

2018

**[OBE DESIGN- PRINTING
TECHNOLOGY DEPARTMENT]**

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PREFACE

Outcome Based Education (OBE) is the educational approach which focuses on student centric education in the context of development of personal, social, professional and knowledge (KSA) requirements in one's career and life. It is the decade ago curriculum development methodology. The educational triangle of LEARNING-ASSESSMENT-TEACHING is the unique nature of the OBE approach. The curriculum practices such as Competency Based Curriculum, Taylor's Model of Curriculum Development, Spadys' Curriculum principles, Blooms taxonomy and further use of assessment methodologies like, Norm-reference testing and Criterion reference testing, etc is being practiced since decades. It is also interesting to know that, globally, different countries and universities adopts the curriculum development models/approaches such as, CDIO (Conceive-Design-Implement-Operate), Evidenced Based Education, Systems' Approach, etc as the scientific and systematic approaches in curriculum design.

The authorities of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (M.S.) in-lieu of accreditation standards of National Assessment and Accreditation Council, decided to opt for Outcomes Based Education (OBE). As the part of the decision, different meetings, workshops and presentations were held at the campus of university.

This document is the outcome of different meetings and workshops held at university level and department level. The detailed document is designed and the existing curriculum of the department is transformed in to the framework of OBE. This is the first step towards the implementation of OBE in the department. The document will serve all stakeholders in the effective implementation of the curriculum. The OBE is continuous process for quality enhancement and it will go a long way in order to enhance the competencies and employability of the graduates/Post-graduates of the university department.

Head of Department

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OUTCOME BASED EDUCATION

Faculty of Interdisciplinary Studies

Department of Printing Technology

1. Mission:

Mission Statement

To provide the young technocrats in the field of printing and packaging by imparting them academic, industrial, technical skillsets as ready to work manpower in different sections of the industry along with boosting youngsters for entrepreneurship.

2. Vision:

Vision Statement

- To impart technical expertise in various areas of Printing Industry.
- To develop & nurture the skills of students in the latest trends of publishing and advertising.
- To enhance professional excellence in the print and packaging media.

3. Title of the Program (s):

- a. Bachelor of Printing Technology and Graphic Arts
- b. Advanced Diploma in Printing Technology and Graphic arts

4. Program Educational Objectives:

The program educational objectives (PEO) are the statement that describes the career and professional achievement after the program of studies (graduation/ post-graduation). The PEOs are driven from question no. (ii) of the Mission statement (What is the purpose of organization). The PEOs can be minimum three and maximum five.

PEO1: To have competencies to apply theories and principles of technology domain in solving the field problems.

PEO2: To provide the professional services to industry, business and institutes.

PEO3: To establish own enterprise in the domain of specialization.

PEO4: To opt for higher education and to be a life-long learner.

PEO5: To provide, value based and ethical leadership in the professional and social life.

5. Program Outcomes:

The program outcomes (PO) are the statement of competencies/ abilities. POs are the statement that describes the knowledge and the abilities the graduate/ post-graduate will have by the end of program studies.

Bachelor of Printing Technology and Graphic Arts

- a. Fundamental knowledge of printing, computer and Management science.
- b. Application of knowledge of computer, printing process and printing technology in taking up the printing jobs.
- c. Design the image based on the product requirement based on the knowledge of computer graphics, typesetting, printing material, colour scheme and printing technology.
- d. Use technology in printing process.
- e. Apply environment and sustainability principles in the printing profession and product development.
- f. Effective communication orally, written and graphical.
- g. Work as individual and member/leader of team.
- h. Undertake printing task/project and employ finance & project management skills.
- i. Demonstrate values and ethics in profession.
- j. To develop ability of life-long learning.

Advanced Diploma in Printing Technology and Graphic Arts

- a. Fundamental knowledge of printing, computer and Management science.
- b. Operate/Implement the tools, techniques and technology in printing jobs.
- c. Design the image based on the product requirement based on the knowledge of computer graphics, typesetting, printing material, colour scheme and printing technology.
- d. Effective communication orally, written and graphical.
- e. Work as individual and member/leader of team.
- f. Undertake printing task and employ supervisory skills.
- g. Demonstrate values and ethics in profession.

6. Course- Program outcome Matrix:

The Program Outcomes are developed through the curriculum (curricular/co-curricular-extra-curricular activities). The program outcomes are attained through the course implementation. As an educator, one must know, **“to which POs his/her course in contributing?”**. So that one can design the learning experiences, select teaching method and design the tool for assessment. Hence, establishing the Course-PO matrix is essential step in the OBE. The course-program outcomes matrix indicates the co-relation between

the courses and program outcomes. The CO-PO matrix is the map of list of courses contributing to the development of respective POs.

The **CO-PO MATRIX** is provided in the below table.

B.A. Printing Technology

Title of Course	PROGRAM OUTCOMES									
	a	b	c	d	e	f	g	h	i	j
Computer Basics & Computer Fundamentals	*	*	*	*						
<i>Practical based on Computer Basics & Computer Fundamentals</i>	*	*	*	*			*	*		
Computer Operating Skills	*	*	*	*						
<i>Practical based on Computer Operating Skills</i>	*	*	*	*			*	*		
Computer Design	*	*	*	*						
<i>Practical based on Computer Design</i>	*	*	*	*			*	*		
Text Setting	*	*	*	*						
<i>Practical based on Text Setting</i>	*	*	*	*			*	*		
Image Processing	*	*	*	*						
<i>Practical based on Image Processing</i>	*	*	*	*			*	*		
Binding & Finishing Technology	*	*	*	*						
<i>Practical based on Binding & Finishing Technology</i>	*	*	*	*			*	*		
Design & Artwork	*	*	*	*					*	
<i>Practical based on Design & Artwork</i>	*	*	*	*			*	*		
Printing Material Science	*	*	*	*						
<i>Practical based on Printing Material Science</i>	*	*	*	*			*	*		
Printing Processes	*	*	*	*					*	
<i>Practical based on Printing Processes</i>	*	*	*	*			*	*		
Reproduction Processes	*	*	*	*						
<i>Practical based on Reproduction Processes</i>	*	*	*	*			*	*		
Screen Printing	*	*	*	*						
<i>Practical based on Screen Printing</i>	*	*	*	*			*	*		
Image Carrier Plano	*	*	*	*						
Image Carrier Relief and Gravure	*	*	*	*						
<i>Practical based on Image Carrier Relief and Gravure</i>	*	*	*	*			*	*		

Press Work Relief and Gravure	*	*	*	*						
<i>Practical based on Press Work Relief and Gravure</i>	*	*	*	*			*	*		
Press Work Plano Sheet fed	*	*	*	*						
<i>Practical based on Press Work Plano Sheet fed</i>	*	*	*	*			*	*		
Press work web	*	*	*	*						
<i>Practical based on Press work web</i>	*	*	*	*			*	*		
Press Management	*	*	*	*					*	
<i>Practical based on Press Management</i>	*	*	*	*			*	*		
Costing and Estimating	*	*	*	*	*	*			*	
<i>Practical based on Costing and Estimating</i>	*	*	*	*			*	*		
Electronic Color Separation and Correction	*	*	*	*						
<i>Practical based on Electronic Color Separation and Correction</i>	*	*	*	*						
Packaging Technology	*	*	*	*						
<i>Practical based on Packaging Technology</i>	*	*	*	*			*	*		
Digital Printing	*	*	*	*						
<i>Practical based on Digital Printing</i>	*	*	*	*			*	*		
Advanced Imaging Techniques	*	*	*	*						
<i>Practical based on Advanced Imaging Techniques</i>	*	*	*	*			*	*		
Newspaper Technology	*	*	*	*						
<i>Practical based on Newspaper Technology</i>	*	*	*	*			*	*		
Security Printing	*	*	*	*						
<i>Practical based on Security Printing</i>	*	*	*	*			*	*		
Final Seminar Presentation (Research work)				*	*	*	*	*	*	*
Seminar Work Updates				*	*	*	*	*	*	*
Industrial Internship Dissertation				*	*	*	*	*	*	*
Industrial Internship Updates				*	*	*	*	*	*	*

Advanced Diploma in Computer Graphics

Title of Course	a	b	c	d	e	f	g
Computer Basics & Computer Fundamentals	*	*	*				
<i>Practical based on Computer Basics & Computer Fundamentals</i>	*	*	*		*	*	
Computer Operating Skills	*	*	*				
<i>Practical based on Computer Operating Skills</i>	*	*	*		*	*	
Computer Design	*	*	*	*			
<i>Practical based on Computer Design</i>	*	*	*	*	*	*	
Text Setting	*	*	*	*			
<i>Practical based on Text Setting</i>	*	*	*	*	*	*	
Image Processing	*	*	*	*			
<i>Practical based on Image Processing</i>	*	*	*	*	*	*	
Binding & Finishing Technology	*	*	*				
<i>Practical based on Binding & Finishing Technology</i>	*	*	*		*	*	
Design & Artwork	*	*	*	*			*
<i>Practical based on Design & Artwork</i>	*	*	*	*	*	*	
Printing Material Science	*	*	*				
<i>Practical based on Printing Material Science</i>	*	*	*		*	*	
Printing Processes	*	*	*				*
<i>Practical based on Printing Processes</i>	*	*	*		*	*	
Reproduction Processes	*	*	*				
<i>Practical based on Reproduction Processes</i>	*	*	*		*	*	
Screen Printing	*	*	*				
<i>Practical based on Screen Printing</i>	*	*	*		*	*	
Image Carrier Plano	*	*	*				
Image Carrier Plano	*	*	*				
Image Carrier Relief and Gravure	*	*	*				
<i>Practical based on Image Carrier Relief and Gravure</i>	*	*	*		*	*	
Press Work Relief and Gravure	*	*	*				
<i>Practical based on Press Work Relief and Gravure</i>	*	*	*		*	*	
Press Work Plano Sheet fed	*	*	*				
<i>Practical based on Press Work Plano Sheet fed</i>	*	*	*		*	*	

7. Course Outcomes (for all courses):

The course outcomes are the statement that describes the knowledge & abilities developed in the student by the end of course (subject) teaching. The focus is on development of abilities rather than mere content. There can be 5 to 7 course outcomes of any course. These are to be written in the specific terms and not in general. The list of Course Outcomes is the part of **Annexure-C** attached herewith.

8. Set Target levels for Attainment of Course Outcomes:

The course outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment are measured/calculated. In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done.

9. Set Target level for Attainment of Program Outcomes:

The program outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment and program outcome attainment is measured/calculated. The program outcome attainment is governed by curricular, co-curricular and extra-curricular activities including the stakeholders' participation. The direct method and indirect method is adopted to calculate the PO attainment. The direct method implies the attainment by course outcomes contributing to respective program outcomes. And indirect method is the satisfaction/feed-back survey of stakeholders. In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done.

The set target level is the set benchmark to ensure the continuous improvements in the learners/ graduates' performance.

10. Course Attainment Levels:

- a. CO attainment is defined/set at three levels;
- b. The CO attainment is based on end term examination assessment and internal assessment;
- c. The Co attainment is defined at three levels in ascending order-
 - i. e.g. For end term and internal examination;
 - ii. Level-1: 40% students scored more than class average
 - iii. Level-2: 50% students score more than class average;
 - iv. Level-3: 60% students score more than class average.

- d. The target level is set (e.g. Level-2). It indicates that, the current target is level-2; 50% students score more than class average. The CO attainment is measured and the results are obtained. Based on the results of attainment, the corrective measures/remedial action are taken.
- e. CO Attainment= 80% (Attainment level in end term examination) + 20% (Attainment level in internal examination).
- f. **The example for calculation CO attainment is explained in in Point No. 12 for one representative course from bachelor of Printing technology and Graphic Arts.**

11. Program attainment Level:

- a. PO attainment is defined at five levels in ascending order;
- b. The PO attainment is based on the average attainment level of corresponding courses (Direct Method) and feed-back survey (Indirect method);
- c. The PO attainment levels are defined / set as stated below;
 - i. Level-1: Greater than 0.5 and less than 1.0 (0.5>1)- Poor
 - ii. Level-2: 1.0>1.5-Average
 - iii. Level-3: 1.5>2.0-Good
 - iv. Level-4: 2.0>2.5-Very Good
 - v. Level-5: 2.5>3.0 -Excellent
- d. The PO attainment target level is set/defined (say, Level-4). It implies that, the department is aiming at minimum level-4 (very good) in the performance of abilities by the graduates. Based upon the results of attainment, the remedial measures are taken;
- e. PO Attainment= 80% (Average attainment level by direct method) + 20% (Average attainment level by indirect method).
- f. **The example for calculation PO attainment is explained in in Point No. 13 for one representative PO from Bachelor of printing Technology and Graphic Arts.**

12. The Results of CO Attainment:

The summary of Results of CO-PO attainment is provided in Annexure-B.

FOR EXAMPLE:

COURSE CODE/TITLE: BPT-109T Printing Process

- e.g. For end term and internal examination;
- i. Level-1: 40% students scored more than class average
- ii. Level-2: 50% students score more than class average; iv.
- iii. Level-3: 60% students score are than class average

Average Marks in External examination: 48.40 = i.e. 48.00

% Students score more than 48 is 60 % i.e. Level-3

Average Marks in Internal examination= 13.00

% Students score more than 13.00 is 60%, i.e. Level-3

A (CO)BPT-109T = 80% (3)+20(3)

=2.4+0.6

= 3.00

Hence, the attainment level is Level-3 and the set target level is Level-2 and therefore the CO is fully attained..

Table No. 1.0: CO Attainment Level

Bachelor of Printing Technology and Graphic Arts

Title of Course	CO Attainment value	Target Attainment Level	Fully Attained/ Not Attained	Remedial Measures
Computer Basics & Computer Fundamentals	2.2	2	Fully Attained	
<i>Practical based on Computer Basics & Computer Fundamentals</i>	2	2	Fully Attained	
Computer Operating Skills	0.2	2	Not Attained	Assignments, tutorials, exercise & remedial coaching.
<i>Practical based on Computer Operating Skills</i>	2	2	Fully Attained	
Computer Design	2	2	Fully Attained	
<i>Practical based on Computer Design</i>	3	2	Fully Attained	
Text Setting	2	2	Fully Attained	
<i>Practical based on Text Setting</i>	3	2	Fully Attained	

Image Processing	2	2	Fully Attained	
<i>Practical based on Image Processing</i>	3	2	Fully Attained	
Binding & Finishing Technology	3	2	Fully Attained	
<i>Practical based on Binding & Finishing Technology</i>	2	2	Fully Attained	
Design & Artwork	1	2	Not Attained	Assignments, tutorials, exercise & remedial coaching.
<i>Practical based on Design & Artwork</i>	2	2	Fully Attained	
Printing Material Science	1.4	2	Not Attained	Assignments, tutorials, exercise & remedial coaching.
<i>Practical based on Printing Material Science</i>	2	2	Fully Attained	
Printing Processes	3	2	Fully Attained	
<i>Practical based on Printing Processes</i>	2	2	Fully Attained	
Reproduction Processes	3	2	Fully Attained	
<i>Practical based on Reproduction Processes</i>	2	2	Fully Attained	
Screen Printing	2	2	Fully Attained	
<i>Practical based on Screen Printing</i>	3	2	Fully Attained	
Image Carrier Plano	2	2	Fully Attained	
Image Carrier Plano	3	2	Fully	

			Attained	
Image Carrier Relief and Gravure	2	2	Fully Attained	
<i>Practical based on Image Carrier Relief and Gravure</i>	3	2	Fully Attained	
Press Work Relief and Gravure	3	2	Fully Attained	
<i>Practical based on Press Work Relief and Gravure</i>	2	2	Fully Attained	
Press Work Plano Sheet fed	3	2	Fully Attained	
<i>Practical based on Press Work Plano Sheet fed</i>	2	2	Fully Attained	
Press work web	3	2	Fully Attained	
<i>Practical based on Press work web</i>	2	2	Fully Attained	
Press Management	3	2	Fully Attained	
<i>Practical based on Press Management</i>	2	2	Fully Attained	
Costing and Estimating	3	2	Fully Attained	
<i>Practical based on Costing and Estimating</i>	2	2	Fully Attained	
Electronic Color Separation and Correction	3	2	Fully Attained	
<i>Practical based on Electronic Color Separation and Correction</i>	2	2	Fully Attained	
Packaging Technology	2.6	2	Fully Attained	

<i>Practical based on Packaging Technology</i>	2	2	Fully Attained	
Digital Printing	3	2	Fully Attained	
<i>Practical based on Digital Printing</i>	2	2	Fully Attained	
Advanced Imaging Techniques	1.4	2	Not Attained	Assignments, tutorials, exercise & remedial coaching.
Practical based on Advanced Imaging Techniques	2	2	Fully Attained	
Newspaper Technology	1.4	2	Not Attained	Assignments, tutorials, exercise & remedial coaching.
<i>Practical based on Newspaper Technology</i>	2	2	Fully Attained	
Security Printing	3	2	Fully Attained	
<i>Practical based on Security Printing</i>	2	2	Fully Attained	
Final Seminar Presentation (Research work)	2	2	Fully Attained	
Seminar Work Updates	3	2	Fully Attained	
Industrial Internship Dissertation	3	2	Fully Attained	
Industrial Internship Updates	3	2	Fully Attained	

Advanced Diploma in Printing Technology and Graphic Arts

Title of Course	CO Attainment Value	Target Attainment level	Fully Attained/ Not attained	Remedial Measures
Computer Basics & Computer Fundamentals	1.6	2	Not Attained	Assignments, Tutorials, Exercise and remedial coaching.
<i>Practical based on Computer Basics & Computer Fundamentals</i>	2	2	Fully Attained	
Computer Operating Skills	2.4	2	Fully Attained	
<i>Practical based on Computer Operating Skills</i>	2	2	Fully Attained	
Computer Design	2.4	2	Fully Attained	
<i>Practical based on Computer Design</i>	2	2	Fully Attained	
Text Setting	3	2	Fully Attained	
<i>Practical based on Text Setting</i>	2	2	Fully Attained	
Image Processing	3	2	Fully Attained	
<i>Practical based on Image Processing</i>	2	2	Fully Attained	
Binding & Finishing Technology	2.4	2	Fully Attained	
<i>Practical based on Binding & Finishing Technology</i>	2	2	Fully Attained	
Design & Artwork	3	2	Fully Attained	
<i>Practical based on Design & Artwork</i>	2	2	Fully Attained	
Printing Material Science	0.6	2	Not Attained	Assignments, Tutorials, Exercise and remedial coaching.
<i>Practical based on Printing Material Science</i>	2	2	Fully Attained	
Printing Processes	2.4	2	Fully Attained	

<i>Practical based on Printing Processes</i>	2	2	Fully Attained	
Reproduction Processes	0	2	Not Attained	Assignments, Tutorials, Exercise and remedial coaching.
<i>Practical based on Reproduction Processes</i>	2	2	Fully Attained	
Screen Printing	3	2	Fully Attained	
<i>Practical based on Screen Printing</i>	2	2	Fully Attained	
Image Carrier Plano	0.6	2	Not Attained	Assignments, Tutorials, Exercise and remedial coaching.
Image Carrier Plano	2	2	Fully Attained	
Image Carrier Relief and Gravure	2	2	Fully Attained	
<i>Practical based on Image Carrier Relief and Gravure</i>	2	2	Fully Attained	
Press Work Relief and Gravure	2	2	Fully Attained	
<i>Practical based on Press Work Relief and Gravure</i>	2	2	Fully Attained	
Press Work Plano Sheet fed	3	2	Fully Attained	
<i>Practical based on Press Work Plano Sheet fed</i>	2	2	Fully Attained	

13.The Results of PO Attainment:

The summary of Results of CO-PO attainment is provided in Annexure-B.

FOR EXAMPLE:

PO NO.: e

(Note: Refer point No. 11 above which describes the attainment level and set target attainment level)

PO Attainment= 80% (Average attainment level by direct method) + 20% (Average attainment level by indirect method).

$$A (PO) a= 80\% (3+2+3+2+3+2+2+3+3+3)/10 +20\% (2.60)$$

= 80% (2.60) + 20 % (2.60)

= 2.60 i.e. Level-5. Target level is Level-4

Hence PO is attained.

Table No. 2.0 PO Attainment Level

Bachelor of Printing Technology and Graphic Arts

PO/PSO number	PO Attainment Value	Target Attainment level	Fully attained/ Not Attained	Remedial Measures
a	2.28	4	Fully attained	Not Applicable
b	2.28	4	Fully attained	
c	2.28	4	Fully attained	
d	2.31	4	Fully attained	
e	2.60	4	Fully attained	
f	2.42	4	Fully attained	
g	2.31	4	Fully attained	
h	2.31	4	Fully attained	
i	2.63	4	Fully attained	
j	2.75	4	Fully attained	

Advanced Diploma in Printing Technology and Graphic Arts

PO/PSO number	PO Attainment Value	Target Attainment level	Fully attained/ Not Attained	Remedial Measures
a	2.05	4	Fully attained	Not Applicable
b	2.05	4	Fully attained	
c	2.05	4	Fully attained	
d	2.43	4	Fully attained	
e	2.00	4	Fully attained	
f	2.00	4	Fully attained	
g	2.70	4	Fully attained	

14. Planned Actions for Course Attainment:

The course(s) having CO attainment level less than Level-2 (As per the table stated in Point No. 12) Shall be address by planning and organizing remedial measures such as assignments, tutorials, exercises and remedial coaching.

15.Planned Actions for Program Outcome Attainment:

The PO having PO attainment level less than Level-4 (as per the table stated in Point No. 13) Shall be addressed by planning and organizing remedial measures for the courses corresponding to respective PO (s) such as assignments, tutorials, exercises and remedial coaching.

ANNEXURE-B

THE SUMMARY OF RESULTS OF CO-PO ATTAINMENT

PO ATTAINMENT: BACHELOR OF PRINTING TECHNOLOGY											
Course Code	A(CO)	PROGRAM OUTCOMES									
		a	b	C	d	e	f	g	h	i	j
PT-101T	2.2	2.2	2.2	2.2	2.2						
BPT-101P	2	2	2	2	2			2	2		
PT-102T	0.2	0.2	0.2	0.2	0.2						
PT-102P	2	2	2	2	2			2	2		
BPT-103T	2	2	2	2	2		2				
BPT-103P	3	3	3	3	3		3	3	3		
BPT-104T	2	2	2	2	2						
BPT-104P	3	3	3	3	3			3	3		
BPT-105T	2	2	2	2	2		2				
BPT-105P	3	3	3	3	3		3	3	3		
PT-106T	3	3	3	3	3						
BPT-106P	2	2	2	2	2			2	2		
PT-107T	1	1	1	1	1		1			1	
PT-107P	2	2	2	2	2		2	2	2		
BPT-108T	1.4	1.4	1.4	1.4	1.4						
BPT-108P	2	2	2	2	2			2	2		
BPT-109T	3	3	3	3	3					3	
BPT-109P	2	2	2	2	2			2	2		
BPT-110T	3	3	3	3	3	3					
BPT-110P	2	2	2	2	2	2		2	2		
PT-111T	2	2	2	2	2						
BPT-	3	3	3	3	3			3	3		

111P											
PT-112T	2	2	2	2	2						
PT-112P	3	3	3	3	3						
BPT-113T	2	2	2	2	2						
BPT-113P	3	3	3	3	3			3	3		
BPT-114T	3	3	3	3	3	3					
BPT-114P	2	2	2	2	2	2		2	2		
BPT-115T	3	3	3	3	3						
BPT-115P	2	2	2	2	2			2	2		
PT-116T	3	3	3	3	3						
BPT-116P	2	2	2	2	2			2	2		
PT -117T	3	3	3	3	3					3	
PT -117P	2	2	2	2	2			2	2		
BPT -118T	3	3	3	3	3	3	3			3	
BPT -118P	2	2	2	2	2	2	2	2	2		
BPT -119T	3	3	3	3	3						
BPT -119P	2	2	2	2	2						
BPT -120T	2.6	2.6	2.6	2.6	2.6						
BPT -120P	2	2	2	2	2			2	2		
PT-121T	3	3	3	3	3						
BPT-121P	2	2	2	2	2			2	2		
	1.4	1.4	1.4	1.4	1.4						

PT-122T											
	2	2	2	2	2			2	2		
PT-122P											
BPT - 123T	1.4	1.4	1.4	1.4	1.4						
BPT - 123P	2	2	2	2	2			2	2		
BPT - 124T	3	3	3	3	3						
BPT - 124P	2	2	2	2	2			2	2		
BPT-125T	2				2	2	2	2	2	2	2
BPT-125P	3				3	3	3	3	3	3	3
	3				3	3	3	3	3	3	3
BPT-127	3				3	3	3	3	3	3	3
		2.285	2.28	2.28	2.31	2.6	2.42	2.31	2.31	2.63	2.75

PO ATTAINMENT: ADVANCED DIPLOMA IN PRINTING TECHNOLOGY AND GRAPHIC ARTS								
Title of Course		a	b	c	d	e	f	g
Computer Basics & Computer Fundamentals	1.6	1.6	1.6	1.6				
<i>Practical based on Computer Basics & Computer Fundamentals</i>	2	2	2	2		2	2	
Computer Operating Skills	2.4	2.4	2.4	2.4				
<i>Practical based on Computer Operating Skills</i>	2	2	2	2		2	2	
Computer Design	2.4	2.4	2.4	2.4	2.4			
<i>Practical based on Computer Design</i>	2	2	2	2	2	2	2	
Text Setting	3	3	3	3	3			
<i>Practical based on Text Setting</i>	2	2	2	2	2	2	2	
Image Processing	3	3	3	3	3			
<i>Practical based on Image Processing</i>	2	2	2	2	2	2	2	
Binding & Finishing Technology	2.4	2.4	2.4	2.4				
<i>Practical based on Binding & Finishing Technology</i>	2	2	2	2		2	2	
Design & Artwork	3	3	3	3	3			3
<i>Practical based on Design & Artwork</i>	2	2	2	2	2	2	2	
Printing Material Science	0.6	0.6	0.6	0.6				
<i>Practical based on Printing Material Science</i>	2	2	2	2		2	2	
Printing Processes	2.4	2.4	2.4	2.4				2.4
<i>Practical based on Printing Processes</i>	2	2	2	2		2	2	
Reproduction Processes	0	0	0	0				
<i>Practical based on Reproduction Processes</i>	2	2	2	2		2	2	
Screen Printing	3	3	3	3				
<i>Practical based on Screen Printing</i>	2	2	2	2		2	2	
Image Carrier Plano	0.6	0.6	0.6	0.6				
Image Carrier Plano	2	2	2	2				
Image Carrier Relief and Gravure	2	2	2	2				

<i>Practical based on Image Carrier Relief and Gravure</i>	2	2	2	2		2	2	
Press Work Relief and Gravure	2	2	2	2				
<i>Practical based on Press Work Relief and Gravure</i>	2	2	2	2		2	2	
Press Work Plano Sheet fed	3	3	3	3				
<i>Practical based on Press Work Plano Sheet fed</i>	2	2	2	2		2	2	
		2.05	2.05	2.05	2.43	2	2	2.7

ANNEXURE-B

COURSE OUTCOMES

Computer Basics and Computer Fundamentals

- Learn the organization of a digital computer.
- Be exposed to the number systems.
- Learn to think logically and write pseudo code or draw flow charts for problems.
- Be exposed to the syntax of C.
- Be familiar with programming in C.
- Learn to use arrays, strings, functions, pointers, structures and unions in C.

Computer operation skills

- Use the basic vocabulary and terminology related to computer and word processing
- Open, save and format a basic document
- Type a simple note or a letter using Microsoft Word
- Perform basic format and editing on a word document
- Create tables and calendars
- Use different basic computer language software and programs to practice English skills and typing skills
- With assistance, navigate websites to access information and evaluate information
- Build confidence and skills in using computer technology.

Image Processing

Understand the pre-press workflow

Learn typography, image acquisition and halftone screening methods

Create imposition schemes for book work and other printed products

Understand the plate chemistry and platemaking process

Computer Design

- Demonstrate the structure of the art by using design elements and design principles,
- Describe design elements and designs working together to make a unified unit,
- Demonstrate techniques and skills to use in graphic reproduction and apply the principles of layout, drawing and image preparation,

- Demonstrate basic skills and practical training in principles and techniques required in press and finishing,
- Apply arithmetic in the printing trade and associated subjects and to develop the knowledge of trade calculation applicable to costing and estimating in the printing industry.

Printing processes

- Analyze the printing workflow to Categories pre press, press and post press techniques
- Analyze the basic printing processes to make a selection of printing processes for specific job
- Analyze the various binding & finishing techniques to make printing job more effective
- Apply the principals of design and fundamentals of design to create a effective design
- Apply the additive & subtractive theory to create a effective design
- Identify the specialised printing applications

Design and Artwork

- To approach work in imaginative ways characterized by a high degree of experimentation, risk-taking, and divergent thinking, and be able to produce work that challenges convention.
- To produce works of art or design those demonstrates comprehensive knowledge of their particular area of study and indicate their capacity to succeed as creative professionals.
- To analyze, interpret, contextualize, evaluate, and create visual materials in both physical and digital formats with well-articulated formal and conceptual choices

Screen printing

- Demonstrate an understanding of a range of techniques relevant to screen printing in response to set tasks.
- Independently explore the potential of material/s in screen printing.
- Experiment with the application of concepts and processes in screen printing.
- Critically engage with the historical and theoretical context of screen printing.

Press management

- Develop organization structure for a printing unit
- Implement different laws in printing industry.
- Conceive owning of a printing unit.

Binding and finishing technology

- Employ different binding techniques
- Operating machines for finishing of binding
- Describe the construction and working of binding and finishing machines
- Describe different finishing process
- Implement the operations such as stapling, numbering, perforating, etc.

Design and Artwork

- Describe different techniques and machines used for design and artwork
- Use colour scanner and digital camera
- Design art work and colour in graphic design.
- Prepare the layout for the final product in stages.
- Implement imposition techniques/schemes.
- Use DTP system in printing.
- Prepare various printed products

Printing material Science

- Describe the material used in printing and their properties.
- Describe different inks their properties.
- Select the ink based on the printing requirement such as absorption drying theory, evaporation drying.
- Describe the development of paper making.
- Describe paper manufacturing process.
- Describe the paper properties and its application in printing.
- Measuring different printing parameters/ properties of printing material
- Select the printing material based on its application/product.

Reproduction processes

- Describe different types, construction, working principles of reproduction camera.
- Describe and use different types of media used in reproduction process of graphic production.
- Implement different stages of reproduction
- Describe and appropriately use densitometer and sensitometer.

Image Carrier Plano

- Differentiate between different web offset configuration
- Describe Importance and use of Infeed unit
- Identify appropriate Dryers, Chillers, Ancillary Operation, and Inline Operation etc.
- Troubles shoot of Web Offset operations.
- Apply Modern Technology for printing operation.
- Operate Metal Decorating Press

Press Work web

- Explain the machines used in web printing
- Describe the constriction, working principles of wen printing machines.
- Identify different part and explain the function of different parts in the web machine/printing.
- Operate the wen printing machine.
- Locate the fault and perform the micro-operations/ fittigs in the web printing machines.

Costing and estimating

- Describe the factors affecting the cost of the product/process.
- Estimate the cost of the product
- Calculate the quantity of printing material required for the job
- Estimate the production coat and selling cost
- Analyze the quantity and quality (standards/specification) of the material required for the printing job.

Digital printing

- Distinguish properties and uses of graphic file types
- Optimize images and graphics for output (ink jet printing, photo paper printing, web display, and offset printing)
- Set printer options for best result based on print medium and dimensions
- Proper use of tools and equipment
- Use basic math proficiency
- Show a basic understanding of the commercial offset printing industry
- Use Pantone matching system
- Use of the process color system
- Use proper imposition techniques for various jobs

Newspaper Technology

- Describe the organization structure of newspaper production/printing.
- Describe the workflow of the newspaper printing.
- Describe the telecommunication system in news paper and remote printing.
- Explain the printing materials used in the newspaper technology
- Describe different workflow systems in news[aper technology.

Security printing

- Implement creation and graphics for currency printing and cheque printing.
- Explain the computer application in security printing
- Implement and operate the numbering, barcodes, holograms printing.
- Describe the properties of printing material for security printing.
- Operate the process of hologram, credit cards and passport printing.