

REGULATIONS AND SYLLABUS
FOR
DIPLOMA IN APPAREL MERCHANDISING (DAM 2011)

Offered by

CCII (Centre for Collaboration of Industry and Institutions)

BHARATHIAR UNIVERSITY

(UNIVERSITY INDUSTRY INTERACTION PROGRAMME)

Description of the Course / Objective of the Course

The Indian apparel industry is facing an unfolding global competition since the dawn of 2005. In this context, the **DIPLOMA IN APPAREL MERCHANDISING** Program is designed with the objective of developing competent technical professionals for meeting the demands of the Indian apparel industry. The **DIPLOMA IN APPAREL MERCHANDISING** is a 1 year Diploma course (Non semester pattern) for students who wish to do higher studies in knitwear designing and knit garment making and those working in the industry and aspiring to obtain an academic diploma.

Regulations

1. Admission Criteria (Eligibility):

Pass in 10 +2 or A pass in 10+2 or 10+3 year Diploma awarded by any state board of Technical Education (or) its equivalent thereto.

2. Course Duration:

The course shall extend over a period of one year comprising of one year (annual pattern). Examinations shall be conducted at the end of every year for the respective subjects. The academic year will be normally spanning the period from July to June.

3. Medium of Instruction:

English shall be the medium of instruction.

4. Courses and Scheme of Examination:

The course of study for the **DIPLOMA IN APPAREL MERCHANDISING** course shall consist of the subjects as in section 6.

Being practical oriented programme the focus will be more for practical training. The candidate shall undergo a practical training in various Processes of Garment Making and Merchandising. Students will be given a case study during the Industrial training and they have to submit a report thereon during the course period and also at the end of the year on dates announced by the institute/department. The guideline for training shall be provided by the institute / department. Every theory paper should have at least 90 contact hours of study including period of study in the industries. The candidates would spend at least 180 hours per practical paper in the industries and / or Institute laboratories.

5. Requirement to appear for examination:

A candidate will be permitted to appear for the University Examination for any year if he/ she secure not less than 75 % of attendance in the number of instructional hours / practical's in the industries and / or Institute laboratories during the year, failing which he / she should redo that course of study.

6. Scheme of Examinations

S.No	Subject Code	Title of the paper	Distribution of Marks		
			CIA	EA	Total
1.	11 AM 01	Introduction to Textiles	40	60	100
2.	11 AM 02	Apparel Manufacturing	40	60	100
3.	11 AM 03	Garment Merchandising & Quality Control	40	60	100
4.	11 AM 04	Costing, documentation & Shipping Procedures	40	60	100
5.	11 AM 05	Fabric production and Garment Making – Practical *	40	60	100
6.	11 AM 06	Garment Merchandising & MIS - Practical *	40	60	100
Total			240	360	600

CIA - Continuous Internal Assessment **EA** External assessment

* In this case, CIA will be given by continuous assessment made by an internal examiner who has handled the respective subject during the course period and EA will be given by assessment made by an another internal examiner of the same institute during the practical examination.

7. Passing minimum:

To pass

- A Candidate shall secure a minimum of 50 %marks individually in the practical and Theory Examinations. A candidate failing in any one component will have to reappear for that particular component only in the supplementary examination.
- The Candidate shall secure 50% marks in internal and External Examinations.

8. Classification of Successful Candidates

- a. All candidates securing not less than 75% of the aggregate marks shall be declared to have passed in **FIRST CLASS with DISTINCTION** provided they have passed the examination in every subject without failure in anytime within the course of study.
- b. All the candidates securing not less than 60% of the aggregate marks shall be declared to have passed in **FIRST CLASS** provided they have passed the examination in every subject.
- c. Other successful candidates shall be declared to have passed the examinations in **SECOND CLASS**.

9. Conferment of degree:

A candidate who has passed all the examinations as prescribed, shall be eligible to receive the “**DIPLOMA IN APPAREL MERCHANDISING**” from the Bharathiar University.

10. Question Papers

The university examinations shall be conducted for 100 marks and it will be converted to 60 marks as an external examination. The pattern of question papers for all the subjects shall be as follows:

Section A: Objective type of questions with no choice 20% (20 questions – 4 from each unit)

Section B: Short answer questions of either / or type 30% (5 questions – 1 from each unit)

Section C: Essay type questions of either / or type 50% (5 questions – 1 from each unit)

11. Internal Assessment Components:

Tests	: 20 Marks
Assignments	: 10 Marks
Involvement & Discipline	: 10 Marks
Total	: 40 Marks

11 AM 01 INTRODUCTION TO TEXTILES

Unit- I

Introduction to Textiles. Polymerisation –Types of Polymers-Requirements of Fibre Forming Polymers-Definition of Textile Fibre and Filament. General Considerations With Regard to Fibre Properties.

Classification of Fibers. Brief Study on Cotton, Silk, Wool & Bast Fibers (Flax & Jute Only). Introduction to Manmade Fibers – Filament Spinning Methods - Brief Study on Semi Synthetic Fibers: Viscose, HWM Fibers (Modal And Tencel) & Acetate Fibres with Their Properties – Brief Study on Synthetic Fibers (Polyester, Nylon, Polyacrylic & Spandex) and Their Properties.

Unit II

Introduction to Yarn Formation-Cotton Yarn Production Sequence and Objectives– Comparison of Carded and Combed Yarn- Quality Requirements for Hosiery Yarn. Study of Yarn Numbering Systems – Yarn and Package Defects.

Unit III

Classification of Fabric Forming Methods-Weaving Operation – Process Sequence- Comparison between Knitting and Weaving- Classification of Looms.

Knitting Terms & Definitions - Comparison of Weft and Warp Knitting Classification of Warp and Weft Knitting Machines - Weft Knitting Machine Elements.

Unit IV

Knitting Cycle of Single Jersey & Double Jersey - Basic Structures - Modern Knitting Concepts & Specialty Knitting - Simple Calculations Weft Knitting Stitches & Notations - Basic Weft Knit Structures - Properties - Derivatives of Single Jersey, Double Jersey Fabrics - Identification of Swatches.

Unit V

Introduction to Wet Processing – Brief Study of Preparatory Processes of Dyeing and Objectives – Meaning of Dyes and Pigments – Various Classification Methods of Dyes – Principle & Method of Dyeing of Cotton Knitted Fabric – Principle and Working of Jigger, Beam Dyeing, Winch, Soft Flow and Air Flow Machines.

Introduction to Printing – Brief Study on Different Styles of Printing & Different Methods of Printing - Defects in Dyed and Printed Cloths: Causes and Remedies Introduction to Finishing - Mechanical and Chemical Finishing

References:

1. Textiles: Fiber to Fabric 6th Edition , Bernard P. Corbman, International students' edition, McGRAW Hill International Edition book co Singapore (1985).
2. Fabric science, 5th edition, joseph.j.p. Et.al. Fairchild publications, New York (1990).
3. Textile chemistry, peters.r.h. Vol i, ii, textile institute Manchester 1970.
4. Technology of textile processing, shenai.v.a. Vol i, ii, v, vii, sevak publications, Bombay 1981.

11 AM 02 APPAREL MANUFACTURING

Unit - I

Introduction to Garment Industry – Detailed Study of Process Sequence- Garment Analysis and Classification –Measurements and Size Charts for Men, Women, Children-Requirement and Breakdown of Garment Flow Process –Torso and Bifurcated Garments- Fabric Selection Techniques for Garments - Case Study on Garment Classification, Flow Process and Fabric Selection.

Unit – II

Concepts of Basic Pattern and Grading – Rules for Developing Basic Patterns – Pattern Materials & Limitations – Pattern Making Tools – Introduction to Computer Aided Pattern Making and Grading – Case Study on Standard Body Measurements of Different Countries for Men, Women and Children Clothing – Defects in Pattern, Causes and Remedies.

Unit – III

Lay and Marker Planning – Study of Methods of Marker Planning – Study of Spreading Methods Concepts of Marker Planning – Marker Planning, Drawing and Reproduction of Marker – Marker Efficiency – Spreading and Methods – Various Cutting Methods and Limitations – Bundling – Defects in Cutting, Causes and Remedies

Unit – IV

Classification of Industrial Sewing Machines – Applications – Description and Working of Single Needle Lock Stitch Machine, Double Needle Lock Stitch Machine, Over Lock Machines, Flat Lock Machine – Types and Parts of Sewing Machine Needles – Needle Sizes.

Sewing Machine Feed Mechanisms: Drop Feed – Differential Feed – Variable Top Feed Combined with Drop Feed - Variable Top Feed Combined with Differential Feed – Compound Feed – Unison Feed. Machine Bed Types: Flat Bed - Cylinder Bed - Post Bed – Feed – Off – The – Arm – Applications.

Brief Study on Work Aids, Special Purpose Machines and Needles –Defects in Sewing, Causes and Remedies.

Unit - V

Brief Study on Safety Stitching, Blind Stitching, Button Stitching, Button Holing, Placket Making and Bar Tacking Machines. Study on Various Garment Finishing Machines for Fusing, Sucking, Ironing and Packing.

Role of Accessories - Buttons, Zipper, Labels, Lining. Interlining Labels Wadding, Lace, Braid & Elastic - Quality Parameters in Accessories.

References:

1. Technology of clothing manufacture - Carr & latham
2. Apparel manufacturer's handbook - Jacob solinger

3. Guide to sewing machine and Catalogues of accessories.

11 AM 03 GARMENT MERCHANDISING & QUALITY CONTROL

Unit - I

Merchandising - Terms Pertaining to Merchandising - Requirements of a Purchase Order - Amendment Sheet - Direct Order - Merchant Order - CM Order - CMT Order - Vendor & Sub-Contractor Evaluation Specifications.

Unit - II

Functions of a Merchandiser - Types of Samples - Sample Quality and Sample Order - Expediting Procedures - Record Maintenance - Approval, Types of Approvals - Check Points for a Proper Approval - Approving Sewing Operations & Various Processes.

Unit - III

Time Management - Production Scheduling - Route Card Format - Yarn Requirements - Accessories Follow-Up - Various Processes Follow-Up & Practical Check Points.

Pattern Approval - Size Set Approval Procedures - Pre - (Pilot Run Inspection) - Order Execution Procedures.

Unit – IV

Quality: Meaning -Definition - Quality Vocabulary. The Importance of Quality, Basic Concepts: - Quality Control, Quality Assurance and Total Quality Control in Textile Industry. Needle Quality - Sewing Thread Quality - Yarn Quality Parameters - Sewing Defects.

Inspection: Definition - Types of Inspections - Fabric Inspection - in Process - Pre Final & Final-Accessories Inspection.

UNIT – V

Wash Care Label Symbols - Meaning of Various Wash Care Symbols. QA Department Functions – AQL Concepts in final inspection - Quality Circles. ISO 9000 QMS Family Standards: ISO 9001 Implementation Procedures and Requirements – Benefits. Introduction to ISO 14000 EMS Implementation.

Reference:

1. Apparel merchandising by krishnakumar.
2. Apparel manufacturer's handbook - Jacob solinger
3. Managing Quality in Apparel Industry – Pradeep V Metha

4. ISO 9000 and ISO 14000 Standard manuals.

11 AM 04 COSTING, DOCUMENTATION & SHIPPING PROCEDURES

UNIT I

Cost - Types of Cost: Fixed Cost, Variable Cost, Semi Variable Cost, Conversion Cost, Differential Cost - Elements of Cost - Direct Material Cost - Direct Expenses - Direct Wages - Indirect Materials - Indirect Expenses - Indirect Labour - Overheads - Production Overhead - Administrative Overhead - Selling Overhead Distribution Overhead - Components of Cost Sheet.

Cost Estimation of Yarn, Knitted Fabric, Dyeing, Printing & Finishing. Arriving of Cost Based on Time Study Method. Evaluation of Process Loss Cost. Detail Analysis About Rejection and Arriving The Rejection Norms As International Norms. Influence of Cost Factors Based On Inspection and Testing Procedures.

UNIT II

Cost Estimation for Cutting, Stitching, Checking, Packing, Forwarding, Shipping, Insurance Etc., - INCO Terms & Its Relationship with Costing. Effect of Costing Methods on the Basis Volume. Effect of Overheads on Estimation. Effect of Inventory and Inventory Cost on the Product.

Case Study on Estimation of Factory Cost for Vest, Briefs, Shorts, T-Shirts, Pyjamas, Children's Wear, Ladies Wear Etc. Various Factors to be considered in Costing for Domestic Products & International Products

UNIT III

Introduction to International Trade - Global Scene, - Prospects for Indian Apparel in Overseas Market, Globalisation, GATT and WTO. RCMC and Export Promotion councils – Procedure to start an export firm - Sales contract and its check list.

UNIT IV

Export Procedure -Pre-Shipment and Post Shipment Credit - Exchange Rate Arithmetic INCO Terms - Payment Terms - Logistic Management. Need for Documents – Invoice - Certificate of Origin - L/C- Shipping Bill - Bills of Exchange- Bill of Lading - GR Form - Packing List - Duty Draw Back - Export License - Marine Insurance Policy.

UNIT V

Export Procedure and Recent Policies of the Government

Customs - Meaning, Definition, Types, Exercise and Customs, Clearance of Export Cargo - Shipment of Goods and Port Procedures - Claiming Duty Draw Backs and Other Benefits

References:

1. Jeremy Rosenau, Apparel Merchandising.
2. Anitha A. Stamper, Evaluation of Apparel Quality.
3. Anitha A. Stamper, Experimental Apparel Construction.
4. B.M. Lal Nigam, Cost Accounting Principles and Practice

11 AM 05 FABRIC PRODUCTION AND GARMENT MAKING - PRACTICAL**A. Testing and Quality**

1. Determination of Count of Yarn Using Wrap Reel & Electronic Balance.
2. Fabric Analysis for Determining GSM, CPI, WPI, SL, CL & Yarn Count of Given Sample
3. Fibre Identification: Microscope and Chemical Test
4. Determination of Colour Fastness of Given Sample to Washing by Using Launderometer and Rating with Help of Grey Scales.
5. Determination of Color Fastness of Given Sample to Rubbing by Using Crockmeter and Rating with Help of Grey Scales.
6. Determination of Dimensional Stability% (Shrinkage / Growth) of a Given Fabric/Garment to Washing by Using Indianized-Washing Machine as Per ISO Procedures.

B. Knitting

7. Trace The Diagram of Different Cams in the Conventional Knitting Machine Wit Measurements. Also Mention the Importance of Each Cam.
8. Develop a Pattern for Circular Knitting and Set the Machine Accordingly.
9. Develop a Pattern by Using Mini Jacquard Machine.
10. Develop an Autostriper Design by Estimating the Course and Yarn Consumption Programmes.
11. Identify and Analyse the Given Swatch for the Following Particulars:
A) Courses and Wales Per Cm B) Loop Length C) Technical Graph D) Cam Order E) Needle Order

Samples:

1. Pique 2. Thick Pique 3. Lacoste (Honey Comb)

4. Pearl 5. Cross Miss 6. Twill 7. 2/3 Thread Fleece 8. Jacquard Design

C. Garment Making

C1 Machine Parts and Threading:

12. Draw the Threading Diagram of SNLS Machine and the Various Parts of Machine.
13. Draw the Threading Diagram of over lock Machine and the Various Parts of Machine.
14. Draw the Threading Diagram of Flat lock Machine and the Various Parts of Machine.

C2 Pedaling Exercise on Paper and Fabrics:

15. Straight and Curves
16. Squares, Rectangles
17. Triangles and Unlimited Shapes

C3 Making of Various Seams and Components:

18. Various Seams Types - Superimpose, Bound, Lap, Piping Etc..
19. Samples of Components Such as
 - A. Round Neck
 - B. Scallop Neck
 - C. Gents Placket
 - D. Ladies Placket
 - E. Cross Pocket
 - F. Band Collar

11 AM 06 GARMENT MERCHANDISING & MIS - PRACTICAL

1. Using MS Word, Prepare a Report for Export Order / PPC as per the given details.
2. Using MS Excel, Prepare the Given Balance Sheet.
3. Using MS Excel get the Output in Various Formats Such as Histogram, Pareto Chart etc., for the Given Data.
4. Using MS Excel, do the Given Calculation and Prepare the Required Statement.
5. Using MS Power Point Prepare the Flow Chart and Presentation Slides for the Given Topic.
6. Design the Given Motif / Design Using Coral Draw Package.
7. Work on Adobe Photo Shop for Given Tag Design Card.
8. Design a Web Page for the Given Details Using HTML / DHTML / Flash.
9. Use of MIS tools for merchandiser communications with in the organizations and with buyer for the given details.
10. Use ERP Package for Garment Costing and PPC, for the given details.
