Annexure-4.03.2(C)
A.C - 19.07.2016

ORDINANCES
for
B. VOC.-PRINTING TECHNOLOGY
and
B. VOC.-WEB DESIGNING

SEMESTER SYSTEM

Sem I & II (SESSION 2016 -2017)
Sem III & IV (SESSION 2017-2018)
Sem V & VI (SESSION 2018 -2019)

Bachelor of Vocation (B.Voc.) is launched under the scheme of University Grants Commission on skill development based higher education leading to Bachelor of Vocation (B. Voc.) Degree with multiple exits as Diploma/Advanced Diploma under the National Skill Qualification framework. The B.Voc. programme incorporate specific job roles and their National Occupational Standards along broad based general education.

1. **B. Voc. Programme** :
   The B.Voc. Programme has been designed as per National Skill Qualification Framework (NSQF) emphasizing on skill based education.

2. **Duration of Course :**The duration of course is 3 Years integrated course with 3 exit points.

Award	Duration	CORE LEVEL / RESPONDING / NSQF
Diploma	1 Year	5
Advance Diploma	2 Year	6
B. VOC Degree	3 Year	7

Note:

1. After successful completion of second semester (1st Year) a Diploma will be awarded to the candidate.
2. After successful completion of fourth semester (2nd Year) an Advance Diploma will be awarded to the candidate.
3. After successful completion of sixth semester (3rd Year) B.Voc. Degree will be awarded to the candidate

3. Eligibility criteria for admission:

12th Class or equivalent in any stream.*(UGC Guidelines for B.Voc. See Annexure A , 5)*

4. Total number of seats:

(i) B.Voc.- Printing Technology: 50
(ii) B.Voc.- Web Designing : 50

5. Reservation of Seats: As per rules of University of Delhi.

6. Course Fee : Student fee should be decided as per the prevalent mechanism for fee fixation for aided courses in the university/college. *(UGC Guidelines for B.Voc. See Annexure A , 9)*

7. Admission Process: Based on Merit (As per University rule).

8. Curriculum:

(i) Generic Component:

The general education component should adhere to the normal university standards. It should emphasise and offer courses which provide holistic development. However, it should not exceed 40% of the total curriculum. *(UGC guidelines for B.Voc. , Annexure A, 6.3(i))*

(ii) Skill Component :

National Skill development Corporation (NSDC)& Sector Skill Council (SSC) will share the curriculum of the identified job roles which will bein alignment to Qualification Packs and National Occupational Standards. *(UGC - NSDCMoU, Annexure B, IV(7))*

The university/college should develop the curriculum in consultation with industry. The industry representatives should be an integral part of the academic bodies of the university/college. While doing so, they should work towards aligning the skill components of the curriculum with the NOSs developed by the respective Sector Skill Council. *(UGC guidelines for B.Voc. , Annexure A, 6.6).*

In case NOS is not available for a specific area / job role, the university/college should get the curriculum for this developed in consultation with industry experts. *(UGC guidelines for B.Voc. , Annexure A, 6.4(iv))*

9. Faculty:

The university/college should use its regular faculty for the conduct of general education component and also for the skills components, if existing. Additionally, they may hire faculty on contractual basis and guest faculty in the core trades only as per UGC norms. *(UGC guidelines for B.Voc. , Annexure A, 8.2).*

NSDC will coordinate the availability of the services of the trained skills faculty, subject to the requirement of institution, from its funded training partners at UGC approved remuneration as per guidelines of Community Colleges and NSDC funded training partner. *(UGC - NSDCMoU, Annexure B, IV(8)).*

10. Credit Calculation:

The following formula should be used for conversion of time into credit hours.

a) One Credit would mean equivalent of 14 to 15 periods of 60 minutes each, for theory, workshops/labs and tutorials;

b) For internship/field work, the credit weightage for equivalent hours shall be 50% of that for lectures/workshops;

c) For self-learning, based on e-content or otherwise, the credit weightage for equivalent hours of study should be 50% or less of that for lectures/workshops. (*UGC Guidelines for B.Voc. See Annexure A , 6.5.1 to 6.5.3).*

NSQF Level	Skill Component Credits	General Education Credits	Total Credits (Cumulative)	Normal calendar duration	Exit Points / Awards
5 (Year 1)	36	24	60	Two semesters	Diploma
6 (Year 2)	36	24	120	Four Semesters	Advanced Diploma
7 (Year 3)	36	24	180	Six Semesters	Degree
Total	108	72			

10. Internal Assessment

- Generic Component: As per University guidelines (will be done by college).
- Skill Component: As per NSDC - SSC guidelines (will be done by SSCs)

11. EXAMINATION

(I) GENERAL EDUCATION COMPONENT (GEC)

The assessment for the General Education Component (GEC) should be done by the University of Delhi as per their prevailing standards and procedures *(UGC guidelines for B.Voc., Annexure A, 7.1).*

The course of study of B.Voc. shall be divided in to six semesters and university examination will be held at the end of every semester in the months of November/December (for semester I, III & V) and May/June (for semester II, IV & VI) or as fixed by the University of Delhi.

The medium of instruction and examination will be English/Hindi, except for the language subjects whose medium of instruction and examination will be that of the language subject.

The minimum number of marks required to pass the GEC examination in each part shall be 40% and details as per Delhi University rules.

Internal assessment and its Components: Internal assessment, in each subject, shall be 25% of the total marks in each paper and shall be uniformly applicable to all the Subjects/Papers. The

three Components for Internal Assessment shall be as follows (to be divided equally, as per the credit of the paper:

(i)	Attendance:	20%	% of the Total Marks of the internal Assessment
(ii)	Written Assignment/Project :	40%	
(iii)	Mid-Semester Tests/Internal Examination	40%	

Papers having practical/viva, the marks of theory and practical/viva will be reduced equally percentage wise, to make room for 20% internal assessment(as per (b) above).

The Successful candidates shall be classified on the basis of aggregate marks secured

a) 75% or more with Distinction.
b) 60% or more in the First division.
c) 50% or more but less than 60% in the Second division.
d) 40% to below 50% in the Third division.

Attendance and Other Requirements: Every candidate will be required to attend a minimum of 66.6% lectures delivered to that class in each paper as well as 75% of the laboratory work, seminars etc. separately. Provided that a deficiency in attendance may be condoned for special reasons, as per the relevant ordinances on the subject.

Re-evaluation of scripts: Re-evaluation of scripts as per University of Delhi Rule.

Award of Medal/Prizes: The general rules and conditions of the University for the Award of Medal/Prizes etc.

(II) ASSESSMENT OF SKILL EDUCATION COMPONENT (SEC):

- NSDC will ensure that post training, the assessment and certification of vocational component is done by NSDC approved Sector Skill Councils. The assessment will be done by Sector Skill Councils(SSC)/Industry Partner through its affiliated Assessment Bodies who have SSC trained certified assessors. *(UGC -NSDCMoU, See Annexure B, II(4)).*

- The university may like to consult the respective Sector Skill Council for designing the examination and assessment pattern for the skill development components. The university may also consider using the designated assessors of Sector Skill Councils/Industry Partners for the conduct of practical assessment. *(UGC guidelines for B.Voc., Annexure A, 7.2).*

DETAILED SYLLABUS

B. VOC. (PRINTING TECHNOLOGY)

B. VOC. (Printing Technology)

DETAILED SYLLABUS

SEMESTER - I

Paper Code	Paper Title	Credit	Credit
GEC1.1	English Communication	GEC	4
GEC1.2	Computer Fundamentals		4
GEC1.3	Computer Applications in Communication and Media Design		4
PT1.1	Fundamentals of Printing Technology	SEC	4
PT1.1L	Lab1-: Fundamentals of Printing Technology		2
PT1.2	Reproduction Techniques and Printing Process		4
PT1.2L	Lab-2: Reproduction Techniques and Printing Process		4
PT1.3	Ms-Office and E-Publishing		2
PT1.3L	Lab-3: Ms-Office and E-Publishing		2
	TOTAL		**30**

SEMESTER – II

Paper Code	Paper Title		Credit
GEC2.1	Environmental Science	GEC	4
GEC2.2	Hindi (कार्यालय हिन्दी) / MIL		4
GEC2.3	Soft Skills		4
PT2.1	Desk Top Publishing	SEC	4
PT2.1L	Lab-1: Desk Top Publishing		4
PT2.2	Typography and Typesetting		4
PT2.2L	Lab-2: Typography and Typesetting		4
PT2.3	Printing Technology Project –I		2
	TOTAL		**30**

Dean
Faculty of Applied Social Sciences and Humanities
University of Delhi South Campus
New Delhi - 110021

Principal
KALINDI COLLEGE
(University of Delhi)
East Patel Nagar, N. Delhi

SEMESTER – III

Paper Code	Paper Title		Credit
GEC 3.1	English	GEC	6
GEC 3.2	Graphic Designing and Visual Image		6
PT3.1	Flexography Printing	SEC	2
PT3.1L	Lab-1: Flexography Printing		1
PT3.2	Print Production Using Graphic Design		3
PT3.2L	Lab-2: Print Production Using Graphic Design		4
PT3.3	Image Carrier Generation		4
PT3.3L	Lab-3: Image Carrier Generation		4
	TOTAL		**30**

SEMESTER – IV

Paper Code	Paper Title		Credit
GEC 4.1	Basic Statistics and Probability	GEC	6
GEC 4.2	Print Media Production		6
PT4.1	Digital Printing	SEC	2
PT4.1L	Lab-1: Digital Printing		2
PT4.2	Book Publishing, Computer Paper and Security Printing		2
PT4.2L	Lab-2: Book Publishing, Computer Paper and Security Printing		2
PT4.3	Planography Printing Process		4
PT4.3L	Lab-3: Planography Printing Process		4
PT4.4	Printing Technology Project –II		2
	TOTAL		**30**

Principal
KALINDI COLLEGE
(University of Delhi)
East Patel Nagar, N. Delhi

Dean
Faculty of Applied Social Sciences and Humanities
University of Delhi South Campus
New Delhi - 110021

SEMESTER – V

Paper Code	Paper Title		Credit
GEC 5.1	Print Journalism and Production	GEC	6
GEC 5.2	Media Industry & Management-1		6
PT5.1	Printing Materials	SEC	2
PT5.2	Gravure printing process		4
PT5.2L	Lab-1: Gravure printing process		4
PT5.3	Printing Science (Paper & Ink)		4
PT5.3L	Lab-2: Printing Science (Paper & Ink)		4
	TOTAL		**30**

SEMESTER – VI

Paper Code	Paper Title		Credit
GEC 6.1	Industrial/Organizational Psychology	GEC	6
GEC 6.2	Entrepreneurship and Small Business		6
PT6.1	Print Industry Management	SEC	3
PT6.2	Design & Planning For Print Production		3
PT6.2L	Print Finishing and Quality Control		4
PT6.3	Lab-1: Print Finishing and Quality Control		4
PT6.3L	Internship Project		4
	TOTAL		**30**

Dean
Faculty of Applied Social Sciences and Humanities
University of Delhi South Campus
New Delhi - 110021

Principal
KALINDI COLLEGE
(University of Delhi)
East Patel Nagar, N. Delhi

B VOC (PRINTING TECHNOLOGY)

ENGLISH COMMUNICATION

Semester - I GEC 1.1

Credit – 4 Maximum Marks – 100 Hours : 3

Course Content :

Introduction:
Theory of Communication: Types and modes of Communication

Language of Communication:
Verbal and Non-verbal
(Spoken and Written)
Personal, Social and Business Barriers and Strategies Intra-personal, Inter-personal and Group communication

Speaking Skills
Monologue
Dialogue
Group Discussion
Effective Communication / Mis- Communication
Interview
Public Speech

Reading and Understanding
Close Reading
Comprehension
Summary Paraphrasing
Analysis and Interpretation
Translation(from Indian language to English and vice-versa) Literary/Knowledge Texts

Writing Skills
Documenting
Report Writing
Making notes
Letter writing

Recommended Readings:
1. Fluency in English - Part II, Oxford University Press, 2006.
2. Business English, Pearson, 2008.
3. Language, Literature and Creativity, Orient Blackswan, 2013.
4. Language through Literature (forthcoming) ed. Dr. Gauri Mishra, DrRanjanaKaul, DrBratiBiswas

Dean
Faculty of Applied Social Sciences and Humanities
University of Delhi South Campus
New Delhi - 110021

Principal
KALINDI COLLEGE
(University of Delhi)
East Patel Nagar, N. Delhi

COMPUTER FUNDAMENTALS

Semester - 1 **GEC 1.2**

Credits: 4 **Lecture : 60** **Max Marks : 100** **Hours : 3**

Course Content:

Introduction: Introduction to computer system, uses, types.

Data Representation: Number systems and character representation, binary arithmetic.

Human Computer Interface: Types of software, Operating system as user interface, utility programs

Devices: Input and output devices (with connections and practical demo), keyboard, mouse, joystick, scanner, OCR, OMR, bar code reader, web camera, monitor, printer, plotter

Memory: Primary, secondary, auxiliary memory, RAM, ROM, cache memory, hard disks, optical disks

Computer Organisation and Architecture: C.P.U., registers, system bus, main memory unit, cache memory, Inside a computer, SMPS, Motherboard, Ports and Interfaces, expansion cards, ribbon cables, memory chips, processors.

Overview of Emerging Technologies: Bluetooth, cloud computing, big data, data mining, mobile computing and embedded systems.

Use of Computers in Education and Research: Data analysis, Heterogeneous storage, e-Library, Google Scholar, Domain specific packages such as SPSS, Mathematica etc.

Reference Books:

1. A. Goel, Computer Fundamentals, Pearson Education, 2010.
2. P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning, 2006
3. P. K.Sinha, P. Sinha, Fundamentals of Computers, BPB Publishers, 2007

Practical :

The practical assignment must include connecting parts of a computer and assembling it to an extent, media formatting and installation of software.

COMPUTER APPLICATIONS IN COMMUNICATION AND MEDIA DESIGN

Semester - I GEC 1.3

Credit – 4 Maximum Marks – 100 Hours : 3

COURSE CONTENT & PRACTICAL

1 Computer Application Designing
Concept of Computer and Designing
Need of computer Application Designing in Extension and Communication
Scope of Computer Application Designing for Extension and Communication
Use of Computer Application Designing for Extension and Communication

2. Computer Software for Designing
Use of the following software for making IEC material and Teaching Aids
Word Processor
Presentation Software
Corel Draw
Paint
Photoshop
PageMaker

3. Issues in Use of Computer Designing
Issues and Challenges in use of Computer for Designing in Extension and Communication

Learning Experiences
Preparing various IEC material with the use of different software
Arranging expert talk on computer designing
Viewing different computer designs.
Preparing charts/poster/flash cards etc with the help of computer
Preparing designed brochures, leaflets with the help of various software.
Preparing presentation with the help of presentation software on development programmes.

RECOMMENDED READINGS
Kihrwadkar A, Pushpanadan, (2006), Information and Communication Technology in Education, Sarup and Sons, Delhi
Sampath K (1998), Introduction to Educational Technology, Sterling Publishers Pvt. Ltd
Sagar Krshna (2007), ICTs and Teacher Training, Authors Press, Delhi
Valerie Q (1998), Internet in a nutshell, Shroff Publishers and Distributors Pvt. Ltd, Delhi

FUNDAMENTALS OF PRINTING TECHNOLOGY

Paper Code :PT1.1	Credit : 4	Lectures : 60

Content Outline:

Unit I: Types of Printing, paper and ink - an Introduction

Letterpress printing-lithography-offset printing- different printing process-machines for letterpress, offset, gravure, flexography and screen printing-printing materials, types of papers (newsprint, white print, art paper, parchment paper, pulp board, art card, ivory card, natural shade paper, color paper, butter paper), traditional paper sizes and grammage, types of inks: for glazed and non-glazed paper.

Unit II: Types of machines

Composing machines: desktop publishing, computer, scanner, printer processing machines: film output machines, plate coating whirler, printing down-frame Printing machines: sheet-fed and web off-set (single, double, four color). Binding machines: Laminating machine, creasing machine, folding machine, centre pinning, section-sewing machine, perfect binding machine, cutting machine.

Unit III: Planning a printing

Pre-press Copy-editing, composing, proofing, Dummy, page-designing, page-proofing, output, cover designing, cover output, preflighting, design factors, color application-film assembly, plate-graining, plate making and its types, binding & finishing.

Unit IV: Printing materials

Plate-coating and developing materials for deep-etch, Pre-sensitized, wipe-on plate making materials, rubber blankets, cleaning and washing materials, Solvents, Adhesives. Use of leather, cloth, rexine, threads, tapes, stitching wire, metal foils and covering materials used for binding and print finishing.

Unit V: Packaging and transportation

Printing of packing material such as wrappers, envelops, cartons, die-cutting of cartons; packing for postal circulation and transportation

SUGGESTED READINGS

1. Letter Press Printing Part 1, 2, By C.S. Misra
2. Printing Technology By Adams, Faux, Rieber
3. Gravure process and technology - GAA
4. Writing for the Web: A Practical Guide by Cynthia L. Jeney
5. Helmut Kipphan (Ed.) "Handbook of Print Media", 2001.

LAB-1: FUNDAMENTALS OF PRINTING TECHNOLOGY

Paper Code :PT1.1L	Credit : 2	Practical Hours : 60

PRACTICAL:

1. Types of printing, identification and decision of appropriate printing for assigned job.
2. Types of papers and inks, decision about use of paper & ink for assigned printing job.
3. Types of printing machines and its uses for particular printing.
4. Printing material and utilities for printing purposes. Combination of ink, use of other materials.
5. Pre-press Copy-editing, composing, proofing, Page-designing, page-proofing, output, cover designing, cover output, preflighting, design factors, colour application-film assembly, plate-graining, plate making.
6. Binding & finishing.
7. Printing of packing material sueh as wrappers, envelops, cartons, die-cutting of cartons.
8. Packing for postal circulation and transportation.
9. Dummy of all steps (1 to 7).
10. Actual use of theoretical knowledge in implementation of printing of public order / institution order / organisation order e.g. order from NBT / publishing house / any firm etc.

REPRODUCTION TECHNIQUES AND PRINTING PROCESS

Paper Code : PT1.2	Credit : 4	Lectures : 60

A. REPRODUCTION TECHNIQUES

1. Basic principles of drawing and 2-D design through relief
2. Various relief printing techniques and their aesthetic value
3. Relief Printing Techniques and relative Safety issues
4. Discussion of individual interests and proposed directions.
5. Monochromatic Relief (Black and White)
6. Polychrome Reduction Relief (Multiple Color)
7. Dry Point (Exquisite Corpse)
8. Monochrome Monotype (Black and White)
9. Polychrome Monotype (Multiple Color)
10. Xerox Transfer &Colograph.

Reference, Resource, or Learning Materials to be used by Student:-Slides, video, digital technology by instructor, and field trip to a museum/company/press are incorporated.

B. PRINTING PROCESS

Screen Printing: History of Screen Printing, Stencils - Their kinds and methods of preparation. Screen materials. Screens - multifilament, mono filaments, Selecting mesh material, stretching screen fabric to frame, screen preparation, screen reclamation - Trouble shooting clogged screens. Care and storage of screens. Image transfer -the squeegee, Squeegee considerations, squeegee preparation, hardness categories of squeegee blades, Variety of blade, its shape and application. Screen ink- its kinds and uses for different substrates and drying methods.

Screen Printing Machines: Their kinds and working principles and methods. Method of halftone preparation for screen printing. Drying Equipments- Drying racks, wicket dryers, Jet dryers, Infrared dryers, Ultraviolet dryers. Flocking process.

Screen Printing Substrates: Introduction, Paper and Paper board, Wood, Textiles, Plastics, Metals, Ceramics and glass. Specialized Areas - Printed circuit boards of screen printing.

SUGGESTED READINGS

- Letter Press Printing Part 1, 2, By C.S. Misra
- Printing Technology By Adams, Faux, Rieber
- Screen Printing Review By Babett Magee
- Screen Printing By John Stephens
- Gravure process and technology – GAA
- Writing for the Web: A Practical Guide by Cynthia L. Jeney
- Helmut Kipphan (Ed.) "Handbook of Print Media", 2001.
- Handbook of Printing processes by D L Stevenson, GATF Publication.

LAB-2: REPRODUCTION TECHNIQUES AND PRINTING PROCESS

Paper Code : PT1.2L	Credit : 4	Practical Hours : 120

PRACTICAL

A. REPRODUCTION TECHNIQUES

1. Discussion of individual interests and proposed directions.
2. Monochromatic Relief (Black and White)
1. Polychrome Reduction Relief (Multiple Color)
2. Dry Point (Exquisite Corpse)
3. Monochrome Monotype (Black and White)
4. Polychrome Monotype (Multiple Color)
5. Xerox Transfer
6. Colograph
7. Model Making by students in supervision by instructor

NOTE: Material to be brought by students during practical - Gloves, biking or recreational (neoprene padding helps with long hours of cutting,while open fingers allow control of tools), Apron or studio shirt, Safety glasses in a plastic zip-lock bag, Clean bath towels, Clean cotton rags, Transfer paper (such as carbon or Saral paper)Sandpaper, 80 – 200 grit, wet-dry recommended, Texturing tools (rasps, nails, wire brushes, etc.)

B. PRINTING PROCESS

1. Identification of different tools &equipments used in letterpress
2. Schematic diagram of different Printing Processes.
3. Printing of line & half tone block in single & multi color.
4. Schematic diagram of different letter press Printing Machines.
5. Study of Running & printing faults on letter press machine.
6. Study of various types of screen materials.
7. Screen stretching techniques.
8. Operating of automatic machine.
9. Stencil preparation - Direct,Indirect, Direct/Indirect, Capillary stencil preparation.
10. Multi color printing of visiting cards, greeting cards, letter heads, certificates, invitations,
folders, cover pages, photographs.
11. Printing on various substrates-wood, leather, textile, acrylic, metal, paper & paper products, plastics.
12. Screen printing on Irregular Surfaces - Bottles, Ceramics, Glass.
13. Screen printing on printed circuit boards (PCB)
14. Screen Reclamation.

MS-OFFICE AND E-PUBLISHING

Paper Code : PT1.3	Credit : 2	Lectures : 30

I. MS-WORD

Unit-I: Introduction to Ms-Word: Introduction, Objectives, What is Word-Processing, Important Features of Ms-Word, Getting Started with Ms-Word, Main menu option. Creating and Editing a Documents: Creating a Document, Editing Operations, Inserting, Replacing and Deleting Character, Using the toolbar, Undo-Repeat, Find and Replace Text, Save and Exit, Opening an Existing Documents, Quitting Word.

Unit-II: Formatting a Document: Introduction, Default and Customized Format, Character Formatting, Line Spacing, Alignment, Boarding and Shading, Page Breaks, Columns, Changing Case, Adding and Removing Number. Advanced Formatting: Introduction, Objectives, Tab Setting, Indenting, Margins, Header and Footer, Spell Checking the Documents, Creating and Managing Tables, Preview and Printing a document.Printing to file. Mail Merge: Introduction, Objectives, What is Mail Merge, Concepts of Mail Merge and its Components, Mail Merge option of word, Merged Printing, Conditional Merging.

II. SPREAD SHEET

Unit-1: Working with Spreadsheets: Open, close a spreadsheet application. Open& close a spreadsheets. Create a new spreadsheet based on default template. Save a spreadsheet to a location on a drive. Save a spreadsheet under another name to a location on a drive. Save a spreadsheet as another file type like: template, text file, software specific file extension, version number.

Unit-II: Managing Worksheets: Insert, Select, Edit, Sort, Edit cell content, modify existing cell content. Copy, Move, Delete and Insert Rows and Columns. Worksheets - Switch, new, delete. Setup-Change worksheet margins: top, bottom, left, right .Change worksheet orientation: portrait, landscape. Change paper size. Adjust page setup to fit worksheet contents on a specified number of pages. Add, edit, delete text in headers, footers in a worksheet. Insert and delete fields: page numbering information, date, time, file name, worksheet name into headers, footers. Check and Print. Check and correct spreadsheet calculations and text.

Unit-3: Formatting: Numbers/Dates. Format cells to display a date style, to display a currency symbol, display numbers as percentages. Alignment, Border Effects, Apply text wrapping to contents within a cell, cell range. Align cell contents: horizontally, vertically. Adjust cell content orientation. Charts: Create, Select, Change, Move, resize, delete a chart. Edit- Add, remove, edit a chart title. Add data labels to a chart: values/numbers, percentages. Background colour, legend fill colour. Change the column, bar, line, pie slice colours in the chart. Change font size and colour of chart title, chart axes, chart legend text.

III. POWER POINT

Unit-1: The PowerPoint interface – Getting started – Terminology and overview – Templates and Slide Masters – Principles of slide design. Basic slide editing – SmartArt – Drawing shapes and lines – Text boxes – Aligning objects – Tips and shortcuts.

Unit-2: Administration and efficiency – Editing and working collaboratively– Printing and other output – Customising PowerPoint – Housekeeping. Communicating Analysis– Tables – Graphs & charts– Graphs & charts – Making a presentation flow – Slide-type toolkit.Making an impact – Incorporating images – Transitions and animation.

IV : Web Technology and E-Publishing

- What is E-Publishing
- The Advantages of E-Publishing
- Scope and Prospects of E-Publishing
- Basics of multimedia
- Color models-An overview, primary & secondary color models
- Multimedia presentation-Images, pictures, text, animation, audio, video
- Commonly used file formats
- Microphone, amplifier, loudspeakers
- Commonly used connectors.
- Internet and

SUGGESTED READINGS:

1. Learn Microsoft Office – Russell A. Stultz – BPB Publication
2. Microsoft Office – Complete Reference – BPB Publication
3. A Conceptual Guide to Öpen Office .org 3, 2nd Edition, R. Gabriel Gurley(online).
4. G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

LAB-3: MS-OFFICE AND E-PUBLISHING

Paper Code : PT1.3L	Credit : 2	Practical Hours : 60

PRACTICAL:

I)Customizing the Desk Top

- Rulers, Grids, Guidelines, Color Palettes, Floating Toolbox

II) Drawing rectangles, squares, ellipses, circles, curves

III) Manipulating Objects

- Moving, Reshaping, Rotating, Skewing and

IV) Mirroring the Objects

- Undo, Redo, Delete, Duplicate and Clone
- Previewing the Objects
- Filling and Outlining Objects

V) Shaping objects

- Lines, Rectangles, Ellipses, Curves

VI) Setting up Page Layouts

- Aligning Objects, Changing Position of Objects
- Converting Objects to Curves
- Layers

VII) Draw and edit Freehand Curves

i)Using Text

- Creating Artistic Text
- Editing Text
- Flow of Text between Frames
- Changing Character Attributes
- Fitting text to a Path Characters rotated to Path Baselines
- Text and Path Distance
- Kerning, Proof reading, Find and Replace
- Tiling Symbols

ii) Using Bezier Curves

iii) Using Bitmap Images

VIII) Creating Special effects

- Adding and Copying Perspectives

- Applying Envelopes
- Blending Objects
- Applying Extrusion and Contours
- Power Lines, Power Clips and Lenses

IX) Managing Layers and Pages

X) Importing and Exporting Objects

XI) Using PHOTO-PAINT

- Using Drawing and Painting Tools
- Eyedropper and Clone Tools
- Retouching Tools
- Special Effects Filters

XII) Managing Files

- Creating new file, opening existing file, saving file
- Setting up multiple page file
- Importing files
- Setting Print Options and Printing files.

XIII) Use of Tools - MS-WORD, MS-EXCEL, MS-POWERPOINT & MS-PAINT in Printing.

XIV) Multimedia Tools in Printing.

XV) Use of recent Computer Technology for Printing Business.

SEMESTER - II

ENVIRONMENTAL SCIENCES

Semester - II **GEC 2.1**

Credits: 4 **Lecture : 60** **Max Marks : 100** **Hours : 3**

Course Content:

Unit 1 : Introduction to environmental studies

- Multidisciplinary nature of environmental studies;
- Scope and importance; Need for public awareness.

Unit 2 : Ecosystems

What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :

1. a) Forest ecosystem
2. b) Grassland ecosystem
3. c) Desert ecosystem
4. d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water : Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management: Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices

- Sustainability and sustainable development.
- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act.

- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management: floods, earthquake, cyclones and landslides.
- Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8: Field work

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Bharucha, E. 2003, Textbook for Environmental Studies, University Grants Commission, New Delhi and BharatiVidyapeeth Institute of Environmental Education and Research, Pune. 361.
2. Carson, Rachel. 1962. Silent Spring (Boston: Houghton Mifflin, 1962), Mariner Books, 2002
3. Economy, Elizabeth. 2010. The River Runs Black: The Environmental Challenge to China's Future.
4. Gadgil, M. &Ramachandra, G. 1993. This fissured land: an ecological history of India. Univ of California Press.
5. Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
6. Grumbine, R. Edward, and Pandit, M.K. Threats from India's Himalaya dams.Science 339.6115 (2013): 36-37.
7. Heywood V.H. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press.
8. McCully, P. 1996. Silenced rivers: the ecology and politics of large dams. Zed Books.
9. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
10. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
11. Pepper, I.L., Gerba, C.P. &Brusseau, M.L. 2011. Environmental and Pollution Science. Academic press, 2011.
12. Rao MN and Datta AK, 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
13. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8edition. John Wiley & Sons.
14. Ricklefs, R. E., & Miller, G.L. 2000. Ecology. W. H. Freeman, New York.
15. Robbins, P. 2012. Political ecology: A critical introduction. John Wiley & Sons.
16. Rosencranz, A., Divan, S. & Noble, M.L.. Environmental law and policy in India. 2001. Tripathi 1992.

17. Sengupta, R. 2003. Ecology and economics (OUP): An approach to sustainable development." OUP Catalogue.
18. World Commission on Environment and Development. 1987. Our Common Future. Oxford: Oxford University Press.
19. Singh, J.S., Singh, S.P. and Gupta, S.R. 2006. Ecology, Environment and Resource Ecology, Environment and Resource Conservation. Anamaya Publishers.
20. Sodhi, N.S., Gibson, L. & Raven, P.HG. (eds). 2013. Conservation biology: voices from the Tropics. John Wiley & Sons.
21. Van Leeuwen, C. J., &Vermeire, T. G. 2007. Risk assessment of chemicals.

Hindi (कार्यालयी हिंदी)

Semester - II GEC 2.2

Credit – 4 Maximum Marks – 100 Hours : 3

इकाई–1 : कार्यालयी हिंदी का स्वरूप, उद्देश्य तथा क्षेत्र

- अभिप्राय तथा उद्देश्य
- कार्यालयी हिंदी का क्षेत्र
- सामान्य हिंदी तथा कार्यालयी हिंदी : संबंध तथा अंतर
- कार्यालयी हिंदी की स्थिति और संभावनाएं

इकाई–2 : कार्यालयी हिंदी की शब्दावली

- कार्यालयी हिंदी की पारिभाषिक शब्दावली
- पदनाम तथा अनुभाग के नाम
- मुख्य कार्यालय, क्षेत्रीय कार्यालय और अन्य प्रशासनिक अधिकारियों के लिए प्रयुक्त होने वाले संबोधन, निर्देश आदि
- औपचारिक पत्रावलियां/अभिव्यक्तियां (सूची विभाग द्वारा तैयार की जाएगी)

इकाई–3 : कार्यालयी पत्राचार के विविध प्रकार

- सामान्य परिचय
- कार्यालय से निर्गत पत्र (ज्ञापन, परिपत्र, अनुस्मारक, पृष्ठांकन, आदेश, सूचनाएं, निविदा आदि)
- रिक्त पदों पर भर्ती हेतु विज्ञापन
- आवेदन–लेखन

इकाई–4 : टिप्पण, प्रारूपण और संक्षेपण

- टिप्पण का स्वरूप, विशेषताएं और भाषा शैली
- प्रारूपण के प्रकार, भाषा शैली, प्रारूपण की विधि
- संक्षेपण के प्रकार, विशेषताएं और संक्षेपण की विधि
- उपर्युक्त सभी इकाइयों पर आधारित व्यावहारिक प्रश्न

सहायक ग्रंथ

प्रयोजनमूलक हिंदी - माधव सोनटक्के
प्रारूपण शासकीय पत्राचार और टिप्पण लेखन विधि - राजेंद्र प्रसाद श्रीवास्तव
प्रयोजनमूलक हिंदी की नई भूमिका - कैलासनाथ पाण्डेय
प्रयोजनमूलक भाषा और कार्यालयी हिंदी - कृष्ण कुमार गोस्वामी
प्रयोजनमूलक हिंदी : सिद्धांत और प्रयोग - दंगल झाल्टे

SOFT SKILLS

Semester - II **GEC 2.3**

Credit – 4 **Maximum Marks – 100** **Hours : 3**

Course Content:

* Teamwork
* Emotional Intelligence
* Adaptability
* Leadership
* Problem solving.

Suggested Readings

1. S.P. Dhanavel. English and Soft Skills. Orient BlackSwan, 2013
2. Dale Carnegie. How to Win Friends and Influence People.Gallery Books, 1936.
3. Gopalaswamy Ramesh &Mahadevan Ramesh. The Ace of Softskills: Attitude, Communication and Etiquette for Success. Pearson, 2010.

DESK TOP PUBLISHING

Paper Code : PT2.1	Credit : 4	Lectures : 60

Unit I: Photoshop

- Introduction- the file menu, the tools, Drawing lines & shapes.
- Inserting picture and shapes, filling colors, text effects, working with layers, filters,
- Creating design patterns, Photoshop presentations -static & dynamic presentation,
- Using internet explorer in photo shop- the Web Gallery
- Creating animations using image ready, creating animations & presentations
- Tips and tricks in Photoshop.

Unit II: CorelDraw

- An overview, menus and tools
- Drawing –lines, shapes .inserting-pictures, objects, tables, templates,
- Adding special effects, Exporting drawings, outlining & filling objects, inserting symbols & Clip arts.
- Working in Corel draw presentation –adjusting the position, resizing, positioning, merging, color shades & shadows .working with advanced effects, special interactive effects.
- Creating- business cards, pamphlets, banners, news papers, books. Shortcut keys in Corel draw.

Unit III: PageMaker

- An introduction, basics menus & tools.
- Guides & rulers. Drawing tools. Fills & outlines.
- Working with- text, paragraphs, tabs & indents, graphics, tables.
- Importing & exporting, story editing & printing. Tips & Shortcut keys
- Creating book works-introduction-building booklets, completing the book.

Unit IV: QuarkXPress

- An introduction, basics menus & tools.
- Guides & rulers. Drawing tools. Fills & outlines.
- Working with- text, paragraphs, tabs & indents, graphics, tables.
- Importing & exporting, story editing & printing. Tips & Shortcut keys
- Creating book works-introduction-building booklets, completing the book.

SUGGESTED READINGS:

1. Hardware Bible : Winn IL RochTechmedia.
2. Desk Top Typography : QuarkXPress
3. Page Maker 6.0 : BPB Publication.

LAB-1: DESK TOP PUBLISHING

Paper Code:PT2.1L	Credit : 4	Practical Hours : 120

PRACTICAL:

Course Outline

Photoshop

1. How to make smooth curved lines in Photoshop?
2. Extract an object from a given picture?
3. Create a new picture. Make it 300 pixels high and 400 pixels wide. The resolution should be 72 pixels/inch.
4. How to create your very own animated beating heart in Photoshop?
5. How to make falling objects that will work as seamless backgrounds and have objects falling at different paces in Photoshop?.

PageMaker

1. Create a 4 page newsletter with PageMaker
2. Prepare a magazine on PageMaker
3. Use various setup options while preparing the material for print
4. import images and create a newspaper

Quark

1. Create a 6 page newsletter with Quark Express
2. Prepare a magazine
3. Use various setup options while preparing the material for print
4. import images and create a newspaper
5. Use special features such as Drop letters (Text), Cut outs (images) etc. while preparing material for print

Corel Draw

1. How to insert a picture in the existing image background?
2. Create a 3D text in Corel Draw
3. Create an advertisement for a Textile company in Corel
4. Design a business card for a company embed photo in it.
5. Design a banner for a marriage function.

TYPOGRAPHY AND TYPESETTING

Paper Code : PT2.2	Credit : 4	Lectures : 60

Unit I: Concepts in Printing Technology

-Identification of printing types, principles of size and design identification. Suitability of different types for different processes and publications. Calculations relating to type sizes and dimensions of printing pages. The transformation from hand-setting to photo-type setting.

-House Style, Good and bad copy; methods of casting off; methods of copy mark-up and copy preparation procedures Reader's marks; word breaks; proofing stages. Composing Tools and Equipment, Basic composing tools for hand composition, spacing material; locking- up devices; proofing presses, kinds of rules. Imposition, Sheet work, Half-sheet work, Work and tumble & Work and twist. The regular schemes up to 32 pages (upright and landscape).

Unit –II: Concepts and Terminology in Printing Technology - Halftone Dots, Color Separation, Post Script, Negative, Typography, Type and Type Faces, Type Measurement, Type Formats, Copy Fitting, Plate Making, Negative, Positive, Tracing Output, etc.

-Typographic Technology- Hand Composition; Linotype, Monotype; Ludlow; Photo-Optical Systems, Photo-Scanning Systems; Phototypesetting System; Classification of Typefaces- Old, Italic, Transitional, Modern, Egyptian, Sans Serif; Typographic Measurement; Metal Type Measurement; Spatial Measurement.

Unit III: Composing the Type:

- Hot Type Composition Method- Setting Foundry Type; Setting Hot Types using Machines; Preparing Reproduction Proof (repro)

- Cold Type Composition Method- Hand Lettering with Pen and Ink; Setting Dry-Transfer Type; Setting Pressure Sensitive Type; Setting Type using Typewriter

Unit III: Phototypesetting - Overview of Strip Printer / Headliner. Text Phototypesetting Machines

SUGGESTED READINGS:

1 Theory & practice of composition By A.C. Goel
2 Composing &typographny Today By B.D. Mehandirutta.
3. Letter Press Printing Part 1, 2, By C.S. Mishra
4. Printing Technology By Adams,Faux,Riber
5. Art & Production By N.N. Sarkar

LAB – 2: TYPOGRAPHY AND TYPESETTING

Paper Code:PT2.2L	Credit : 4	Practical Hours : 120

PRACTICAL

1. Block Lettering & Numbering (Normal Types).
2. Italics Types (75 Degree Angle) Lettering & Numbering.
3. Four-line Principle (Drawing).
4. Physical (features) parts of the type (Structural Diagram).
5. Fundamental strokes.
6. Finishing strokes & their identification.
7. Introduction to various fonts & their drawing characteristics.
8. Newspaper/Magazine Clippings of different point sizes.

(Paste them on Practical Note-book & draw the same).

9. Draw different cases, faces, series & families etc.
10. Draw types with different X - heights, contrasts, serifs, Beak & Terminals.
11. Study of Type case, Composing stick and various materials and equipments used in composing room.
12. Composing exercises.

LAB 3: PRINTING TECHNOLOGY PROJECT

Paper Code : PT2.3	Credit : 2	Hours : 60

The students are able to use their theoretical and practical learning through this project. Students may develop and design professional / business oriented printing output. The faculty member or Industry Partner will supervise the student during their internship. The project must be market oriented under guidance of a faculty member and / or Industry Partner. Student must use theoretical and practical learning in the assigned project. The student will present outcome in form of hard and soft copy to the examiner / Industry Partners. The Industry Partners (Examiner/s) and External Academic Expert (Examiner/s) will evaluate the outcome of assigned project. The report and the specimens of the work done by the student should be attested by the organization/faculty.

SEMESTER – III

ENGLISH

Semester - III **GEC 3.1**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Course Content:

Writing skills

- Diary entry
- Paragraph writing
- Summary/Note-making
- Formal and informal letter writing
- CV/ Resume writing
- Book/ Film reviews

Internal assessment

Speaking skills, Listening/ Comprehension

Project work (Suggested projects)

Sports writing, Poetry about women/ men, Poetry in translation, Telling a story, Fantasy writing, Chat shows, The menace of dowry, A success story

Recommended Readings:

Fluency in English Part I, Delhi: Macmillan, 2005.
El Dorado: A Textbook of Communication Skills, Orient Blackswan Private Limited, Hyderabad, 2014, Units 1 – 5.
Interchange, Workbook III, Fourth Edition, Cambridge University Press, Delhi, 2015, Units 1 - 8.
New Headway, Intermediate Student's Book, 3rd Edition, Oxford University Press, 2012, Units 1-6.
Write to be Read: Reading, Reflecting & Writing, Cambridge University Press, Delhi, First South Asian edition 2014, Units 1-4.

GRAPHIC DESIGNING AND VISUAL IMAGE

Semester – III **GEC 3.2**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Unit 1:Communication and Graphics:
Principle and Theory of Design and Graphics.
Layout: concepts and types.
Working with color: theory of colors.
Pixel and Resolution : Vector and Bitmap Graphics.

Unit 2 Digital Images
Working with Images
File Formats of Images
Editing Images, Morphing and Manipulation
Creating Special Effects.

Unit 3 Working with Software for Visual Imaging
Adobe Photoshop,
Corel Draw
Adobe in design
Using Image for Motion and Video Graphics

Unit 4 Production
Book Cover
Posters
Tabloid
Preparing Text Graphics/ 2D Graphics

Indicative Reading List
White Alex W , The Elements of Graphic Design (Second Edition).
Hearn D. & Baker P. M. Computer Graphics, Prentice – Hall, NewJersey, 2001.
Villamil , John & Molina, Louis. Multimedia: An Introduction,Prentice -Hall, New Delhi, 2001.

FLEXOGRAPHY PRINTING

Paper Code : PT3.1	Credit : 2	Lecture Hours : 30

Introduction: Flexographic printing, flexographic market, flexographic products.

Printing plates: Plates for printing Rubber plates, Types of Plate and methods of preparation, Photopolymer plates its kinds and methods of preparation, handling and storage of flexographic plates.

Press: Flexo press types - Stack press, Central impression cylinder press, Inline press. Unwind equipments. Rewind equipments.

Printing stations - Two roll, anilox roll, reverse angle doctor blade system, Deck control, Continuous inking, side and circumferential register control, Dryers. CI drum, plate cylinders. Anilox roll - construction, cell structure, anilox roll wear, selecting the night anilox roll, chrome plating. Fountain rolls - formulating rubber for rolls, Flexo roller covering, Care of rolls.

Mounting and Proofing: Mounting and proofing of plates, proofing for printability, methods of prepress make-ready, wrapping mounted cylinders. Removing plates from the cylinder, mounting metal-backed plates, reusing sticky back, plate staggering, use of release agents.

SUGGESTED READINGS:

Flexography principles and practices - Foundation of flexographic technical association.

LAB-1: FLEXOGRAPHY PRINTING

Paper Code:PT3.1L	Credit : 1	Practical Hours : 30

1. Introduction and familiarizing flexo machine and other related elements.
2. Preparation of rubber plates.
3. Preparation of -liquid photo polymer plates and sheet photo polymer plates.
4. Registering and plate mounting on flexo plate cylinder.
5. Make ready procedures a flexo machine.
6. Printing- single color, two color, four color.
7. Studying of 6 color and 8 color flexomachines.
8. Printing a various substrates -LDPE, HPDE, Paper, and Aluminum foil.
9. Studying modern flexo machines with inline operations.

Print Production Using Graphic Design

Paper Code : PT3.2	Credit : 3	Lectures Hours : 45

Content:

1. Design Fundamentals: Line, tone, value, weight, texture, shape, size, space, etc.
2. Principles of design- balances, proportion, rhythm, unity, contrast, simplicity, fitness.
3. Colour theory: Dimension, schemes, symbolism and emotional effects of colour.
4. Division of design: Natural, conventional, decorative, geometrical and abstract.
5. Typeface design and font designing.
6. Printing planning: Rough layout, comprehensive, artwork, type of originals, sizing, mashing &cropping.
7. Design management: In advertising art, modern art, abstract art, applied art, Corporate Style Guide, Information Design Etc.
8. Design with D.T.P. Software's.
9. Selection of an appropriate printing process for printing job.
10. Visualizing 3D effects from 2D drawings and vice versa. Perspective drawing.
11. Understanding of scale and sense of proportion.

SUGGESTED READINGS:

1. The Designer's Handbook by Alistair Campbell
2. Design & Technology by Van No strand
3. Handbook of Advertising Art Production by schelmmer.
4. Art & Production by Sarkar.
5. Advertising, Art & Production by J. Nath.
6. A.C. Book (C.D.) so hick, Fundamental of copy and layout ,Crair Book.
7. The Production Manual: AmbroseHarris
8. Design Elements, A Graphical Style Manual: Timothy Samara

LAB-2: Print Production Using Graphic Design

Paper Code:PT3.2L	Credit : 4	Practical Hours : 120

Outline:

1. Designing of visiting card. Letterhead, Envelop, Bill form, Receipt, Invitation card, Posters, Title page of a Book, Magazine Cover page.
2. Preparing Publications such as Vouchers, Letter Heads, Invitation cards, Advertisements (single/double column), Pamphlets (1/8 size), Leaflets, Running Pages of Magazines Brochures, Booklets, Broadsheets.
3. Create special effects using clipart, graphics, etc.
4. The conversion of analogue video into its digital equivalent
5. Stationary and small sales literature. Folders - Single fold & Double fold. Sticker – Two colours. Label designing- 2 and 4 colours.
6. Use of computers software for designing purpose – Demonstration (Manipulation of same design). Logo designing on computers. Colour and colour matching. Printing inks: Demonstration system. Color wheel.

IMAGE CARRIER GENERATION

Paper Code : PT3.3	Credit : 4	Lectures Hours : 60

Content Outline:

Unit I: film images: Facilities, equipments and tools required

- Materials and supplies- Photographic film-camera film, contact film, room light handling films, duplicating films. Proofing materials - diazopapers, polymer papers, brown print paper, diffusion transfer material, photographic and stabilization paper.
- Assembly and masking materials - Goldenrod, vinyl, clear film, peelable masking films, photographic masking films.

Unit II: Imposition considerations

- Sheet fed - press considerations, paper, press masks
- Web fed - press, paper, press masks
- The book signature - parts of a signature
- Kinds of press layout - one up layout, one side multiple layout, one side combination layout, sheet wise layout, work and - turn layout, work and- tumble layout
- Folding requirements - basic folds, folding dummy, machine folds
- Image register system - control from art preparation through press.

Unit III: Film Assembly

- Filmimage register systems - Tab-and-button method, Punched - hole method
- Film assembly basic - negative film assembly, preparing negativesfor stripping attaching negative to masking material; Attaching negatives to clear polyester; Attaching negatives to peelable masking film; Cutting openings in masking material, Scribing lines.
- Positive film assembly
- Film assembly for single color printing; multiple color printing
- Assembly for multiple imaging of plates and film
- Automatic processing and development - direct emulsion photostencil - making a direct emulsion photostencil, direct emulsion coating m/c. Direct emulsions, direct/indirect photo stencils- making a direct/indirect photostencil, capillary direct film photo stencils- making a capillary direct photostencil.

- Quality control in photo stencil making
- Heat transfer printing- melt transfer, dry transfer

Unit IV: Planographic plates

- Light sensitive coating -dicromated colloids, diazo compounds, photo polymers
- diffusion and transfer methods, electrostatic
- Dye-sensitized photo polymerization, dark reaction, post exposure, safe lights, reciprocity law Action of light sources on coatings, stabilities of coatings

Unit V: Plates

- Plate Materials- zinc, aluminium, brass, copper, steel, chromium
- Action of oil and water on metal - contact angle
- Ability to withstand cracking
- Graining of plates - mechanical graining, electrochemical graining
- Producing a multi-metal plate- bi-metallic, tri-metallic
- Projection-speed negative plates
- Positive working lithographic plates- Pre-sensitized plates, Electrostatic plates

Suggested Readings :

Heidelberg DI Press- Manual Chemistry for Graphic Arts - Dr. Nelson R. Eldred.

Offset Plate Making - Robert F. Reed. Printing Technology 3rd Edition. - Adams, Fax &Rieber.

Screen Process Printing - John Stephens. Sheetfed Offset Press Operating - Lloyd P. Dejidas.

Flexography Premier - Donna C. Mulvihill. Stripping - Harold L. Peck.

Gravure Process And Technology –GAA. Selecting The Right Litho Plate - BPIF.

LAB-3 :IMAGE CARRIER GENERATION

Paper Code:PT3.3L	Credit : 4	Practical Hours : 120

PRACTICAL

1. Setting of Camera.
2. Line negative and positive preparations.
3. Half tone negative and positive preparations
4. Bromide Positive preparations.
5. Exposing difficult line originals; use of filters
6. Finding B.D.R. and main exposure time of contact screen.
7. S.D. calculations and S.D. setting and contrast control with glass screen.
8. Line negative making with density range compensation, use of log Equations.
9. Highlight compensation with log exposure formula.
10. Contrast control with contact screens.
11. Use of CC filters with magenta contact screen.
12. Contrast control with supplementary exposures.
13. Line and half tone combination.
14. Fake colour reproduction and introduction to direct and indirect colour separation methods.

SEMESTER – IV

BASIC STATISTICS AND PROBABILITY

Semester – IV **GEC 4.1**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Course Content:

Concepts of a statistical population and sample from a population, quantitative and qualitative data, nominal, ordinal and time-series data, discrete and continuous data.Presentation of data by tables and by diagrams, frequency distributions for discrete and continuous data, graphical representation of a frequency distribution by histogram and frequency polygon, cumulative frequency distributions (inclusive and exclusive methods).

Measures of location (or central tendency) and dispersion, moments, measures of skewness and kurtosis, cumulants. Bivariate data: Scatter diagram, principle of least-square and fitting of polynomials and exponential curves. Correlation and regression.Karl Pearson coefficient of correlation, Lines of regression, Spearman's rank correlation coefficient, multiple and partial correlations (for 3 variates only).

Random experiment, sample point and sample space, event, algebra of events, Definition of Probability - classical, relative frequency and axiomatic approaches to probability, merits and demerits of these approaches (only general ideas to be given). Theorem on probability, conditional probability, independent events.Baye's theorem and its applications.

REFERENCES:

1. J.E. Freund (2009): *Mathematical Statistics with Applications*, 7th Ed., Pearson Education.
2. A.M. Goon, M.K. Gupta and B. Dasgupta (2005): *Fundamentals of Statistics*, Vol. I, 8th Ed., World Press, Kolkatta.
3. S.C. Gupta and V.K. Kapoor (2007): *Fundamentals of Mathematical Statistics*, 11th Ed., Sultan Chand and Sons.
4. R.V. Hogg, A.T. Craig and J.W. Mckean (2005): *Introduction to Mathematical Statistics*, 6th Ed., Pearson Education.
5. A.M. Mood, F.A. Graybill and D.C. Boes (2007): *Introduction to the Theory of Statistics*, 3rd Ed., Tata McGraw Hill Publication.

PRINT MEDIA PRODUCTION

Semester - IV **GEC 4.2**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Unit I: Trends in Print Journalism. Agenda setting role of newspapers- Ownership, Revenue, Editorial policy, Citizen Journalism, Investigative journalism. Sting operations and Celebrity/ Page 3 journalism. Ethical debates in print journalism - Paid news, Advertorials.

Unit II: Specialised Reporting - Business, Parliamentary, Agriculture / Rural, International Affairs, Entertainment.

Unit III: Production of a Newspaper - Planning for print : size, anatomy, grid, design. Format, typography, copy, pictures, advertisements.Plotting text: headlines, editing pictures, captions. Page-making : Front page, Editorial page, Supplements

Unit IV: Technology and Print - Technology and Page making techniques: layout, use of graphics and photographs).Printing Processes: Traditional vs modern. Desk Top Publishing : Quark Express, Coral Draw, Photoshop etc. The Invention of the Printing Press.

Indicative Reading List

Kamath, M.V. Professional Journalism, Vikas Publications
Goodwin, Eugene H. Groping for ethics in Journalism, Iowa State Press
Hough, George A. News Writing, Kanishka Publishers, New Delhi (1998)
Hodgson F. W. Modern Newspapers practice, Heinemann London, 1984.
Sarkar, N.N. Principles of Art and Production, Oxford University Press
Stuart Allan, Journalism: Critical Issues, Open University Press

DIGITAL PRINTING

Paper Code : PT4.1	Credit : 2	Lectures Hours : 30

Digital Documents- Introduction to Digital Printing fundamentals Pixel image, Digital image, Digitization, Half toning colour reproduction, colour jumbs, resolution and its qualities.

AC Quiring- Scanning of different original, Selection of technology of Programme. Transfer of Digital Photographs.

Documentation - Image file formats, TIFF, EPS JPEG files text files and past descriptionlanguages.

Digital Printing Processes - Silver faldire, Phernal, Inkjet, electrostatic processes.

Rendering Typeline Art and Images.

Colour management- Introduction and future, Characterizing input and output device use of CIELAB, CMS.

Networking- Networks for printing and publishing (newspaper paper / book). Flexibility.Changing Markets for Print.Market projections, Projection of changes in the number of colors.Moving towards shorter runs.

SUGGESTED READINGS:

Digital Printing - On Demand Printing - Howard M. Fenten, Frank J. Romano.

LAB-1: DIGITAL PRINTING

Paper Code:PT4.1L	Credit : 2	Practical Hours : 60

PRACTICAL :

1. Preparation ofPixel image, Digital image.
2. Colour Reproduction, Colour Jumbs, resolution qualities.
3. Transfer of Digital Photographs.
4. Image creation and formatting.
5. Digital Printing Processes -Silver faldire, Phernal, Inkjet, electrostatic processes using appropriate software and hardware.
6. Digital printing and publishing of newspaper paper, book and other material.
7. Operation of mechanical relation between computer software (application programme), computer hardware (computer, Inkjet/LaserJet printer) and printing machines (machines of newspaper press and machines of book printing press).

BOOK PUBLISHING, COMPUTER PAPER AND SECURITY PRINTING

Paper Code : PT4.2	Credit : 2	Lectures Hours : 30

Introduction- Basic steps in book printing, areas of printing- general publishing, educational publishing, professional publishing and reference publishing. The role of commissioning editor, the desk editor, the designer, the production manager. Issues and challenges and future prospects of E-Book and Conventional Bôok.

Production, Cost and Legal Aspect- Manufacturing cost of book, sell price and profit estimation, gestation period, calculating break-even point. Technical aspects of production from receipt of manuscript to completion of book. Copyright, types of agreement between author and publishers the outright sale of the copyright, profit sharing agreement, the royalty system, commission agreements. Subsidy in the Publication of Books.

Marketing &Distribution - Indigenous market, foreign market, advertising and publicity, channels of distribution. Issues in Import and export of books. Introduction to Booking and Circulation methods used in publishing houses.

Computer Forms & Security Paper - Typography of various types of computer forms for input and output - Fan fold forms, Computer letters and Mailers. Computer envelopes, Snap-out-forms, Tags and labels, Computer envelope and MICR cheques. Specifications, requirements, storage conditions, Carbon papers.

Production and Finishing of Computer Form and MICR Cheque- Numbering, perforating, sprocket hold punching and Zig-Zag folding. Different types of collators - Roll to Roll -Roll to pack and pack to pack-Programmable outer for continuous web-MICR cheque binding system.

Fundamentals of Stochastic Screening and Litho Printing: Fundamentals of Stochastic Screening and Litho Printing Spot patterns and size. Concepts of AM screening and FM screening. Combination of AM & FM. Benefits and Limitations of AM &FM screening. Film imaging. Film contacting. Plate making. Photomechanical proofing. High levels of dot gain. Fine screen rulings versus FM screening.

Suggested Readings :

Introduction to Printing Technology - Hugh M Speirs
Forms for the 80"s. How to design and produce them - Gar Raines.
Stochastic Screening - Kelvin Tritton.

LAB-2: BOOK PUBLISHING, COMPUTER PAPER AND SECURITY PRINTING

Paper Code:PT4.2L	Credit : 2	Lectures Hours : 60

1. Methods of commissioning, editing and designing of books.
2. Printing of E-Book and Conventional Book.
3. Formation of various types of computer forms and envelops.
4. Formation of Security Paper&MICR cheques.
5. Selection, uses and storage of carbon papers.
6. Production and Finishing of Computer Form and Security Papers (MICR cheque)
7. Binding system of Computer Form and Security Papers (MICR cheque).
8. Process of Stochastic Screening and LithoPrinting :- Film imaging, Film contacting, Photomechanical proofing and Plate making. Exposure and tone transfer. Using FM and AM screening at a time. Negative working plates. Proofing. Negative proofing. Printing. Dot gain in printing. Influence of FM screening spot size. Influence of different screening algorithms. Tone value stability. Register shifts and Colour shifts sensitivity.

PLANOGRAPHY PRINTING PROCESS

Paper Code : PT4.3	Credit : 4	Lectures Hours : 60

Content Outline:

Basic principles in offset printing :Introduction: Role and Functions; advantages and limitations, Types of feed board sheet control devices, - Forwarding system, Sheet detectors, Plate insertion system, Delivery unit.

Offset Plate Making :Common Types of Offset Plates, Process, Plate Making Exposure Factors, Automatic Plate Processors

Offset Process : Concept, Advantages and Limitations, Lithography Offset, Standard Specifications for Offset, Publications, Machinery in Offset Press, Working of Offset Press, Concept of Web Offset, Multicolour Printing.

Introduction to inking system and its types: Types of rollers, Various types of inking system, Roller Settings, Roller maintenance.

Introduction to dampening system and its types: Dampening settings, Different dampening systems.

Various aspects of the printing unit: Introduction: Cylinder gears and design, Process of plate mounting, Packing requirements and material, Blanket cylinder: types and functions.

Process of Printing Operation: Colour settings in two-colour and multicolour printing, Different types of printing, Testing and quality control, Problems in printing unit

Suggested Readings:

Manual For Lithographic Press Operation - A. S. Porter
Offset Technology – C.S. Mishra
Lithographic Technology - Erwin A Dennis, OlusegunOdesina
Introduction to Printing Technology - Hugh M Speirs.

LAB-3: PLANOGRAPHY PRINTING PROCESS

Paper Code:PT4.3L	Credit : 4	Practical Hours : 120

Practical -I

1. Studying various controls and operations.
2. Studying of various mechanisms.
3. Studying of the lubrication system.
4. Setting the feeder, feed board, lays and delivery.

Practical - II

1. Setting the water and ink rollers and fixing the plate.
2. Learn the process of single colour printing, two colour and four colour printing
3. Understand the effect of ink and water on the print quality-use of densitometer.
4. Learn ink trapping and back trapping- effect of tack, printing speed, ink film thickness.
5. Understand the effect of impression pressure on print quality-use of feeder gauge.
6. Understand the effect on colour sequence on print quality-transparency and opacity of inks.

Practical -III

1. How to overcome problems of printing a second colour on a printed sheet, adjustment of lays, change of packing etc.
2. Identification of printing faults in the given samples - reasons and remedial actions.
3. Understand the effect of paper and ink film thickness
4. Mixing of process inks to the shade for a given colour patch.

PRINTING TECHNOLOGY PROJECT -II

Paper Code : PT4.4	Credit : 2	Hours : 60

The students are able to use their theoretical and practical learning through this project. Students may develop and design professional / business oriented printing output. The faculty member or Industry Partner will supervise the student during their internship. The project must be market oriented under guidance of a faculty member and / or Industry Partner. Student must use theoretical and practical learning in the assigned project. The student will present outcome in form of hard and soft copy to the examiner / Industry Partners. The Industry Partners (Examiner/s) and External Academic Expert (Examiner/s) will evaluate the outcome of assigned project. The report and the specimens of the work done by the student should be attested by the organization/faculty.

SEMESTER – V

PRINT JOURNALISM AND PRODUCTION

Semester - V **GEC 5.1**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Course contents:

Unit 1: Specialized Reporting Business/economic Parliamentary Political

Unit 2: Trends in Print journalism Investigative journalism/ Sting operations and related case studies Impact of Technology on newspapers and Magazines Ethical debates in print journalism: ownership and control.

Unit 3: Production of Newspaper Principles of Layout and Design: Layout and format, Typography, Copy preparation Design process (size, anatomy, grid, design) Handling text matter (headlines, pictures, advertisements) Page make-up (Print and Electronic copy) (Front page, Editorial page and Supplements).

Unit 4: Technology and print Modern Printing Processes. DTP (Desk top publishing)/software for print (Quark Express, Adobe Photoshop, Adobe In Design etc.) Picture Editing and Caption Writing.

Unit 5: Advanced Newspaper and Magazine Editing. Classification of Newspapers and Magazines. Current trends in Newspapers and Magazines with respect to content. Photographs and Cartoons in Newspapers and Magazines.

Suggested Readings

1. *Editing: A Handbook for Journalists* – by T. J. S. George, IIMC , New Delhi, 1989
2. *News Reporting and Editing by* Shrivastava, K. M. (1991) Sterling Publishers, New Delhi
3. *Professional Journalism*, by M.V. Kamath, Vikas Publications
4. *Groping for ethics in Journalism*, by Eugene H. Goodwin, Iowa State Press
5. *Journalism: Critical Issues*, by Stuart Allan, Open University Press
6. *ModernNewspaperspractice*, by Hodgson F. W. Heinemann London, 1984.
7. *Principles of Art and Production*, by N.N. Sarkar, Oxford University Press

Nakamura, —Race In/For Cyberspace: Identity Tourism and Racial Passing on the Internet.

UNIT - 5 Case Studies

- Visionary Leadership- Media Entrepreneurs, Qualities and Functions of media managers.
- Indian and International Media Giants- Case Studies

Suggested Readings

- Vinita KohliKhandeka, Indian Media Business, Sage
- PradipNinan Thomas, Political Economy of Communications in India, Sage
- Lucy Kung, Strategic management in media, SAGE
- Dennis F. Herrick, Media Management in the age of Giants, Surjeet Publications
- Jennifer Holt and Alisa Perren, (Edited) Media Industries-History, Theory and Method , Wiley- Blackwel
- John M. lavine and Daniel B. Wackman, Managing Media Organisations.

MEDIA INDUSTRY & MANAGEMENT-1

Semester - V **GEC 5.2**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Course contents:

UNIT - 1 Media Management: Concept and Perspective. Concept, origin and growth of Media Management. Fundamentals of management. Management School of Thought.

UNIT - 2 Media Industry: Issues & Challenges. Media industry as manufacturers- Manufacturing Consent, news and content management. Market Forces, performance evaluation (TAM, TRP, BARC and HITS) and Market shifts. Changing Ownership patterns.

UNIT - 3 Structure of news media organizations in India. Role responsibilities & Hierarchy. Workflow & Need of Management. Shift Patterns, Circulation & Guidelines.

UNIT - 4 Media Economics, Strategic Management and Marketing. Understanding Media Economics- Economic thought, Theoretical foundations, issue and concerns of media economics. Capital inflow, Budgeting, Financial management, and personnel Management, Strategic Management, Market forces.

UNIT - 5 Case Studies :
Visionary Leadership- Media Entrepreneurs, Qualities and Functions of media managers. Indian and International Media Giants.

Suggested Readings

□ Vinita KohliKhandeka, Indian Media Business, Sage
□ PradipNinan Thomas, Political Economy of Communications in India, Sage
□ Lucy Kung, Strategic management in media, SAGE
□ Dennis F. Herrick, Media Management in the age of Giants, Surjeet Publications
□ Jennifer Holt and Alisa Perren, (Edited) Media Industries-History, Theory and Method , Wiley- Blackwel
□ John M. lavine and Daniel B. Wackman, Managing Media Organisations

PRINTING MATERIALS

Paper Code : PT5.1	Credit : 2	Lectures Hours : 30

Photographic Materials: Main kinds of films and photographic papers used in graphic origination. Films positives, main base, stripping, thickness, right and wrong reading, negatives; paper positive materials. Developers, Reducers, Intensifiers.

Paper and Ink : Fibrous and Non-fibrous materials used in paper and board manufacturing. General characteristics and requirements of printing inks formulations pigments, vehicles, varnishes, solvents.O ther sensitive, sophisticated and light materials.

Adhesives : Classes and characteristics of adhesives used in binding and warehouse work and their range of applications Selection for specific purpose.

Other Materials - Binding materials. Different types of rubber used in printing. Use of leather, cloth, rexine, threads, tapes, stitching wire, metal foils and covering materials used for binding and print finishing.

Materials Management: Handling and storage of paper, printing surfaces, films, chemicals and other printing materials. Systems and methods of storage. Precautions in handling, storage, use and care of various printing substrates, materials and chemicals. Wastage reduction. Procurement, storage and delivery of raw material, semi finished material and finished products. Purchasing function, Inspection & quality control of material, materials storage, materials identification and location, stock records, material handling equipment, training, stock and inventory control, waste materials disposal, packing and dispatch of materials.

Suggested Readings:

Cost Accounting - B. R. Bhar
Printing Surface Praperation by C. S. Mishra
Print Management - Derek Porter
Printer's Costing & Estimating - B. D. Mendiratta
Management Aspect of Printing Industry - T. A. Saifuddin.
Estimating Methods and Cost Analysis for Printers - K. S. Venkataraman, K. S. Balaraman.
Printing Estimating Principle & Practice - Philip Kent Ruggles
Print Production Management - Gray G. Field
Principles of Applied Costing for Printing Industry - K. S. Venkataraman.

GRAVURE PRINTING PROCESS

Paper Code : PT5.2	Credit : 4	Lectures Hours : 60

Unit I: Gravure Technology

- Introduction of Gravure technology
- Features: Advantages and disadvantages

Unit II: Gravure Process and Components

- Types of cylinders
- Gravure presses and their configurations and characteristics
- Gravure Folders and Ink dryers
- Preparing Gravure cylinder

Unit III: Gravure Substrates

- Different Paper substrates
- Different Packaging paper substrates
- Non-paper substrates
- Advantages and limitations
- Future of gravure printing

Suggested Readings:

Printing Technology - Adams, Faux and Rieber
Handbook on printing technology – NIIR Board
Gravure Process and Technology – Gravure Association of America

LAB –1: GRAUVER PRINTING PROCESS

Paper Code:PT5.2L	Credit : 4	Practical Hours : 120

Practical - Gravure printing basics

- Study of various Gravure printing machine configurations
- Study of various components of a Gravure printing machine
- Pre-make ready in Gravure Printing Process
- Plate preparation/ Cylinder preparation
- Make-ready in Gravure Printing Process
- Study of feeding unit of a Sheet-fed/Web-fed Gravure printing machine

Practical – Color and substrates

- Single and multi-colour printing by using Gravure Printing Process
- Printing on different substrates by using Gravure Printing Process
- Study of delivery unit of a Sheet-fed/ Web-fed Gravure printing machine
- Cylinder setting in a Gravure printing machine
- Checking of practical problems in a Gravure printing process

PRINTING SCIENCE (PAPER & INK)

Paper Code : PT5.3	Credit :4	Lectures Hours: 60

Unit I: Printing Ink Technology

- Introduction, Different types of Inks and their properties
- Ingredients in Ink pigments and their characteristics
- Vehicles for Inks and their properties
- Different types of Additives and Oils and their characteristics
- Types of drying mechanisms
- Rheology of printing inks
- Ink requirements for printing processes
- Optical properties of ink films
- Machines and equipment for manufacturing printing ink
- Trends and developments in ink manufacturing process

Unit II: Radiation Curing

- Radiation curing inks
- Different types of curing
- Considerations for Ink curing
- Chemistry of UV Curing

Unit III: Security Inks

- Different types of security inks
- Special Features of Security Inks
- Printing security inks for cheques
- Features of inks for printing cheques
- Testing and quality control for security inks
- Environmental concerns in security ink printing.

Unit IV: Printing Substrates

- Types of paper and their characteristics
- Paper machines and process of paper manufacture
- Recycling of paper and its process
- Choosing paper for printing (size, storage, varieties)
- Printing problems and paper properties

Suggested Readings:

1) Printing materials science & technology - Bob Thompson
2) Advances in printing science & technology Vol.24 - J. Anthony Bristow
3) Hand book of Print & Production - Micheal Barnard, John Peacock
4) Introduction to Printing Technology - Hugh M.Speirs
5) What Printer Should Know About Ink, Dr. Nelson R. Eldered, 2001
6) Printing Ink Technology - Chris H. Williams, 2001
7) Printing Technology - Adams, Faux, Rieber

LAB -2 : PRINTING SCIENCE (PAPER & INK)

Paper Code:PT5.3L	Credit: 4	Practical Hours : 120

PRACTICAL:

1. Various samples of paper and their study.
2. Different samples of Inks and their study.
3. Light-fastness test
4. Machine Direction and Cross Direction of paper.
5. Effect of Humidity and Temperature on paper.
6. Ink tackiness Test.
7. Printed samples of different printing processes and their study.
8. Ink Viscosity Test.
9. Introduction to various chemicals used in printing.
10. Consumables and miscellaneous used in printing.

SEMESTER – VI

INDUSTRIAL / ORGANIZATIONAL PSYCHOLOGY

Semester - VI **GEC 6.1**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Objective: To introduce the basic concepts of I/O psychology and to understand the applications of psychology at the workplace.

Unit 1: Introduction: Industry and organization; Current status of I/O psychology, I/O psychology in the Indian context.

Unit 2: Work Related Attitudes: Job satisfaction; Organizational Commitment; Organizational Citizenship Behavior.

Unit 3: Work Motivation: Theories and application; Indian perspective.

Unit 4: Leadership: Classical and Contemporary approaches to leadership; Cross-cultural leadership issues; Indian perspective on leadership

Practicum: Any two practicum based on the syllabus

Reading List:

Aamodt, M. G. (2001) Industrial Organizational Psychology. India: Cengage Learning.

Chadha, N.K. (2007) Organizational Behavior. Galgotia Publishers: New Delhi.

Greenberg, J. & Baron, R.A. (2007). Behaviour in Organizations (9th Ed.). India: Dorling Kindersley.

Luthans, F. (2009). Organizational behavior. New Delhi: McGraw Hill.

Muchinsky, P.(2006). Psychology applied to work: An introduction to industrial and organizational psychology. NC: Hypergraphic Press.

Pareek, U.(2010). Understanding organizational behaviour. Oxford: Oxford University Press.

ENTREPRENEURSHIP AND SMALL BUSINESS

Semester - VI **GEC 6.2**

Credit – 6 **Maximum Marks – 100** **Hours : 3**

Objectives

The purpose of the paper is to orient the learner toward entrepreneurship as a career option and creative thinking and behavior for effectiveness at work and in life.

Unit I 15

Meaning, elements, determinants and importance of entrepreneurship and creative behavior. Entrepreneurship and creative response to the society' problems and at work. Dimensions of entrepreneurship: intrapreneurship, technopreneurship, cultural entrepreneurship, international entrepreneurship, enetpreneurship, ecopreneurship, and social entrepreneurship.

Unit II 15

Entrepreneurship and Micro, Small and Medium Enterprises. Concept of business groups and role of business houses and family business in India. . The contemporary role models in Indian business: their values, business philosophy and behavioural orientations. Conflict in family business and its resolution. Managerial roles and functions in a small business. Entrepreneur as the manager of his business.The need for and the extent of professionalization of management of small business in India.

Unit III 15

Public and private system of stimulation, support and sustainability of entrepreneurship. Requirement, availability and access to finance, marketing assistance, technology, and industrial accommodation, Role of industries/entrepreneur's associations and self-help groups. The concept, role and functions of business incubators, angel investors, venture capital and private equity fund.

Unit IV 15

Sources of business ideas and tests of feasibility. Significance of writing the business plan/project proposal. Contents of business plan/ project proposal. Designing business processes, location, layout, operation, planning & control; preparation of project report (various aspects of the project report such as size of investment, nature of product, market potential may be covered). Project submission/presentation and appraisal thereof by external agencies, such as financial/non-financial institutions.

Unit V 15

Mobilising resources for start-up. Accommodation and utilities. Preliminary contracts with the vendors, suppliers, bankers, principal customers; Contract management: Basic start-up problems. Operations management: designing and redesigning business processes, layout, production planning &control, implementing quality management and productivity improvement programmes. Input-analysis, throughput analysis and output analysis. Basic awareness of inventory methods. Basic awareness about the need for and means of environment (eco-) friendliness and energy management. Organization of business office.

Basic awareness of manual and computerized office systems and procedures. Introductory word processing, spreadsheet preparation and data sorting and analysis, internet browsing.

Suggested Readings:

1. Kuratko and Rao, *Entrepreneurship: A South Asian Perspective,* Cengage Learning.
2. Desai, Vasant. *Dynamics of Entrepreneurial Development and Management*. Mumbai, Himalaya Publishing House.
3. Dollinger, Mare J. *Entrepreneurship: Strategies and Resources*. McGraw Hill.
4. Holt, David H. *Entrepreneurship: New Venture Creation*. Prentice-Hall of India, New Delhi.
5. Jain, Arun Kumar. *Competitive Excellence: Critical Success Factors*. New Delhi: Viva Books Limited
6. Panda, ShibaCharan. *Entrepreneurship Development*.New Delhi, Anmol Publications.
7. Plsek, Paul E. *Creativity, Innovation and Quality*. (Eastern Economic Edition), New Delhi: Prentice-Hall of India.
8. SIDBI Reports on Small Scale Industries Sector.
9. Singh, Nagendra P. *Emerging Trends in Entrepreneurship Development*. New Delhi: ASEED.

PRINT INDUSTRY MANAGEMENT

Paper Code : PT6.1	Credit : 3	Lectures Hours : 45

Unit I: Management Concept

- Concept of Management. Organizational Structure and Role of various departments.
- Inter-dependence & interaction of department.
- Types of firm - Sole Proprietor, Partnership, Limited Company, Administrative office
- Facility location decision making, Economic analysis, Qualitative factor Analysis, Layout of the factory, Analysis & selection,
- Human Resource - Consideration of man & machine, job-design, working environment &safety of worker.

Unit II: Management Function

- Marketing and its functions, distribution channels, salesmanship and advertising.
- Human resource management: Manpower planning – recruitment, selection, Training performance appraisal Wage and salary administration, Resource analysis & allocation.
- Financial Management -Nature, Scope objectives and functions of Financial Management.
- Work flow and organizational structure in a printing press.
- Cost Accounting: cost concept, cost sheet, cost reduction and cost control.

Unit III: Inventory Management

- Definition & purpose, Inventory classification, EOQ, Materials handling &Warehousing. Cost estimation and control.

Unit IV: Materials and Capacity Requirement Planning

- MRP, CRP–Concepts & applications, aggregate planning & Master Scheduling.
- Acquisition of printing and packaging materials, equipment transportation & logistics.

Unit V: Printing Industry and Policy Framework

- Obtaining license for printing press, readership segment, Government Interface, policies of government, publication division, RNI, Readership surveys- NRS & IRS, Circulation& Subscription.

Suggested Readings:

Cost Accounting - B. R. Bhar

Print Management - Derek Porter

Printer's Costing & Estimating - B. D. Mendiratta

Management Aspect of Printing Industry - T. A. Saifuddin.

Estimating Methods and Cost Analysis for Printers - K. S. Venkataraman, K. S. Balaraman.

Printing Estimating Principle & Practice - Philip Kent Ruggles

Print Production Management - Gray G. Field

Principles of Applied Costing for Printing Industry - K. S. Venkataraman.

DESIGN & PLANNING FOR PRINT PRODUCTION

Paper Code : PT6.2	Credit : 3	Lectures Hours : 45

Introduction: Graphic designer and his role. Elements and Principles of design.

Design: Visual ingredients of graphic design, point, line, graphic space, shape, texture, color, scale, balance and contrast. Use of computers software in designing. Types of images. Selection and assessment of originals, photographs, sketches, paintings. Factors to be considered for preparation of a design.

Design management: Relationship production and sales departments of a press. Control and checking of artwork at all stages. Outsource of design and resources for design.

Design process: Materials and tools used in preparing layouts and artwork. Methods of preparing a design in various stages. Design for books, magazines, newspapers, catalogues, cartons and commercial stationery.

Production Management: Input, process and output decision. Selection and co-ordination of production processes. Decision of material composition methods. Finishing and ancillary processes of design. Selection and specification of ink, paper and other materials in relation to design specifications and to the production process.

Suggested Readings:

Fundamentals of Copy & Layout - A. C. Book(Ac) Sohick(Cd)
Production for the Graphic Designer. – Craig.
How to brief designs & buy print.–Muray(Ray).
Lithographic Press Work. - A. S. Porter.
Principle of CAD.- Rooney J. & Steadman P.
Advertisement Management.- David A. Akar& John G. Myers.
Elements of Cartography. - Arthur Robinson, Randall Sale & J. K. Morrison.
Analysis of Electronic Circuit - Jal Baker.
Copy Preparation. - Leon O Chus& Pen Min Lin C. A.

PRINT FINISHING AND QUALITY CONTROL

Paper Code : PT6.3	Credit : 4	Lectures Hours : 60

Unit -1: Introduction:

- Developments in Print Finishing. Growths Factors in Print Finishing.
- Book Binding. Book Binding Tools-.Forwarding Tools, Finishing Tools, Binding Room Equipment- Laying Press, Standing Press, Sewing Frame, Glue Pot, Board Cutting.
- Board - Kinds of Boards. Reinforcing Materials. Securing Materials, Covering Materials.
- Adhesives- Types and use of Adhesives in Print Finishing, selection of Adhesives.
- Paper – Type, Selection and Finishing process.
- Binding, Stitching, Sewing & Finishing Machines.

Unit -2: Finishing Operations - Book:

- Hard and Paper Bound Book.
- Hand Folding and Machine Folding.
- Gathering, Collating & Inserting.

Unit -3: Stitching, Sewing & Binding :

- Stitching, Sewing. Binding – Types and appropriate use of Stitching, Sewing &Binding.
- Material of Stitching, Sewing and Binding for different articles.
- Process and finishing operation of Stitching, Sewing and Binding of different articles.
- Order of on Demand Booklet Binding. Publishers Binding. Magazine Binding & Book Binding.

Unit -4: Finishing Processes:

Decoration. Print Finishing Operations - Embossing &De-bossing, Blind Embossing, Gold Blocking /Foil Stamping. Die Printing. Thermograph, Velvet Printing, Marbling, Varnishing, Graining, Laminating, Gumming, Gluing, Punching, Perforating, Drilling. Label Pouching, Edge Decoration. Numbering. Indexes. Ruling. Banding & Lacing..

Unit -5: Quality Control:

Establishing clear specifications and standardization of materials to be purchased - paper, ink, plates, blankets and rollers, Inspection and testing of incoming materials as part of quality control. Paper and paper board testing. Print quality and end-use requirements, Process control instruments, devices and aids used in the galley and dark-room, striping department, plate room and press room for specific processes and for general purposes Press sheet control devices used for production of multi-colour printing jobs.

Suggested Readings:-

Binding And Finishing - Ralph Lyman Binding And Finishing Part-1 - B.D.Mendiratta
Binding Finishing Mailing - T.J.Tedesco Introduction to Printing & Finishing - Hugh Speirs
Finishing Process in Printing - A.G.Martin.
W.H. Banks, Inks, Plates and Print Quality, Pergamon Press
Quality Control for quality printing, Graphic Arts, Technical Foundations.

PRINT FINISHING AND QUALITY CONTROL

Paper Code:PT6.3L	Credit : 4	Practical Hours – 120

PRACTICAL:

I. Preparation of books - Quarter bound a/c books, Half bound a/c books and Full bound a/c books by - French sewing method, Tape sewing method, Cord sewing method, Saddle sewing method, Side sewing method, Whip sewing method.

II. Preparation of Writing board, Photo Album, Receipt books with duplicate & triplicate, Cheque books, telephone directory with Indexes and Tabs. Preparation of Mechanical binding - Spiral wire binding, Wire 'O' binding, Ring binding.

III. Preparation of files - Loose leaf file - single piece, Loose leaf file - Two piece tab binder, Loose leaf guard file - Boards joined with spine strip.

IV. Preparation of End papers - Single End paper, Double or Inserted End paper, Made end paper, Cloth joint end paper, ZigZag end paper, Cloth joint ZigZag end paper.

V. Operations and mechanisms Folding machine, Guillotine machine, Cutter and Creaser, Varnishing machine, Laminating machine, Sewing & Stitching machine and other machine.

VI. Binding of case bound, publishers binding. Book-emphasis will be given on decoration.

VII. Print finishing operation to be conducted - Gold blocking, Embossing, Edge decoration,
Thermography, Marbling, Velvet printing, Rubber printing, Die printing, Pouch lamination.

VIII. Quality Control – Operation.

INTERNSHIP

Paper Code : PT6.4	Credit : 4	Internship Hours - 120

Content Outline:

The students compulsorily complete a minimum of 120 hours internship programme. The project must be in professional field of printing technology. An industry professional and a faculty member will supervise the student during their internship. Student compulsorily produces a real web development project. At the end of the internship, the students require to prepare a comprehensive report. The report and the specimens of the work done by the student should be attested/certified by the organization. Student should also produce a completion certificate of internship which will be issued by the organization after successful completion of the project. All the above details should be submitted to the Head of the Department and/or Industry Partner for evaluation.

---------- xxxxxxxxxxxxxxxx ----------

Dean
Faculty of Applied Social Sciences and Humanities
University of Delhi South Campus
New Delhi - 110021

Principal
ALINDI COLLEGE
(University of Delhi)
East Patel Nagar, N. Delhi