

**COURSE TITLE** : **DIGITAL PREPRESS**  
**COURSE CODE** : **4101**  
**COURSE CATEGORY** : **A**  
**PERIODS/ WEEK** : **6**  
**PERIODS/ SEMESTER** : **84**  
**CREDIT** : **5**

**TIME SCHEDULE**

| <b>MODULE</b> | <b>TOPIC</b>                       | <b>PERIODS</b> |
|---------------|------------------------------------|----------------|
| 1             | RIP and Data exchange              | 23             |
| 2             | PDF                                | 23             |
| 3             | Color management                   | 23             |
| 4             | Workflow management and job ticket | 15             |
| <b>TOTAL</b>  |                                    | <b>84</b>      |

**Course General Outcomes:**

| <b>SUB</b> | <b>ON THE COMPLETION OF THE STUDY OF THIS MODULE STUDENT WILL BE ABLE :</b> |
|------------|---|
| 1          | To understand Digital imposition and RIP                                    |
| 2          | To Understand data transfer with computer                                   |
| 3          | To Comprehend the PDF as a digital master and its production and management |
| 4          | To Comprehend about Color management in printing workflow                   |
| 5          | To comprehend digital work flow systems and software                        |
| 6          | To comprehend job ticket  |

**MODULE I RIP AND DATA EXCHANGE**

**1.1.0 To Understand data transfer with computer**

- 1.1.1. To explain digital imposition
- 1.1.2. To explain RIP and its stages

**1.2.0 To Understand data transfer with computer**

- 1.2.1. To define data exchange
- 1.2.2. To describe the data transfer in print firm
- 1.2.3. To identify the basic networking and its components

**MODULE II PDF**

**2.1.0 To Comprehend the PDF as a digital master and its production and management**

- 2.1.1 To define page description languages
- 2.1.2 To describe postscript
- 2.1.3 To explain about PDF
- 2.1.4 To differentiate PDF and postscript

- 2.1.5 To define JDF
- 2.1.6 To describe production of print ready PDF files
- 2.1.7 To describe use of Adobe Distiller and its settings
- 2.1.8 To define PDF/X standards

## **MODULE III COLOR MANAGEMENT**

### **3.1.0 To Comprehend about Color management in printing workflow**

- 3.1.1 To explain color management and its need
- 3.1.2 To define work flow with color management
- 3.1.3 To explain about ICC profiles and its use
- 3.1.4 To define different color spaces
- 3.1.5 To explain CIE XYZ and Lab color spaces
- 3.1.6 To differentiate different device's color gamut
- 3.1.7 To define ICC profile
- 3.1.8 To explain creation of ICC profiles for different devices

## **MODULE IV WORKFLOW MANAGEMENT AND JOB TICKET**

### **4.1.0 To comprehend digital work flow systems and software**

- 4.1.1 To define modern print workflow
- 4.1.2 To explain digital workflow management
- 4.1.3 To specify the software for workflow management

### **4.2.0 To comprehend job ticket**

- 4.2.1 To explain Job tickets
- 4.2.2 To describe about JDF

## **COURSE CONTENT**

### **MODULE I**

Introduction to Imposition. Factors affecting imposition. Imposition through software. Types of imposition software. Requirement of imposition software. Setting of a digital document - Art box, trim box, bleed box, media box. Trimming marks, cutting marks, quality control patches, registration marks etc.

RIP (raster image processor): definition, function, hardware and software. Stages of RIP.

Data transfer: Data transfer definition. Print data exchange. Data exchange standards ( PDF, PDF-X series).

Basic networking knowledge – Link, nodes, servers, hub, router, topology, types of networks. Protocols – TCP/IP. IP address.

Data transfer in print shop (servers, prepress workstations, CTP, data to machines - data to printing machine, post press machine etc).

## **MODULE II**

Introduction to page description language. Names of page description language. Postscript language.

PDF: PDF – history, importance, advantages. PDF writer and Adobe Distiller. PDF in print industry. PDF and post script differences and similarities.

JDF – definition, use, importance.

PDF generation. Generating PDF with distiller from different applications (Illustrator, InDesign, Corel draw, quark xpress, Photoshop, etc) . Correct layout files and PDF.

Distiller settings and changing of setting according to job need. Job option and use of job option. Using job option to create PDF. Fonts and images in PDF. Points to consider while producing PDF. Corrections and editing of images and type matter in PDF. Document security. Automation with PDF and JDF.

Preflight. Parameters checked during preflight. Advantages of preflight.

PDF/X and PDF/X-3 standards.

## **MODULE III**

Color management: Color management definition. Need of color management. True color reproduction – definition. Image reproduction using color management. Device coordination. ICC profiles. Use of ICC profiles. Different color spaces. CIE XYZ color system. CIE Lab color system. Color difference (Delta E). chromaticity diagram.

Color measurement – Devices and methods. Color gamut. Color gamut of different devices used in Print production (Scanner, Digital camera, Monitor, Proofing devices, Press). Color space conversion.

ICC profile creation of – Scanner, monitor, digital printer and printing press. Different color management tools (software and hardware) and their manufacturers.

Definition of open loop and closed loop color management.

## **MODULE IV**

Open prepress interface (OPI)

Present industry prepress practices.

Digital print production workflow (automated workflow). Production management software. Production workflow systems –Prinect (signastation, Meta dimension etc.)

Software for (names and manufacturers) - Preflight.

Job ticket – definition, use, role in production. Digital job tickets. Processing information contained in the job tickets. Digital job ticket based work flow.

Creation of electronic job tickets with software.

| <b>Reference :</b>                        |  |   |
|---|--|---|
| <b>Author</b>                             | <b>Title</b>   | <b>Publishers</b>                       |
| Heidelberg                                | Expert guide color management                        | Heidelberg                              |
| AGFA                                      | Digital color Prepress                               | AGFA                                    |
| Dr R K Molla                              | Electronic colour separation                         | R.K. Printing & Publishing company, USA |
| Adams J.M                                 | Printing Technology 5 <sup>th</sup> edition          | Delmar Publishers, NewYork              |
| Helmut Kipphan                            | Hand book of print media                             | Springer Science & Business Media       |
| Heidelberg                                | Expert guide an introduction to Screening technology | Heidelberg                              |
| Colorimetry fundamentals and applications | Noboru Ohta  |   |
| Constance Sidles. Rick Sutherland         | Graphic designers print plus color hand book         | Rockport publishers                     |
| Heidelberg                                | Expert guide PDF workflow                            | Heidelberg                              |
| Reid Anderson                             | Exploring Digital Prepress : 1 edition               | Delmar Cengage Learning                 |
| Heidelberg                                | Color and Quality                                    | Heidelberg                              |