GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN PRINTING TECHNOLOGY
Semester: 4

Subject Name   **IMAGE GENERATION & CORRECTION**

Sr.No	Course content0

1	**COLOUR SEPARATION.**
	Handling different types of originals for colour process.
	  1.1 Fake colour theory.
	  1.2 Light and colour theory.
	  1.3 Filters-colour seperation filters and other overlap in the filters, filter factor and filter ratio.
	  1.4 Screen angle – moiré, barite rules in angular adjustment, reproduction on pre-printed colour originals..

2	**HALFTONE SCREENING WORK**
	  2.1 Type of contact screen.
	  2.2 Screen for colour reproduction.
	  2.3 Use of C.C. filter with screen.
	  2.4 Mechanical contact screen for dot percentage.
	  2.5 Use of contact box for screening, point source light.

3	**INHERENT ERRORS OF TRICHROMATISM.**
	  3.1 Inadequacies in filtration.
	  3.2 Unequal spectral sensitivity.
	  3.3 Proportionality failure, additively failure, super additively.
	  3.4 HUE deficiencies in the tri-chromatic inks.
	  3.5 Evolution of subtractive primary-study of filtered densitometer reading of actual inks and effects.

4	**COLOUR CORRECTION.**
	  4.1 Basic principle of colour correction-manual, photographic and electronic.
	  4.2 Hand retouching method, dot etching.
	  4.3 Brief study of photographic masking with schematics of positive and negative marking methods.
	     Tonal correction : Tonal mask, Brief study of light premask, shadow mask, contant reducing mask.
	  4.5 Generation of black printer – under colour removal and its variant – grey component replacement.

5	**REPRODUCTION BY ELECTRONIC SCANNING.**
	  5.1 Introduction to three basic movements of electronic scanner reciprocal motion, electronic flying spot, rotating cylinder.
	  5.2 Terminology and important basic concepts in modern scanning systems..

6	**BRIEF STUDY OF DRUM SCANNERS.**
	  6.1 Basic operating principles of colour scanners.
	  6.2 Classified scanner by O/P- continuous tone scanners, contact screen scanner, electronic dot generating scanners.

	6.3 Important components of drum scanner(Block Diagram)
	6.4 Dot area and densitimeter, electronic unsharp masking.
	6.5 Evaluting scanning film.
	6.6 Study of quality control aids for scanning.
7	**ORIGINALS FOR SCANNING.** 7.1 Dupling transparency. 7.2 Emulsion stripping.. 7.3 Mounting transparencies in oil. 7.4 Reflection copy, scaling copy, colour reproduction guides scanner output. 7.5 Colour correction – the dogotal scanner, Analog scanner simulation of mascking system, use of colour masking equations.
8	**QUALITY CONTROL.** 8.1 Grey scale and colour control scale, guide scale. 8.2 Spectral curve for photographic Materials. 8.3 Use of Densitometer, measurement and control of colour for printing.
9	**DESIGNING SOFTWARES.** 9.1 Tools and equipment for creation of design/art work. 9.2 Prepare design using multicolour combination.
10	**FILM PROCESSING** 10.1 Formulation for processing chemicals and preparation. 10.2 Manual and automatic film processing. 10.3 Electronic processing (i. E RIP, Image setter)
11	**ROLE OF INTERNET IN PRINTING INDUSTRY.** 11.1 Working of internet. 11.2 Benefit of internet for printing industry. 11.3 Role of world wide web (www,) in printing industry.
12	**ROLE OF MULTIMEDIA IN PRINTING INDUSTRY.** 12.1 Bebefits of Multimedia packages. 12.2 Softwares for Destance communication.

LABORATORY EXPERIENCES

1. Shooting Halftone negative and positive through contact screen for direct and indirect process.
2. Process of line colour separation.
3. Colour separation by single overlay masking.
   Flow chart preparation of : -

   1. Direct and Indirect process.
   2. Single overlay masking.
   3. Double overlay masking.
   4. Camera back masking.
   5. Integral masking. Advantages and Disadvantages.
4. Preparation of Highlight mask and Drop out mask.
5. Learn to prepare positive to positive film (etch bleach process).

6. Scanning of Reflection and Transparency copy through electronic scanning devices.
7. Rescreening of Halftone originals for Reproduction by use of camera / Computers.
8. Screen angle setting for Duotone printing, four colour printing – Manual / Computer.
9. Study of parts of Computer.
10. Preparation / editing of Design consisting only text by using MS-Office, Pagemaker, Corel draw softwares.
11. Preparation / editing of Design consisting text and picture combination by using MS-Office, Pagemaker, Photoshop, Corel draw.
12. Inspection of finish Design as per quality requirement and problem solving.
13. Study of different O/P devices.
14. Study of Internet and multimedia as per printing requirement.

Reference Books:

Sr. No.	Name of Books	Author	Publisher
1.	Line Photography	Davis Robinson	AIFMP, New Delhi
2.	Halftone Photography	Erwin Jaffe.	AIFMP, New Delhi
3.	Manual of Graphic reproduction for lithography	Eric Chambers	Litho training services Ltd., London & Manchester
4.	The Hand Book of Modern Halftone Photography.	Ekald Fred Noemer	Perfect graphic Arts Demarest
5.	Colour and its Reproduction	Gray G.	G. A. T. F.
6.	Graphic Reproduction Photography.	Homes Walter Burden	Focal press, London