

**SYLLABUS FOR LAB ASSISTANT**  
**(PRINTING ENGINEERING)**

# Printing Technology (Lab Assistant Syllabus)

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## 1. Printing process

- 1.1 Introduction, Classification and it's Principles of Various Printing Processes
- 1.11 Relief Printing process-Letterpress, Flexography printing press
- 1.12 Planography printing process-Lithography, Sheetfed offset printing press, Webfed offset printing press.
- 1.13 Intaglio printing process-Gravure Printing press
- 1.14 Screen Printing process.
- 1.2 Introduction of Tools & Equipment's used for Various Printing Processes.
- 1.3 Ancillaries of Printing Machines.
- 1.4 Printing Defects: Its causes and remedies

## 2. Printing Material Science

- 2.1 Materials used in Printing Technology.
- 2.2 Photographic Films and Photographic Materials.
- 2.3 Uses of Light sensitive materials for surface preparations.

## 3. Paper and Ink Technology

- 3.1 Fibrous and Non-Fibrous Raw materials used in Paper and Board Manufacturing
- 3.2 Manufacturing and finishing process of Paper and Board.
- 3.3 Definition and ingredients of various types of Inks
- 3.4 Type's and properties of various types of Substrate and Inks.

## 4. Letter Assembly

- 4.1 Type setting Techniques
- 4.2 Input and output device used in type setting techniques
- 4.3 Page assembly and Proofing
- 4.4 Imposition and Planning.

## 5. Graphic Design and Typography

- 5.1 Various Kind of printing products and formats and its design factors.
- 5.2 Originals and Illustrative Elements
- 5.3 Introduction of Typography. Selection of Type Face on base of printing surface.
- 5.4 Colour theory, Colour wheel and Colour Schemes,
- 5.5 Dimensions of Colour and measurement of Colour
- 5.6 Visual Ingredients of Design and Principle of Design.,
- 5.7 Preparation and stages of layout and Dummy Preparation.
- 5.8 Various Kind of printing products and formats and its design factors.
- 5.9 Design and Typographic Elements
- 5.10 Introduction of Typography. Selection of Type Face on base of printing surface.
- 5.11 Table and Tabular setting and type setting techniques

## 6. Binding and Finishing

- 6.1 Information about Binding Materials used in Press.
- 6.2 Pre – Forwarding & Forwarding Operations.
- 6.3 Covering Operation with types and style.
- 6.4 Finishing Operation.

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6.5 Hard case binding and its types.

6.6 Loose leaf binding and its methods.

6.7 Binding Defect and Re-pairing and rebinding of books.

**7. Printing Surface Preparation**

7.1 Surface preparation of Metals and Metals for Plate & Block making purpose.

7.2 Types of Plates for offset printing,

7.3 Types of Plates for Flexo Plates

7.4 Stencil Preparation for Screen Printing Process.

**8. Reproduction Photography**

8.1 Function of Graphic reproduction and Types of originals for reproduction.

8.2 Process camera, its type and parts of process camera.

8.3 Photographic Films, Parts of Film and Emulsion of photographic Films

8.4 Line photography, half tone Photography and Contact Processing.

8.5 Processing Chemicals used in reproduction photography and its functions.

8.6 Colour Separation and Colour Correction.

8.7 Digital Reproduction Techniques

8.8 Electronics Colour Scanners.

8.9 Quality Control Tools and Proofing

**9. Digital Printing**

9.1 Electrophotography, Ink jet, Thermography

9.2 Xerography printing, Laser printing

**10. Pre-press Technology**

10.1 Introduction of page make up techniques.

10.2 Scanner operations.

10.3 CMS & Ripping of Files

10.4 Image setter operations

**11. Web offset Technology**

11.1 Web fed offset printing machines

11.2 Infeed unit

11.3 Printing unit

11.4 Delivery unit

11.5 Ancillary Equipment's and waterless offset printing.

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