DIPLOMA IN TEXTILE ENGINEERING
SYLLABUS
PROBIDHAN-2022

Subject Code	Subject Name	Period Per Week		Credit
21441	Apparel Manufacturing-I	T	P	C
		3	3	4

Learning Outcome (Theoretical):

- ➢ Define the history of the apparel industry, process sequence and different terms of
- ➢ apparel.
- ➢ Define human body measurement, technical package, pattern making and grading.
- ➢ Describe marker making, CAD & CAM, and sampling.
- ➢ Define fabric inspection, spreading and cutting.

Learning Outcome (Practical):

- ➢ Design the layout of the apparel manufacturing lab and point out human body
- ➢ measurements.
- ➢ Perform basic measurement and design components of tops and bottoms.
- ➢ Demonstrate pattern making, grading and marker making.
- ➢ Conduct cutting operations.

Detailed Syllabus (Theory)

Unit	Topics with contents	Final Marks
1	**Basic aspects of Apparel industry** 1.1 Describe the historical development of apparel industries in Bangladesh. 1.2 List down the names of apparel exporting countries. 1.3 Discuss the roles of the apparel industries of Bangladesh. 1.4 Describe the tailoring process. 1.5 Distinguish between tailoring process and industrial apparel manufacturing process.	4
2	**Process sequence of Apparel Manufacturing** 2.1 Mention the process flow-chart of apparel manufacturing.	3

	2.2 Describe the process flow-chart of apparel manufacturing. 2.3 Illustrate the layout plan of the apparel manufacturing unit.	
3	**Terms of Apparel Manufacturing** 3.1. Describe Applique, Allowance, Back tacking, Backing, Basic block, Bar-tack, Basting, Needle gauge and Bespoke. 3.2. Describe CB Line, CF Line, CM, CMT, Collar, Cuff, Dart, Darning, Drape, Dummy, Facing, Flap, Hem, Inlay, Jetting, Front rise and Back rise, Piping, Ticket number. 3.3. Describe Button Ligne, Molding, Nap, Notch, N.S.A, Pleating, Placket, Quilting, Swatch, Vent and Wrap. 3.4. Describe the different commercial terms related to the process sequence of apparel manufacturing: Backward linkage, Forward linkage, GSP, Quota, Invoice, Non-quota, C&F, CIF, L/C, Back to Back L/C and MFA. 3.5. Mention the role of BGMEA, BKMEA, BTMA, BJMC, BTMC, BJRI, FBCCI, MOTJ, ISO, ILO and IJSC.	5
4	**Human Body Anthropometry** 4.1 Draw a men's standard body with all measurement points. 4.2 Describe the measurement points for the men's standard body. 4.3 Sketch a women's standard body with all measurement points. 4.4 Describe the measurement points for the women's standard body. 4.5 Outline ease allowance based on the degree of allowance for menswear. 4.6 Outline ease allowance based on the degree of allowance for women's wear.	6
5	**Technical package and measurement of Apparel** 5.1 Describe measurement sheet, Specification Sheet (Spec Sheet) and Technical Package (Tech Pack). 5.2 Explain the specifications of Tech Pack. 5.3 Point out the importance of Tech Pack. 5.4 Illustrate the Point of Measures (POMs) of T-shirt, Polo shirt, Hoodie from Spec Sheet/ Tech Pack. 5.5 Illustrate the Point of Measures (POMs) of Trousers, Shorts from Spec Sheet/ Tech Pack. 5.6 Illustrate the Point of Measures (POMs) of Shirt and Jacket from Spec Sheet/ Tech Pack. 5.7 Illustrate the Point of Measures (POMs) of 5 pocket denim pants and Chino pants from Spec Sheet/ Tech Pack. 5.8 State HTM (How-to-Measure) manual.	8
6	**Pattern making of Apparel** 6.1 Define pattern. 6.2 Describe the necessity of pattern making. 6.3 Explain Block pattern and Production pattern.	8

	6.4 Discuss the methods of pattern making. 6.5 List the different components of a shirt. 6.6 Define grain-line. 6.7 Point out the types of grain-line used in pattern making. 6.8 List the different components of a pant.	
7	**Pattern Grading** 7.1 Define pattern grading. 7.2 Describe the objectives of pattern grading. 7.3 Illustrate the types of pattern grading methods. 7.4 Mention the advantages of different pattern grading methods. 7.5 Mention the disadvantages of different pattern grading methods. 7.6 Discuss the method of grade rule setting in computerized grading.	5
8	**Marker Making** 8.1 Define marker and marker making. 8.2 State the marker efficiency. 8.3 Mention the factors affecting Marker efficiency. 8.4 Discuss the methods of marker making. 8.5 List down the method of drawing and duplication of a marker. 8.6 Explain the prospects and constraints of marker making.	4
9	**CAD and CAM** 9.1 Define CAD and CAM. 9.2 Mention the advantages of CAD and CAM. 9.3 Point out the disadvantages of CAD and CAM. 9.4 List out the commonly used commercial CAD software for apparel pattern making, grading, marker making and 3D simulation.	10
10	**Digitizing and Plotting** 10.1 Define digitizing. 10.2 Describe the importance of digitizing. 10.3 Classify pattern digitizing methods. 10.4 Describe the process of different pattern digitizing methods. 10.5 State the importance of digitizing with and without seam allowances. 10.6 Define plotter. 10.7 Classify plotter. 10.8 Illustrate the working procedure of the plotter. 10.9 Describe different types of patterns and marker plotting systems.	5
11	**Sample Making** 11.1 Define sample. 11.2 State the importance of samples for apparel making. 11.3 Describe the different types of samples. 11.4 Describe the process flowchart of a sample for apparel making.	4

12	**Virtual Sampling and Prototyping** 12.1 State virtual prototyping. 12.2 Describe different maps to assess the virtual fit of an apparel. 12.3 List down the properties of the virtual fabric. 12.4 Explain virtual try-on and virtual catwalk. 12.5 List down the physical samples replaced by virtual samples. 12.6 Explain the ways of replacing physical samples with virtual samples.	8
13	**Fabric Inspection and Fabric Relaxation** 13.1 State fabric inspection. 13.2 Mention the importance of fabric inspection. 13.3 Describe the procedure of fabric inspection. 13.4 Explain different types of fabric defects during inspection. 13.5 Describe the 4-point inspection method. 13.6 Describe the 4-point inspection method. 14.1 Define fabric relaxation. 14.2 Mention the fabric relaxation time for different types of fabric.	6
14	**Spreading** 14.3 Define fabric spreading. 14.4 List down the pre-requirements of fabric spreading. 14.5 Describe the methods of fabric spreading. 14.6 Describe types of fabric lays. 14.7 Describe each type of fabric package. 14.8 Classify fabric spreading machines. 14.9 Describe the manual fabric spreading. 14.10 Describe the automatic fabric spreading machine.	6
15	**Fabric Cutting** 15.1 State fabric cutting. 15.2 List down the requirements of fabric cutting. 15.3 Describe the methods of fabric cutting. 15.4 List down the names of the manual cutting machines. 15.5 List down the names of computerized cutting machines. 15.6 Describe Straight knife and Band knife cutting machine. 15.7 Mention the merits of straight knife cutting machines. 15.8 Describe the uses of a band knife cutting machine. 15.9 Point out the features of die-cutting and drill machines. 15.10 Describe a computerized fabric cutting (CAM) machine.	8
	Total:	**90**

Detailed Syllabus (Practical)

Unit	Topics with Contents	Final Marks
1	**Observe Layout Plan of Apparel Manufacturing Lab**. 1.1 Observe the present layout condition of the apparel manufacturing lab. 1.2 Replicate the apparel manufacturing laboratory layout in A4 size paper maintaining measurement ratio. 1.3 Measure the dimensions of all machinery that exists in the apparel manufacturing laboratory. 1.4 Measure machine to machine distance and machine to wall distance. 1.5 Perform total space utilization from taken measurements. 1.6 Maintain the record of the performed experiment.	2.5
2	**Observe Human Body Anthropometry** 2.1 Observe different points of men's body measurement. 2.2 Observe different points of women's body measurement. 2.3 Sketch the human body with the aid of measured points. 2.4 Identify body measurements. 2.5 Maintain the record of the performed experiment.	2.5
3	**Observe Basic Components of Top and Bottoms** 3.1 Draw a flat sketch of the basic shirt on A4 size paper. 3.2 Identify the components of a basic shirt. 3.3 Design a flat sketch of a basic trouser on A4 size paper. 3.4 Identify the components of a basic trouser. 3.5 Maintain the record of the performed experiment.	2.5
4	**Observe Pattern Making of a Basic T-Shirt** 4.1 Find out the Point of Measures (POM) from Specification Sheet (Spec Sheet) / Technical Package (Tech Pack) of a basic T-shirt. 4.2 Select the appropriate base size of a basic T-Shirt. 4.3 Create different pattern pieces of a basic T-shirt according to the measurement. 4.4 Sketch notch mark and grain-line of a basic T-shirt. 4.5 Maintain the record of the performed experiment.	2.5
5	**Observe Pattern Grading of a basic T-Shirt** 5.1 Select zero point of the front part, back part, and sleeve for grading. 5.2 Select grade points for a specific pattern of a basic T-shirt. 5.3 Choose the rule setting of a specific pattern for a basic T-shirt. 5.4 Calculate grading increment values of the front part, back part and the sleeve of a basic T-shirt. 5.5 Perform pattern grading according to the grading increment calculation of a basic T-shirt. 5.6 Maintain the record of the performed experiment.	2.5

6	**Observe Marker Making and Cutting of a basic T-Shirt** 6.1 Calculate size ratio from the order of a basic T-shirt. 6.2 Arrange the pattern pieces according to design and grain-line a basic T-shirt. 6.3 Construct the outlines of pattern pieces over marker paper for marker making of a basic T-shirt. 6.4 Perform fabric spreading according to the fabric characteristics of a basic T-shirt. 6.5 Place the marker paper on the fabric lay. 6.6 Perform cutting operation for the basic T-Shirt panels. 6.7 Maintain the record of the performed experiment.	2.5
7	**Observe Pattern Making of a basic pants** 7.1 Find out the Point of Measures (POM) from Specification Sheet (Spec Sheet) / Technical Package (Tech Pack) of a basic pant. 7.2 Select the appropriate base size of basic pants. 7.3 Create different pattern pieces of a basic pant according to the measurements. 7.4 Sketch notch mark and grain-line of a basic pant. 7.5 Maintain the record of the performed experiment.	2.5
8	**Observe Pattern Grading of a basic pants** 8.1 Select zero point of the front part, back part, pocket, fly piece, waistband, and pocket facing for grading of a basic pant. 8.2 Select grade point for a specific pattern of a basic pant. 8.3 Choose the rule setting of a specific pattern of a basic pants. 8.4 Calculate grading increment values of the front part, back part, pocket, fly piece, waistband, and pocket facing of a basic pant. 8.5 Perform pattern grading according to the grading increment calculation of a basic pants. 8.6 Maintain the record of the experiment performed.	2.5
9	**Observe Marker Making and Cutting of a basic pants** 9.1 Calculate size ratio from the order of a basic pants. 9.2 Arrange the pattern pieces according to the design and grainline of basic pants. 9.3 Construct the outlines of pattern pieces over marker paper for marker making of a basic pant. 9.4 Perform fabric spreading according to the fabric characteristics. 9.5 Place the marker paper on the fabric lay. 9.6 Perform cutting operation of different panels of a basic plant. 9.7 Maintain the record of the experiment performed.	2.5
10	**Operate Straight Knife and Band Knife Cutting Machine** 10.1 Identify the different components of Straight Knife and Band Knife cutting machine. 10.2 Perform cutting operations.	2.5

	10.3 Identify the safety points of the cutting machine during operation. 10.4 Maintain the record of the experiment performed.	
	Total:	**25**