P207 FILM ASSEMBLY AND PLATE MAKING

IV TERM CORE COURSE

6 Hours / Week Total Hours: 72 Hrs.

MAJOR DIVISIONS

UNIT TOPIC
I Film Assembly
II Job Planning and Imposition considerations
III Negative / Positive Film Assembly
IV Lithographic Plate Surface Chemistry
V Offset Plate Making Processes

UNIT I - FILM ASSEMBLY (15 Hrs)


UNIT II - JOB PLANNING AND IMPOSITION CONSIDERATIONS (15 Hrs)


UNIT III – NEGATIVE / POSITIVE FILM ASSEMBLY (15 Hrs)

1. Inspection and preparation of films before assembling; 2. Types of film Assembly - Negative assembly on peelable membrane substrates, negative assembly to golden rod, and negative assembly to golden rod with plastic interleave, conventional positive assembly, blue and red keys on film; 3. Application and method of producing the burn-out mask; 4. Conventional positive film assembly;


UNIT IV - LITHOGRAPHIC PLATE SURFACE CHEMISTRY


UNIT V - OFFSET PLATE MAKING PROCESSES

1. Wipe-on process using negative films; 2. Pre sensitized plates using both negative and positive films; 3. Trouble shooting in the wipe-on and presensitized plate making system; 4. Care and storage of offset plates before and after printing.

Reference Books:

P208 SHEETFED OFFSET MACHINES
IV TERM CORE COURSE

6 Hours / Week          Total Hours: 72 Hrs.

MAJOR DIVISIONS

<table>
<thead>
<tr>
<th>UNIT</th>
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<tbody>
<tr>
<td>I</td>
<td>Offset Lithographic Presses</td>
</tr>
<tr>
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<td>Printing Unit</td>
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<td>III</td>
<td>Inking and Dampening</td>
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<tr>
<td>IV</td>
<td>Sheet Handling, Controlling and Transferring</td>
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<td>Make ready and the Machine Run</td>
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UNIT - I - OFFSET LITHOGRAPHIC PRESSES (15 Hrs)


UNIT - II - PRINTING UNIT (14 Hrs)


UNIT - III - INKING AND DAMPENING (12 Hrs)

The inking system: Construction of a typical inking system, Ink film thickness, setting rollers: setting form roller to oscillator, setting form roller to plate, setting the ductor roller. Inking system – Problems.


UNIT-IV-SHEET HANDLING, CONTROLLING AND TRANSFERRING (14 Hrs)

lay - Types, sheet detectors and trip systems. Grippers and sheet insertion system: Type of grippers, sheet insertion Systems – Types and principles: Direct System, Swing – arm system, Rotary drum system, Overfeed system, care and attention to grippers.


UNIT - V - MAKE READY AND THE MACHINE RUN (17 Hrs)

Pre make ready procedures, Make ready Procedure for single colour, Preparing the press for the New pressrun: Inking system wash up, cleaning the dampening system, checking the instructions on work order. Setting sheet handling mechanisms, Installing the plate, preparing new blankets, making trial Impressions, press problems - ghosting, hickies, ink mottle, set-off, backing- up, fluffing, linting, picking, piling, moire and static electricity, examining, Registration check, checking for print Quality.


Reference Books

1. Loyal P.Dejidar, Thomas, M.Destree - "Sheetfed offset operating", GA TF, 1988,
P209 FLEXO, GRAVURE AND SCREEN PRINTING

IV TERM CORE COURSE

6 Hours/Week                       Total Hours - 72 Hrs

MAJOR DIVISIONS

UNIT TOPIC
I Principle of Flexographic Process and Image Carrier
II Gravure Principles and Image carriers
III Gravure Press Work
IV Screen Printing
V Textile Printing

Unit I – PRINCIPLE OF FLEXOGRAPHIC PROCESS AND IMAGE CARRIER  
(14 Hrs)

1. Principle of flexographic printing process; 2. Flexographic surface preparation – 
Rubber plate molding, sheet photopolymer, liquid photopolymer; 3. Plate mounting and 
proofing, handling and storage of plates; 4. Flexographic printing machines – Anilox rollers , 
fountain rollers , types of inking system, plate cylinder, impression cylinder; 5. Press types - 
Stack, common impression and inline presses; 6. Inks and solvents used for flexo printing; 
7. Types of substrates – their properties

UNIT II - GRAVURE PRINCIPLES AND IMAGE CARRIERS  
(15 Hrs)

1. Principle of Intaglio and Gravure printing process- Relative advantages – job suitability; 
2. Gravure cylinder preparation – chemical etching, Electromechanical process, direct 
transfer, laser cutting; 3. Carbon printing; 4. Well formation; 5. Cylinder design, Balancing 
the cylinder, Electro plating principles, copper plating and polishing, staging and etching 6 
cylinder proofing and correction ; 7. Reuse of cylinder – methods

UNIT III - GRAVURE PRESS WORK  
(15 Hrs)

1. Rotogravure printing (The publishing press): Printing units- impression system-
doctor blade mechanism- inking unit-drying system, solvent recovery and handling the printed 
web, paper quality and their control.

2. Rotogravure printing (the packaging press): Sheetfed presses, Speciality printing, label and 
narrow web printing; Gravure printing inks and solvents – volatile solvent based inking system, 
aqueous based solvent systems; 4. Noise at work.

UNIT IV - SCREEN PRINTING  
(18 Hrs)

1. The principles of screen printing, classification; 2. Materials used for Screen 
printing process; 3. Mesh classification and mesh selection; 4. Screen tables, Screen frames - 
Wood, Steel, Aluminum screen frames, and screen tensioning- self-tensioning frames; 5. Screen

UNIT V – TEXTILE PRINTING

(10 Hrs)

Materials
1. Dyes and Dyeing - single stage dyeing and polychromatic dyeing
2. Synthetic fibers, blended fiber fabrics, natural fibers
3. Paper, paints, brushes, pens and inks, pallets, pencils and adhesives.

Printing Methods
1. Roller Printing, screen printing, dry printing, wet printing, discharge printing, lithographic printing and flexographic printing.

Reference Books:
2. Herbert L. Weies, Converting Technology corporation, “Rotogravure and Flexographic printing presses”, N. Batlett Drive, Milwaukee, WI, USA.
P210  FILM ASSEMBLY AND PLATEMAKING LAB

IV TERM CORE COURSE

6 Hours / Week          Total Hours : 72 Hrs

1. Layout preparation for film assembly using register marks, bleed marks, trim marks and folding marks.
2. Assembly of film negatives for sheet work and half sheet work up to 4 pages section of imposition schemes.
3. Assembly of film positives for sheet work and half sheet work up to 8 pages section of imposition schemes.
4. Assembly of film negatives for sheet work and half sheet work up to 16 pages section of imposition schemes.
5. Assembly of film positives for sheet work and half sheet work up to 32 pages section of imposition schemes.
7. Preparation of complementary flats using negative and positives for butting images and surprint.
9. Preparation and analysis of albumen coating solution.
10. Coating, exposing and processing of albumen plates.
15. Plate inspection and application of washout solution.
16. Study of various quality control aids in plate making.
17. Plate treatments - care and storage.

SCHEME OF EXAMINATION

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P211 SHEETFED OFFSET AND SCREEN PRINTING LAB

7 Hours / Week IV TERM CORE COURSE Total Hours : 84 Hrs.

SHEETFED OFFSET
1. Perform Pre make-ready operations of offset printing machines.
3. Preparation of offset plate for mounting on the cylinder.
4. Preparation and fitting of offset blanket.
5. Care and treatment of offset blanket in use.
6. Checking for correct pressure of blanket using bandwidth.
7. Preparation of fountain solution and plate etches for use.
8. Preparation of dampening rollers.
9. Checking for correct pressure of inking rollers
   a) Bandwidth, b) Ink pan method
10. Adjustment of inking rollers and dampening rollers.
11. Perform a) Ink roller wash-up b) Ink fountain setting.
12. Make-ready and printing two-colour work of line originals.
13. Make-ready and printing two-colour work of halftone originals.
14. Dampening unit cleaning Preparing the plate for storage.
15. Preparing the plate for storage and Give the safety precautions while working on machines.

SCREEN PRINTING LAB
1. Study of different types of mesh materials used for screen preparation – Silk, Nylon, Polyester etc
2. Preparing a mesh and stencil for screen printing
3. Preparing a film material by direct method and indirect method
4. Prepare a) Visiting card b) greeting card
5. Exposing and developing chromline film.
7. Screen Printing operation on cloth.
8. Obtain a single colour - line work output of a book cover in the screen printing process.
9. Obtain a cut colour output using the screen printing process.
10. Study on Types of Screen Printing Machineries.

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1. Design a webpage to display a formatted message by using bullets font type etc.,
2. Design a webpage with images and text wrapped around the images.
3. Design a webpage with a table with 4 Rows and 4 Columns include Headers and Footers.
4. Design a Chessboard layout using HTML.
5. Design a webpage which contain Hyperlink on a image and on a text.
6. Design a webpage using frames, include external hyperlinks.
7. Design a form with text field, radio button, Check box, Text area, Menu, submit and reset button using HTML.
8. Design a webpage with multiple frames.
9. Create a table with 2 columns and n rows. In the first column of each row type a text and in next column give a link to a page related to that text.
10. Create a webpage for a company. Include all the details, use appropriate tools.
11. Web site creation: Creating HTML home page with (a) List (b) A horizontal line.
12. Web site creation: Creating HTML home page with (a) Images (b) Line break.
13. Create a webpage with Audio effect.
14. Create a webpage with Video effect.
15. Create a home page for NPTC with the Logo.
16. Create a webpage with Subscripts and Superscripts.
17. Create a webpage with Ordered list.
18. Create a webpage with In ordered list

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