

Teaching and Examination Scheme

Teaching Scheme hrs/week		Examination Scheme					
Theory	Practical	Theory Marks	Duration	UT Marks	Pr. Marks	Or. Marks	TW Marks
03	02	---	---	--	30	--	20

Rationale: Pre-Press activities such as operating reproduction photography camera, printing down frame, off-line chemical processing of exposed film and plate required more manpower. Number of raw material and are time consuming and perhaps less environment friendly. Digital Imaging techniques at sans camera, printing down frame and even film are replacing conventional imaging technologies at faster rate. Output quality rendered by any of the digital imaging technique promises saving in turnaround time, cost incurred on account of manpower required, and effective use of raw materials. These techniques also offer easiest ways of storing original, positives and negatives in digital form and unmatched digital quality. Thus understanding the concepts of digital imaging its scope is inevitable for sprints of career in printing technology.

Chapter	Name of the Topic	Hours	Marks
1.0 Overview Of Conventional Imaging Techniques And Digital Imaging			
1.1	Study of page make up, photographic characteristics of image carriers of different printing processes.	02	---
1.2	Definition, applications and factors that accelerated the development of Digital Imaging in graphic prepress technologies.	02	---
1.3	Comparison of conventional film, plate making and digital imaging approaches used in graphic reproduction. Advantages of Digital Imaging prepress techniques i.e. computer-to-film and computer-to plate.	02	---
2.0 Requirements For An Ideal Digital Imaging System.			
2.1	Energy i.e. photo speed requirements of different light sensitive chemistries in use. Comparison of direct and indirect methods of plate making.	02	---
2.2	Requirements for computer-to-plate and computer-to-film devices. Study of required properties of illuminants used in computer-to-plate and computer-to-film devices.	02	---
2.3	Different types of Digital Imaging systems. Classification of computer-to-plate and computer-to-film systems as light and non-light sensitive.	02	---

3.0 Silver Halide Based Light Sensitive Digital Imaging Systems.			
3.1	Study of working principle, spectral sensitivity, stages involved in different silver halide based computer-to-plate & computer-to-film systems.	02	---
3.2	Study of advantages, applications and limitations of silver halide based computer-to-plate and computer-to-film systems.	03	---
4.0 Electro Photography Based Light Sensitive Digital Imaging Systems.			
4.1	Study of working principle, spectral sensitivity, stages involved in different electro photography based computer-to-plate & computer-to-film systems.	02	---
4.2	Study of advantages, applications and limitations of electro photography based computer-to-plate and computer-to-film systems.	03	---
5.0 Organic Photopolymer Light Sensitive Digital Imaging Systems			
5.1	Study of working principle, spectral sensitivity, stages involved in organic photopolymer based computer-to-plate systems.	02	---
5.2	Study of advantages, applications and limitations of organic photopolymer based computer-to-plate and computer-to-film systems.	02	---
6.0 Non Light Sensitive Or Heat Based Digital Imaging Systems			
6.1	Study of working principle and characteristics of imaging with the help of thermal cross-linking mechanism and comparative sensitivities of optical i.e. light sensitive and cross-linked plates.	02	---
6.2	General comparison of light and non-light sensitive Digital Imaging systems used in graphic prepress industry.	02	---
7.0 Digital Thermal Imaging Systems.			
7.0	Study of working principle, stages involved in different laser ablation i.e. heat based computer-to-plate making systems.	02	---
		32	

No	Practical
01	Comparison of different light sensitive computer-to-film technologies on the basis of spectral sensitivity, photo speed, output resolution, recording light source, etc.
02	Study of construction of an image setter and listing its mechanical and optical elements and technical specifications.
03	Demonstration of replenishment of chemicals on an image setter.
04	Study of recording light source used in an image setter.
05	Study of RIP software and hardware used in an image setter.
06	Study of routine and preventive maintenance methods of an image setter.
07	Comparison of different light sensitive computer-to-plate technologies on the basis of spectral sensitivity, photo speed, output resolution, recording light source, etc.
08	Study of construction of an image setter and listing its mechanical and optical elements and technical specifications.
09	Demonstration of replenishment of chemicals on plate setter.
10	Study of recording light source used in plate setter.
11	Study of RIP software and hardware used in plate setter.
12	Study of routine and preventive maintenance methods of an image setter.

References Book

No	Author	Title	Publication
1	Hugh Speirs	Introduction to Prepress	BPIF Publishing
2	Bob Thompson	Printing Materials: Science and Technology	PIRA International
3		Handbook of Imaging Materials	
4	Helmut Kipphan	Handbook of Print Media: Technologies and Production methods.	Heidelberg and Springer
5	Kennard Cloud	Electronic Imaging Applications in Graphic Arts	Proceedings
6	Joe Farace	Digital Imaging	Focal Press Ltd. London