

AMPT14 GRAVURE TECHNOLOGY

UNIT-1 GRAVURE PROCESS AND IMAGE CARRIER PREPARATION

- 1.1 Process characteristics, cylinder construction- design, balancing, copper plating and polishing; reuse of cylinder; well formation; film positives;
- 1.2 Cylinder layout and film assembly; cross line screen, image carrier preparation techniques – diffusion etch process, direct transfer process,
- 1.3 Electromechanical, laser and electron beam engraving process.

UNIT-2 GRAVURE PRINTING MACHINE

- 2.1 Doctor blade assembly- conventional, reverse angle, holder, loading, doctor and back-up blades; oscillation, positioning; impression rollers- types, loading, deflection;
- 2.2 Electrostatic assist impression system; inking system- types; dryer- types; Press design- types; in feed and out feed coating;
- 2.3 Lamination, inline solvent less lamination; inline converting operations; power transmission system.

UNIT-3 SCREEN PRINTING COMPONENTS

- 3.1 Process characteristics; essential components;
- 3.2 Screen fabrics- types, fabric terminology, fabric selection; frames- types;
- 3.3 Fabric tension characteristics; tension measurement; squeegees- types, techniques,
- 3.4 Selection, maintenance and blade sharpening; substrates and inks; screen printed product

UNIT-4 STENCIL PREPARATION AND PRESSES

- 4.1 Stencil types- Direct stencil, indirect stencil, capillary film – stencil exposure,
- 4.2 Stencil preparation; stencil selection; presses – graphic presses, textile presses, and container printing; dryers- types.

UNIT-5 PRINT PROBLEMS AND QUALITY CONTROL

- 5.1 Print problems and remedies; quality control aids; maintenance; health and safety issues;
- 5.2 Waste disposal and environmental safeguards.

Reference Books:

1. Harry B. Smith, Modern Gravure Technology, Pira reviews of Printing, Pira International, 1994
2. Samuel B. Hoff, Screen Printing – A Contemporary Approach, Delmar Publishers, 1997.
3. Ingram, Samuel, Screen Printing Primer, GATF press, 2nd Edition, 1999.
4. William Appleton, Screen Printing, PIRA International, 1994.