of blankets-Working requirements of Blankets-Blanket selection-Care of Blankets-Blanket mounting. Recovering from a Blanket smash and use of slightly damaged blankets.

Unit III - Inking and Dampening

The inking system - Construction of a typical inking system-Setting ink rollers, setting from roller to oscillator, setting form roller to plate-Setting the ductor roller-Inking system – Problems-The Dampening System - Construction of conventional dampening systems-Continuous-flow dampening system-Dampening solutions and its importance - Its composition, alcohol and alcohol substitutes-pH of a dampening solution-Setting of rollers in conventional dampening system. Metering dampening on conventional system-Operating problems of dampening systems.

Unit IV - Sheet Handling, Controlling And Transferring

Purpose of automatic sheet feeders-Classification - friction feeders, single-sheet feeder, Stream feeder-Front and back sheet separation systems-Pile loading-Feed Board sheet control devices. Setting the feed board devices, front lays and side lay and their types-Sheet detectors and trip systems-Type of grippers-Sheet insertion devices - Types and principles, direct system, swing-arm system, rotary drum system, overfeed system-Care and attention to grippers-Sheet Transfer and delivery System-Types of sheet transfer - Chain transfer, single drum, and three drum transfer systems-Transfer cylinders-Delivery section - sheet decurler – jiggers-Sheet guiding devices. Delivery assist devices-Suction slow - down rollers-Blow down wedges and - Anti-set off spray equipment.

Unit V - Make-ready and the Machine Run

Pre make ready procedures-Make ready procedure for single colour-Extra precautions required for make ready-Make ready types-Preparing the press for run-Inking system - wash-up-Cleaning the dampening system-Checking work order instructions-Setting sheet handling devices-Installing the plate-Making trial impressions – examining the trial impressions, image registering and positioning-Checking quality of print, ink and water balance, colour of print-Printing defects and their remedy-Make-ready procedure for multi colour printing-Selection of colour sequence for multi colour printing-Types of sheet distortion-Ideal condition of paper for registering purposes-Running the machine for production-Inspection of press sheets, random check-up-Control of press functions during pressrun-Quality control during the pressrun-Densitometry, colour control bars, controlling colour during the pressrun-Pressroom lighting and standard viewing conditions.

Unit I - Introduction to Web Offset Printing Press

Structure and type of presses - In-line press, stack press, Blanket to Blanket, common impression- Infeed, Printing unit, Drying, Chilling, Folding and Delivery-Blanket to blanket printing-The plate cylinder, blanket cylinder and Gap-less cylinder.

Unit II - Make-ready and Feeding Unit

Infeed - Types of reel stands, automatic splicers, preparing a splice, dancer roller-Reel braking method-Image and web control: Side lay, back up, slitting-Colour registering and web tensioning- Feeder - Preset feeder, Vacuum belt sheet forwarding system-Motorized side lay control.

Unit III - Printing Unit

Inking and Dampening - motorized adjustment of ink zones and ink metering cylinder-Water cooled oscillating roller-Ink wash up device-Remote ON/OFF dampening system and dampening solution control-Printing unit - Automatic plate clamping-Adjustment of circumferential and lateral register-Printing pressure adjustment-Automatic blanket and impression cylinder wash-up device- Dryer and chill rolls: Types of dryers, types of chill roll pumping-Computer print control, press monitoring-Pre selection of operation in the press.

Unit IV - Delivery Unit

Folding - Web folding principles, folder types, cut off length, pinless folder-Delivery – Automatic setting of powder spray length-IR and UV dryers-Auxiliary equipments - Sidelay sensors, web break detectors, anti-static devices, perforators, Imprinters, fountain solutions recirculation and refrigerating system, sheet cleaners, plate scanner, Ink agitator, Fountain height monitor, ink consumption computer, Air curtain.

Reference Books

Sheetfed offset operating - GATF 1988 Litho Printing - Ian Faux, Blueprint publishing Ltd.
A manual of Lithographic press operations - A.S. Porter, Lithographic Training services.
Modern Lithography - Ian Faux, SITA Limited, Manchester, UK

Web Offset Press operating - David B. Crouse with Robert J. Schneider, Jr., GATF.

Sheet fed press operating – GATF.

Modern Lithography - Ian Fax, SITA Limited, Manchester.

A manual of Lithographic press operation - A.S. Porter.

Lithographic Training services. Printing in a digital world - David Bergsland, Delmar Publishers
International Thompson Publishing, New York. Gutenberg goes digital - Michael Liburg -
Blueprint, an Imprint of Chapman & Hall.

A Handbook for printing and packaging Technology – Bighwenath

PUBLISHING SOFTWARES

Subject title : **Publishing Software**

Subject code :

Periods per week : **04**

Periods/Semester : **60**

Sl. No.	Major Topics	Periods	Weightage of Marks	Short Answer Questions	Essay Type Questions
1	Basic Anatomy of a Computer	8	16	2	1
2	Paging Softwares	13	26	2	2
3	Illustrator and CorelDraw	13	26	2	2
4	Photoshop	12	16	2	1
5	Indesign	14	26	2	2
Total		60	110	10	8

Objectives:

On completion of this subject the student should be able to

1.0 Basic Anatomy of a Computer

1.1 Define Computer and its Features

1.2 Classify Computers

1.3 Classify Storage Media

1.4 Different File Formats used in Designing Software's

2.0 Paging Software's

- 2.1 Introduction to Adobe PageMaker and QuarkXpress
- 2.2 The User Interface
- 2.3 Projects and Layouts
- 2.4 Boxes Lines and Tables
- 2.5 Text and Typography
- 2.6 Working with Pictures
- 2.7 Working with Colour
- 2.8 Document Construction

3.0 Illustrator and CorelDraw

- 3.1 Illustrator Basics
- 3.2 Putting Illustrator to Work
- 3.3 Corel Draw Basics
- 3.4 Color Basics
- 3.5 Page Layout and Illustrations
- 3.6 Book Cover Illustration and Design
- 3.7 Logo Design

4.0 Photoshop

- 4.1 Starting Adobe Photoshop and Opening Files
- 4.2 Using Tools

- 4.3 Working with Selections
- 4.4 Layer Basics
- 4.5 Painting and Editing
- 4.6 Masks and Channels
- 4.7 Photo Retouching
- 4.8 Basic Pen Tools Techniques
- 4.9 Vector Shapes and Clipping Paths

5.0 Indesign

- 5.1 Creating a New Document
- 5.2 Working with Multiple Document Windows
- 5.3 Using Tools
- 5.4 Working with Panels and Docks
- 5.5 Menu Commands
- 5.6 Working with Preferences Files
- 5.7 Working with Pages and Layers
- 5.8 Creating Layout Standards
- 5.9 Defining Colours, Tints, Gradients
- 5.10 Object Fundamentals

COURSE CONTENT

Unit I: Basic Anatomy of a Computer

Define Computer and its Features; Classify Computers; Classify Storage Media; Different File Formats used in Designing Software's

Unit II: Paging Software's

Introduction to Adobe PageMaker and QuarkXpress; The User Interface; Projects and Layouts; Boxes Lines and Tables; Text and Typography; Working with Pictures; Working with Colour; Document Construction

Unit III: Illustrator and CorelDraw

Illustrator Basics – Understanding Illustrator's Desktop, Working with Illustrator Documents; Putting Illustrator to Work – Working with Type, Strokes and Pattern; Corel Draw Basics – Basics, Photo paint, ; Color Basics – Color Management; Page Layout and Illustrations – Tips and techniques; Book Cover Illustration and Design – Wrap; Logo Design

Unit IV: Photoshop

Starting Adobe Photoshop and Opening Files; Using Tools - Entering Values, Viewing Images, ; Working with Selections – Moving Selections, Magic wand tool; Layer Basics – Creating and Viewing layers, Rearranging layers; Painting and Editing; Masks and Channels; Photo Retouching; Basic Pen Tools Techniques; Vector Shapes and Clipping Paths

Unit V: Indesign

Creating a New Document – Working with Frames, working with text; Working with Multiple Document Windows – Saving Documents; Using Tools; Working with Panels and Docks – Adding pages Deleting pages; Menu Commands; Working with Preferences Files; Working with Pages and Layers – Creating layers, working with layers; Creating Layout Standards; Defining Colours –Colour terms, Mixing spot and Process colours, Tints, Gradients; Object Fundamentals – Creating Graphic frames

REFERENCE BOOKS

1. E – Publishing by John Kennel
2. Manuals of PageMaker,
3. Manuals of Photoshop
4. Fundamentals of Computers by Rastogi

COLOUR SEPARATION & MANAGEMENT

Subject title : Colour Separation & Management

Subject code :

Periods per week : 04

Total periods per Semester : 60

TIME SCHEDULE

S. No	Major Topics	Periods	Weightage of marks	Short Answer Questions	Essay type Questions
1.	Colour Measurement	10	13	1	1
2.	Colour Reproduction	15	29	3	2
3.	Colour Separation	15	26	2	2
4.	Developments in Electronic Scanning	10	21	2	1½
5.	Colour Proofing	10	21	2	1½
Total		60	110	10	08

OBJECTIVES:

On completion of this subject the student should be able to

1.0 Colour Measurement

- 1.1 To discuss measurement of colour
- 1.2 To indicate Colour difference measurement
- 1.3 To apply Densitometry, Colorimetry and Spectrophotometry

2.0 Colour Reproduction

- 2.1 To examine Originals and Print viewing conditions
- 2.2 To recall different originals
- 2.3 To review CIE chromaticity diagram

3.0 Colour Separation

- 3.1 To discuss out lines of colour separation
- 3.2 To define principles of electronic colour separation on CTP
- 3.3 To apply Gray component Replacement.
- 3.4 To identify Line mode in Scanners

4.0 Developments in Electronic Scanning

- 4.1 To employ Colour separation in flatbed scanners used in Desktop Publishing
- 4.2 To use register systems
- 4.3 To appraise laser principles

5.0 Colour Proofing

- 5.1 To employ the pre press and press proofing systems
- 5.2 To discuss Digital colour proofing and hexachrome (hi fi) Close colors
- 5.3 To identify the uses and limitations of colour chart.
- 5.4 To relate 3M match print colour control element.
- 5.4 To analyse FOGRA standards.

COURSE CONTENTS:

1. Colour Measurement

Methods of colour measurement (colour tolerance) – colour gamut, colour models, HSL, HSB, C.I.E. -Colour matching -Colour difference measurement

Instrumental measurement of colour – Densitometry, Colorimetry and Spectrophotometry.

2. Colour Reproduction

Originals and Print viewing conditions - originals for colour reproduction - colour prints, contrast range, colour balance and surface reflection , wash drawings and pastel colour originals , printed originals

Spectrophotometric curves for photographic materials.

Colour Diagrams and their uses- CIE chromaticity diagram, Maxwell Additive Triangle, GATF colour circle.

3.0 Colour Separation

Out lines of colour separation- direct and indirect methods-

electronic colour scanners- Types, principles and functions

Colour separation on CTP

Colour cast removal

Tonal changes - colour correction - Gray Balance setup procedure.

Under colour addition, under colour removal - Gray component Replacement.

Line mode in Scanners.

4. Developments in Electronic Scanning

Colour separation in flatbed scanners used in Desktop Publishing.

Register systems for Perfect Registration.

Lasers - Principles of operation, types, characteristics.

5. Colour Proofing

Press and Pre-press proofing systems.

Digital colour proofing, study of hexachrome (hi fi) close colors

Uses and limitations of colour chart - 3M match print colour control element.

FOGRA standards.

Reference Books

Reproduction Photography for Lithography - GATF. Electronic colour separation - Dr.R.K.Molla, R.K.Printing and Publishing Company, West Virginia, U.S.A. Standardized Lithographic colour printing - PIRA Guide. Reproduction of colour - R.W.G. Hunt, Fountain Press.

Colour photography and the ink, paper and other related industries - John Wiley & Sons, U.K. The Lithographers manual - 7th Edition - GATF. The Lithographers manual - 9th Edition - GATF.The art of colour- Johannes Item, Digital colour Printing Technology- Biswanth Chakravarthy

Colour and Quality- by Hidelberg, Desk Top Publishing- by Ron Strutt and Kirty Wilson Davis, Understanding Digital Colour- by Phol Green.

MODERN PLATE MAKING METHODS

Subject title : **Modern Plate Making Methods**

Subject code :

Periods per week : **04**

Periods / Semester : **60**

TIME SCHEDULE

S. No	Major Topics	Periods	Weightage of marks	Short Answer Questions	Essay type Questions
1.	Job Planning and Film Assembly	10	16	2	1
2.	Imposition Considerations	10	16	2	1
3.	Lithographic plate Surface Chemistry	10	26	2	2
4.	Computer to technologies and Computer to Film; Computer to Press	22	26	2	2
5.	Computer to Plate	23	26	2	2
Total		75	110	10	08

OBJECTIVES:

On completion of this subject the student should be able to

1.0 Job Planning & Film Assembly

- 1.1 Examine job planning & importance of Planning
- 1.2 Basic steps in planning o film image assembly
- 1.3 Introduce film image assembly
- 1.4 Inspection & preparation of films before assembly
- 1.5 Planning of Layouts

- 1.6 Layout and Planning information
- 1.7 Preparation of Production Layouts
- 1.8 Equipment & Tools for Layout department
- 1.9 Preparing Complimentary Flats

2.0 Imposition Considerations

- 2.1 Discuss Imposition Considerations for sheet fed presses & Web fed presses
- 2.2 Imposition terms & Imposition rules
- 2.3 Imposition schemes for printing bookwork
- 2.4 Full sheet work; work-and-turn; work-and-tumble

3.0 Lithographic Plate surface chemistry

- 3.1 Classify main types of lithographic plates
- 3.2 Identify Plate making equipments – whirler, pressure vacuum printing down frame
- 3.3 List out Plate making materials
- 3.4 Define Plate graining
- 3.5 List out processing chemicals
- 3.6 Explain Chemistry of plate making
- 3.7 Discuss how to Control plate making variables - use of plate sensitivity
- 3.8 Control the tone values-use of GATF star target and other devices, continuous tone step wedge
- 3.9 Use Quality control devices used in plate making department.

4.0 Computer to technologies and Computer to Film; Computer to Press

- 4.1 The use of Computer to Film/Plate/Press technologies and Networking for the Production of Print Media
- 4.2 Computer to Film
- 4.3 Principles & Equipment; Film Materials for CTF
- 4.4 Introduction to Computer to Press
- 4.5 Re-Imageable Printing Plate
- 4.6 Direct Imaging presses for Larger sheet formats
- 4.7 Further Concepts for Computer to Press

5.0 Computer to Plate

- 5.1 Introduction to Computer to Plate
- 5.2 Technology of Computer to Plate systems for Offset Printing
- 5.3 Imaging methods & Plate Punching
- 5.4 Computer to Plate systems for Offset Printing
- 5.5 Computer to Plate Workflow
- 5.6 Rise in Quality as a result of Computer to Plate
- 5.7 Printing plates for Digital Imaging
- 5.8 Trends in Computer to Plate

COURSE CONTENT:

Unit I – Job Planning & Film Assembly

Examine job planning & importance of Planning - Basic steps in planning o film image assembly - Introduce film image assembly - Inspection & preparation of films before assembly - Planning of Layouts - Layout and Planning information - Preparation of Production Layouts - Equipment & Tools for Layout department - Preparing Complimentary Flats

Unit II Imposition Considerations

Discuss Imposition Considerations for sheet fed presses & Web fed presses - Imposition terms & Imposition rules - Imposition schemes for printing bookwork - Full sheet work; work-and-turn; work-and-tumble

Unit III - Lithographic Plate surface chemistry

Classify main types of lithographic plates - Identify Plate making equipments – whirler, pressure vacuum printing down frame - List out Plate making materials - Define Plate graining - List out processing chemicals - Explain Chemistry of plate making - Discuss how to Control plate making variables - use of plate sensitivity - Control the tone values-use of GATF star target and other devices, continuous tone step wedge - Use Quality control devices used in plate making department.

Unit IV - Computer to technologies and Computer to Film; Computer to Press

The use of Computer to Film/Plate/Press technologies and Networking for the Production of Print Media - Computer to Film Principles & Equipment - Film Materials for CTF - Introduction to Computer to Press - Re-Imageable Printing Plate - Direct Imaging presses for Larger sheet formats - Further Concepts for Computer to Press

Unit V - Computer to Plate

Introduction to Computer to Plate - Technology of Computer to Plate systems for Offset Printing - Imaging methods & Plate Punching - Computer to Plate systems for Offset Printing - Computer to Plate Workflow - Rise in Quality as a result of Computer to Plate - Printing plates for Digital Imaging - Trends in Computer to Plate

Reference Books:

Modern film planning and plate making - AL Gate house and Kn Roper,

SITA Limited England Stripping:

The assembly of film images - GATF Offset lithographic plate making Robert F Reed,

GATF the lithographers manual - 7th edition,

GATF the lithographers manual - 9th edition

ENGLISH - II

Subject Title	:	English-II
Subject Code	:	
Periods per Week	:	03
Periods per Semester	:	45

Time Schedule

SI No	Major Topics	No. of Periods	Weightage of Marks	No of Short Answers	No of Long Answers
1	Vocabulary	5	13	1	1
2	Grammar	30	31	7	1
3	Reading	10	10	-	1
4	Writing	30	40	-	4
5	English in Action	15	16	2	1
			110	10	08

Introduction

Globalization has ushered in an era of opportunities for those who have the necessary competencies. Effective communication is one among them. This shift demands strengthening of English in polytechnics. In C-14 Curriculum the focus is on the special English needs of technician studies and training. This course aims at integration of the four fold language abilities viz., listening, speaking, reading and writing. The use of English for learning technical subjects and for performing technical functions like, writing reports, giving instructions and interpreting graphics is of great importance. Therefore the curriculum C-14 focuses on improving communicative abilities equipping the students to become industry- ready and employable.

General Objectives

On completion of this course the student will be able to:

Build their vocabulary in the direction of their future needs

2.0 Learn various grammatical structures

3.0 Read and comprehend English and understand the details and draw inferences

4.0 Learn to be competent in various forms of written communication (writing composition and data interpretation)

5.0 Practice spoken communication suited to various situations.

3 Specific Instructional Objectives

3.0 Extend their vocabulary in the direction of their future needs

3.1 Locate words, learn spellings, understand meanings

3.2 Pronounce words intelligibly

3.3 Find synonyms and antonyms

3.4 Use affixation

3.5 Comprehend meanings of words by understanding meanings of roots

4.0 Learn various grammatical structures

4.1 Identify and use nouns

4.2 Identify and use pronouns

4.3 Use the present tense

4.4 Use the past tense

4.5 Use the future tense

4.6 Identify and use adjectives

4.7 Identify and use adverbs

4.8 Use prepositions

4.9 Use linkers

4.10 State basic sentence structures

4.11 Construct different types of sentences

4.12 Frame questions to elicit information

4.13 Frame questions for confirmation

4.14 Use active voice

4.15 Use passive voice

- 4.16 Use direct speech
- 4.17 Use indirect speech
- 4.18 Identify and correct errors

5.0 Read and comprehend English

- 5.1 Identify the main ideas
- 5.2 Identify the specific details
- 5.3 Draw inferences
- 5.4 Give contextual meanings of the words
- 5.5 Perceive tone in a text

6.0 Learn to excel in various forms of written communication (writing composition and data interpretation)

- 6.1 Identify components of a good paragraph
- 6.2 Write types of paragraphs
- 6.3 Distinguish between formal and informal letters
- 6.4 Write personal letters
- 6.5 Write leave letters
- 6.6 Write official letters
- 6.7 Write letters of complaints
- 6.8 Prepare a resume
- 6.9 Write a cover letter
- 6.10 Write short messages
- 6.11 Report incidents
- 6.12 Report experiments
- 6.13 Report Industrial visits
- 6.14 Write work done statements

- 6.15 Write maintenance reports
- 6.16 Make notes using Cue method and Mapping method
- 6.17 Summarize Paragraphs
- 6.18 Present and Interpret Data from flow charts, tree diagrams, bar graphs, tables, pie charts

7.0 Practice spoken communication suited to various situations.

- 7.1 Use appropriate expressions to greet and take leave
- 7.2 Use proper expressions to make requests
- 7.3 Use apt expressions for asking and giving directions
- 7.4 Use suitable expressions to seek and offer suggestions
- 7.5 Use suitable expressions to state intentions
- 7.6 Use suitable expressions to state feelings
- 7.7 Use appropriate expressions to state agreement and disagreement
- 7.8 Use proper expressions to make complaints
- 7.9 Use suitable expressions to express obligations

4 Course Material

The textbook prepared by the faculty of English of Polytechnics in AP.

5 Reference Books

1. Essential English Grammar (Intermediate Level) Raymond Murphy
2. Learn English (A Fun Book of Functional Language, Grammar and Vocabulary)
Santanu Sinha Chaudhuri
3. Grammar Builder (Entire Series) Oxford University Press
4. High School English Grammar (Revised Edition) Wren and Martin
5. Sentence skills with Readings (fourth Edition, Tata McGraw Hill)
John Langan, Paul Langan
6. Word Power Made Easy Norman Lewis

