DIPLOMA IN TEXTILE ENGINEERING SYLLABUS
PROBIDHAN-2022
4TH SEMESTER

Sl. No.	Subject		Period		C	Marks Distribution						
						Theory Assessment			Practical Assessment			Grand Total
	Code	Name	T	P		Continuous	Final	Total	Continuous	Final	Total	
1	21363	Textile Printing	2	3	3	40	60	100	25	25	50	150

This course will be conducted by: Md. Obydullah Al Masum

1) **Learning Outcome (Theoretical/Knowledge):**

1. Develop various textile printing designs
2. Describe screen preparation
3. Explain textile printing ingredients and functions
4. Describe the use of printing paste on the textile materials
5. Interpret the dye-fiber interaction through the steaming, curing and washing processes
6. Clarify the quality of the printed products
7. Mention the problems of printed products with remedies

2) **Learning Outcome (practical):**

1. Prepare printing paste
2. Identify machineries involved in printing
3. Operate textile printing machineries
4. Develop essential design for screen
5. Point out the ingredients for printing paste
6. Calculate printing recipe as well as shade percentage by using spectrophotometer

7. Perform process sequence for textile printing
8. Demonstrate textile printing processing machinery and their operations

Detailed Syllabus (Theory)

Unit	Topics with Contents	Final Marks
1	**Design development for textile printing** 1.1 Define design for textile printing 1.2 Mention the types of design 1.3 List out the sources of design 1.4 Mention the uses of Illustrator for printing design 1.5 Mention the uses of Adobe Photoshop for printing design 1.6 Describe the repeat of design and repeat alignment 1.7 State the limitations of repeat size in design.	6
2	**Screen preparation for fabric printing** 2.1 Define screen for textile printing 2.2 Classify screen 2.3 Mention the chemicals required for screen preparation 2.4 Mention the sequence of screen preparation 2.5 List out the light sources for screen preparation 2.6 Describe the squeeze system	6
3	**Printing paste preparation** 3.1 Define printing paste 3.2 Define water-based and oil-based printing paste 3.3 Define printing thickener 3.4 Classify printing thickener 3.5 State the suitability of thickener for different dyes and fibers 3.6 Discuss the functions of ingredients used in reactive printing on cotton 3.7 Discuss the functions of ingredients used in disperse printing on polyester 3.8 Illustrate the functions of ingredients used in pigment printing	7

	on cotton and polyester	
4	**Textile printing procedure** 4.1 State the common process flow chart of textile printing procedure 4.2 Discuss the printing process of cellulosic fabric by reactive dye 4.3 Describe the printing process of polyester fabric by disperse dye 4.4 Discuss the printing process of cellulosic fabric by pigment 4.5 Describe the printing process of polyester fabric by pigment 4.6 Discuss the printing process of wool and silk fabric by pigment 4.7 State the advantages and disadvantages of pigment printing 4.8 State the advantages and disadvantages of disperse printing 4.9 State the advantages and disadvantages of reactive printing	10
5	**Machinery of textile printing** 5.1 Mention the general machineries used for textile printing 5.2 Describe the uses of flatbed screen printing machine for textiles 5.3 Mention the uses of rotary screen printing machine for textiles 5.4 Differentiate between flatbed and rotary screen printing machine 5.5 Point out the main parts of flatbed and rotary screen printing machine	6
6	**Drying systems** 6.1 Describe the drying methods for printing 6.2 State the various drying system after printing 6.3 Mention the factors considered for selection of dryer 6.4 Mention the different types of dryer machine used in textile printing industry	5
7	**Steaming and Curing** 7.1 Define steaming 7.2 Define Curing 7.3 Differentiate between steaming and curing 7.4 Discuss the importance of steaming and curing in printing 7.5 State the principle of steaming and curing machine during printing	4
8	**Washing for Textile Printing** 8.1Define washing for textile printing	4

	8.2State the purpose of washing after textile printing 8.3Describe the various washing processes after textile printing	
9	**Testing in printed goods** 9.1 Mention the necessity of testing in printed goods 9.2 State the required testing in printed goods 9.3 Describe color fastness to wash, rubbing, light, perspiration and hot pressing 9.4 Describe color bleeding performance 9.5 List out the chemical test for toxic materials and carcinogenic contents	6
10	**Faults and Remedies for Textile Printing** 10.1 Discuss the faults and remedies of screen preparation 10.2 Describe the faults and solutions during textile printing process 10.3 Sate the limitations of textile printing process	6
	Total	**60**

Detailed Syllabus (Practical)

Unit	Topics with Contents	Final Marks
1	**Develop various designs for textile printing** 1.1 Collect design from buyers 1.2 Develop design using different software as per buyer requirement 1.3 Maintain the record of performed experiment	2.5
2	**Prepare Screen for fabric printing** 2.1 Choose the mesh fabric 2.2 Attach the mesh fabric with appropriate frame	2.5

	2.3 Collect necessary chemicals 2.4 Apply chemicals on the mesh fabric 2.5 Maintain proper light sources to obtain an appropriate design 2.5 Maintain the record of performed experiment	
3	**Prepare printing paste for textile fabric printing** 3.1 Select ingredients for making textile printing paste 3.2 Perform necessary calculations to obtain a required shade 3.3 Apply chemicals and auxiliaries for making textile printing paste 3.4 Prepare the textile printing paste 3.5 Maintain the record of the experiment.	2.5
4	**Perform operation of flatbed screen printing machine** 4.1 Sketch and identify different components of flatbed printing machine 4.2 Demonstrate the operation of flatbed printing machine 4.3 Observe the effect of required print on printed fabrics 4.4 Maintain the record of performed experiment	2.5
5	**Perform operation of rotary screen printing machine** 5.1 Sketch and identify different components of rotary printing machine 5.2 Demonstrate the operation of rotary printing machine 5.3 Observe the effect of required print on printed fabrics 5.4 Maintain the record of performed experiment	2.5
6	**Perform printing with pigment on cellulosic materials** 6.1 Collect pigment, necessary chemicals and fabrics 6.2 Perform necessary calculations to obtain a required shade 6.3 Apply chemicals and auxiliaries for printing of cellulosic fabrics 6.4 Demonstrate the printing process with pigment on cellulosic fabric 6.5 Maintain the record of performed experiment	2.5
7	**Perform printing of reactive dyes on cellulosic materials** 7.1 Collect reactive dye, necessary chemicals and fabrics	2.5

	7.2 Perform necessary calculations to obtain a required shade 7.3 Apply chemicals and auxiliaries for printing of printing of cellulosic fabrics 7.4 Demonstrate the printing process with reactive dye on cellulosic fabric 7.5 Maintain the record of performed experiment	
8	**Perform application of disperse dyes on polyester fabrics** 8.1 Collect disperse dye, necessary chemicals and fabrics 8.2 Perform necessary calculations to obtain a required shade 8.3 Apply chemicals and auxiliaries for printing of polyester fabrics 8.4 Demonstrate the printing process with disperse dye on polyester fabric 8.5 Maintain the record of performed experiment	2.5
9	**Demonstrate drying, steaming and curing machinery in textile printing process** 9.1 Sketch and identify different components of drying, steaming and curing machine 9.2 Demonstrate the operation of drying, steaming and curing machine 9.3 Maintain the record of performed experiment	2.5
10	**Demonstrate the faults and remedies of textile printing** 10.1 Collect faulty samples from printing industries 10.2 Identify the name of faults and find their possible remedies 10.3 Maintain the record of performed experiment	2.5
	Total	**25**