

# **K.G.T.E PRINTING TECHNOLOGY COURSES**

## **SYLLABUS**

- **PRE-PRESS OPERATION**
- **PRESS WORK**
- **POST PRESS OPERATION & FINISHING**



**GOVERNMENT OF KERALA**

**Abstract**

Higher Education - Technical - KGTE Printing Technology - Restructuring and Revision of Curriculum and Syllabus - orders issued.

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**HIGHER EDUCATION (L) DEPARTMENT**

**G.O. (Ms.) No: 780/2014/H.Edn**

**Dated, Thiruvananthapuram, 12.09.2014**

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*Read:-*1. G.O.(Ms) No.147/2008/H.Edn dated 19/11/2008

2. Government Letter No.40113/L2/08/H.Edn Dated,08.07.2011

2 . Letter No.Ex.A5/57668/2008/CGE dated 20/12/2008 received from the Commissioner for Government Examinations, Thiruvananthapuram

3. Letter No.C3/45334/2008 dated 2/10/2011,20/3/2013 and 15/7/2014 received from the Senior Joint Director (PS) of Technical Education, Thiruvananthapuram

**ORDER**

As per the Government order read as first paper and the letter read as second paper above Government have entrusted the duty of conducting KGTE Book Binding (Lower) Practical & Theory Examination with the Controller of Technical Examinations.Later Government have entrusted the Curriculum Development Centre, Kalamasserry which is now renamed as State Institute of Technical Teachers Training & Research to restructure the KGTE Printing Courses.

Now the Director of Technical Education has forwarded revised curriculum,syllabus and courses on KGTE Printing Technology prepared by the State Institute of Technical Teachers Training & research for the approval of Government. Government have considered the report and are pleased to restructure the KGTE Printing Technology Courses as proposed by the SITTR. New pattern of the KGTE Printing Technology Courses, the Curriculum, Syllabus and Scheme for the examination are appended to this Government Order.

The newly structured courses shall be under the control of the Director of Technical Education/Joint controller of Technical Examinations.

(By order of the Governor )

T. J Varkey

Deputy Secretary to Government

To

The Director of Technical Examinations, Thiruvananthapuram

The Senior Joint Director (PS) of Technical Education, Thiruvananthapuram

The Joint Director, State Institute of Technical Teachers Training and Research,  
Kalamassery

The Joint Controller of Technical Examinations, Kaimanam, Thiruvananthapuram

The Director of Printing, Thiruvananthapuram

The Superintendent, Government Presses, Thiruvananthapuram

The Director, Information & Public Relations Department, Thiruvananthapuram

The Commissioner for Government Examinations, Thiruvananthapuram

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Section Officer

**RULES AND REGULATIONS FOR THE CONDUCT OF  
VARIOUS COURSES IN PRINTING TECHNOLOGY UNDER  
THE STATE BOARD OF TECHNICAL EDUCATION, KERA.LA**

## **Course**

There shall be three separate courses focusing the three major operational areas in the printing industry.

## **Course Title**

The course title shall be:

- 1. KGTE Pre Press Operation**
- 2. KGTE Press Work**
- 3. KGTE Post Press Operation and Finishing.**

## **Duration of the Course**

The duration of each course shall be one year.

## **Equivalent courses**

The course will supersede/replace all the existing KGTE Printing Technology Courses offered as detailed below. The equivalency of the existing courses in relation to the proposed courses shall be as under.

<b>New/Proposed course</b>	<b>Equivalent existing course</b>
KGTE Pre Press Operation	<ol style="list-style-type: none"><li>1. KGTE Proof Reader (Higher)</li><li>2. KGTE Stereo Typing (Higher)</li><li>3. KGTE Compositors Work (Higher)</li><li>4. KGTE Type Casting (Higher)</li></ol>

KGTE Press Work	<ol style="list-style-type: none"><li>1. KGTE Machine Work (Higher)</li><li>2. KGTE Press Work (Higher)</li><li>3. KGTE Printers Ware House (Higher)</li></ol>
KGTE Post Press Operation and Finishing	<ol style="list-style-type: none"><li>1. KGTE Book Binding (Higher)</li></ol>

### **Medium of Instruction**

The medium of instruction shall be Malayalam.

### **Eligibility for Admission**

For admission to the KGTE Printing Technology Courses, the candidate shall be required to have passed the 10th standard examination conducted by Board of Public Examinations Kerala State or any other equivalent examinations recognised by the Board of Public Examinations, Kerala.

### **Registration of Candidates for Examination**

Joint Controller of Technical Examinations shall issue necessary guidelines regarding registration of candidates.

### **Registration of in-service candidates**

Candidates employed with the Government of Kerala and possessing KGTE (Lower) Certificate and experience for a minimum of five years in the respective area (Pre-Press, Press Work or Post Press Operation and Finishing as the case may be) will be exempted from

attending the academic programme through approved institutions and can register with the O/o the Joint Controller of Technical Examinations for the end of the year examinations directly. Joint Controller of Technical Examinations shall invite registrations from such candidates separately. They shall be exempted from the academic requirements such as minimum attendance, maintenance of practical records, internal assessment.

### **Instructional Duration in an Academic Year**

The academic year shall consist of a minimum of 36 weeks of instruction including intervening holidays, but excluding the period of examination and study holidays. There shall be 7 instructional periods of 55 minutes duration per day and there shall be 5 working days per week from Monday to Friday and thereby 35 periods per week.

### **Minimum attendance to appear for the Examinations**

A candidate must secure a minimum of 80% attendance to secure eligibility for examination. In the case of those students with 65% or more attendance, but could not attain 80% attendance due to medical reasons, the Principal/Head of Institution, at his/her discretion, may grant the eligibility to appear for the examination.

### **Scheme of Evaluation**

- The scheme of evaluation shall consist of End of the year examination in Theory and Practical subjects. The maximum marks for end of the year examinations for theory and practical subjects shall be 100 each. The total marks for the course shall be 200 marks.
- All the end of the year examinations will be of 3 hour duration.

- Polytechnic Colleges and Technical High Schools in the State shall be the centres for the conduct of theory examinations.
- The Practical Examinations can be conducted at IPT and GPTC, Shoranur, Institutions under Directorate of Technical Education and other Institutions under Government having required facilities, selected by Joint Controller of Technical Examinations.

## **Examination**

In each theory subject, there will be an end of the year examination conducted by the Board of Technical Examinations as per the pre-announced notification of examination.

- The time-table for the examination will also be published ahead of its conduct.
- There will not be any separate supplementary examination.
- The scheme of Question Paper shall be issued by Joint Controller of Technical Examinations along with notification.
- For practical examinations, the Board of Technical Examinations shall appoint examiners, who will set a question paper for conducting practical exercises.

## **Minimum marks for pass**

A candidate must secure a minimum of 40% (forty percentage) marks in the end examination, in theory and practical for a pass in each subject. There will be no minimum for pass in the internal assessment, but the total marks for the end of year examination and the internal

assessment should not less than 40% (forty percentage) for a pass in each subject.

### **Classification of successful candidates**

A candidate will be declared to have passed the course only if he/she secured a pass in all the theory and practical subjects, within the validity period of his/her registration.

There shall be two classifications of passed candidates:

- (i) First Class.
- (ii) Second Class.

A candidate will be declared to have passed the course in First Class if he/she secures a pass in all the subjects, with an aggregate minimum of 60% (sixty percentage) within the normal duration of the course. All other successful candidates will be declared to have passed the course in Second Class.



## KGTE PRE PRESS OPERATION

### Subjects of Study, Scheme of Examination and Evaluation

Sl. No.	Subject Code	Subject	Periods/Week	Evaluation (marks)
1	PPO 111	Pre Press Operation (Theory)	15	100
2	PPO 112	Pre Press Operation (Practical)	20	100

Subject Title : Pre Press Operation (Theory)

Subject Code : PPO 111

Periods/week : 15

Total Marks : 100

### Time Schedule

#### *Periods*

UNIT I Designing for Printing 127

UNIT II Colour Separation 143

UNIT III Softwares for Pre-Press Work I 127

UNIT IV Softwares for Pre-Press Work II 103

# **OBJECTIVES**

## **UNIT I - Designing for Printing**

- 1.1 Computer - Input/output devices - Scanner etc.
- 1.2 Computer Printer - Laser, Inkjet, Dot matrix etc.
- 1.3 Understand Operating system MS DOS, Windows, Text manipulation
- 1.4 Study Layout - Different Types
- 1.5 Working with Illustrations
- 1.6 Study Desktop Publishing
- 1.7 Study Concept of DTP System
- 1.8 Study Typography
- 1.9 Study Designing for Printing
- 1.10 Study Basic Principles of Design
- 1.11 Preparation of layout, RIP.

## **UNIT II - Colour Separation**

- 2.0 Study Colour Separation
- 2.1 Study Basic Colour Theory
- 2.2 Understand Light and Colour
- 2.3 Understand Additive Primary Colours
- 2.4 Understand Subtractive Primary Colours

- 2.5 Study Basic Separation Theory
- 2.6 Study Image Assembly
- 2.7 Study Imposition--Sheet and Half sheet
- 2.8 Study Purpose of Proofing
- 2.9 Understand Digital Proofing

### **UNIT III - Software for Pre Press Work I**

- 3.0 Study Software for Graphic Arts - Introduction
- 3.1 Study Page Maker - Basics of Page Maker and InDesign  
Job suitability overview of tools in InDesign
- 3.2 Study Setting up of Printer and Page Setting - Paragraphs,  
Bullets, Columns, Drop letters
- 3.3 Study Creating Style sheets
- 3.4 Study Importing of Text and Graphics
- 3.5 Understand Master pages and Multiple Master pages
- 3.6 Study Layers
- 3.7 Understand Plug. in Operations - Imposition of pages
- 3.8 Understanding Paper size and Quality.

### **UNIT IV - Software's for Pre Press Work II**

- 4.0 Study Photoshop - -Basics
- 4.1 Study Overview of Tools
- 4.2 Study Illustrator and Corel Draw, Quark Express
- 4.3 Study Creating Various Images
- 4.4 Understand Creating Monograms

- 4.5 Understand Saving the File
- 4.6 Understand Computer to Film (CTF)
- 4.7 Understand Image Setter - its Principle and Functions
- 4.8 CTP and Associated Software's
- 4.9 InDesign, Quark Express and PIFS (page set up software's)
- 4.10 Thorough understanding on CTP (screen angle)
- 4.11 CTP Thermal and Violet.

## **SUBJECT DETAILS**

### **Unit I - Designing for Printing**

Design Principles, Typography, Layout, Working with Illustrations, Desktop Publishing, Concept of DTP System, Input devices, Output devices, Operating Systems and Text Manipulation.

### **Unit II - Colour Separation**

Colour separation, Basic colour theory, Light and colour, Additive Primary Colours, Subtractive Primary colours, Basic separation theory, Image assembly- Stripping and proofing, Imposition--sheet and halfsheet, Equipment and tools used for stripping, Elementary stripping techniques--masking sheets, Laying outspread - Printed massing sheet, attaching film negatives, opaqueing and attaching the flat attaching film positives, Purpose of proofing, Photo mechanical proofing, Digital Proofing.

## **Unit III-Software for Pre Press Work I**

Software for Graphic Arts - Introduction, Page maker-Basics of Page maker and InDesign job suitability overview of tools in InDesign, Setting up of Printer and Page setting--Paragraphs, Bullets, Columns drop letters, Creating style sheets, Importing of text and graphics, Master pages and Multiple master pages, Layers, Plug-in Operations - Imposition of pages.

## **Unit IV-Software for Pre Press Work II**

Photoshop - Basics, Overview of tools, Illustrator and Corel Draw, Creating monograms, saving the file, Computer to film (CTF), Image setter-its principle and functions, CTP and associated software's.

**Subject Title : Pre Press Operation (Practical)**

**Subject Code : PPO 112**

**Periods/week : 20**

**Total Marks : 100**

Exercise I : Windows OS

Exercise II : MS-Word

Exercise III : Lettering for layouts

Exercise IV : Design--Preparation of design for visiting cards, letter heads

Exercise V : Preparation of design for title cover

Exercise VI : Designing monograms, Trademarks

- Exercise VII : Proof Reading - Procedure of showing text and marginal marks
- Exercise VIII : Correction of at least four proofs (four exercises)
- Exercise IX : Preparation of imposing schemes for two and four pages - sheet and half sheet methods
- Exercise X : Preparation of imposition schemes for eight and sixteen pages - sheet and half sheet methods
- Exercise XI : Identification of image carriers for letter press
- Exercise XII : Preparation of image carriers for PS plates, CTP Plates
- Exercise XIII : Acquaintance with Photoshop, Corel draw, InDesign etc.

### **Project Work**

Preparation of a magazine with cover (of not less than 48 pages).

## KGTE PRESS WORK

### Subjects of Study, Scheme of Examination and Evaluation

Sl. No.	Subject Code	Subject	Periods/Week	Evaluation (marks)
1	PW 221	Press Work (Theory)	15	100
2	PW 222	Press Work (Practical)	20	100

Subject Title : Press Work (Theory)

Subject Code : PW 221

Periods/week : 15

Total Marks : 100

### Time Schedule

#### *Periods*

UNIT I	:	Introduction to Printing Presses	80
UNIT II	:	Offset Press Works	140
UNIT III	:	Print Media materials	112
UNIT IV	:	Maintenance, Cleaning and Safety	100

# **OBJECTIVES**

## **UNIT I - Introduction to Printing Presses**

- 1.0 Understand various Printing Presses---Introduction (Explanation of Principle of Letterpress, Offset, Gravure, Screen printing, flexography, Digital printing)
- 1.1 Understand Press Development in Letterpress process Platen presses, Flat bed cylinder presses and Rotary presses. (Introduction only required)
- 1.2 Introduction to Lithography
- 1.3 Understanding Offset Press
- 1.4 Understanding (a) Infeed unit (b) Feeder unit
- 1.5 Study Registration systems
- 1.6 Study Printing unit
- 1.7 Study Dampening unit
- 1.8 Study Inking unit
- 1.9 Study Delivery unit
- 1.10 Understand Sheet fed presses
- 1.11 Understand Single colour sheet fed presses
- 1.12 Understand Multicolour Sheet fed presses
- 1.13 Types and Configuration
- 1.14 Make ready procedure (a) Pre make ready (b) Final make ready.



## **UNIT II - Offset Press Works**

2.0 Study Offset Presses

2.1 Study its types and configurations

2.2 Study Multi-colour Web presses

2.3 Understand Perfecting printing (Back and back)

2.4 Study Printing materials used for Offset process and job suitability

2.5 Study sequence of printing colours

2.6 Understand Digital printing.

## **UNIT III - Printing Media Materials**

2.1 Ink

2.2 Paper

2.3 Plates

2.4 Blankets

2.5 Chemicals

## **UNIT IV - Maintenance, Cleaning and Safety**

4.1 Quality control and devices

4.2 Maintenance and lubrication

4.3 Trouble shooting

4.4 Safety precautions.

## **SUBJECT DETAILS**

### **UNIT I - Introduction to Printing press**

Printing Presses - Introduction (explanation of Principle of Letterpress, Offset and Gravure), Press Development in letterpress process - Platen Presses, Flat bed cylinder Presses and rotary Presses, Classify Offset lithography Presses, Understanding Offset Press operation, Feeder Unit, Registration Unit, Printing unit, Inking Unit, Dampening Unit, Delivery Unit, Sheet fed presses - Introduction, single colour sheet fed presses, Multicolor Sheet fed presses.

### **UNIT II - Offset Press works**

Offset Presses, Study Multi-colour Web Presses. Understand Perfecting Printing (Back and back). Study Printing Materials used for Offset process and job suitability. Study sequence of printing colours. Study Web-offset presses, its types and configurations, elements of Web-offset, Reel stand, Printing unit, Dampening unit, Inking unit, chilling, Folders, Delivery, Understand Digital printing.

### **UNIT III - Printing Media Materials**

Ink-manufacturing, types, drying methods, paper-manufacture, types, qualities required, sizes, Plates - types, metals used, thickness, need of graining, methods of graining, Blankets - types of blankets, quality, manufacture, Chemicals - different chemicals and solutions used for offset printing.

## **UNIT IV - Maintenance, cleaning and safety**

Temperature and humidity control, storage of materials, Quality control and devices, Maintenance and lubrication, Trouble shooting, safety precautions.

**Subject Title : Press Work (Practical)**

**Subject : PW 222**

**Code Periods/week : 20**

**Total Marks : 100**

Exercise I : Feeder settings and paper jogging

Exercise II : Plate and blanket fixing--pre make ready.

Exercise III : Make ready on Offset machines

Exercise IV : Printing single Colour Job

Exercise V : Printing Two Colour and multicolor Jobs

Exercise VI : Colour printing by Screen printing method

### **Project work :**

1. Field visit to Offset printing Press and newspaper presses for Study of web offset printing (Sheet fed).
2. A work record of the activities undertaken during the course to be prepared and to be presented for evaluation during the term end practical examination.

## **KGTE POST PRESS OPERATION AND FINISHING**

### **Subjects of study, Scheme of Examination and Evaluation**

**Subject Title : Post Press Operation and Finishing(Theory)**

**Subject Code : PPOF 331**

**Periods/week : 15**

**Total Marks : 100**

### **Time Schedule**

#### Periods

<b>UNIT I</b>	<b>:</b>	<b>Introduction to Binding</b>	<b>100</b>
<b>UNIT II</b>	<b>:</b>	<b>Sewing and Binding Operations</b>	<b>116</b>
<b>UNIT III</b>	<b>:</b>	<b>Advanced Bindery Operations</b>	<b>116</b>
<b>UNIT IV</b>	<b>:</b>	<b>Packaging</b>	<b>100</b>

## **OBJECTIVES**

### **UNIT I - Introduction to Binding**

- 1.1 Understanding Definition of Binding
- 1.2 Study Ware housing - various operations
- 1.3 Understand Paper sizes - GSM, GSM calculations
- 1.4 Understand Tools, Equipments and Machineries
- 1.5 Study Classification of Binding - Letter press, stationary
- 1.6 Study Account Book Binding, Mechanical Binding

### **UNIT II - Sewing and Binding Operations**

- 2.1 Folding
- 2.2 Forwarding
- 2.3 Gathering
- 2.4 Collating
- 2.5 Block binding
- 2.6 Wire stitching
- 2.7 Thread sewing
- 2.8 Case binding
- 2.9 Finishing operations
- 2.10 Lamination
- 2.11 Gold foiling.

### **UNIT III - Advanced Bindery Operations**

- 3.1 Understand Programmable cutting machine
- 3.2 Study Folding machine, Bundling machine
- 3.3 Study Gathering machine, wire stitching machine
- 3.4 Study Perfect Binding machines
- 3.5 Study Case binding machines, study flow line machine
- 3.6 Understand Definition of packaging - types of packaging
- 3.7 Understand Materials for packaging

### **UNIT IV - Packaging**

- 4.1 Study the materials used for packaging---paper board, metal, glass, plastics, timber and textiles
- 4.2 Study the plastic based packaging materials
- 4.3 Study the Flexible Packaging
- 4.4 Understand Speciality Packaging
- 4.5 Understand Plastic corrugated boxes
- 4.6 Understand Rigid boxes
- 4.7 Understand Converting Process - Introduction - Principles of carton design - Sequence of operations involved in die-making for carton and envelopes
- 4.8 Study Die-cutting and creasing make ready Folding and gluing

## **SUBJECT DETAILS**

### **UNIT I – Introduction to binding**

Defining of Binding, Paper sizes-different types, GSM, Tools, Equipments and machineries, Classification of Binding - Letter press, stationary, Account Book binding, Spiral Binding

### **UNIT II - Sewing and Binding operations**

Folding methods, Forwarding operation, Gathering, Collating, Block binding, Wire stitching, Thread sewing, Case binding, Finishing operations, Lamination, Gold foiling

### **UNIT III - Advanced Bindery Operations**

Edge decoration-painting, sprinkling, marbling, gilding, Different covering materials, Binding materials calculations, Finishing - Finishing Tools, blind blocking and tooling, gaufforing, gliding. Case binding machines, Perfect Binding machines, Folding machine, Bundling machine, Gathering machine, wire stitching machine, Programmable cutting machine, definition of packaging types of packaging, Materials for packaging.

### **UNIT IV - Packaging**

Materials used for packaging- paper board, metal, glass, plastics, timber and textiles, Plastic based packaging materials, Flexible packaging, Speciality packagings, Plastic corrugated boxes, Rigid boxes, Converting Process Introduction principles of carton design Sequence of operations involved in die-making for cartons and envelopes, Die-cutting and creasing make ready Folding and gluing.

**Subject Title : Post Press Operation and Finishing (Practical)**

**Subject Code : PPOF 332**

**Periods/week : 20**

**Total Marks : 100**

Exercise 1 : Jogging, Counting, Folding (Hand and machine)

Exercise 2 : Folding, (hand, machine) types of folding

Exercise 4 : Gathering, Collating

Exercise 5 : Sewing practice--various types

Exercise 6 : Forwarding and covering operations- -attaching plates  
and Maps

Exercise 7 : Case binding practice--stitching, sewing, perfect binding

Exercise 8 : Account Book Binding

Exercise 9 : Lamination, Varnishing, UV coating

Exercise 10 : Familiarise with Modern Binding machinery

Exercise 11 : Adhesive binding (Perfect binding), wire stitching,  
section sewing

Exercise 12 : Cutting machine operations

Exercise 13 : Mechanical binding, spiral, comb, wire, loose leaf etc.

Exercise 14 : Packaging different methods