

ABOUT THE COURSE

Printing is indispensable for the modern man as every product he comes across in his day-to-day life is directly related to it. We can see printing on a tooth paste tube or tooth brush that he uses immediately after waking up. From that moment, almost everything he uses for any purpose bears a printed impression. This course provides in-depth coverage of electronic text generation, desktop publishing, computer-to-plate operations, computer-controlled inking and printing, digital image generation and electronic prepress.

Printing has undergone a complete transformation with the application of electronics, computers and microprocessors and advanced science and technology. This technology has developed by incorporating the advancements from other disciplines and adopting the latest technical information from commercial art, photography, applied science, computer, mechanical and electronic engineering, nano technology etc.

The importance of Printing Technology is fast increasing in today's commercial world. It has wide usage and applications. The range of products vary from newspapers, books, labels, business cards, stationery, inserts, catalogues, pamphlets, advertisements, carton & foil printing etc. The related activities associated with printing technology are data imaging, book binding, plate making, prepress services etc. Firms are finding it time saving and economical to print their own newsletters and reports. Hence on completion of this course, there is a wide scope of wage and self employment.

The information revolution and consumerism create an ever increasing demand for printed materials in every field. Printed material is the main medium of communication and dissemination of knowledge. But more than this, the medium of print is improving its position in today's multimedia society. Day by day, people are becoming more and more quality conscious and this in turn increases the demand for quality printed products. The methods of print production are also changing; in the direction of environment-friendly, highly automated and easily operated printing systems integrated in a digital data environment.

Packaging is an integral part of printing Industry. The printing and packaging industries in India have assumed growing significance during the last decade. This has become a dynamic and key area for manufactures and trading companies all over the country with the element of aesthetics, hygienic and cost effectiveness receiving increasing importance in commercial operations. The exterior looks and present ability of marketable goods leave a lasting impression on the minds of consumers and in this context packaging occupies the centre stage.

Since there is increasing demand for printed products there is always scope for those who are skilled in the operation of printing machines either as workers or entrepreneurs.

The course is designed in four modules of six month each as detailed below.

1. Graphic Designing and DTP
2. Digital Pre press and Printing
3. Offset and Modern Printing Techniques
4. Binding and Packaging

On completion of every module the student will get a certificate for the skill he acquired. On successful completion of the course two certificates will be issued - a regular higher secondary certificate and a Skill certificate in the level 3 & 4. The students who pass the exams can apply for any engineering, degree or diploma course just like any another student who passed higher secondary exam with the mathematics group.

JOB ROLES

In the past five years, the printing industry has undergone a fundamental restructuring. The entire job classification such as paste-up, stripping has been replaced by graphic designing software and digital workflow. This course is structured in such a way that the learner will get both theory and practical based knowledge so that he will be capable to fulfil the need of the industry for trained manpower in the field of graphic designing and Printing Technology.

This curriculum will enable the students to undertake different job roles in Government as well as Private sector. The production cum Training Centre (PTC) and On the Job Training (OJT) will provide hands on practical experience to the students; which will enable them to become entrepreneur in the field of Graphic Designing and Printing Technology. This curriculum is suitable for career enhancement by joining various Print Media courses in various parts of the country.

Govt./Semi Govt. Sector	Private Sector	Self Employment
<ul style="list-style-type: none"> • DTP Operator • Graphic Designer • Pre Press Operator • CTP Machine Operator • Plate maker • Offset Operator • Binder 	<ul style="list-style-type: none"> • Sales Executive • Production Assistant • Store Keeper • Binder • Offset Operator • CTP Operator • DTP Operator 	<ul style="list-style-type: none"> • Printing Material Supply • Printing Chemicals and Ink supply • Paper supply • Offset Printing Unit • Screen Printing Unit • Binding Unit • Envelope making unit

Govt./Semi Govt. Sector	Private Sector	Self Employment
<ul style="list-style-type: none"> • Folding Machine Operator • Perfect Binding machine Operator • Store keeper • Lab Technical Assistant • Tradesman • Trade Instructor 	<ul style="list-style-type: none"> • Graphic Designer • Pre Press Operator • Digital Printer Operator • Cutting Machine Operator • Proof Reader • Flexo Machine Operator 	<ul style="list-style-type: none"> • Notebook making unit • Packaging Industry • Hologram Printing Unit • Xerox Unit • DTP Unit • Graphic Designing Unit • Proof Reading

Subject Approach

The art of preserving all arts, printing has undergone a complete transformation with the application of Electronics, Computers, Microprocessors and advanced science and technology. This technology has been developing by incorporating the advancements from other disciplines and adopting the latest technical information from commercial art, photography, applied science, computer, mechanical and electronic engineering etc. The diversity of language and the multitude of literate population, which is roughly 1000 million, create an ever increasing demand for printed materials in social, cultural, educational, artistic and scientific fields. Achievement of full literacy and higher levels of education mainly depends upon the availability of printed materials in the form of books, journals, magazines, newspapers, research papers, reports and so on.

Printed material is the main media of communication and dissemination of knowledge, but more than this, the medium of print is improving its position in today's multimedia society. The trend is towards approaching target groups directly, faster production, more and more colour and even higher quality. The methods of print production are also changing, in the direction of environmentally compatible, highly automated and easily operated printing systems integrated in a digital data environment. There is a dearth of technical man-power operators, technicians and supervisors with broad based science, engineering background combined with knowledge of Business Administration to manage modern printing and allied establishments.

Packaging is an integral part of Printing Industry. The printing and packaging industries in India have assumed growing significance during this decade. This has become a dynamic and key area for manufactures and trading companies all over the country with the element of aesthetics, hygienic and cost effectiveness receiving

increasing importance in commercial operations. The exterior looks and presentability of marketable goods leave a lasting impression on the minds of consumers and in this context packaging occupies the centre stage. New packaging machines and technologies have been introduced to meet the challenges. Today, the Indian Packaging Industry is growing at a rate of 25 - 30 percent per annum.

The printing industry is one of the biggest and fastest growing industries in India. More than two lakh printing presses are in operation all over the country with a capital investment of over Rs. 2,50,000 million. This industry provides direct and indirect employment to two million people. It is natural that along-side the growth of literacy, there is a commensurate rise in demand for various inputs for the printing industry.

Learning outcomes of the Course

Upon completion of the course, the learners will be able to

- Identify various printed products
- Visualise ideas with the help of designing software
- Design various printed products like catalogues, Brochures, magazine, posters, calendars, flex etc.
- Typeset matters in English and Malayalam
- Operate scanning machines
- Prepare Page layout using advanced software
- layout of a news paper page
- Proof read typeset matters
- e-publish assigned print job
- Evaluate printing quality of various printed products.
- Identify printing defects and suggest remedies and Troubleshoot printing problems.
- Identify different types of printing machines
- Operate different types of printing machines.
- Screen print on various substrates like paper, cloth, leather, metal, glass etc.
- Binding and finishing of various printed products.
- Computer operation
- Packaging Industry
- Operating different binding machines

Discovery learning

Here the learning takes place in problem solving situations where the learner rely on his own experience and prior knowledge. It is a method of instruction through which students interact with their environment by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments.

Co-operative learning

Cooperative learning is an educational approach which aims to organize classroom activities into academic and social learning experiences. In this method the learners learn by helping each other. The negotiations among peers take place here. For example, if we want to take an awareness among the students about different starting methods, the students can be divided into different groups and a group discussion on the topic can be conducted. The ideas evolved from the discussion can be consolidated and presented in the class by one person from each group.

Collaborative learning

Collaborative learning is a situation in which two or more people learn or attempt to learn something together. Unlike individual learning, people engaged in collaborative learning capitalize on one another's resources and skills (asking one another for information, evaluating one another's ideas, monitoring one another's work, etc.). More specifically, collaborative learning is based on the model that knowledge can be created within a population where members actively interact by sharing experiences.

Interaction with society

Learner is an integral part of the society. The education aims at uplifting the social commitment of the learner. Good interaction of learner with the society during learning process will ensure this aim. In this course, OJT, PTC and field visits ensure the social interaction of the learner.

Teaching learning materials

The selection of teaching learning materials for the class room transaction should be based on suitability to the topic, participation of the learner, effectiveness in transaction, cost factor etc. For the course GDPT use of working models, photo images, multi media CDs internet etc can be used.

Role of learner

The needs of the learner should reflect in the learning process. Active participation, making use of resources, applying thoughts, make interpretations, draw inferences, dedication for acquiring expertise or

skill are expected from a learner. A congenial atmosphere inside and outside the class room should be ensured by the learner as well as by the teacher.

Role of teacher

The teacher's role is redefined now-a-days from an actual teacher to one who learns the learners, knows his strength and weakness, arrange the resources, needs as and when required, create learning situations, learn with the learner, assist or scaffold the learner throughout the learning process, evaluate the learner and equip him further to live in the society.

Role of supporting system

The School Resource Group, Parent Teacher Association, Government and Non-Governmental Organisations are the main supporting systems. A live institution-industrial linkage is also essential in imparting vocational education.

Evaluation

In educational process the evaluation should be systematic, continuous and comprehensive. A good scheme of evaluation can be drawn in such a way that it can measure the skill or expertise acquired by the learner. The aptitude, attitude and approach of the learner should also be assessed for better evaluation.

ICT possibilities

Vocational education is practical oriented, even though time will be a limiting factor for learning processes. Hence the curricular objectives can be achieved by making use of new technologies like ICT enabled education. Making use of multimedia CDs are helpful in transaction processes inside the classroom which are to be developed by the department based on the curriculum..

Learning Situations

Commercial presses, Designing labs and Printing trade shops in prepress and post press are the most suitable areas for skill acquirement. Students can acquire hands on experience and knowledge by engaging in various activities of the PTC like note book production, record book production and printing operations in the school as part of the learning process.

Resources

In addition to the school level infrastructure and human resources, the smooth conduct of the course requires industrial linkage. There are eleven presses directly under Kerala govt. and many large scale semi-govt. presses like KBPS, CAPT and several presses under the cooperative sector and private sector where Vocational students can acquire more practical experience.

OJT/Field visit

OJT or On the Job Training Programme forms an integral part of the vocational curriculum of VHSE in Kerala. It gives a good platform for students to learn the working condition and work culture. OJT help the learners to identify the skill needs of the industry. It is the place where the students acquire and polish their vocational skill. The students will be able to get familiarized with the administrative background of the institution where they undergo training, which will contribute the managerial skill in feature.

In the new curriculam GDPT the skills are defined and OJT should provide hands on experience to the students in the defined skill sector.

The defined skill areas in GDPT are Data entry, Graphic designing, Digital pre-press & Digital printing, offset printing, screen printing, binding, packaging and other print finishing operations.

While identifying the OJT centers following factors should be considered

- 1 Select OJT centres capable of providing the defined skills.
2. For the first two modules depend on firms which have in-house designing & CtP units
3. More impotance to be given for digital printing.
4. Publication firms having graphic designing and software facilities should be selected for OJT.
5. For second and third modules firms with modern offset printing, screen printing, packaging and print finishing operations facilities should be given importance than nearly depending on Govt. presses.
6. Schools should be given freedom for selecting the time for OJT and selecting the centre depending on locality

Inclusiveness

Vocational education is a group activity, where the learners are heterogeneous mixture of gifted learners, average learners, slow learners and differently abled learners. Our class rooms ensure the participation of these groups and reap benefit.

SYLLABUS

Module I: Graphic Designing & DTP

1.1 Introduction to Printing

Origin and development of Printing

- Definition of printing
- Brief history of printing
- Developments in printing
- Influence of printing in human development
- Classification of Printing
- Conventional Printing (with Master)
 - * Relief - Intaglio - Planography - Screen
- Non Impact printing (without Master)
 - * Electrophotography - ionography - magnetography - Inkjet - Thermography - Photography

Print production work flow

- Idea and Concept
- Creative Production
- Industrial Production
 - * Prepress
 - * produce printing plates
- Printing
 - * select the apt printing process
- Finishing and binding
 - * foiling, varnishing, lamination cut to size, die-cutting, perforation and punching, folding, creasing, binding, glue binding
- Logistics
 - * Distribution of the printed product to the end user

Division of Printing Industry

- Printing Industry and Allied Industry
- Printing Industry
- Allied Industries
 - * Trade Shops or Production Houses
 - * Supplies
 - * Sales and Service

* Equipment

* Related Areas

Print Media

- Books
- Magazines
- Brochures
- Newspapers
- Other Printed media
- Future of printing

Size of the Printing Industry

- Size of the Printing Industry
-Govt Sector, Private Sector, National & Abroad
- Job Opportunities and Entrepreneurship
Govt Sector, Private Sector, National & Abroad
- Future of printing

1.2 Computer Basics

Basics of Computer

- Computer Operation
- Software and Hardware
- Operating system/system software Data

Parts of Computer

- Components of computer
- Input device
- Output device

Computer network

- LAN
- WAN
- MAN
- Wireless Networks
- Advantages of networking

Internet and e-mail

Server, connecting media, modem, browser, URL

Application of Internet in printing industry

Printers

- Dot matrix printer
- Ink jet printer
- Large format inkjet printer - Flex printing
- Laser printer

Storage and Data transfer

- Storage devices
CD,DVD, Blue ray, hard disc, USB,etc.
- Data transfer methods
http/web transfer, portable storage devices, wifi, blue tooth, fire wire, FTP, email attachment etc.

1.3 Typography and Word processing**Typography**

- Type/ Font
- Classification of Typeface
- Design of typeface
- Point system

Type setting

- Conventional typesetting

Hand composing – Linotype - Photo typesetting

- Modern typesetting

Input via Keyboard

Input via OCR

Speech input

Importing of documents / File transfer

Word Processing

- Word processing software
- MS Word
- Text file
- RTF / Rich Text Format and its advantages compared to text file
- Formatting of text is possible in RTF

Page Layout Software

- Adobe Pagemaker
 - * Advantages of page layout software over word processing softwares
 - * Text block, Frames
 - * Layers
 - * Mirror images, Flip etc
- Quark Xpress
 - * Advantages of Quark Xpress over Pagemaker

1.4 Graphic Designing

Design

- Principles of Design
- Balance, Dominance/Contrast, Proportion, Unity/Harmony
- Techniques of Design
- Tint, Surprint, Reverse. Bleed

Images for printing

- Types of originals
- Line original, Tone original
- Rastor images
- Vector images
- Resolution
 - * DPI, PPI, LPI

Image input methods

- Scanner
 - * Types of scanners, Parts of a scanner, Formats for scanning
- Digital camera
 - * Digital photography
Pixels, Shutter speed, Aperture ISO
- Internet
 - * Search engines
 - * Stock photos websites like Flickr, shutterstock, etc.

Illustration and Image Editing Software

- Illustrating Software
 - * CorelDraw
 - * Adobe Illustrator
 - * Advantages of illustrating software
- Image Editing Software
 - * Photoshop
- Image manipulation
 - * Cropping , Scaling
- Advantages of Image Editing Software

Image formats

- JPEG, PDF, TIFF, EPS, PSD, PS, ZIP/RAR

3D image and object designing

- Applications of 3D Printing
- Software for 3D designing
 - * Autocad, Maya, 3D S max, 3D scanner

Publishing

- Book Publishing
- Different types of publishers
- House style
- Copy Editing
- Proof Reading
 - * Proof reading marks, Different types of proof
- Parts of book
- e-publishing
- Outsourcing

Digital Photography

- Choosing the Camera Equipment
- The basics of photography
- Photo composition, Rule of thirds, Pan, Zoom
- Exposure in the camera
 - * CCD
- Exposure triangle, ISO in digital photography, Shutter speed, Aperture
- Lighting for photography

- Getting the colour right
- Tips for photographing different subjects
- Introduction to white balance
- Editing your photos in Photoshop
- Introduction to digital camera models

1.5 Colours for Printing

Light and colour

- Electromagnetic Spectrum
- Wavelength of different colours
- Eye and the colour
- Colour Theory
- Additive colours
- Subtractive colours

Colour Psychology

- Warm Colour
- Cool Colour
- Neutral Colour
- Hue, Saturation, Value
- Colour Harmony (achromatic, chromatic, monochromatic)
- Colour contrast (simultaneous & HSV contrast)

Colour Printing

- Spot Colour
- Spot colour systems PANTONE & HKS
- Fake Colour, Duotone, Tritone, Process Colour, Hi Fidelity Printing
- Colour Models
 - * CMYK, RGB
- RGB to CMYK conversion

Colour Separation

- Basic Colour Separation Theory
- Colour Filters
- Screen Angle
- Electronic Colour Separation
 - * Working of a scanner

- Colour Correction
 - * UCR, GCR

Module II : Digital Pre-press & Printing

2.1 Page layout and Imposition

Traditional Image Assembly

- Transparent materials
Positive and Negative Films
- Printers' Marks
- Paste up methods
Single colour paste up
Multi colour paste up
- Developments in Pre press

Page Layout

- Page size
- Page Orientation
- Page Margins
- Terms in Imposition
- Layout Lines
- Pre press software

Planning the job

- No. of copies
No. of colours
- Types / Fonts
- Screening
- Colour management
- Image quality
- Print run
- Paper stock
- Finishing works

Imposition

- Definition

- Principles of imposition
- Advantages of a good imposition
- Types of impositions
 - Work and turn
 - Work and Tumble
 - One side imposition
 - Sheet wise imposition
 - Signature imposition
 - Ganged imposition
 - Full Sheet Output
- Imposition softwares
 - Multi up form imposition
 - Full sheet production workflow

Font formats

- Post Script Type 1 font
- True type fonts
- Vector fonts

2.2 Digital Pre press workflow & Output

Workflow

- Generating a PDF document
 - PDF from different softwares
- Colour Management
 - Gamut
 - Profile
 - Colour Management Module (CMM)
 - Colour Management Solution (CMS)
- Trapping
 - Digital Trapping and Imposition
 - Vector Trapping
 - Raster Trapping
- Hybrid Trapping

Pre-flighting

- Preflighting – definition
- Attributes checked during preflighting
 - Missing and incorrect Fonts
 - Trapping
 - Colour
 - Missing and unlinked graphics
 - Incorrectly defined bleeds
 - Low Resolution

Production Proofs

Preliminary Proof

- Laser printer
- Solid ink printer
- Ink jet printer
- Dye sublimation printers

Contact Proof

Soft Proof

Digital Proof

- Digital Halftone proof

Machine Proof

Digital Pre Press Output

- Post Script
 - Script driver
 - RIP
 - Hardware RIP
 - Software RIP
 - Software RIP with hardware components
 - Recorder
 - Calibration
 - RIP functions
 - RIP based Imposition
 - Image output
- General Checking

Output to Film

- Image setters
- Film processor

Offset Plate Making

- Offset Plates
 - Base metal
 - Graining
 - Coating materials
- Classification of Lithographic plates
 - Surface plate
 - Wipe on plate
 - Egg Albumen plate
 - PS Plate
 - Deep etch plate

Exposure system

- Components of an Exposing machine
 - Light Source
 - Actinic light
 - Vacuum frame
 - Cabinet
 - Timer
- Light source calibration
 - Sensitivity guide
 - Light integrator
- Working of an Exposing Machine

Processing system

- Platemaking sink
- Automatic Plate processor
- Chemicals used for plate developing

2.3 Computer to Plate

- **Basic components of CTP**
 - Computer
 - Imaging System
 - Printing Plate

Technology of CtP

- Design principles of CtP
 - External Drum
 - Internal Drum
 - Flat bed design
- **Imaging methods**
 - Laser imaging
 - UV light imaging
 - Inkjet imaging

CtP for different Printing Processes

- CtP for Offset
- CtP for Flexo
- Computer to Cylinder for Gravure
- Computer to Screen for Screen printing

Printing plates for Digital imaging

- Electrophotographic CtP plates
- Aluminium based printing plates
- Thermal sensitive aluminium plates
- Imaging and developing technology of CtP

Quality control in CtP

- Print control strips
- imaging control
- Digital control strips
- Microlines

Advantages of CtP

2.4 Computer to Print (NIP Technology)

Introduction to Digital Imaging

- Types of Digital Printing

Electrostatic Printing

- Principle
- Imaging systems
- Inking unit (Developing unit) and Toner
- Fixing and cleaning
- Applications of Electrostatic Printing

Ionography

Printing unit

Imaging system and the principle of ionography

Printing unit concepts and Printing system

Applications of Ionography Printing

Magnetography

Principle

Imaging system

Applications of Magnetography Printing

Ink-Jet printing

Principle

Imaging systems

Inking unit

Types of Ink-jet printing

Ink-jet Inks

Ink-jet Heads

Applications of ink-jet Printing

Dye Sublimation

Principle

Imaging system

Applications of Dye Sublimation Printing

Applications of Digital Printing

Variable Data Printing

Distributed Printing

Data Assessment Management

Advantages and disadvantages of Digital Printing

2.5 Introduction to Offset Printing

- Principle of offset printing
- Four units of an offset press
- Cylinder configuration
- Operation of four units
- Web Offset

LEARNING OUTCOMES OF THE COURSE

Upon completion of the first module

Graphic Designing and DTP

- 1.1.1 The learner will be able to sketch the origin and development of printing
- 1.1.2 The learner will be able to explain how each printing process differ from each other
- 1.1.3 The learner will be able to understand the sequence of steps in the printing process
- 1.1.4 The learner will be able to categorize different types of firms engaged in the printing business
- 1.1.5 The learner will be able to differentiate between different media in printing
- 1.1.6 The learner will be able to understand the scope of printing and the course
- 1.2.1 The learner will be able to differentiate between software and hardware
- 1.2.2 The learner will be able to list out the components of a computer based on the function it performs
- 1.2.3 The learner will be able to differentiate between various types of networks and its purpose
- 1.2.4 The learner will be able to understand the use of a MODEM
- 1.2.5 The learner will be able to communicate and collect information and images from internet
- 1.2.6 The learner will be able to differentiate different type of printers
- 1.2.7 The learner will be able to recognise different data transfer methods and storage devices
- 1.3.1 The learner will be able to identify and classify different fonts
- 1.3.2 The learner will be able to create new fonts
- 1.3.3 The learner will be able to predict the size of different fonts
- 1.3.4 The learner will be able to do the word processing work using MS word
- 1.3.5 The learner will be able to do page layout using different software
- 1.3.6 The learner will be able to identify different fonts and should get an idea about at least 5 fonts of each class
- 1.3.7 Learner will be able to typeset English and Malayalam matter

with 25 words per minute

1.3.8 Learner will be able to operate the Adobe PageMaker software.

1.4.1 The learner will be able to do designing of various jobs

1.4.2 The learner will be able to explain how one original differs from another

1.4.3 The learner will be able to observe resolution and its importance

1.4.4 The learner will be able to compare and understand about different image input methods

1.4.5 The learner will be able to discuss about different image editing software and illustration software and their advantages

1.4.6 Learner will be able to identify various types of scanners and their working

1.4.7 The learner will be able to understand about the operation of a digital camera

1.4.8 The learner will be able to distinguish between different file formats and the corresponding printing quality

1.4.7 The learner will be able to discover latest developments in 3D image designing and printing

1.4.8 The learner will be able to discuss the basics of publishing and e-publishing.

1.4.9 The learner will be able to judge and evaluate different techniques in digital photography

1.5.1 The learner will be able to differentiate between different parts of an electromagnetic spectrum

1.5.2 The learner will be able to list out different types of colours used in designing

1.5.3 The learner will be able to differentiate between various types of colour printing

1.5.4 The learner will be able to handle colour separation techniques

Upon completion of the second module

Module II Digital Pre-press & Printing

- 2.1.1 The learner will understand the traditional image assembly
- 2.1.2 The learner will be able to analyze the different page layouts
- 2.1.3 The learner will be able to create a job format
- 2.1.4 The learner will be able to create and analyze different imposition scheme
- 2.1.5 The learner will able to remember the various font formats
- 2.2.1 The learner will understand the digital work flow
- 2.2.2 The learner will be able to evaluate the different problems in pre press after preflighting
- 2.2.3 The learner will be able to understand the different proofing techniques and systems
- 2.2.4 The student will be able to remember and understand about digital pre press out puts
- 2.2.5 The student will be able to understand about film outputs
- 2.2.6 The student will be able to apply offset plate making
- 2.2.7 The student will be able to understand plate Exposure system
- 2.2.8 The student will be able to understand plate Processing system
- 2.2.9 To do PDF document creation methods
 - To select the appropriate Preflight options for given scenario
 - To select the appropriate Print Production options
- 2.2.10 To do Ripping for output
- 2.2.11 To demonstrate the functioning of a printing down frame
- 2.2.12 To expose a PS plate using Printing Down frame and to develop an exposed PS plate
- 2.3.1 The learner will understand the basic components of CTP
- 2.3.2 The learner will understand technology of CTP
- 2.3.3 The learner will analyze imaging methods
- 2.3.4 The learner will analyze CTP for different printing processes
- 2.3.5 The learner will evaluate printing plates for digital imaging

- 2.3.6 The learner will understand quality control in CTP
- 2.4.1 The learner will understand about digital printing and Non-Impact printing
- 2.4.2 The learner will understand electrophotography
- 2.4.3 The learner will understand Ionography
- 2.4.4 The learner will understand Magnetography
- 2.4.5 The learner will analyse the working and functioning of an inkjet model digital printers
- 2.4.6 The learner will be able to understand about the working Dye sublimation printers
- 2.4.7 The learner will be able to evaluate the different applications of digital printing
- 2.4.8 The learner will be able to recommend the adequate printing method for a particular job
- 2.5.1 The learner will understand the principle of offset printing
- 2.5.2 The learner will understand the four units of offset press
- 2.5.3 The learner will understand the cylinder configuration of offset press
- 2.5.4 The learner will analyse the operation of four units
- 2.5.5 The learner will understand the operating method of web offset press
- 2.5.4 The learner will analyse the operation of four units
- 2.5.5 The learner will sketch the operating method of web offset press

SCHEME OF WORK / YEAR PLAN

Module I : Graphic Designing and DTP (Theory)

Sl. No.	Month	Units Covered in the Month	Periods
1	June	Introduction to Printing	27
2	July	Computer Basics	18
3	August	Typography and Word Processing	155
4	September	Graphic Designing	112
5	October	Colours for Printing	28
		TOTAL	340

Module I : Graphic Designing and DTP (Practical)

Sl. No.	Month	Units Covered in the Month
1	June/July	Typography, English & Malayalam Typesetting
2	July	Adobe PageMaker
3	July/August /September	Adobe Photoshop
4	October	Digital Photography
		70% practical and 30% theory

Module II: Digital Pre Press and Printing (Theory)

Sl. No.	Month	Units Covered in the Month	Periods
1	November	Page Layout & Imposition	205
2	November	Digital Prepress Work Flow and Output	75
3	December	Computer to Plate	20
4	December	Computer to Print(NIP)	20
5	January	Introduction to Offset Printing	20
		TOTAL	340

Module II: Digital Pre Press and Printing (Practical)

Sl. No.	Month	Units Covered in the Month
1	November	Page Layout –Adobe InDesign
2	November	Adobe Illustrator
3	November/ December	Corel Draw
4	December	Digital Pre-press workflow- Adobe Acrobat
5	December/ January	Output Plate & Film
		70% practical and 30% theory

COURSE STRUCTURE

This course will consist of 4 modules such as :-

Module 1	Graphic Designing and DTP
Module 2	Digital Pre press and Printing
Module 3	Offset and Modern Printing Techniques
Module 4	Binding and Packaging

Class room activities

- Chart preparation
- Poster preparation
- Presentation of sample collection
- Debates
- Discussion with printers
- Interactive discussion sessions with successful entrepreneurs and Printing industry managers
- Interactions with former students employed abroad
- 2D & 3D animations
- Videos, slides presentation on various printing processes
- Downloaded contents from YouTube etc.
- Models and exhibits
- Seminars
- Group Discussions
- Projects etc.

LIST PRACTICAL ACTIVITIES

- Different printing processes - Plate/Stencil other image carriers making
- Computer basics, Operation of mouse, keyboard, scanner, printer, pen drive etc.
- Designing various products like visiting card, notice, poster, book cover, brochure etc.
- Computer basics, operation of scanner, printer, etc.
- Typesetting English/Malayalam
- PageMaker, ISM, Photoshop, CorelDraw, Illustrator,

InDesign etc.

- Graphic designing
- Different printing processes - Plate/Stencil other image carrier preparation.
- Distinguish between different types of offset machines
- Plate making, jogging, blind feeding, lay adjustments, printing
- Identify different units and parts of an offset machine
- Offset press operation
- Identify printing problems & troubleshooting
- Binding - different styles of binding
- Cutting machine operations
- Operation of various binding machines, Other finishing operations

ON THE JOB TRAINING PROGRAMME

More than the class room activities, OJT/Field visit provides the needed practical exposure for the students in an applied field like Graphic Designing and Printing Technology. In Kerala, all the VHSE schools which offer Graphic Design and Printing Technology courses are having industrial linkage with different presses situated in different parts of the state.

On the job training programme can be conducted in Govt. firms/ Semi Govt. firms / Private firms which includes the eleven Govt. Presses, KBPS, Kakkanad, Kochi, Presses under CAPT, Commercial Printing Presses, Newspaper and book publishing companies, Trade shops in pre-press and post press, advertising firms, Graphic designing and DTP centres, e-publishing firms etc.

Time : Two weeks after two module

Duration : Two weeks per year

In the new curriculam GDPT the skills are defined and OJT should provide hands on experience to the students in the defined skill sector.

The defined skill areas in GDPT are Data entry, Graphic designing, Digital pre-press & Digital printing, offset printing, screen printing, binding, packaging and other print finishing operations.

While identifying the OJT centers following factors should be considered

1 Select OJT centres capable of providing the defined skills.

2. For the first two modules depend on firms which have in-house designing & CtP units
3. More importance to be given for digital printing.
4. Publication firms having graphic designing and software facilities should be selected as OJT firm.
5. For second and third modules firms with modern offset printing, screen printing, packaging and print finishing operations facilities should be given importance than nearly depending on govt. presses.
6. Schools should be given freedom for selecting the time for OJT and selecting the centre depending on locality

Certification of skills in each module

Certificate in Graphic Designing and DTP

Certificate in Digital Pre-press and Printing

Certificate in Offset Printing Technology

Certificate in Binding and Packaging

Module I Graphic Designing & DTP

The first module aims to introduce the course in general to the students and also to get an over view about the history and the development stages of printing. This module includes objectives like understanding basic on computer, typography, design basics and about colour, colour separation and colour management. Also the first module gives software based practical training to the students in design basics, English and Malayalam type-setting, page layout in Adobe PageMaker, word processing through MS Word and image editing with Adobe Photoshop.

List of Expected Skills

- Computer basics
- Operation of scanners, printers, Digital cameras.
- Typesetting English/Malayalam (ISM)
- Handling different word processing software like MS Word,
- Handling of page layout software like Adobe PageMaker.
- Image editing using Adobe Photoshop.

Designing various products like visiting card, notice, poster, book cover, brochure, Calendars, Invitations, menu card, magazines etc.

Units Frame of module I

Theory

Sl. No.	Name of the Units	Periods
1	Introduction to Printing	27
2	Computer Basics	18
3	Typography and Word processing	155
4	Graphic Designing	112
5	Colours for Printing	28
	Total	340

Practical

Sl. No.	Name of the Units
1	Typography and word processing (Data Entry English & Malayalam ISM)
2	Page layout with Adobe PageMaker
3	Image editing with Photoshop
4	Digital Photography

Practical activities of Module 1

Identify different fonts and should get an idea about at least 5 fonts of each Font family

Typing practice with Rapid Typing / Typing Tutor

Typeset English and Malayalam ISM

Handling the word processing software like MS Word

Adobe PageMaker

To operate the Adobe PageMaker software.

Communicate with others about design plans.

To Identifying Design Elements When Preparing Images

Demonstrate knowledge of design principles, elements, and image composition.

Demonstrate knowledge of typography.

To create a page layout for a magazine in Adobe PageMaker.

To design a notice and a visiting card in PageMaker

Adobe Photoshop

Image editing using Adobe Photoshop.

Demonstrate knowledge of color correction using Photoshop.

Demonstrate knowledge of image-generating devices, their resulting image types, and how to access resulting images in Photoshop.

Understand key terminology when working with digital images.

Demonstrate knowledge of layers and masks.

Demonstrate knowledge of importing, exporting, organizing, and saving.

Demonstrate knowledge of producing and reusing images.

Demonstrate and understanding of and select the appropriate features and options required to

implement a colour management workflow.

Demonstrate knowledge of working with selections.

Use Photoshop guides and rulers.

Transform images.

Adjust or correct the tonal range, colour, or distortions of an image.

Demonstrate knowledge of retouching and blending images.

Demonstrate knowledge of drawing and painting.

Demonstrate knowledge of type.

Demonstrate knowledge of filters

Demonstrate knowledge of preparing images for web, print, and video

Designing various products like poster, Calendars, Invitations etc

Learner will be able to operate the Adobe PageMaker software

Learner will be able to operate the Adobe Photoshop software

Learner will be able to identify Design elements when preparing images

Understand key terminology when working with digital images.

Learner will be able to do image editing and manipulation

Learner will be able to demonstrate knowledge of layers and masks.

Learner will be able to adjust or correct the tonal range, colour, or distortions of an image.

Learner will be able to create a duotone image using spot colour from pantone shade

Digital SLR Camera

Understanding digital photography workflow

Taking Outdoor Photography / Nature and Landscape photography

To understand most common cause of blurry photos, and how to avoid it while taking photographs using Digital Cameras

To understand the most common mistake made when you point-and-shoot and how you can avoid

Module II. Digital Pre-press & Printing

Prepress is the term used in the printing and publishing industries for the processes and procedures that occur between the creation of a print layout and the final printing. The prepress procedure includes the manufacture of a printing plate, image carrier or form, ready for mounting on a printing press, as well as the adjustment of images and texts or the creation of a high-quality print file. In today's prepress shop, the form of delivery from the customer is usually electronic, either a PDF or application files created from such programs as Adobe InDesign or Illustrator or CorelDraw

There are many processes involved in part of prepress like typesetting, copy-editing, markup, proofing, proofreading, screening, imposition, manufacturing of plates, manufacturing of a high-quality print (PDF) file and the final process which is paper select choosing the proper paper for printing.

This module covers each step of the prepress process, from proper document planning and construction to making the right choices for output settings. The module covers all the details in between, including choosing the right typefaces and fonts, working with graphics and colours, and much more.

List of Expected Skills

- Able to handle Digital Pre-press workflow
- Handling of Pre-flighting software in pre press workflow
- Operation of image setters - CtP and CtF machines
- Doing manual Imposition scheme for magazines
- Doing manual imposition using CorelDraw software
- Doing software based imposition using Adobe Acrobat.
- Handling of page layout software like Adobe InDesign.
- Page layout using Adobe Illustrator.

Digital Pre Press and Printing : 340 Periods**Unit Frame of Module II****Theory**

Unit No.	Name of Unit	No. of Period
1	Page Layout & Imposition	30
2	Digital Pre press work flow & Output	25
3	Computer to Plate	20
4	Computer to Print (NIP)	10
5	Introduction to Offset Printing	20
	Total	105

Practical

Unit No.	Name of Unit
1	Page Layout -Adobe In Design
2	Adobe Illustrator
3	Corel Draw
4	Digital Pre-press workflow- Adobe Acrobat Professional
5	Output Plate & Film

Practical Activities of Module II**Adobe InDesign**

Design the notice/ Poster/ newsletter/Brochure

Add text, graphic, image, and video content to a page layout.

To work with color style and Text style.

Identify the purpose, audience, and audience needs for preparing page layouts.

Communicate with others about design plans.

Identifying Design Elements When Preparing Page Layouts

Demonstrate knowledge of the appropriate properties of page layouts for print, web, and digital publishing.

Identify elements of the InDesign interface and demonstrate

knowledge of their functions.

Use non printing design tools in the interface.

Demonstrate and understanding of and select the appropriate features and options required to manage colors.

Demonstrate knowledge of layers.

Demonstrate knowledge of exporting, packaging, saving, and organizing files.

Creating Page Layouts by Using Adobe InDesign

Demonstrate knowledge of how to create multiple-page documents.

Demonstrate knowledge of how to use styles.

Demonstrate knowledge of how to use frames in a page layout.

Demonstrate how to add text to a page layout, add graphic, image, and video content to a page layout.

Demonstrate knowledge of how to create special page elements using InDesign tools.

Demonstrate knowledge of how to add interactive elements using InDesign tools.

Explain how to Publish, Export, and Archive Page Layouts by Using Adobe InDesign

Demonstrate knowledge of how to prepare page layouts for publishing to print.

Demonstrate knowledge of how to prepare page layouts for export to multiscreen devices.

CorelDraw

To import a JPEG/TIFF/PSD format file for prepress setting

To do imposition using CorelDraw software

To operate CorelDraw software for designing print media articles

To prepare imposition for multi page book/magazine works

To do lay out work in CorelDraw using lay out marks

To design a poster/notice/visiting card

Adobe Illustrator

Demonstrate knowledge of how to create documents.

Demonstrate knowledge of how to use type tools.

Building Illustrator Documents

Customize the workspace

Create art boards

View artwork

Save and export documents
Demonstrate how to draw basic shapes
To Edit paths
To Combine objects
Demonstrate how to draw in perspective
Managing and Transforming Objects
Use rulers, grids, and guides
To group objects and paths
To Create and use layers
To Use isolation mode
To Position multiple objects precisely
To apply fills and strokes
Work with brushes
To work with transparency and blending modes
To Create and use gradients
To Create and use meshes
To Create and use patterns
Working with Color
Apply colors and swatches
To Work with Color Groups
To Adjust Color
To Set Fill and Stroke Overprint
Working with Type
To Add text and type
To Set text on a path
To Transform characters and type blocks
To Work with fonts and special characters
To Format type
To Create and apply character and paragraph styles
Applying Object Effects
To Create Document Raster Effect Settings
To Create and apply drop shadows, glows, and feathering
To Copy formatting between objects
To Place Graphics from other applications
To Links Panel
To Set up documents for printing
To Print color separations

To Print gradients, meshes, and color bleeds
Designing a magazine cover
Designing a brochure with text effects, illustrations and contrasting color

ADOBE ACROBAT PROFESSIONAL

Viewing and navigating PDF documents
Accessing viewing and navigation options
Customizing the workspace
Using Find and Search Features
Creating PDF documents
Understanding PDF document creation methods
Creating PDF documents from PDF Printer
Creating PDF documents from Adobe PDFMaker
Creating PDF documents from Acrobat Distiller
Creating PDF documents from a Web page
Reusing PDF content
Copy and paste PDF content to Microsoft Office applications
Saving PDF documents in alternate formats
Modifying and enhancing PDF documents
Methods for modifying PDF documents
Adding navigation elements to a PDF document
Creating accessible PDF documents
Reducing the size of a PDF document
Understanding methods available for reviewing PDF documents
PDF standards and print production
Identifying the purpose of the PDF Standards
Selecting the appropriate Preflight options for given scenario
Selecting the appropriate Print Production options
Imposition using adobe plug-in quite impose plus
Offset Plate Making
To demonstrate the functioning of a printing down frame
To expose a PS plate using Printing Down frame
To develop an exposed PS plate.
Gumming

Module I : Graphic Designing and DTP			
Unit No.: 1.1 : INTRODUCTION TO PRINTING			
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.1.1 Origin and development of Printing</p> <ul style="list-style-type: none"> • Brief history of printing • Transfer of information • Verbal - manuscripts - clay tablets - wooden blocks - types etc. • Contribution of the Chinese • Contribution of Gutenberg • Contribution of Senefelder - Ira Rubel - Chester Carlson • Developments in printing • Platen press - flatbed cylinder - rotary • lithography - offset - xerography - digital • Influence of printing in human development. 	<ul style="list-style-type: none"> • The learner will be able to evaluate about the origin and development of printing 	<ul style="list-style-type: none"> • Collect different printed products from day-to-day life 	<ul style="list-style-type: none"> • Notes in the activity log
<p>1.1.2 Classification of Printing</p> <ul style="list-style-type: none"> • Classification of Printing • Conventional & Non Impact Printing • Conventional/Impact Printing (with Master) • Relief - Intaglio - Planography - Screen • Non Impact printing (without Master) • Electrophotography - ionography - magnetography - • Inkjet - Thermography - Photography 	<ul style="list-style-type: none"> • The learner will be able to explain how each printing process differ from each other 	<ul style="list-style-type: none"> • Classify the collected printed products and prepare an album 	<ul style="list-style-type: none"> • Preparation of chart

Unit No.: 1.1 : INTRODUCTION TO PRINTING			
Module : Graphic Designing and DTP	Learning Outcomes	Suggested Activities	Assessment
<p>1.1.3 Print production work flow</p> <ul style="list-style-type: none"> ● Idea and Concept Strategic Work Define product, purpose and goals Analyze audience Identify & select the production team Select paper ● Creative Work Develop design Create messaging Meet product specifications Creative Production Image and Text create, collect and select images edit images enhancement cropping output images to file Layout arrange of text and images send digital and printed proofs to decision ● Industrial Production <i>Prepress</i> create high-resolution PDF files print adjustment of images create proofs arrange imposition run rasterization produce printing plates 	<ul style="list-style-type: none"> ● The learner will be able to understand the sequence of steps in the printing process 	<ul style="list-style-type: none"> ● Group discussion and preparation of a flow chart on print production work flow 	<ul style="list-style-type: none"> ● Preparation of flow chart

Module : Graphic Designing and DTP				Unit No.: 1.1 : INTRODUCTION TO PRINTING			
Ideas/Concepts/Skill		Learning Outcomes		Suggested Activities		Assessment	
<p><i>Printing</i> select the apt printing process <i>Finishing and binding</i> foiling, varnishing, lamination cut to size, die-cutting, perforation and punching folding, creasing, binding, glue binding</p> <ul style="list-style-type: none"> Logistics Distribution of the printed product to the end user 		<ul style="list-style-type: none"> The learner will be able to categorize different types of firms engaged in the printing business 		<ul style="list-style-type: none"> Presentation of Charts and study about the functioning about different types of printing firms. 		<ul style="list-style-type: none"> Categorization of different types of firms. 	
<p>1.1.4 Division of Printing Industry Printing Industry and Allied industry Printing Industry Commercial Printing In-Plant Printing Publishing Packaging Quick Printing Allied Industries Trade Shops or Production Houses Supplies Sales and Service Equipment Related Areas</p>							
<p>1.1.5 Print Media Books Magazines Brochures Newspapers Other Printed media</p>		<ul style="list-style-type: none"> The learner will be able to understand the scope of printing and the course* 		<ul style="list-style-type: none"> Presentation of Charts and group discussion 		<ul style="list-style-type: none"> Notes in the activity log 	
<p>1.1.6 Future of printing Size of the Printing Industry Job Opportunities and Entre preneur ship</p>							

Module : Graphic Designing and DTP		Unit No.: 1.2 : COMPUTER BASICS	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.2.1 Basics of Computer Computer Operation Software and Hardware Operating system/system software Data</p>	<ul style="list-style-type: none"> The learner will be able to differentiate between software and hardware The learner will be able to list out the components of a computer based on the function it performs 	<ul style="list-style-type: none"> Presentation of computer and its working Presentation of computer parts Discussion, Practice 	<ul style="list-style-type: none"> Awareness of computer and understanding of facts Preparation of chart showing the diagrams of different parts
<p>1.2.2 Computer Networks Parts of Computer</p> <ul style="list-style-type: none"> Components of computer CPU Motherboard Processor SMPS Memory Hard disk Ports Input device Output device Computer network LAN WAN MODEM Wireless Networks WiFi Bluetooth Advantages of networking Internet and e-mail Server, connecting media, modem, browser, URL Application of Internet in printing industry 	<ul style="list-style-type: none"> The learner will be able to differentiate between various types of networks and its purpose The learner will be able to understand the use of a MODEM 	<ul style="list-style-type: none"> Demonstrate and present the working of LAN, LAN, WAN, Modem and other wireless networking in the computer lab. 	<ul style="list-style-type: none"> Participation in discussion and understanding the role.
	<ul style="list-style-type: none"> The learner will be able to differentiate different type of printers 	<ul style="list-style-type: none"> Demonstration / Presentation of charts Operating and printing documents Using laser printers 	<ul style="list-style-type: none"> Reports in activity log Assignment

Module : Graphic Designing and DTP		Unit No.: 1.2 : COMPUTER BASICS	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.2.3 Printers Dot matrix printer Ink jet printer • Large format inkjet printer - Flex printing • Laser printer</p> <p>1.2.4 Data transfer and storage • Storage devices CD,DVD, Blue ray, hard disc, USB • Data transfer methods http/web transfer, portable storage devices, wifi, blue tooth, fireWire, FTP, emil attachment</p>	<p>The learner will be able to recognise different data transfer methods and storage devices</p>	<p>Compare and distinguish</p>	<p>Report</p>

Module : Graphic Designing and DTP		Unit No.: 1.3 : TYPOGRAPHY AND WORD PROCESSING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.3.1 Typography</p> <ul style="list-style-type: none"> Type/ Font Font families Parts of type face Classification of Typeface Roman Sans Serif Square serif Text Script Occasional Design of typeface Stress Stroke Serif Point system Point Pica Stress Stroke Serif Point system Point Pica 	<ul style="list-style-type: none"> The learner will be able to identify and classify different fonts. The learner will be able to create new fonts The learner will be able to predict the size of different fonts 	<ul style="list-style-type: none"> Presentation of specimens of different types of fonts, Observing and Identifying their differences. Typesetting a matter with different font and comparing their esthetics Identify the parts of a type in different DTP software Practice in DTP by changing the point and pica values of a font 	<ul style="list-style-type: none"> Notes in the activity log Drawing skill Ability to identify fonts
<p>1.3.2 Word Processing</p> <ul style="list-style-type: none"> Word processing software MS Word Text file RTF / Rich Text Format and its advantages compared to text file Formatting of text is possible in RTF 	<ul style="list-style-type: none"> The learner will be able to do the word processing work using MS word 	<ul style="list-style-type: none"> Lab work in data entry in English and Malayalam in DTP software 	<ul style="list-style-type: none"> Ability to do word processing

Module : Graphic Designing and DTP				Unit No.: 1.3 : TYPOGRAPHY AND WORD PROCESSING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment		
<p>1.3.3 Page Layout Software</p> <ul style="list-style-type: none"> • Adobe Pagemaker • Advantages of page layout softwares over word processing softwares • Text block, Frames • Layers • Mirror images, Flip etc • Quark Xpress • Advantages of Quark Xpress over Pagemaker 	<ul style="list-style-type: none"> • The learner will be able to do page layout using different software 	<ul style="list-style-type: none"> • Lab work in Adobe PageMaker by creating page layout for magazines, Newspapers, News Letters etc. 	<ul style="list-style-type: none"> • NAbility to do page layout 		
<p>1.3.4 Typography -(Practical)</p> <ul style="list-style-type: none"> • Familiarise with fonts • Elements of type face • Classification of Typeface • Roman • Sans Serif • Square serif • Text • Script • Occasional • Familiarise with Point system • Point • Pica • Leading • kerning • Tracking • Formatting 	<ul style="list-style-type: none"> • The learner will be able to identify different fonts and should get an idea about at least 5 fonts of each class 	<ul style="list-style-type: none"> • Presentation of specimen • Observation • Identification • Typesetting and designing using different types of fonts. 	<ul style="list-style-type: none"> • Notes in the activity log • Drawing skill • Ability to identify different fonts 		

Module : Graphic Designing and DTP		Unit No.: 1.3 : TYPOGRAPHY AND WORD PROCESSING (PRACTICAL)	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.3.5 Type setting Modern typesetting Input via Keyboard • Data Entry- English Rapid type typing tutor • Data Entry- Malayalam - ISM Gist Modern typesetting Input via OCR Importing of documents / File transfer.</p> <p>1.3.6 Page Layout Software Adobe PageMaker How to open PageMaker, create a new document and save files. The PageMaker document window, the pasteboard analogy and an overview of the pages/pull-down menus. Multiple paste option The PageMaker Toolbox Creating, importing and formatting text in PageMaker dialog boxes in PageMaker The colour palette, control palette and master pages palette. Working with Master page ruler and ruler guides Using the pointer tool Working with text in PageMaker Text block Auto Flow Paragraph settings Indent settings Text Wrap Text effects Layer effects in PageMaker Column works Exporting to PDF Printing a Document</p>	<ul style="list-style-type: none"> • Leaner will be able to typeset English and Malayalam matter with 25 words per minute • Leaner will able to operate the Adobe PageMaker software. 	<ul style="list-style-type: none"> • English and Malayalam data entry in PageMaker. • Importing files from other formats • Lab work in Adobe PageMaker by creating page layout for magazines, Newspapers, News Letters etc. • Designing color and black and white jobs with text effects and importing images and image editing and scaling. • Export the data to adobe PDF using PS reader 	<ul style="list-style-type: none"> • Data entry test • To prepare a design of Visiting card and a notice • To prepare a PDF document from a pagemaker design

Module : Graphic Designing and DTP		Unit No.: 1.4 : GRAPHIC DESIGNING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
1.4.1 Design <ul style="list-style-type: none"> Principles of Design Balance Dominance/Contrast Proportion Unity/Harmony 	<ul style="list-style-type: none"> The learner will be able to do designing of various jobs 	<ul style="list-style-type: none"> Presentation of samples of good and bad design Design experiments 	<ul style="list-style-type: none"> Notes in the activity log Finish a design with different balance using DTP software
<ul style="list-style-type: none"> Techniques of Design Tint Surprint Reverse Graddient Clipping Bleed 	<ul style="list-style-type: none"> The learner will be able to explain how one original differ from another The learner will be able to observe resolution and its importance 	<ul style="list-style-type: none"> Presentation of different types of images used as originals 	<ul style="list-style-type: none"> Identification Specimen observation
1.4.2 Images for printing <ul style="list-style-type: none"> Types of originals Line original Tone original Rastor images Vector images Resolution DPI, PPI, LPI 			
1.4.3 Image input methods <ul style="list-style-type: none"> Scanning Types of scanners Parts of scanners Formats for scanning 			

Module : Graphic Designing and DTP		Unit No.: 1.4 : GRAPHIC DESIGNING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<ul style="list-style-type: none"> Digital camera CCD Mega pixel Sensor Advantaes of digital cameras Internet search engines flicker, <p>1.4.4 Illustration and image editing software</p> <ul style="list-style-type: none"> Illustration software Corel Draw Adobe Illustrator Advantages of illustration software Image editing software Adobe Photoshop Image manipulation Cropping Scaling Advantages of Image editing software 	<p>The learner will be able to discuss and evaluate about the operation and advantages of different illustration and image editing software</p>	<p>Group discussion</p>	<p>Record</p>

Module : Graphic Designing and DTP		Unit No.: 1.4 : GRAPHIC DESIGNING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.4.3 Image formats JPEG PDF TIFF EPS PSD PS ZIP/RAR</p>	<ul style="list-style-type: none"> The learner will be able to distinguish between different file formats and the corresponding printing quality 	<ul style="list-style-type: none"> Save the scanned images in various image formats Take printout of each of the saved images Comparison Discussion 	<ul style="list-style-type: none"> Reports on discussion Assignment
<p>1.4.4 3D image and object designing Applications of 3D Printing Software for 3D designing Autocad Maya 3D S max 3D scanner</p>	<ul style="list-style-type: none"> The learner will be able to discover latest developments in the field of printing 	<ul style="list-style-type: none"> Presentation of videos Presentation of samples printed through 3D printing method 	<ul style="list-style-type: none"> Understanding of facts Seminars
<p>1.4.5 Publishing</p> <ul style="list-style-type: none"> Book Publishing Different types of publishers House style Copy Editing Proof Reading Proof reading marks Different types of proofs Parts of book E-publishing Outsourcing 	<ul style="list-style-type: none"> The learner will be able to discuss the basics of publishing and e-publishing 	<ul style="list-style-type: none"> Discussion Presentation of specimens Presentation of visual aids 	<ul style="list-style-type: none"> Assignment

Module : Graphic Designing and DTP		Unit No.: 1.4 : GRAPHIC DESIGNING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.4.6 Digital Photography Choosing the camera Basics of photography Photo composition rule of thirds Pan, Zoom Exposure in the camera ISO Shutter speed Aperture Lighting for photography Getting right colour White balance Camera models</p>	<p>The learner will be able to judge and evaluate different techniques in digital photography</p>	<p>Workshop on digital photography</p>	<p>Product</p>

Module : Graphic Designing and DTP		Unit No.: 1.4 : GRAPHIC DESIGNING (PRACTICAL)	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.4.6 Design Basics</p> <ul style="list-style-type: none"> Principles of Design <ul style="list-style-type: none"> Balance Dominance/Contrast Proportion Unity/Harmony Techniques of Design <ul style="list-style-type: none"> Tint Surprint Reverse Bleed Gradient Clipping <p>1.4.7 Image Editing Software- Photoshop</p> <ul style="list-style-type: none"> Introduction Getting ready to work Familiarization of tool box Working with Photoshop images Cropping and straightening Selection Working with Photoshop text Working with Photoshop Brush tools Layers Layer opacity and blending options Working with adjustment layers Layer styles Transparency Masks Photoshop filters Image size and resolution 	<ul style="list-style-type: none"> Leaner will able to operate the Adobe PageMaker software <ul style="list-style-type: none"> Leaner will able to operate the Adobe Photoshop software Identifying Design Elements When Preparing Images Understand key terminology when working with digital images. Leaner will be able to do image editing and manipulation Demonstrate knowledge of layers and masks. 	<ul style="list-style-type: none"> SPresentation of samples of good and bad design Design experiments <ul style="list-style-type: none"> Demonstrate knowledge of image resolution, image size, and image file formats Demonstrate knowledge of design principles, elements, and image composition. Demonstrate knowledge of typography. Demonstrate knowledge of colour correction using Photoshop Demonstrate knowledge of image-generating devices, their resulting image types, and how to access resulting image Photoshop 	<ul style="list-style-type: none"> Notes in the activity log Finished design <ul style="list-style-type: none"> Manipulating Images by Using Adobe Photoshop To design a Poster To design a notice

Module : Graphic Designing and DTP		Unit No.: 1.4 : GRAPHIC DESIGNING		(100 periods)			
Ideas/Concepts/Skill		Learning Outcomes		Suggested Activities			
<p>1.4.8 Replacing, Retouching, Editing</p> <ul style="list-style-type: none"> Basic colour theory Colour modes Converting RGB to CMYK and vice versa Shadow, Highlight, Midtone Dodge and Burn Converting to Black & white (Gray scale) Levels Working with curves Scanning Batch scanning Data importing Evaluating image quality Spot colours, Process colours Building colour with spot colours Create a duotone, tritone Saving in different file formats Printing Photoshop documents 		<ul style="list-style-type: none"> • Adjust or correct the tonal range, colour, or distortions of an image. • Learner will be able to create a duotone image using spot colour from pantone shade 		<ul style="list-style-type: none"> • Manipulating Images by Using Adobe Photoshop • Demonstrate knowledge of importing, exporting, organizing, and saving • Demonstrate knowledge of producing and reusing images • Demonstrate and understanding of and select the appropriate features and options required to implement a colour management workflow • To create a duotone image 		<ul style="list-style-type: none"> • Publishing Digital Images by Using Adobe Photoshop 	
<p>1.4.9 Digital Photography</p> <ul style="list-style-type: none"> • Pan • Zoom • Exposure • ISO in digital photography • Shutter speed • Aperture 		<ul style="list-style-type: none"> • To understand most common cause of blurry photos, and how to avoid it • To understand the most common mistake made when you point-and-shoot and how you can avoid 		<ul style="list-style-type: none"> • To capture fast action, even when it's heading right for you • To adjust your camera to get the right exposure every time • To make your subject stand out from the background • To tweak your camera's settings to capture vivid, accurate colors 		<ul style="list-style-type: none"> • Take crystal-clear photos, even in dim light 	

Module : Graphic Designing and DTP		Unit No.: 1.5 : COLOURS FOR PRINTING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>1.5.1 Light and colour Electromagnetic Spectrum Wavelength of different colours Eye and the colour Colour Theory</p> <ul style="list-style-type: none"> Additive colours Subtractive colours 	<ul style="list-style-type: none"> The learner will be able to differentiate between different parts of an electromagnetic spectrum 	<ul style="list-style-type: none"> Presentation of Charts Discussion Presentation of videos 	<ul style="list-style-type: none"> Preparation of chart Understanding of facts
<p>1.5.2 Colour Psychology Warm Colour Cool Colour Neutral Colour Hue, Saturation, Value</p>	<ul style="list-style-type: none"> The learner will be able to list out different types of colours used in designing 	<ul style="list-style-type: none"> Presentation of samples Discussion Collection of samples for these colours 	<ul style="list-style-type: none"> Reports on discussion Activity log
<p>1.5.3 Colour Printing Spot colour systems PANTONE & HKS Fake Colour Duotone Tritone Process Colour Hi Fidelity Printing Colour Models</p> <ul style="list-style-type: none"> CMYK RGB RGB to CMYK conversion 	<ul style="list-style-type: none"> The learner will be able to differentiate between various types colour printing 	<ul style="list-style-type: none"> Presentation of samples Discussion 	<ul style="list-style-type: none"> Assignment Process skills
<p>1.5.4 Colour Separation Basic Colour Separation Theory Colour Filters Screen Angle Electronic Colour Separation</p> <ul style="list-style-type: none"> Working of a scanner Colour Correction " UCR " GCR 	<ul style="list-style-type: none"> The learner will be able to handle colour separation techniques 	<ul style="list-style-type: none"> Demonstration using ICT facilities Lab experiments Discussion 	<ul style="list-style-type: none"> Participation in discussion Understanding of facts

Module II : Digital Pre-press & printing		Unit No.: 2.1 : PAGE LAYOUT AND IMPOSITION	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.1.1 Traditional Image Assembly Transparent materials Positive and Negative Films Printers' Marks Registration mark Cylinder line Gripper line Image starting point Plate centre line Single colour paste up Multi colour paste up Developments in Pre press Introduction of Apple Macintosh PC Page makeup software Adobe Post Script page description languages PDF and other softwares</p>	<ul style="list-style-type: none"> The learner will understand the traditional image assembly 	<ul style="list-style-type: none"> Identify and observe the sample from the school 	<ul style="list-style-type: none"> Notes in the activity log Diagrams
<p>2.1.2 Page Layout Page size Page Orientation Page Margins Fore edge</p>	<ul style="list-style-type: none"> The learner will be able to analyze the different page layouts 	<ul style="list-style-type: none"> Separate and compare the different page layout formats in different software 	<ul style="list-style-type: none"> Preparation of chart Report

Module II : Digital Pre-press & printing		Unit No.: 2.1 : PAGE LAYOUT AND IMPOSITION	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<ul style="list-style-type: none"> • Back • Head • Tail <p>Terms in Imposition</p> <ul style="list-style-type: none"> • Gutter • Spine • Folio • Creep • " Cross over <p>Layout Lines</p> <p>Repro lines</p> <ul style="list-style-type: none"> • Centre line • Fold line • Trim line <p>Non Repro lines</p> <ul style="list-style-type: none"> • Image guide line • Page line <p>Pre press software</p> <ul style="list-style-type: none"> • PDF • InDesign 	<ul style="list-style-type: none"> • The learner will be able to create a job format 	<ul style="list-style-type: none"> • Identify the different imposition terms and prepare imposition in software • Use different layout lines for preparing page layout and impositions in different software • Student should estimate and imagine about planning a printing work 	<ul style="list-style-type: none"> • Product
<p>2.1.3 Planning the job</p> <p>No. of copies</p> <p>No. of colours</p> <p>Types / Fonts</p> <p>Screening</p> <ul style="list-style-type: none"> • Frequency • Screen angle • Dot shape <p>Colour management</p> <p>Image quality</p> <p>Print run</p> <p>Paper stock</p> <p>Finishing works</p>			

Module II : Digital Pre-press & printing		Unit No.: 2.1 : PAGE LAYOUT AND IMPOSITION	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.1.4 Imposition Definition Principles of imposition Advantages of a good imposition Types of impositions Work and turn Work and Tumble One side imposition Sheet wise imposition Signature imposition Ganged imposition Full Sheet Output Imposition softwares Multi up form imposition 2 up 4 up 8 up Full sheet production workflow</p>	<ul style="list-style-type: none"> The learner will be able to create and analyze different imposition scheme 	<ul style="list-style-type: none"> Categorization of imposition Prepare 4 page ,8 page ,16 page layout manually and using software like CorelDraw 	<ul style="list-style-type: none"> chart
<p>2.1.5 Font formats Post Script Type 1 font True type fonts Vector fonts</p>	<ul style="list-style-type: none"> Remember the various font formats 	<ul style="list-style-type: none"> Identify and observe the different font formats 	<ul style="list-style-type: none"> models

Module II : Digital Pre-press & printing		Unit No.: 2.1 : PAGE LAYOUT AND IMPOSITION (PRACTICAL)	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.1.1.6 Page layout with Adobe InDesign</p> <p>Getting to know the work area Setting a pure document Working with frames Importing and editing text Working with typography Working with colour Working with style Importing and linking graphics Creating tables Working with long documents Working with transparency Output and exporting</p>	<ul style="list-style-type: none"> Identifying Design Elements When Preparing Page Layouts Creating Page Layouts by Using Adobe InDesign Publish, Export, and Archive Page Layouts by Using Adobe InDesign To prepare a poster following the principles of design Use nonprinting design tools in the interface To prepare a notice Prepare page layouts for publishing to print. To import images Preflighting with In Design 	<ul style="list-style-type: none"> Design the notice/ Poster/ newsletter/Brochure Add text, graphic, image, and video content to a page layout. To work with color style and Text style. 	<ul style="list-style-type: none"> Prepare a poster following the principles of design
<p>2.1.1.7 CorelDraw</p> <p>Opening screen CorelDraw menus CorelDraw toolbox pages with CorelDraw How the CorelDraw program works? Drawing shapes Drawing lines Editing nodes Drawing curves Adding arrow heads Drawing rectangles, boxes</p>	<ul style="list-style-type: none"> To operate CorelDraw software for designing print media articles To prepare imposition for multi page book/magazine works 	<ul style="list-style-type: none"> To import a JPEG/TIFF/PSD format file for prepress setting To do imposition using CorelDraw software To design a poster/notice/visiting card 	<ul style="list-style-type: none"> To do lay out work in CorelDraw using lay out marks To do imposition work in corelDraw

Module II : Digital Pre-press & printing			
Unit No.: 2.1 : PAGE LAYOUT AND IMPOSITION			
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>Rotating an object Working with text Power clipping Perspective Saving illustrations Importing other file formats Lay out preparation for single page out put Setting a double side designs in Work & Turn and Work & Tumble imposition. Imposition of a multi page book work Keyboard shortcuts in CorelDraw</p> <p>Adobe Illustrator Getting to Know the Work Area Selecting and Aligning Creating and Editing Shapes Transforming Objects Drawing with the Pen and Pencil Tools Color and Painting Importing, exporting, and saving Working with Type Working with Layers Working with Perspective Drawing Blending Colors and Shapes Working with Brushes Applying Effects Applying Appearance Attributes and Graphic Styles Working with Symbols Combining Illustrator CS6 Graphics with Other Adobe Applications Keyboard shortcuts.</p>	<ul style="list-style-type: none"> To prepare different designs in Adobe Illustrator Identifying Design Elements Used When Preparing Graphics Create Graphics Using Adobe Illustrator Archive, Export, and Publish Graphics Using Adobe Illustrator 	<ul style="list-style-type: none"> Demonstrate knowledge of how to create documents. Demonstrate knowledge of how to use type tools. Demonstrate knowledge of how to use scanned or photographic images Demonstrate knowledge of how to modify and transform objects Designing a magazine cover Designing a brochure with text effects, illustrations and contrasting color 	<ul style="list-style-type: none"> To design a poster/ notice / book cover

Module II : Digital Pre-press & printing		Unit No.: 2.2 : DIGITAL PRE PRESS WORKFLOW & OUTPUT	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.2.1 Workflow</p> <ul style="list-style-type: none"> • Generating a PDF document • PDF from different softwares <p>Colour Management</p> <ul style="list-style-type: none"> • Gamut • Profile • Colour Management Module (CMM) • Colour Management Solution (CMS) <p>Trapping</p> <ul style="list-style-type: none"> • Digital Trapping and Imposition • Vector Trapping • Raster Trapping • Hybrid Trapping 	<ul style="list-style-type: none"> • The learner will understand the digital work flow 	<ul style="list-style-type: none"> • Identify and observe different steps in pre press work flow 	<ul style="list-style-type: none"> • Notes in the activity log reports
<p>2.2.2 Preflighting</p> <p>Preflighting - definition</p> <p>Attributes checked during preflighting</p> <ul style="list-style-type: none"> • Missing and incorrect Fonts • Trapping • Colour • Missing and unlinked graphics • Incorrectly defined bleeds • Low Resolution 	<ul style="list-style-type: none"> • The learner will be able to evaluate the different problems in pre press after preflighting 	<ul style="list-style-type: none"> • students will discuss and judge the preflighting process 	<p>Group discussion and conclusion</p>
<p>2.2.3 Production Proofs</p> <p>Preliminary Proof</p> <ul style="list-style-type: none"> • Laser printer 	<ul style="list-style-type: none"> • The learner will be able to understand the different proofing techniques and systems 	<ul style="list-style-type: none"> • Students will be able to identify the different types of proofs 	<ul style="list-style-type: none"> • Books and models

Module II : Digital Pre-press & printing		Unit No.: 2.2 : DIGITAL PRE PRESS WORKFLOW & OUTPUT	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<ul style="list-style-type: none"> • Solid ink printer • Ink jet printer • Dye sublimation printers Contact Proof Soft Proof Digital Proof <ul style="list-style-type: none"> • Digital Halftone proof Machine Proof			<ul style="list-style-type: none"> • Software, chart
2.2.4 Digital Pre Press Output Post Script <ul style="list-style-type: none"> • Script driver RIP <ul style="list-style-type: none"> • Hardware RIP • Software RIP • Software RIP with hardware components • Recorder • Calibration RIP functions " RIP based Imposition " Image output " General Checking	<ul style="list-style-type: none"> • The student will be able to remember and understand about digital pre press out puts 	Demonstration & discussion	
2.2.5 Output to Film <ul style="list-style-type: none"> • Image setters • Film processor 	<ul style="list-style-type: none"> • The student will be able to understand about film outputs 	Demonstration	<ul style="list-style-type: none"> • Records

Module II : Digital Pre-press & printing		Unit No.: 2.2 : DIGITAL PRE PRESS WORKFLOW & OUTPUT	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.2.6 Offset Plate Making</p> <p>Offset Plates</p> <ul style="list-style-type: none"> • Base metal • Graining • Coating materials <p>Classification of Lithographic plates Surface plate</p> <ul style="list-style-type: none"> • Wipe on plate • Egg Albumen plate • PS Plate <p>Deep etch plate</p>	<ul style="list-style-type: none"> • The student will be able to apply offset plate making method 	<p>Demonstration using teaching aids</p>	<ul style="list-style-type: none"> • Records
<p>2.2.7 Exposure system</p> <p>Components of an Exposing machine</p> <ul style="list-style-type: none"> • Light Source • Actinic light • Vacuum frame • Cabinet • Timer • Light source calibration • Sensitivity guide • Light integrator 	<ul style="list-style-type: none"> • The student will be able to understand Exposure system 	<p>Demonstration</p>	<ul style="list-style-type: none"> • Records
<p>2.2.8 Processing system</p> <ul style="list-style-type: none"> • Platemaking sink • Automatic Plate processor • Chemicals used for plate developing 	<ul style="list-style-type: none"> • The student will be able to understand plate Processing system 	<p>Field visit & Demonstration</p>	<ul style="list-style-type: none"> • Records

Module II : Digital Pre-press & printing		Unit No.: 2.2 : DIGITAL PRE PRESS WORKFLOW & OUTPUT (PRACTICAL)	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.2.9 Digital pre press PDF and pre flighting with Acrobat Professional</p> <ul style="list-style-type: none"> Introducing Adobe Acrobat Reader & Distiller How to open a PDF file Working with Acrobat tools and toolbars Creating Adobe PDF files Combining files in PDF portfolios Enhancing and editing PDF documents Using Acrobat in Professional printing Proofing and PDF concepts 	<ul style="list-style-type: none"> To do PDF document creation methods To Selecting the appropriate Preflight options for given scenario To Selecting the appropriate Print Production options To do Ripping for output 	<p>Lab Activity</p>	<ul style="list-style-type: none"> Presentation
<p>2.2.10 Digital Pre Press Output</p> <p>Post Script conversion</p> <ul style="list-style-type: none"> Installing a Post Script driver RIP functions " Raster image processing 	<ul style="list-style-type: none"> To demonstrate the functioning of a printing down frame 	<p>Lab Activity</p>	<ul style="list-style-type: none"> Presentation
<p>2.2.11 Printing down frame</p> <ul style="list-style-type: none"> Light Source Vacuum frame Timer Offset Plate Making Offset Plates Exposing and developing of PS Plate Oleophilic and Hydrophilic nature of the plate Platemaking chemicals 	<ul style="list-style-type: none"> To expose a PS plate using Printing Down frame To develop an exposed PS plate 	<p>Lab Activity</p>	<ul style="list-style-type: none"> Presentation

Module II : Digital Pre-press & printing		Unit No.: 2.3 : COMPUTER TO PLATE	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
2.3.1 Basic components of CTP Computer Imaging System Printing Plate	<ul style="list-style-type: none"> The learner will understand the basic components of CTP 	<ul style="list-style-type: none"> Slide Presentation 	<ul style="list-style-type: none"> Report
2.3.2 Technology of CTP Design principles of CTP External Drum Internal Drum Flat bed design	<ul style="list-style-type: none"> The learner will understand technology of CTP 	Slide Presentation	<ul style="list-style-type: none"> Report
2.3.3 Imaging methods Laser imaging UV light imaging Inkjet imaging Computer to press	<ul style="list-style-type: none"> The learner will analyze imaging methods 	Slide Presentation	<ul style="list-style-type: none"> Diary
2.3.4 CTP for different Printing Processes CTP for Offset CTP for Flexo Computer to Cylinder for Gravure Computer to Screen for Screen printing	<ul style="list-style-type: none"> The learner will analyze CTP for different printing processes 	Field visit	<ul style="list-style-type: none"> Activity log
2.3.5 Printing plates for Digital imaging Electrophotographic CTP plates Aluminium based printing plates Thermal sensitive aluminium plates Imaging and developing technology of CTP	<ul style="list-style-type: none"> The learner will evaluate printing plates for digital imaging 	Teaching aids	<ul style="list-style-type: none"> Activity log
2.3.6 Quality control in CTP Print control strips imaging control Digital control strips Microlines Advantages of CTP	<ul style="list-style-type: none"> The learner will understand quality control in CTP 	Chart And Slide presentation	<ul style="list-style-type: none"> diagram

Module II : Digital Pre-press & printing Unit No.: 2.3 : COMPUTER TO PRINT (NIP)			
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.4.1 Introduction to Digital Imaging Non impact printing Different types of digital imagings</p>	<ul style="list-style-type: none"> The learner will understand about digital printing and non impact printing 	<ul style="list-style-type: none"> Research 	<ul style="list-style-type: none"> Notes in the activity log, records
<p>2.4.2 Electrophotography Principle Imaging systems Inking unit (Developing unit) and Toner Fixing and cleaning</p>	<ul style="list-style-type: none"> The learner will understand electrophotography method of non-impact printing 	<ul style="list-style-type: none"> Discussion 	<ul style="list-style-type: none"> Assignment
<p>2.4.3 Ionography printing unit Imaging system and the principle of ionography Printing unit concepts and Printing system</p>	<ul style="list-style-type: none"> The learner will understand Ionography method of non- impact printing 	<ul style="list-style-type: none"> Discussion 	<ul style="list-style-type: none"> Assignment
<p>2.4.4 Magnetography Principle Imaging system Examples of application</p>	<ul style="list-style-type: none"> The learner will understand Magnetography method of non-impact printing 	<ul style="list-style-type: none"> Discussion 	<ul style="list-style-type: none"> Assignment
<p>2.4.5 Inkjet printing Principle Imaging systems Inking unit Type of inkjet printing Inkjet inks Inkjet heads</p>	<ul style="list-style-type: none"> To analyse the working and functioning of an inkjet model digital printers 	<ul style="list-style-type: none"> Discussion 	

Module II : Digital Pre-press & printing		Unit No.: 2.3 : COMPUTER TO PLATE	
Ideas/Concepts/Skill	Learning Outcomes (periods)	Suggested Activities	Assessment
2.4.6 Dye sublimation Principle Imaging system Examples of application	The learner will understand dye-sublimation method of non- impact printing	Teaching aid	Report
2.4.7 Applications and advantages of digital imaging Variable Data Printing Distributed Printing Data Assessment Management Advantages of digital imaging	The learner will be able to evaluate the different applications of digital printing	Teaching aid	Report

Module II : Digital Pre-press & printing		Unit No.: 2.5 : INTRODUCTION TO OFFSET PRINTING	
Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
<p>2.5.1 Principle of offset printing Basic principle Hydrophilic & Oleophilic nature of plate Offset classification</p> <ul style="list-style-type: none"> • Web offset • sheet-fed offset 	<ul style="list-style-type: none"> • The learner will understand the principle of offset printing 	<ul style="list-style-type: none"> • Discussion, chart Demonstrations, filed visit 	<ul style="list-style-type: none"> • Notes in the activity log
<p>2.5.2 Four units of an offset press Feeding unit- working Registration unit- working Printing unit Delivery unit</p>	<ul style="list-style-type: none"> • The learner will understand the four units of offset press 	<ul style="list-style-type: none"> • Discussion, chart Demonstrations, presentation, filed visit 	<ul style="list-style-type: none"> • Notes in the activity log
<p>2.5.3 Cylinder configuration Three cylinder Two cylinder</p>	<ul style="list-style-type: none"> • The learner will understand the cylinder configuration of offset press 	<ul style="list-style-type: none"> • identify & observe 	<ul style="list-style-type: none"> • Notes in the activity log
<p>2.5.4 Operation of four units Feeding unit Registration unit Printing unit Delivery unit</p>	<ul style="list-style-type: none"> • The learner will analyse the operation of four units 	<ul style="list-style-type: none"> • classify & categorize 	<ul style="list-style-type: none"> • Report
<p>2.5.5 Web Offset Sections of web offset</p>	<ul style="list-style-type: none"> • The learner will understand web offset press 	<ul style="list-style-type: none"> • Discussion, chart Demonstrations, presentation, filed visit 	<ul style="list-style-type: none"> • Notes in the activity log

Detailed Unit Analysis

Name of Module : Graphic Designing and DTP

Name of Unit : Introduction to Printing

Overview of the Unit : The first unit is aimed to give an over view about the origin and development of the printing industry and the development stages of the printing machines. Also in this module the new classification method of printing process, the print production workflow, division of printing industry and different print media products has to be explained to the learner . Also the module try to evaluate about the future of the industry before the students .

Idea / Concepts	Learning Outcomes
1.1.1 Origin and development of Printing	<ul style="list-style-type: none"> • The learner will understand the origin and development of printing
1.1.2 Classification of Printing	<ul style="list-style-type: none"> • The learner will be able to explain how printing process are classified
1.1.3 Print production work flow	<ul style="list-style-type: none"> • The learner will be able to understand the sequence of steps in the printing process and the print production work flow
1.1.4 Division of Printing Industry	<ul style="list-style-type: none"> • The learner will be able to categorise different types of firms engaged in the printing business
1.1.5 Print Media	<ul style="list-style-type: none"> • The learner will be able to differentiate between different media in printing
1.1.6 Future of printing	<ul style="list-style-type: none"> • The learner will be able to understand the scope of printing and the course.

1.1 Introduction to Printing

Origin and development of Printing

- Definition of printing
- Brief history of printing
- Developments in printing
- Influence of printing in human development
- Classification of Printing
- Conventional/Impact Printing (with Master)
 - * Relief - Intaglio - Planography - Screen
- Non Impact printing (without Master)
- Electrophotography - ionography - magnetography - Inkjet
- Thermography - Photography

Print production work flow

- Idea and Concept
- Creative Production
- Industrial Production
 - * Prepress
 - * produce printing plates
- Printing
 - * select the apt printing process
- Finishing and binding
- foiling, varnishing, lamination cut to size, die-cutting,
 - * perforation and punchingfolding, creasing, binding, glue binding
- Logistics
 - * Distribution of the printed product to the end user

Division of Printing Industry

- Printing Industry and Allied industry
- Printing Industry
- Allied Industries
 - * Trade Shops or Production Houses
 - * Supplies
 - * Sales and Service
 - * Equipment
 - * Related Areas

Print Media

- Books
- Magazines
- Brochures
- Newspapers
- Other Printed media

Future of printing

Size of the Printing Industry

Job Opportunities and Entrepreneurship

Detailing of Activities

Concept : Origin and development of Printing

To get knowledge about the history and development of the printing industry

Suggested Activities

- The teacher discuss about the evolution and development of graphics and printing machines and the contributions of Chinese, Guttenberg, Ira Rubella and Alois Senifeilder
- Group discussion on the development and contributors to printing industry
- Model presentation.
- Drawings made in practical record.

Learning outcome

The learner will understand the origin and development of printing

Discussion points

- What is Printing?
- How printing developed into the present stage?
- Who are the major contributors to the invention of this process?
- How printing influenced the development of human culture?

Consolidation point

- Development of Pictographs and Ideographs
- Contribution of China to Printing
- Father of printing
- Printing process

- Lithographic printing
- Invention of offset printing
- Difference between lithography and offset printing

Concept : Classification of Printing

Division of Printing Industry

about Different printing processes under Non Impact printing

Suggested Activities

Classify different printing process with the help of diagrams, chart and models

Learning outcome

The learner will be able to explain how printing process are classified

Discussion points

Printing with master

- Relief Printing
- Intaglio Printing
- Planography printing
- Screen printing

Printing without Master (Non Impact Printing)

- Electrophotography
- ionography
- magnetography
- Inkjet
- Thermography
- Photography

Consolidation point

- Examples for each processes
- Difference between each process

Concept : Print production work flow

To understand about the work flow of a printing job

To describe the different process in print production work flow

To list different steps in printing process

Suggested Activities

To prepare a flow chart showing the the print production work flow

Group discussion

Model work

Learning Outcome

The learner will be able to understand the sequence of steps in the printing process and the print production work flow

Discussion points

Idea and Concept

Creative Production

Industrial Production

Printing

Finishing and binding- various finishing operations like foiling, varnishing, lamination cut to size, die-cutting,

perforation and punching, folding, creasing, binding, glue binding

Logistics

Consolidation point

- Prepress
- produce printing plates
- select the apt printing process
- Post press

Concept : Division of Printing Industry

To describe the structure and purpose of each level of small to medium to large printing company

To compare the kind of service provided by the different types of printing industry

Suggested Activities

Chart preparation classifying the printing industry

compare the service provided by each of them.

Learning outcome

The learner will be able to categorise different types of firms engaged in the printing business

Discussion points

- Printing Industry and Allied industry
- Printing Industry
- Allied Industries
- Trade Shops or Production Houses

- Supplies
- Sales and Service
- Equipment
- Related Areas

Consolidation point

- Examples for each type of firm
- Difference between each firms

Concept : Print Media

To differentiate between different printed products

Suggested Activities

Sample collection

Learning outcome

The learner will be able to differentiate between different media in printing

Discussion points

- Books
- Magazines
- Brochures
- Newspapers
- Other Printed media

Consolidation point

Difference between different printed products

Concept: Future of printing

To discuss about the Size of the Printing Industry

To make aware about the Job Opportunities and Entrepreneurship in printing industry

Repository of Continuous Evaluation Possibilities

- a) Process assessment
 - Participation in group discussion
 - Active involvement in practical
 - Answering of questions during quiz competition
- b) Portfolio assessment
 - Report on group discussion
 - Practical record
 - Score card of quiz competition

- c) Unit assessment
 - Oral test
 - Unit test
 - Quiz
 - Preparation of questions and answers
- d) Practical Assessments
 - Practical record
 - Vocational diary
- e) Terminal Evaluation Questions
 - Who is the father of Printing?
 - Write a short note about the history about printing.
 - Who invented the Offset printing process?
 - Differentiate between a newspaper and magazine
 - Explain the NIP process?
 - Differentiate between Creative production and industrial production in the print production workflow.
 - Which are the major types of firms coming under allied industry?
 - Name two printing process with master?
 - Write a few words about the future of the printing industry?
 - List out some print finishing methods that will give value addition to the printed product

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8. Printing on a digital world, David Bergstand.
9. Graphic communication The printed image, Z. A Prust 5th edition.
10. Desk top Publishing Basics, Alan Holmes.
11. Offset Lithography Technology, Kenneth F-Hird, Charles E Finley

List of Tools, Equipments and Materials

1. Desk Top computer/Laptop for individual students
2. Projector
3. Internet
4. Advanced Offset Machine lab with allied equipments
5. Digital colour Printer with post script option, High resolution Scanner, Digital SLR Camera, video camera
6. Advanced software packages (Adobe PageMaker, InDesign, Photoshop, Distiller, PDF Reader, QuarkXpress, MS Office, Corel Draw)
7. Advanced OS
8. Printing Materials for offset and digital work.