

# Chittagong BGMEA Institute of Fashion & Technology (CBIFT)

## Syllabus for

<b>B. Sc (Hon's) in Apparel Manufacturer &amp; Technology (AMT)</b>
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### Course Structure:

Total Credit = 148

### First Year, 1<sup>st</sup> semester

Code	Course Title	Credits	Remarks
AMT 101	Introduction to Apparel Business in Bangladesh	3	
AMT 102	Introduction of Textile Fiber	3	
AS 101	Basic Science: Physics	3	
AS 102	Basic Science: Chemistry	3	
FDT 103	Fashion Design-I: Elements of Design	3	
ENG 111	English Foundation Course: Part-1	3	
AMT 100	Apparel Industry & Fashion House Visit	1	
		<b>19</b>	

### First Year, 2<sup>nd</sup> Semester:

Code	Course Title	Credits	Remarks
AMT 121	Yarn Production	3	
AMT 122	Yarn Production-Lab	1	
AMT 123	Apparel Manufacturing Technology	3	
AMT 124	Apparel Manufacturing Technology-Lab	1	
AMT 125	Sewing Machine Engineering and Attachment	2	
ENG 121	English Foundation Course: Part-II	3	
AS 123	Basic Science: Mathematics	3	
BUS 121	Introduction to Economics	3	
		<b>19</b>	

### Second Year, 1<sup>st</sup> Semester:

Code	Course Title	Credits	Remarks
AMT 211	Introduction to Weaving & Knitting	3	
AMT 212	Clothing Materials and Techniques	3	
AMT 213	Bodice and Variations	2	
AMT 214	Cutting Room Technology	3	
AE 214	Fundamentals of Computer	3	
AS 215	Research Method and Statistics	3	
BUS 213	Principles of Marketing	3	
		<b>20</b>	

**Second Year, 2<sup>nd</sup> Semester:**

<b>Code</b>	<b>Course Title</b>	<b>Credits</b>	<b>Remarks</b>
AMT 221	Apparel Dyeing Technology	3	
AMT 222	Apparel Dyeing Technology-Lab	1	
AMT 223	Apparel Printing and Finishing Technology	3	
AMT 224	Apparel Printing and Finishing Technology- lab	1	
AMT 225	Apparel Production System Analysis	3	
AMT 226	Pattern Grading	3	
AMT 227	Sewing Technology	3	
BUS 225	Human Resource Management	3	
		<b>20</b>	

**Third Year, 1<sup>st</sup> Semester:**

<b>Code</b>	<b>Course Title</b>	<b>Credits</b>	<b>Remarks</b>
AMT 311	Advanced Apparel Production	3	
FDT 311	Surface Ornamentation & Decoration	2	
AMT 312	Variations of Bottoms and Dresses	2	
AMT 313	Sewing Construction and Techniques	3	
AMT 314	Apparel Engineering	3	
AS 310	Bangladesh Studies	2	
BUS 317	Production Planning	2	
		<b>17</b>	

**Third Year, 2<sup>nd</sup> Semester:**

<b>Code</b>	<b>Course Title</b>	<b>Credits</b>	<b>Remarks</b>
AMT 321	Testing of Textiles	3	
AMT 322	Testing of Textiles-Lab	1	
AMT 323	CAD	2	
AS 325	Consumption and Costing of Apparel Production	2	
AS 326	Computing for Managers (E-Biz)	3	
AMT 324	Basic Apparel Washing	3	
BUS 324	Consumer Behavior	3	
		<b>17</b>	

**Fourth Year, 1<sup>st</sup> Semester:**

Code	Course Title	Credits	Remarks
BUS 411	Quality Control Management	3	
AMT 411	Industrial Apparel Washing	3	
AMT 412	Product Development	3	
AMT 413	Tools and Techniques of Merchandisers	2	
BUS 412	ISO and Compliances	3	
BUS 413	Production and Operation Management	2	
AMT 414	Fully Fashioned Apparel Manufacturing	2	
		<b>18</b>	

**Fourth Year, 2<sup>nd</sup> Semester:**

Code	Course Title	Credits	Remarks
AS 420	Environment and Pollution Control	2	
BUS 420	Principle and Practice of Export Import Business	3	
BUS 421	Fashion & Textile Brand Management	2	
AS 424	Advanced Quality Control Management	3	
AMT 423	Finishing Room: Wash and Care label	3	
AMT 424	Problem and Prospect of the RMG related Industries in Bangladesh	2	
AMT 400	Internship	3	
		<b>18</b>	

**Elective Subjects:**

Code	Course Title	Credits	Remarks
EL 001	E-Merchandising	3	
EL 002	Principle of Accounting	3	
EL 003	International Merchandising Strategies	2	
EL 004	Principle of Management	3	
EL 005	International Trade and Commercial Transaction	3	
EL 006	Store Room Management	3	
EL 007	Color and Fabric Study	2	

# **Detailed Course Content of B.Sc. (Hon's) in Apparel Manufacturing & Technology (AMT)**

## **First Year 1<sup>st</sup> Semester:**

### **AMT 101: Introduction to Apparel Business in Bangladesh 03 Credit**

This course includes the history and growth of Apparel and Fashion Industry in global to national context with special reference to the Apparel industry in Bangladesh. Effort will be made to provide the student with the past history, present status and future prospect of the apparel and fashion industry of Bangladesh, as well as the forward and backward linkage industries. The course would address about the general concept about various department of a clothing industry, activities and function of the industry. Factory visit will be followed with theoretical class and students will be required to report on factory visit. Students will be presented with multimedia presentation on relevant industry.

### **AMT 102: Introduction to Textile Fibre 03 Credit**

This course deals the introduction of various textile fibers and their classification. This will includes cellulosic fiber, protein fibers, man-made fiber and other fiber used in textile manufacturing. The course would cover the details description (cultivation and harvesting, growth, composition, physical and chemical structure, properties, geographical distribution, grading/classification, end-uses etc.) of some commonly used fibers such as Cotton, Viscose, Jute, Wool, Silk etc. The other part of this course will deals with the detailed study (classification, fibre properties, manufacturing, spinning system, end-uses etc.) of man-made fibres such as Polyester, Polyolefin's, Polyamides, Polyacrylates, Acetate and Elastomeric fibres etc. This course will also focus on other types of natural and man-made fibers including various high performance (i.e. carbon, aramid, glass, metallic and bi/multicomponent etc.) fibers.

### **AS 101: Basic Science: Physics 03 Credit**

The course is designed to introduce the students the basic knowledge of physics. This course will cover a general description and properties of materials. Students will be given a brief idea about elasticity, moment of inertia, surface tension, viscosity, light etc. Furthermore, static and current electricity, magnetism, heat and rules of thermodynamics, laws of Gas will be discussed in this course.

**AS 102: Basic Science: Chemistry****03 Credit**

The course is designed to introduce the students the basic knowledge of chemistry. This course will cover a general description of inorganic and organic chemistry. Students will be given a brief idea about mass, atomic structure, periodic table, metals and non-metals, acid-bases etc. Inorganic chemistry part will include bonding, isomerism, properties and derivatives of different hydrocarbon, carbohydrates and proteins. Physical chemistry includes the theory of gases, thermodynamics, solution, equilibrium and chemical kinetics.

**FDT 103: Fashion Design-I: Elements of Design****03 Credits**

This course includes an introduction to knitwear based fashion, fashion design, and fashion cycle, principles of fashion, elements of design and terminology. It also includes the terminologies, influence of fashion, factors of fashion, importance of fashion, fashion design and career opportunity. It also includes color and color dimension, color wheel, fashion trend, affordability, fashion career, fashion coordination, color presentation, factors of fashion, apparel and design.

**ENG 111: English Foundation Course: Part-1****03 Credit**

The course is designed to introduce students the basic requirement of both oral and written communication in English. The main objectives of this is to develop four language skills, i.e. listening, reading, writing and speaking. After completion of this course a student will know the fundamentals of writing reports, writing official correspondence, letter, memoranda, inquiries, orders, lodging complains, and writing application. Students will be encouraged oral interpersonal communication in and outside classroom. Participatory and activity based approach would be followed in acquiring the basic skills using different teaching aids, such as Video, audio cassettes and CD.

**AMT 100: Apparel Industry & Fashion House visit****01 Credits**

Before Visit the factory the students will be provided the understanding about the nature, scope and function of the textile and Garments factory. A general flow chart of the factory would be presented and after that students will be taken to factories, at least two types of factories. The purpose of visit is to provide the students the practical knowledge about how textile and garments factories function and how different department works, the machineries used and its function, the students will be taken to relevant factories. All factory visits will the preceded and followed by multimedia presentation on the type of factories the students will visit. After the visit, students will be required to submit a report on visit.

## **First Year, 2<sup>nd</sup> Semester:**

### **AMT 121: Yarn Production**

**03 Credit**

The main objective of this course is to provide the students the basic knowledge of how fibers are converted in yarn . This course includes description of different yarn production techniques, spinning, yarn count, yarn count method, threads and types of threads, textured yarn, fancy yarn and stretch yarn. It will also covers the detailed study (flow chart of manufacturing process, principles of operation, objectives, machine used, controlling point, roller settings, faults, causes and remedies of variation, waste control etc.) of different stages of yarn manufacturing process i.e. mixing, blow room, carding, drawing, combing, spinning etc.

### **AMT 122: Yarn Production-Lab**

**01 Credit**

Detailed practical study of Mixing, Blow room, Carding and Draw frame, Comber, Speed frame, Ring frame, Doubling, Reeling machine etc, used in Cotton yarn Spinning used.

### **AMT 123: Apparel Manufacturing Technology**

**03 Credit**

This course will cover the introduction and historical background of apparel technology, general terms and principles, to provide knowledge garments assembly and all available techniques necessary for modern apparel manufacture of world markets. This course is designed to provide the students the knowledge of garments analysis, operation breakdown, process flow chart, sewing defects and solution, component construction, basics of shirts, trousers, and jacket construction, attachment to different component. It also provides knowledge about different process of manufacturing apparels, different types of production, line balancing, and line layout, plant layout.

### **AMT 124: Apparel Manufacturing Technology-Lab**

**01 Credit**

Detailed practical study of component & construction of basics of shirts, trousers, and jacket construction, attachment to different component.

### **AMT 125: Sewing Machine Engineering and Attachment**

**02Credits**

This course includes an Introduction to Sewing machines, types and functions of sewing machines, parts of sewing machine, replacement of spare parts, sewing machine accessories and attachments, use of attachments and their function, sewing machine mechanisms, safety methods, lubrication, machine installing, types and function of motor; various sewing defects identification and rectification.

### **ENG 121: English Foundation Course: Part-II**

**03 Credit**

This course enables the student's to enhance analytic capacity in reading, strengthen writing capacity, especially writing of essays, paragraphs, notes etc. Students will learn to organizing writing materials on logical sequence and the art of presentation of materials in written and verbal form using correct grammar.

### **AS 123: Basic Science: Mathematics**

**03 Credit**

This course teaches the foundational knowledge of mathematics to students. It includes Algebra, trigonometry, and three dimensional geometry. It also covers the different methods, functions and application of differential calculus Integral calculus and differential equation. Vector analysis and different mathematical models and functions will be discussed in the course.

### **BUS 121: Introduction to Economics**

**03 Credit**

This course includes the some foundational concepts of economics. It includes the nature, scope and methods of economics, production curve, economic systems, demand and supply, production and cost, market structure, competition & monopoly. Economic efficiency and market failure, national and international economy, income supply model, inflation and unemployment, influence of Government budget and fiscal policy, national income, aggregate demand and aggregate supply, business cycle, economic growth, free trade vs. protection balance of payment 7 exchange rate policy, SAFTA, WTO, MFA etc.

## Second Year, 1<sup>st</sup> Semester

### **AMT 211: Introduction to Weaving & Knitting**

**03 Credit**

This course includes the introduction of woven & knit fabric, the source of woven & knit fabric, the characteristics, properties and use of these fabrics, woven & knit fabric formation, the types of woven & knit fabrics, and woven & knit fabric structure. It also includes the design of woven & knit fabric and fabric set particles. This Course is also designed to provide the students with the fundamental knowledge of different types of special woven & knit fabrics, such as laminated fabric, non-woven fabric; lapel swivel fabric, coated fabric, netting and lace fabric, leno fabric. It also includes the chemicals and other ingredients used and its impacts on finishing of special woven & knit fabric.

### **AMT 212: Clothing Materials and Techniques**

**03 Credits**

This course includes an introduction to clothing materials and techniques, importance of clothing materials, classification of clothing materials, introduction to trims and accessories, importance and uses of different materials in apparel product, practical identification of clothing materials. The Student will be required to submit a presentation based on individual assignment on clothing materials and techniques.

### **AMT 213: Bodice and Variation**

**02 Credits**

This course include Basic Bodies Block, Dart Manipulation and Style line, Sleeve Variation, Basic Shirt Block, Shirt Variation, Pattern Making Technology, Truing, Blending, Pin Marking and Tape Marking, Fabric Terms and Fabric Line, pattern Line, Measuring, Skirts, Standard Measurement Chart.

### **AMT 214: Cutting Room Technology**

**03 Credit**

This course cover an introduction to activities of cutting room, functional chart or organ gram, production process in the cutting room, basic pattern and controlling, responsibility of cutting personnel, various type of machine and equipment used, marker efficiency analysis, spreading techniques, cut order plan preparation, different cutting techniques, waste control, cutting defect prevention and rectifications, bundling, numbering and cut panel checking, fusing, quality control in the Cutting section, store and issue control.

**AE 214: Fundamentals of Computer****03 Credit**

This course will describe the basic and fundamental concept of computer science. It deals with types of computer, Functional units of computer, Typical input and output devices, Auxiliary storage devices, Commonly used DOS commands, GUI, numerical method, Programming techniques etc.

**AS 215: Research Method and Statistics****03 Credit**

The main objective of this course is to provide the students to know about the basic nature of science and scientific method and the use of statistics as tools of science. The topics includes are science and scientific method, Experimental and Quasi-experimental design, Observation, steps of research, Problem, Hypothesis's, control of variables, Sample and Sampling techniques, Report writing, Introduction of Statistics, Frequency distribution table, Preparation of FD table, Graphical presentation of data, Normal distribution and normal curve, importance and use of normal distribution, Measure of variability. Percentile and Percentile and Percentile rank, standard score. Statistical tests such as t-test, F-test, chi-square test, Correlation etc.

**BUS 213: Principles of Marketing****03 Credit**

This course is designed to provide an introduction to the basic principles and concepts of marketing, understanding marketing and marketing management process, analyzing market opportunities. It also includes customer relationship, company and marketing strategy, marketing environment, consumer market and buying behavior, product development and product life cycle, market research, Selecting Target Market, Demand Forecasting, Market Brand, product Pricing, Marketing Mix, Distribution Channel, product Promoting, PR and Personal Selling, marketing Effort, International Marketing, Social Responsibility and Market Ethics.

## **Second Year, 2<sup>nd</sup> Semester:**

### **AMT 221: Apparel Dyeing Technology**

**03 Credit**

This course is designed to provide the students with the fundamental knowledge of different method of dyeing of Apparel. It also includes the flow chart of dyeing process, water required for wet processing of yarn,fabric,knit & finished apparel stage, scouring, bleaching, mercerizing, the chemicals and ingredients used and its impacts on dyeing of different types of fiber and fabric. Also includes a detailed information of application and properties of different dyestuffs (reactive, vat , disperse, basic, acid, pigments etc.) used in dyeing.

### **AMT 222: Apparel Dyeing Technology- Lab**

**01 Credit**

Practical study on preparation of different stages of textiles (eg.yarn,fabric,apparel) for dyeing – Desizing, Scouring and bleaching of Cotton, Jute, Wool and silk fibres. Practical application of direct, Acid, Basic and Vat dyes for Dyeing of textiles made of Cotton, Jute, Wool and Silk fibres. Study on different dyeing machineries. Before any bulk dyeing approval from buyer is important and also costing calculation is important. So from sample dyeing we can estimate the production cost and simultaneously a merchandiser can quote the garment price.

### **AMT 223: Apparel Printing and Finishing Technology**

**03 Credit**

This course is designed to provide the students with the fundamental knowledge of different method of printing & finishing of Apparel. It also includes the flow chart of printing and finishing process, the chemicals and ingredients used and its role on printing of different types of fibre and fabric, printing theory, styles of printing, methods of printing, finishing chemical, needs of finishing and value addition and finishing.

### **AMT 224: Apparel Printing and Finishing Technology -Lab**

**01 Credit**

In this course, students will perform practical work on yarn, fabric & apparel dyeing and finishing. It deals the printing of different fabrics with different dyestuff and pigments. Production of softening, water repellent and flame retardant effects on different fabrics will be also carried out as practical experiment of finishing technology.

### **AMT 225: Apparel Production System Analysis**

**03 Credit**

These course includes push & pull production system; JIT; GT (group technology) MRP-1, ROP; factory dynamics (routing; throughput; WIP; CT; Bottle neck rate; critical WIP calculation; Little's Law; reducing WIP and CT); Production scheduling; supply chain.

### **AMT 226: Pattern Grading**

**03 Credit**

This course includes an introduction to master pattern; size chart, rectangle grading; measurement different and tabulation; grade plan, basic skirt grading; curve grading, neck and armhole, sleeve, cuff and collar grading; bodice block grading; trouser grading with industrial chart; grading of different part of garments; grading of apparels with industrial chart;

### **AMT 227: Sewing Technology**

**03 Credit**

This course is designed to introduce the student's different types of sewing machine, parts of sewing machine and its functions, feeding mechanism, different types of needles and threads, stitching pattern, stitching construction, classes and types, edge formation, double needle stitch, Kansai stitch, blind hem, seams and types of seams, seam formation, pleat and types of pleat, pockets and pocket formation, collar and variation, sleeves and formation of sleeves, different parts of garment construction. It also covers sewing needles, types of needles, treads and its classification, sewing defects, causes and solution of sewing defects.

### **BUS 224: Human Resource Management**

**03 Credit**

This course provides an understanding of personal management issues such as Hiring, Training, Selection, Grievance Handling, Job Design and Analysis, Job Evaluation, Focuses on Individual, Interpersonal, Group and Inter Group Behavior and Group Dynamics. It basically focuses on the functions, roles, and competencies required for human resources management; staffing, Compensation and benefits; labor relation; employee development; legal issues related to labor and employment in Bangladesh; strategic human resources management etc. It also explores Leadership, power, and Conflict, Diversity and Change and main role in improving the results by influencing personal Behavior.

## **Third Year, 1<sup>st</sup> Semester:**

### **AMT 311: Advanced Apparel Production**

**03 Credit**

This course covers an introduction to activities of general terms, principle of cut & sew. It includes the topic like, modern industrial techniques; eg: jackets interlinings, under linings, lining types with reason & techniques. Use of special materials – leather, PVC, fur coats, rain wear, winter wear, survival clothing. It also includes Alternative Manufacturing Systems – made to measure, customization & further production. Different fabric studies; production techniques; wear style; quality control of Apparel Production, productivity calculation; fabric consumption and costing of different wear, merchandising; Fashion fabric and fashion fabric used in apparel industry, machinery for Making-up of modern wear.

### **FDT 311: Surface Ornamentation & Decoration**

**02 Credits**

The aim of this course is to provide the student the introduction of surface ornamentation of fabric and apparel; nature scope and responsibility; pattern, motif and tools; block print tools and coloration batik process; screen print techniques; hand printing; airbrush printing and techniques; tools and color preparation process; tools making process; accessories making; different collection and composition; techniques of presentation.

### **AMT 312: Variation of Bottoms and Dresses**

**02 Credit**

This course is designed to introduce the student's different types of Pattern and its variations of Bottoms and dresses. The main objectives of the pattern study are pattern designing i.e. the free unguided planning of all the details of a style is done only through Experimentation & Research, Based on its Fundamental principles. Once this basic concept has been achieved progress in learning Pattern Designing is usually more rapid & it is not necessary to have years of Fitting experience in order to learn to see what one is aiming at i.e. to have a clear mental picture of the shape, line & fit of the style on the figure.

### **AMT 313: Sewing Construction and Techniques**

**03 Credit**

This course includes both practical and theoretical components but major portions are practical. The Practical classes are followed by theoretical exposition of specific topics. Topics include an introduction to application of sewing machine, various sewing machine attachment and uses of attachment, different types of needles and selections and selections of sewing machine needle, safety instructions, introduction with various machine, threading, spooling, needle control exercise, basic exercise, job related exercise, based exercise, job related exercise, practice with special type sewing machine. It also covers seams, different types of seams, over lock machine, types and functions of over lock machines, stitching, techniques of stitching, and different parts of garments and construction of parts.

### **AMT 314: Apparel Engineering**

**03 Credit**

This course includes the introduction; Tools & Techniques of Apparel Engineering, Time Management, Method Study, Principle of Motion Economy, Work Measurement, Time Study, SMV Calculation, Rating Calculation, Activity Sampling, PMTS, M/C Layout, Line Balancing and Incentive Calculation. It also includes IRR, NPV; SPC; sampling plan; human factor engineering; shift and work plan design; logistic supply chain; layout design; line balancing;

### **AS 310: Bangladesh Studies**

**02 Credits**

This course introduces students to history, culture, heritage, geography, environment and development of Bangladesh. Students learn about our rich heritage and cultural influences and national identity. Special emphasis will be on the environmental and developmental issues facing Bangladesh. This will encourage a better understanding of the interaction between economy and perspectives. This course will give students the challenges and opportunities facing specially for the RMG sector in Bangladesh.

### **BUS 317: Production Planning**

**02 Credit**

This course includes the introduction, production and productivity calculation, planning tools and forecasting, Break even analysis linear programming, scheduling, GANT chart, PERT & CPM, Material Requirement Planning (MRP), Production planning and control (PPC), production system analysis.

## **Third Year, 2<sup>nd</sup> Semester:**

### **AMT 321: Testing of Textiles**

**03 Credit**

This course includes an Introduction to Conventional and Modern Textile Testing, Sampling of Yarn, Fiber, Fabric & Apparel; Fiber Dimension, Yarn Dimension, Count and Count Measurement, Twist and Effect of Twist, Fabric Dimension and Testing. Crimp, Air Permeability, Stiffness and drape test, Crease, Serviceability, Flammability, Water-proof, Tensile, Tearing, Ballistic, Fastness test, Fabric & Apparel inspection and Defects, Quality Measurements, ISO, AATTC etc. It also includes garment testing, inspection and apparel defects, inspection system, checklist, sampling, statistical quality control.

### **AMT 322: Testing of Textiles-Lab**

**01 Credit**

Detail practical study of all the referred testing of yarn, fiber, fabric & apparel; eg: Sampling of Yarn, Fiber, Fabric & Apparel; Fiber Dimension, Yarn Dimension, Count and Count Measurement, Twist and Effect of Twist, Fabric & Apparel Dimension and Testing. Crimp Air Permeability, Stiffness and drape test, Crease, Serviceability, Flammability, Water-proof, Tensile, Tearing, Ballistic, Fastness test, Fabric & Apparel inspection and Defects.

### **AMT 323: CAD**

**02 Credits**

To cope with change and the trend of fashion industries, a designers or a garments technologist must know the Computer Aided Design technology known as CAD. CAD helps the designers to have a speedy solution of design problems and provide the opportunity to experiment with design. It also emphasizes the necessity of using accurate and speedy technological solution in order to obtain better material utilization and garment quality. This course provided in many terms to fulfill the target. The course includes an introduction; Pattern Digitization with internal point and lines; Pattern orientation, Nomenclature and notches; pattern modification; creation of waist band, pattern grading; variants; Creation of Size, Pattern Orientation, Completion of Garments Model, Adding Blocking, and Match Marker etc.

### **AS 325: Consumption and Costing of Apparel Production**

**02 Credits**

This course is designed to provide the students the in depth knowledge of costing and accounting for Apparel Merchandising. This course includes Introduction to Accounting and Merchandising Costing, Systems of Garment costing, Determination of fabric consumption, Analysis of yarn, Weaving and Dyeing costs of knitted, woven and sweater. Buyer negotiation and order handling, Follow up, Payment Negotiation, Payment Terms, PI and LC Analysis, MIS and Business Correspondences, Practice of Cost Estimation, Computer and Costing, cost bidding procedure with international buyers, Review of Quoted price, Profitability analysis.

### **AS 326: Computing for Managers (E-Biz)**

**03 Credit**

The traditional concept of business is changing rapidly. The widespread application of computer technology in business solution requires the managers to know the e-business or use of computer technology and its application to run business, especially the international business. The aim of this course is to provide the students the basic concepts of Computer application in business, using of some basic program, such as MS word, Power Point, MS-Excel, spreadsheet, data base, data base and table design, creating and deleting tables, ms access and use of access and use of access, Photoshop; coral draw; flash, HTML; Statistical Package, Internet, and E-mail etc.

### **AMT 323: Basic Apparel Washing**

**03 Credits**

This course includes both practical and theoretical components but a major portion is practical. The practical classes are followed by theoretical exposition of specific topics. This course includes introduction to washing machine, different types of washing machine, use of different types of washing machine, solution for different wash, various type of wash for different garments such as, shirts, trousers, shorts, and jacket. Process analysis, process flow chart of washing of individual component of shirts, trousers, shorts, skirts and jacket.

**BUS 324: Consumer Behavior****03 Credit**

A comprehensive analysis of the factors in human behavior, which influence the choice and the use of products and services offered in the profit and non-profit organizations consumers buy product and services to satisfy their conscious and unconscious need. One the most important things the producers of product and service offered in the profit and non-profit organization. Consumers buy product and services to satisfy their conscious and unconscious need. One of the most important thing the producers of product and services is that they must know the consumers needs, choice, preference, values, personalities and other psycho-social characteristics. It will use a variety of learning methods to study the interrelationship between theory and practices as applied to consumer behaviors. Often the importance of the concepts that will be discussed in these cores become more evident when discussed in light of real world examples. It will be use a Combination of Assignments, individuals and Group exercises, videos or presentations to help facilities the learning process.

**Fourth Year, 1<sup>st</sup> Semester:****BUS 411: Quality Control Management****03 Credits**

This course is designed to introduce the student with the concept of Quality and Quality Control in clothing Industry and to provide technical knowledge to the student on the followings: Quality control organ gram, Fabric defects, Fabric inspection, Parts and Points of garments, Garment Measurement, Zone Classification, Garment Defects & Standard Terminology, Defects Classification, Identification of Garment Defect, Prevention and Rectification of Garment Defects, section wise quality control, Quality Specification, Quality Control System, Section wise Quality Control, AQL, Final Inspection, care Instruction symbol, Responsibilities of Quality Control Personnel. Factory Visits & Project Submission. After completion the course the student will be able to control the quality of product as per requirement of the customer.

### **AMT 411: Industrial Apparel Washing**

**03 Credit**

The purpose of this course is to introduce the students the importance of garments washing for value addition. It is not the cleaning of the garments but using washing technology for value addition and to enhance the competitiveness of the garment products. It introduced the students different techniques of washing, the chemicals required for different types of washing used to modify, out look, comfort, fashion etc. The course covers normal and pigment wash, caustic and stone wash, enzyme and enzyme wash, washing faults, acid wash, whickering, tagging, grinding and destroy process, crinkles, sand blasting, spray, tainting and over dye, It includes how washing affects the properties of garments, demand of garments etc. costing of washing. For export market as well as domestic consumption, garments must treated and washed before marketing.

### **AMT 412: Product Development**

**03 Credits**

This course include Introduction to Production Development, Product Development Process, Fashion Sources, Dress and Trims, Theme and Developing research materials, Dress Design, Principles of Dress Design, Drawing and lay out flats, Template Fashion Illustration, Net Pattern, Template Pattern, Pattern Problem and Solution, Sewing layout, Fit sample, Sample, Approval, Pre Production sample, mood Boards, Illustration. Trims and Swatches, Garments Specification, Production Detail and Plan, IE Bulletin, Cost Sheet, Final Production Submission, Production Display, Students' will be submit a number of project involve different areas of the course.

### **AMT 413: Tools and Techniques of Merchandisers**

**02 Credits**

The role of merchandisers in the RMG business is very important. Merchandisers play the most pivotal role in both buying and selling the goods. He must know almost all aspect of garments products. This course is designed to provide the students the Essential Knowledge and Skill of Merchandising. Art of Negotiation, Determination of Pricing, Consumption, Time Calculation, Order Placement, Order Fulfillment, Negotiation, Sourcing etc.

## **BUS 412: ISO and Compliance**

**03 Credits**

This course is designed aiming to provide knowledge on Standardization & Compliance for clothing Industry. After having the course the student will be able to help to have to ISO certification and will be able to setup Compliances in the factory. Also they will be able to setup all Quality facilities in the Industry as per the requirement of the customer. Student will have knowledge on different issues on Standard and other Quality issues, which are very important to sustain in the competition. Student has to prepare a project based on their learning's and visiting a factory for a certain time as decided by the course teacher to accomplish the assignment.

## **BUS 413: Production and Operation Management**

**02 Credits**

This Course includes the Introduction, Operation strategies, Forecasting, Manufacturing Policy Decision, Production System, Plant Location and Factory Layout, Production Planning and Control, Product Design and Development, Job Design, work Study, Time and Motion Study, Material management, Production and Service Scheduling, Purchasing, Inventory Control and Maintenance Management.

## **AMT 414: Fully Fashioned Apparel Manufacturing**

**02 Credit**

This course is designed for greater knowledge and understanding of the technology of fully fashion apparel. After successful completion of this module, students will be able to understand the operational and analytical knowledge related to this technology, designing, manufacturing and merchandising of fully fashioned apparel, especially the fabric production and properties; design; production techniques and breakdown; design and stitch properties; basic stitch notation; manufacturing techniques and end uses; style analysis; design chart and calculation; quality aspects and controls; linking and defects, defects mending; merchandising; consumption and costing.

## **Fourth Year, 2<sup>nd</sup> Semester:**

### **AS 420: Environment and Pollution Control**

**02 Credit**

This course is designed to teach the students about the recent environmental challenges such as soil erosion, desertification, bio diversity loss, deforestation, water pollution and climatic changes, urbanization, air pollution, effluents etc and their effect on environment and living species. This course also covers the types of industrial and textile pollution and their control/treatment and management and costing related. Regulatory issues like environmental policy and law of Bangladesh will be also informed to the students.

### **BUS 420: Principle and Practice of Export Import Business**

**03 Credits**

The aim of this course is to provide the students the Basic Nature of International Trade. Students will be exposed to different international trade bodies such as GAAT, WTO, SAFTA, and other international Trade Forum, Basic of Export Import Management, Export Import Formalities, Function of different agencies related to export and import business, Customs Regulation, Function and Formalities of C & F etc.

### **BUS 421: Fashion & Textile Brand Management**

**02 Credits**

This course emphasizes an understanding of psychological principles at the customer level that will improve managerial decision-making with respect to brands utilizing concepts relevant for any type of organization (public, private, large or small), particularly fashion organizations. Overall, the course is designed to improve students' marketing skills and understanding of specific marketing topics, as well as how various aspects of marketing fit together, all from a brand equity perspective. This course aims to increase understanding of the important issues in planning and evaluating brand strategies and to provide the appropriate theories, models, and other tools to make better branding decisions.

### **AS 424: Advance Quality Control Management**

**03 Credits**

This course is designed aiming to provide technical knowledge in advanced level on Quality Control Management in Clothing Industry. After having the course the student will be able to meet the customer requirement by developing Quality Assurance team in the Industry and they will have knowledge on different issues on Quality assurance for clothing Industry such as – Quality Control Circle, Quality Control Tools, quality Specification, Waste Control & Productivity, Quality Manual, concept of Standard, Compliance etc. Student has to prepare a project based on their learning's and visiting a factory for a certain time as decided by the course teacher to accomplish the assignment.

### **AMT 423: Finishing Room-Wash & Care Label**

**03 Credits**

This course covers an introduction to Activities o Finishing Room, Organ gram, Responsibility of Finishing Personal, Various types of Machine, Tools and Equipments used in the Section, Understanding of Packing and Packaging, Cartoon Measurement and CBM Calculations, Wash Care Labeling and Understanding of care symbol. The course will be followed by factory visit, specially the finishing section of the garments factory as well as multimedia Presentation on the relevant area.

### **AMT 424: Problem and Prospect of RMG related industries in Bangladesh**

**02 Credit**

The topics of this course include the historical development of the RMG industries from global to regional to Bangladesh on historical perspectives with special reference to apparel industries. The trend in the development of the apparel industry in Bangladesh, the export market, competitors, problems of manpower, marketing, sourcing, future prospectus; survival strategy; recent trend; the role of government and different trade bodies in the development of the RMG industries.

### **AMT 400: Internship**

**03 Credits**

Purpose of the Internship program of B. Sc (Hon's) students of Apparel Manufacturing technology is to provide the opportunity for the students to expose him in the manufacturing, plan of the apparel related industries. This course will be offer at the terminal phase of their degree. Under supervision of a course teacher, student will be assigned under an official of apparel manufacturing unit who will supervise and guide the students to conduct the internship program have to submit a report dully signed by the supervisor to the guide teacher for evaluation.

## **Elective Courses:**

### **EL 001: E-Merchandising**

**03 Credit**

This is a course with the purpose of providing efficiency to the students for basically communication with buyers. Merchandising course is very important for the RMG business and a Merchandiser must know the sourcing of materials, pricing, consumption, costing, production, design etc. There are different softwares available on merchandising and the students attending this course will be taught at least two most widely used software on merchandising.

### **EL 002: Principles of Accounting**

**03 Credit**

This course has been designed to enable the students to acquire the basic skills necessary to use, interpret and analyze accounting data. The students will be exposed with basic accounting concepts and its environment. Topics of the course include basic concept, principles and techniques used in the generation of accounting data for financial statement preparation. Asset, liability, equity, valuation income determination are emphasized.

### **EL 003: International Merchandising Strategies**

**02 Credit**

The course is designed to provide the students an in-depth understanding and analysis of globalization and the critical elements involving international trade regulations, global market integration dynamics, sensitivities of different cultures, and effective market entry strategies. Students will be exposed to different international trade bodies such as GAAT, WHO, SAFTA and other international trade forum, basic of export import business, customs regulations, functions and formalities of C& F etc.

### **EL 004: Principle of Management**

**03 Credits**

This course will guide the students about the basic knowledge management course. Focuses on the fundamental practice of management including administrative, organizational and behavioral theories. It explores the function of management and aspect of the organizational environment and production and operation management as well.

**EL 005: International Trade and Commercial Transaction** **03 Credits**

This course includes topics on international trade with special reference to apparel trade. Rules and regulation of international trade, international trade bodies, such as WTO, GATT, SAFTA, NAFTA, SAARC Cumulation, MFA, Trend and policy shifting of international apparel trade, advantages and disadvantages of Bangladesh Apparel trade, growth and development of apparel trade, shifting and relocation of apparel trade, challenges of Bangladesh apparel trade and survival strategy of Bangladesh apparel trade.

**EL 006: Store Room Management** **03 Credits**

The course is designed to introduce the students the types, functions and use of storeroom; activities of store room; types of storeroom; It also includes the Packing Materials, Different types of Packing, Packing Design, Selection of Package Design, Principles of Warehousing, 5S Concepts, inventory Management System, Storage of different types of RMG products, SCM, Storage of Accessories and Spare Parts, Equipments of Warehousing, bounded warehousing; stocks and classification of stock, symbols used in storeroom; quality control and waste control in storeroom, and Computerized Storage System.

**EL 007: Color and Fabric study 3** **02Credits**

Analysis of natural and man-made fibers, fabric construction and special finishes; characteristics that determine use, performance and care; innovations in the textile field, dyes, printing processes and fabric tests. Class will present knitwear design possibilities in techniques including: knitting, fabric painting, appliqué, beading, felting and reconstructed fabric making. Pattern designing is emphasized.