

**COURSE TITLE : BASICS OF PRINTING PROCESSES**  
**COURSE CODE : 2101**  
**COURSE CATEGORY : B**  
**PERIODS/ WEEK : 4**  
**PERIODS/ SEMESTER : 60**  
**CREDIT : 4**

**TIME SCHEDULE**

<b>MODULE</b>	<b>TOPIC</b>	<b>PERIODS</b>
1	Introduction to printing technology	10
2	Basic printing processes	20
3	Work flow of printing processes	15
4	Introduction to screen printing process	15
<b>TOTAL</b>		<b>60</b>

**Course General Outcomes:**

<b>G .O.</b>	<b>ON THE COMPLETION OF THE STUDY OF THIS MODULE STUDENT WILL BE ABLE :</b>
1	To understand the concept of printing
2	To comprehend basic types of printing processes
3	To understand the conventional and modern work flow of printing
4	To comprehend the screen printing process

**SPECIFIC OUTCOMES**

**MODULE I INTRODUCTION TO PRINTING TECHNOLOGY**

**1.1.0 To understand the concept of printing**

- 1.1.1. To define printing
- 1.1.2. To explain the History of printing
- 1.1.3. To differentiate between prepress, press and post press operations
- 1.1.4. To understand various printed products

**MODULE II BASIC PRINTING PROCESSES**

**2.1.0 To comprehend basic types of printing processes**

- 2.1.1 To Define the terms and Non-impact printing
- 2.1.2 To classify different printing processes
- 2.1.3 To explain the principle of relief printing
- 2.1.4 To explain the principle of intaglio printing
- 2.1.5 To explain the principle of planographic printing
- 2.1.6 To explain the principle of screen printing process
- 2.1.7 To define the principle of digital printing

## **MODULE III WORK FLOW OF PRINTING PROCESSES**

### **3.1.0 To understand the conventional and modern work flow of printing**

- 3.1.1 To define basic units of a printing machine
- 3.1.2 To describe the work flow of Letterpress printing .Introduction only.
- 3.1.3 To describe the work flow of gravure printing
- 3.1.4 To describe the work flow of offset printing
- 3.1.5 To describe the work flow of flexographic printing
- 3.1.6 To describe the work flow of digital printing
- 3.1.7 To differentiate the conventional and modern work flow of all basic printing Technologies

## **MODULE IV INTRODUCTION TO SCREEN PRINTING PROCESS**

### **4.1.0 To comprehend the screen printing process**

- 4.1.1 To list out the various tools and equipments used for screen printing process
- 4.1.2 To identify the different fabrics used for screen printing
- 4.1.3 To describe different fabric stretching techniques
- 4.1.4 To list the substrates for screen printing
- 4.1.5 To explain the printing process of screen printing
- 4.1.6 To identify the applications of screen printing process.

## **CONTENT DETAILS**

### **MODULE I**

Printing –definition. History of printing - from early stone print to latest innovations. Classification of print works - Prepress, Press, post press. Various printed products.

### **MODULE II**

Impact and non-impact printing – definition. Basic principles of - relief printing (letter press, flexography), intaglio printing (gravure), planography (lithography, offset), stencil printing and digital printing processes.

Selection of printing process according to the job. Applications, advantages and limitations of all major printing processes.

### **MODULE III**

Functional units of a printing machines- infeed unit, Registration unit, printing unit and delivery unit. Basics of Letter press (Introduction and workflow only).

Basics of Offset Printing- sheet fed and web offset Printing, plate cylinder, Blanket Cylinder, Impression cylinder, inking and dampening system.

Basic Units of gravure printing machine - gravure cylinder, impression roller, doctor blade.

Basics of flexographic printing machine - Fountain roller, Anilox roller, plate cylinder, impression cylinder.

Digital printing basics.

#### **MODULE IV**

Screen printing-definition. Equipment and materials: frames (wooden frames, metal frames, self-stretching frames). Mesh materials (silk, synthetic, stainless steel).

Types of stencils – Hand-cut , tusche and glue, photographic. Screen fabrics-multifilament screens, monofilament screens. Fabric stretching techniques-mechanical stretching, hand stretching.

Introduction to - Photographic stencil methods-direct image method, indirect/transfer image method, film emulsion or direct/indirect image method.

Substrates- (paper, paper board, wood, textiles, plastics, metals, ceramics & glass). Image transfer-squeegee (types and selection), on contact and off contact printing.

Printing process – Manual, semi automatic, fully automatic. Screen printing ink. Definition of Screen reclamation. Applications of screen printing process. Advanced screen printing machines.

<b>Reference :</b>		
<b>Author</b>	<b>Title</b>	<b>Publishers</b>
C S Misra	Offset technology	Anupam prakashan
Heigh. M. Speir	Introduction in Printing Technology	
Adams J.M, Faux,D.D and Rieber L.J	Printing Technology 3 <sup>rd</sup> edition	Delmar Publishers, NewYork
Michal Adams	Printing Technology 5 <sup>th</sup> edition	Delmar Publishers, NewYork