BHARATHIAR UNIVERSITY – COIMBATORE – 641046
B.Sc. APPAREL MANUFACTURING & MERCHANDISING DEGREE COURSE
(For the students admitted during the academic year 2014-2015 Batch onwards)

**Scheme of Examination**

<table>
<thead>
<tr>
<th>Part</th>
<th>Study Components</th>
<th>Course Title</th>
<th>Hours per week</th>
<th>Examinations</th>
<th>Credit</th>
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<td>III</td>
<td>Core Paper I - Textile Fibres &amp; Yarns</td>
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### Semester IV

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### Semester V

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<td>Core Paper XXI - ERP in Apparel Industry</td>
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### List of Elective papers (Colleges can choose any one of the paper as electives)

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<tr>
<th>Elective – I</th>
<th>A Fashion &amp; Apparel Marketing</th>
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<td>B Business Communication</td>
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<td></td>
<td>C Visual Merchandising</td>
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@ No University Examinations. Only Continuous Internal Assessment (CIA)

# No Continuous Internal Assessment (CIA). Only University Examinations.

** Theory 25/75 Marks, Practical 40/60 Marks

* For Viva: 15 Marks (20%) & report: 60 Marks (80%).
Semester – I  Core Paper I - Textile Fibres & Yarns

Unit I

Unit II
Methods of filament spinning. Semi synthetic fibres: Regenerated and modified cellulose - Viscose rayon process flow - HWM fibres - End uses –Brief study of Bamboo, Lyocell, Soya bean fibres.

Unit III

Unit IV

Unit V

References:
5. Identification of Textile Materials, The Textile Institute,Manchester.
6. Eric Oxtoby, Spun Yarn Technology
8. K.P.Chellamni, Yarns and Technical Textiles.
Semester I Core II - Knitting Technology

Unit – I

Unit-II
Knitting terms and definitions - Principal weft knit stitches - Knit, tuck and miss stitch formation and properties - Representation of weft knit stitches – Study of Basic weft knit structures - Needle gating - Description of circular Rib & Interlock knitting machine – Characteristics of basic weft knit structures – Circular knitting GSM and production calculations.

Unit-III
Single jersey knit fabric structures, their cam and needle order: Plain jersey, Pique, Thick pique, Honey comb, Pearl and Twill. Rib fabric structures, their cam and needle order: 1x1 rib, 2x2 rib, Drop needle, Royal rib, Polka rib, Double half cardigan, Double cardigan, Milano rib, Waffle, Flat back, Swiss double pique and French double pique. Interlock fabric structures, their cam and needle order: Interlock, Eight lock, Ottoman rib, Pin tuck, Texi pique and Ponte di Roma.

Unit-IV

Unit-V

References:
1. D.B. Ajgaonkar, Knitting Technology
2. David J.Spencer, Knitting Technology
3. Chandrasekara Iyer et al., Circular knitting technology
4. Dr. Samuel Raz , Flat Knitting
5. Dr. S.Raz , Warp Knitting Technology
6. Peter Lord et al., Fabric forming systems
Semester I  Core III - Knitting Technology  Practical

Part A  
1. Calculate the speed of single jersey knitting machine through gearing diagram.
2. Calculate the speed of rib knitting machine through gearing diagram.
3. Trace the diagram of different cams in the conventional/modern knitting machine with measurements. Also mention the importance of each cam.
4. Trace the take down mechanism and set the mechanism for maximum and minimum tension.
5. Trace the positive feeder mechanism available in the modern knitting machine and set the mechanism for two different feed lengths.
6. Develop a pattern for flat knitting and set the machine accordingly.
7. Develop a pattern for circular knitting and set the machine accordingly.

Part B - Sample Development

    and Analysis of the Following Particulars:

    A) Course and Wale density    B) Loop length    C) Areal Density (GSM)
    D) Tightness factor    E) Technical Graph    F) Cam Order
    G) Needle Order

    (Any one of the above designs shall be given)
Semester – I  Allied Paper I - Computer Application Practical

**MS Office**
1. Prepare your class time table using table option in MS Word.
2. Prepare an interview call letter and send using mail merge in MS Word.
3. Design the given advertisement using in MS word. Apply various fonts and pictures.
4. Create line, bar and pie charts for the given data using MS Excel.
5. Prepare students mark statement with the following fields Roll No, Name, Sub1, Sub2, Sub3, Sub4, Sub5. Calculate Total, Average, Result and Grade. Apply Conditional formatting.
6. Prepare employee salary list with fields Employee No, Employee Name, Experience, Basic Pay, HRA, DA, LIC, PF. Calculate Gross Salary & Net Salary based on the following conditions:

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<tr>
<th>Experience</th>
<th>HRA</th>
<th>DA</th>
<th>LIC</th>
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<tr>
<td>5 Years &amp; Above</td>
<td>30%</td>
<td>15%</td>
<td>3%</td>
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<tr>
<td>Less than 5 Years</td>
<td>15%</td>
<td>5%</td>
<td>3%</td>
<td>700</td>
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</table>

7. Prepare a power point presentation about a product. Apply animation and slide timing.
8. Prepare a power point presentation about an organization with organization chart. Apply different slide layouts.
9. Search the given topic using any search engine and prepare a report using MS word.
10. Create an EMail ID and use various mail features.

**Corel Draw**
11. Design a T Shirt and apply patterns.
12. Design a wedding invitation
13. Create the given jewellery design
14. Using text tool, create five text designs
15. Design precious stone

**Photoshop**
16. Create a design by extracting objects from given images.
17. Design a realistic pen
18. Create the given design

**HTML**
19. Write HTML code to display the followings
   - Invitation with different font and pictures
   - Scroll text from one end to other end
   - Display the items in bullets
20. Write HTML code to display the Registration form and frame
21. Design five web pages with hyperlinks linking all pages
Semester II Core IV - Woven Fabrics & Designs

Unit – I

Unit – II

Unit – III
Passage of material through a plain power loom – Basic mechanisms of a loom – Primary, secondary & auxiliary motions – Tappet shedding – Cone over pick & under pick mechanisms – Beat up mechanism – Types of let off & take up mechanisms – Fabric defects, causes & remedies.

Unit – IV

Unit – V

References:

Semester II Core V - Textile Wet Processing

Unit – I

Unit – II.

Unit – III.

Unit – IV.

Unit – V.

References:
1. Technology of textile processing (vol 1-2), Sevak Publications – V.A.Shenai
2. Dyeing and chemical technology of textile fibres, Charles Griffin & Co – E.R.Trotman
4. The Bleaching and Dyeing of Cotton Material 1983, Weaver’s Service Cent Prayag R.S.,
6. Processing of Manmade Fibres 1975, MIR Publishers, Moscow. - Usenko V,

**Semester II Core VI - Textile Wet Processing Practical**

1. Estimation of water hardness by EDTA method.
2. Combined Scouring & Bleaching of grey cotton woven / knitted fabrics and estimate the loss percentage.
3. Dye the given cotton sample with natural dyes.
4. Dye the given cotton sample with cold brand reactive dyes.
5. Dye the given cotton sample with hot brand reactive dyes.
6. Dye the given cotton sample with vinyl sulphone dyes.
7. Dye the given cotton sample with reactive H-E dyes.
8. Dye the given silk material with acid / basic dyes.
9. Dye the given wool material with acid / basic dyes.
10. Dye the given polyester sample using carriers.
11. Dye the given fabric for the given pattern using Tie & Dye Technique.
12. Develop a batik motif and print on the given sample.
13. Prepare the print paste with pigment colour and print on the given fabric.
14. Print the given fabric with reactive dyes by Resist Style.
15. Prepare the print paste with reactive dyes and print on the given fabric by discharge style.
Semester II Allied II - Woven Fabric Analysis & Designing Practical

Part A
To analyse the following particulars of woven fabrics

- Woven structural analysis: Design, draft, peg plan, denting plan.
- Warp particulars: Material of warp - ends per length - count, direction of twist, Crimp percentage, cover factor, warp pattern.
- Weft particulars: Material of weft - picks per unit length - count, direction of twist, twist per length, Crimp percentage, cover factor and warp pattern.
- Fabric particulars: Total Cover factor, Weight of fabric and thickness.
- Loom requirements: Shedding mechanism, heald count, and count.

1. Plain and Twill fabrics
2. Demonstration - production of plain and twill fabrics
3. Satin/Sateen and Honey comb fabrics
4. Demonstration - production of satin/sateen and honey comb fabrics
5. Velvets/velveteen
6. Extra thread figuring fabric(s)

Part B
1. Basics of Raster and vector images, types, image formats and colour concepts.
2. Development of dobby designs (part –I) based on interactivity of weave.
3. Development of dobby designs (part –II) based on interactivity of weave and colour order.
10. Multi layer design- extra warp/ weft design concepts.
Semester – III  Core Paper VII - Garment Machineries and Equipments

Unit I

Unit II
Classification of garment manufacturing machines & applications. Studies on different sewing machine – Lockstitch machine (chain stitch formation) - Features of advanced lock stitching machines. Overlock machine – Classification - Three thread overlock machine – Stitch forming elements. Brief study on double needle lock stitch machine, flat lock machines.

Unit III
Sewing machine shapes - Sewing machine bed types-Description and application of each bed – Flat bed - Cylinder bed - Post bed – Applications. Feed mechanisms – Types - Drop feed – Compound feed - Unison feed – Drop and variable top feed -Differential bottom and variable top feed (description of each type of feed mechanisms with sketch).

Unit IV

Unit V

References

Semester – III  Core Paper VIII - Pattern Making & Grading

Unit I
Introduction – Concept of basic pattern and grading – Different types of block pattern. Methods of pattern making with special reference to pattern drafting - Pattern making tools – Various pattern production terms–Standard body measurements for men’s wear, women’s wear and kids wear of different countries. Style wise component parts of a garment.

Unit II
Pattern positioning and lay out – Concept of pattern layout - Rules and methods of pattern layout – Adjusting the patterns to fabric. Fitting: Definition – Principles for a good fit– Checking the fit of a garment – Solving fitting problems in various garments.

Unit III

Unit IV
 Procedure to draft the ¼th patterns for Ladies wear: Blouse, kameez, salwar, midi, midi top. Style detailing – Skirt, Plackets, Pockets, Pants, Sleeve, Collar, Necklines.

Unit V

References:
9. Gerry Cooklin, Master Patterns and Grading for Women’s Outsizes, Blackwell Science Ltd, England

Semester –III  Core Paper IX - Principles of Management

Unit I

Unit II
Planning - Meaning and purpose of planning – Steps in planning – Types of planning - Objectives and policies – Objectives, policies, procedures and methods, nature and types of policies.

Unit III

Unit IV

Unit V
Controlling – Need for co-ordinating – Meaning and importance of control - Control process – Types of control - Decision making – Process of decision making – Types of decisions – Problems involved in decision making.

References
7. Dingar Pagore, Principles Of Management
8. L.M.Prasath, Principles Of Management
Semester III   Core Paper X - Stitches & Seams Practical

List of Experiments

2. Prepare atleast five different stitch and seam samples by using different sewing machines and furnish the machine threading diagram along with stitch density and thread consumption details.
3. Developing seams of various types - superimposed, bound, lapped, flat felt and piping
4. Develop the samples of components such as
   a. Round neck
   b. Scallop neck
   c. Gents placket
   d. Ladies placket
   e. Cross pocket
   f. Band collar and
   g. Henley band

Semester – III   Allied Paper III   - Pattern Making Practical

List of Experiments

Men’s Wear

1. Basic t-shirt with half sleeve.           2. Polo t-shirt with half sleeve          3. T-shirt with full sleeve.

Kid’s Wear


Women’s Wear

Semester III Skill Based Subject I - Accountancy for Merchandisers

Unit – I

Unit – II

Unit – III
Final accounts – nature – matching principles – limitations –difference between trading profit and loss account –p/l account and balance sheet – adjustments in final accounts

Unit – IV
Depreciation – meaning – types – straight line methods or fixed installments or equal Installment method. Diminishing balance or reducing installment method. Revaluation Method (simple problems only)

Unit – V

Note for the question paper setting: Problems and theory Questions shall be 60% and 40%.

References
2. T.S.Grewal – Introduction to Accountancy– S.Chand & Company Ltd.,
Semester IV Core-XI - Textiles Testing & Quality Assurance

Unit I

Unit II

Unit III

Unit IV

Unit V

References
1. J.E. Booth, Principles of Textile Testing
3. B.P.Saville Physical testing of Textiles
4. P. Angappan & R. Gopalakrishnan, Textile testing
5. Pradeep V Metha & Satish k. Bhardwaj, Managing Quality in Apparel Industries
Semester IV Core XII - Garment Construction

Unit I

Unit II
Stitches and seams: basic principles of stitch formation – classification of stitches based on federal standards — detailed study of application of all stitches - comparison of stitches.

Unit III

Unit IV
Detailed study on various stitching, sewing and assembly defects - causes & remedies: skip stitch, unbalanced, puckering, gathering, needle defects, thread problems – quality of threads and its impact on sewing quality – sew ability and its influencing factors – needle cutting index.

Unit V

References:
1. Apparel Manufacturing – Hand Book – Jacob Solinger
2. Technology Of Clothing Manufacture – Herold Carr & B.Latham
3. Knitted Clothing Technology – T.Bracken Berry
4. Technology Of Stitches & Seams – Coats Viyella Limited
5. Apparel Manufacturing Management System – Roche Daniel
6. Knitting and Apparel Manufacture – Sureshkumar, SSMITT Stores
Semester IV Core XIII - Garment Construction Practical

Draft The Pattern, Cut & Construct The Following Components For The Given Measurement:
1. Different Neck Lines (At Least 3 Types)
2. Different Collars (At Least 3 Types)
3. Different Sleeves (At Least 3 Types)
4. Different Plackets (At Least 3 Types)
5. Different Pockets (At Least 3 Types)
6. Slits

and develop and construct the following.

Semester IV Core Paper XIV - Textile Testing - Practical

1. Determination of count of yarn using wrap reel & weighing scale.
8. Identification of Fibre using microscope and by chemical test.
9. Analysis of Blend composition of given fabrics.
12. Determination of color fastness of given sample to washing by using launderometer.
13. Determination of color fastness of given sample to rubbing by using crockmeter.
14. Determination of color fastness of given sample to perspiration by using perspirometer.
15. Determination of dimensional stability% of a given fabric/garment to washing.
CAD software is used to practice the following on the styles mentioned,

1. Create Pattern on computer screen, adding details to patterns.
2. Digitizing, saving, extracting & editing patterns from stock library of Patterns.
3. Grading patterns on different size scale.
5. Estimating lay length and calculating marker efficiency.
6. Fit analysis of the given pattern using 3D CAD software.

**Styles**

1. Men’s Basic T Shirt
2. Raglan with Pocket
3. Men’s Polo T Shirt
4. Men’s High Neck Shirt
5. Men’s Boxer Short
6. Men’s Bermudas Short
7. Men’s Trouser
8. Men’s Kimono Sleeve
10. Men’s T-Shirt with hood
11. Men’s Inner Garment – Vests RN / RNS
12. Men’s under garment: briefs with inner waist band or outer waist band of various models - trunk type.
13. Ladies Skirt
14. Ladies Blouse & Ladies Tops
15. Women’s Nighties
16. Kid’s Wear – Romber
17. Kid’s Wear – A Line frock
18. Children’s Suits And Pyjama
Semester IV Skill Based Subject II – Fashion Business

Unit I

Unit II

Unit III

Unit IV

Unit V
Advertisement and Promotions: Advertising: purpose – methods - types of advertising media - Sales promotion methods - Trade fairs and fashion shows as sales promotion techniques - Feedback to production and marketing departments - Use of computers as a tool for effective merchandising - Fashion auxiliary services.

References

1. Fashion Merchandising, Elian Stone,
3. Apparel Merchandising
4. Fashion : Concepts to Consumers
Semester V Core XV - Apparel Production Management

Unit – 1

Unit – 2

Unit – 3

Unit – 4

Unit – 5
Function, Qualitative And Quantitative Analysis Of Production - Coordinating Departmental Activities - Flow Process And Charts For Garment - Scheduling Calculations - Assigning Operators Optimally - Setting Up Complete Balanced Production Lines To Produce Given Amount Of Garments

References:
1. Technology Of Clothing Manufacture – Carr & Latham
2. Apparel Manufacturers Handbook – Jacob Solinger
3. Introduction To Clothing Manufacture – Gerry Cooklin
4. Introduction To Production Management – A. J. Chuter
5. Personal Management And Industrial Relations – Tripathi
6. Industrial Engineering And Management – OP. Khanna
**Semester V Core XVI - Apparel Merchandising**

**Unit I**

**Unit II**
Process flow in apparel industry – Buyer sourcing & communication – Enquiry – Order confirmation – order review and its importance – Planning & programming: Master planning, Scheduling or route card – Factors for route card - programming for yarn, knitting, dyeing, stitching, sampling, accessories – Samples: Meaning & importance – Types of samples – expedition of samples

**Unit III**
Inspection and its types – Testing – Check points before cutting - Pilot run or trial run and its importance – Approvals - Types of approvals – Shipping marks – Final inspection procedures – Self, Second and Third party inspection - Effective expedition procedures.

**Unit IV**

**Unit V**
Advertising- scope, importance, types, merits & demerits; sales promotion, personal selling. Retail management. Export associations – Apparel Export Promotion Council – Journals and magazines related to apparel and textiles –Trade shows and Fairs – Participation in trade shows – Advantages of trade shows and fairs - Apparel & Textile Trade shows and fairs in India.

**References**
1. Building Buyer Relationships, *Daragho’ Reilly, Jullian J. Gibbs*
2. Inside the Fashion Business, Mc Millan Publishing Co.,
Semester V Core XVII - Fashion Accessories & Trims

Unit I
Accessory and its importance – the concept – the difference between accessories and trims – specifications – standards pertaining to accessory – types of accessories and trims. sourcing of accessory – single sourcing – multiple sourcing – advantages and disadvantages of sourcing – vendor evaluation – rating – vendor based rationalization

Unit II
Sewing threads and its applications – quality control in sewing thread – types of thread packages – embroidery threads – quality requirements – appliqué works – sequence works, beads, crystals & stones

Unit III

Unit IV

Unit V

References:
1. Technology of clothing manufacture – Carr & Latham
2. Apparel manufacturers handbook – Jacob Solinger
3. Introduction to clothing manufacture – Gerry Cooklin
5. Singer creating Fashion Accessories – Cy. De Cosse Incorporated, IAFL Publications
Semester V Core XVIII - Garment Costing

Unit – I
Principles of costing - requirements of good costing system - cost unit - types of costs - Elements of cost - direct material cost - direct expenses - direct wages - indirect materials - indirect expenses - indirect labour - overheads - prime cost - work cost - cost of production - total cost. INCO terms & its relationship with costing

Unit – II
Budgeting: The budgeting process: Budgeting principles for the apparel industry- Fixed vs.variable budget - Master budget-laminations of budgets- any justification effort - Planned Vs Actual Cost.

Unit III

Unit – IV
Estimation of factory cost for Woven & Knitted - vest, briefs , shorts, t-shirts, pajamas, children’s wear, ladies wear, Woven Shirt, Woven Tops & Bottom. Various factors to be considered in costing for domestic products & international products

Unit – V
Determining Pricing of apparel products: Price elasticity of demand and supply, sample costing- marginal revenue and marginal cost, cost plus pricing methods:, Full cost pricing, conversion cost pricing, differential cost pricing, variable cost pricing, direct cost pricing derivation of cost of apparel products-woven/knits.

References

Semester V Skill Based Subject III - Total Quality Management

Unit I

Unit II

Unit III
Control charts: concepts and uses – Control limits – Control charts for Variables and Attributes: X Charts – R chart – P chart – NP chart – C chart – Acceptance sampling – Types of sampling plans: Single, Double and Multiple Sampling plans – OC curves – AQL and LTPD – Sampling errors and sampling risks – Producer’s risk and Consumer’s risk

Unit IV

Unit V

References

1. Dr. S.P.Gupta, “Statistical Methods”
Semester VI Core XIX International Trade & Documentation

Unit – I

Unit – II

Unit – III

Unit – IV

Unit – V

References:
3. How To Start Export.
4. CBI Booklets – Netherland
5. ECGC Services And Guidelines
6. AEPC Booklets
Semester VI Core XX Apparel Retailing

Unit I
Retail & Retailing – Meaning & definition – Scope of apparel retailing – Retailing terminologies – Types of retailers and retail formats – Global retailing scenario – Retailing scenario in India – Functions of retailers

Unit II
Retail strategies : Operational excellence , Product differentiation, Customer intimacy – Growth strategies – Market expansion strategies – Store planning – Location planning – Store design – Store design & retailing image mix – Space mix – Effective retail space management – Store layout – Floor space management

Unit III
Retail merchandising – Merchandise planning – Merchandise hierarchy – Buying function – Category management – Mark up & Mark down – Shrinkage in merchandising management – Gross margin return on inventory – Supply chain management in apparel retailing – ERP in apparel industry

Unit IV

Unit V

References
2. “Retail management “
3. Retail Merchandising – part I
5. Fundamentals of retailing – Madan, Tata Mcgraw, New Delhi
6. Retailing Management – Levy, Diamond Publications, Delhi
Semester VI Core Paper XXI  ERP in Apparel Industry

Unit I

Unit II
Implementation of ERP: ERP implementation lifecycle, implementation methodology, hidden costs, organizing the implementation, vendors, consultants and users, contracts with vendors, consultants and employees, project management and monitoring

Unit III
The Business Modules: Business modules in an ERP package - finance, manufacturing, human resources, plant maintenance, materials management, quality management, sales and distribution. Significance and advantages of each of the modules

Unit IV
ERP in apparel industry: Production resource planning – principles and management of and demand chain analysis – quick response strategy - material management for ‘Quick Response’ – ‘Just in Time (JIT) Technology’; Production planning, costing and merchandising software

Unit V
Computer Applications: Management Information System in garment industry – EDI in garment technology; Use of Computers in Designing, Pattern making, computerized production systems, communicating with vendors and buyers; Telephone, fax, video conferencing, intranet, internet, etc; Export documentation, retailing; Methods of communicating with consumers

References
5. Enterprise Resource Planning, Theory & Practice – Rahul Altekar , V., Printice Hall of India, New Delhi, 2005

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Students have to undertake project in the areas of Knitting / Weaving/ Processing /Garment Manufacturing industry. A Team consisting of Internal & External Experts will evaluate the Project Report. The Viva-Voce will be conducted.

Semester VI Skill Based Subject IV – Project Work & Viva Voce

Semester V Elective I – A - Fashion & Apparel Marketing

Unit I
Meaning and classification of marketing, Fashion marketing, fashion market – size and structure, marketing environment – micro and macro marketing environment, trends in marketing environment

Unit II
Marketing function – assembling, standardization and grading and packaging, product planning and development, importance of fashion products, nature of fashion products. The fashion industry and new product development, product-mix and range planning, fashion and related cycles.

Unit III
Fashion advertising and preparation of advertising for apparel market, advertising media used in apparel market – advantages and limitations, advertising department – structure and functions, advertising agencies- structure and functions. Advertising budget

Unit IV
Fashion sales promotional programmed for apparel marketing, communication in promotion, personal selling, point of purchase, sales promotion – objectives and methods, Marketing research – definition, scope and process – areas of research

Unit V
Pricing policies and strategies for apparel products, Importance of price policies, Functions and factors influencing pricing – internal and external, pricing strategies for new products, methods of setting prices

References
1. Marketing – R S N Pillai and Bhagavathi, S Chand and company ltd, New Delhi, 1987
5. Fashion Marketing – Mike Easey, Black well Science Ltd, 1995
6. Advertising – C N Sonatakki, Klyani Publishers New Delhi, 1989
Semester V Elective I – B: Business Communication

Unit I

Unit II
Functions of a business letter - Foreign words used in correspondence – The layout planning – Enquiries and replies – Orders and execution – Credit and status enquiries.

Unit III
Complaints – Collection letters – Circular – Sales letters - Bank and insurance correspondence – Import and export correspondence - Agency correspondence – Correspondence of a company secretary.

Unit IV

Unit V
Agenda and minutes of meeting – Advertisement – Speech making – Interviews- Information technology of the future - Telex - Teleconferencing - Fax-Internet – Multimedia.

Reference

2. Krishna Mohan, Developing communication skills.
3. Champa Tickoo & Jaya sasikumar, Writing with a purpose.
4. F.T.wood, A Remedial English Grammar for Foreign Students
5. Basic business communication – Lesikar & Flatiley , Jaico Publications, Chennai
7. Business communication – Locker, Excel books, Delhi
Semester V Elective I – C  Visual Merchandising

Unit I
Introduction: Visual merchandising-introduction, concepts and role, importance in store planning and utilizing basic visual merchandising techniques; Role of atmosphere in garment retailing – immediate effects and simulation types, visual merchandisers in garment retailing

Unit II
Store Exterior And Interior: Store exterior – marquee, facade, exterior display, surrounding stores and displays; Store interior – store atmospheric, aesthetic, execution of store layout - selection of display locations, lifts, staircase, elevators, utilization of store space; Display composition: Elements and principles of design, tools and materials

Unit III
Store layout: Factors considered in organizing effective display – balance, rhythm, proportion, texture, harmony and emphasis. Store layout planning- grid, race track, freeform – direction of flow and planogram; Design elements to create mood and impression – colour, angle, motion, simplicity, and repetition

Unit IV
Display: Seasonal and trend decision for point of emphasis – creativity in display; Planning of assortment, theme, ensemble, racks, shelves, bins, etc. and balance of display in a show room. Wall as retail selling tool – types of materials used merchandise display and effective wall planning. Application of colour schemes, colour psychology, creating mood by colour

Unit V

References
Semester VI Elective II - A - Research Methods

Unit I
Introduction to Business Research: Research - Definition - Importance - Advantages and Limitations. The research process - problem identification and Definition -. Hypothesis Formulation; Developing Research Proposal; Ethical issues in Research.

Unit II
Research Design and Data Collection: Types of Research Design; Primary and Secondary Data, Data collection - methods - tools – Questionnaire- Questionnaire Designing and Testing; Interview Schedule ; Observation Methods; Qualitative Research; Scaling Techniques and Attitude Measurement; Online Data Sources and Research. Editing, Coding, Tabulation.

Unit III
Sampling process and selection -sample types - Sample size and sampling errors Sample Design: Defining the Universe and Sampling Unit; Sampling Frame; Probability and Non-probability Sampling Methods; Sample Size Determination, Data Collection and Survey Errors.

Unit IV
Data Analysis, Interpretation and Report Preparation: Data Editing and Coding; Tabulation; Hypothesis Testing; Analysis of Variance - Z test, T test - Chi-square test .Correlation and regression.

Unit V
Report Preparation and Presentation: Interpretation and report writing - steps in writing reports - layout of report, types, and principles of report writing - Graphical representation of results.

References
Semester VI Elective II - B Industrial Engineering Techniques

Unit I
Introduction: Definition, purpose, available techniques, Aspects, physical facilities & operating facilities, scientific management, resources productivity. Work Study: Definition, objectives, Techniques, method study, work measurement, Purpose of work study, steps, different phases.

Unit II
Method Study: Definition, Steps, Selection of problems, Collection of facts and consideration about objectives, Recording techniques, Elements of a process analysis, Operation process chart, Different process charts, Critical examination.

Unit III
Work Measurement :Definition ,Uses, Techniques, Time Study, Measuring Instruments, Elements in time study, factors, alignment chart, Performance rating methods, observed time & normal time , allowances, Standard time, Work sampling Predetermined Motion Time study, Motion time data for assembly operations, Work factor system, method time measurement.

Unit IV

Unit V

References
1. Industrial Engineering and Management by O. P. Khanna,
2. Textile Mill Management by Ormerod ,
3. Engineering Economics by Kleinfeld,
4. Managerial Economics by M.V.Palyee, K.C. Sankaranarayan & J.T. Payyappilly,
5. Essentials of Engineering Economics by Kasner,
6. Management in a Global Perspective by K’oonze & Weihrich,
7. Quantitative Approach to Management by Levin, Rubin, et. al.,
Semester VI Elective II - C  Eco Textiles

Unit I

Unit II

Unit III

Unit IV

Unit V
Testing of Textiles to Eco-Standard Specifications: Introduction. Test methods for testing the banned chemicals – free formaldehyde, pesticides, pentachlorophenol, heavy metals, azo dyes containing aromatic amines & benzidine and halogenic carriers.

References
Semester VI Elective III - A Clothing Care

Unit I

Unit II
Laundry equipment and reagents: Study of laundry equipment and laundry reagents - soaps - detergents - cleaning action of soaps, indigenous cleaning agents - rita nut - shikakai - green gram - bran solution – study of modern and industrial cleaning agents

Unit III

Unit IV
Stain Removal: Principles of laundering - stain removal - various solvents for stain removing blood, tea, rust; oil/grease etc. – different methods of washing - application of friction by hand rubbing - scribing - tumble wash

Unit V
Washing Machine And Care Labels: Study of different types of house hold/industrial washing machines- rotary -swirling - pressure - tumble wash etc; the various systems of care labelling- washing instruction. bleaching instruction-drying instruction-ironing instruction-dry cleaning instruction. placement of labels on garments.

References
2. Denlkar, “Household Textiles and Laundry Work”, Atma Ram and Sons, Delhi, 1993
5. Mary Schenck Woolman, “Clothing: Choice, Care, Cost” Kessinger Publishing,
Semester VI Elective III - B  Entrepreneurship and Small Business Development

Unit I
Entrepreneurship: Concept and Definitions; Entrepreneurship and Economic Development; Classification and Types of Entrepreneurs; Entrepreneurial Competencies; Factor Affecting Entrepreneurial Growth – Economic, Non-Economic Factors; EDP Programmes; Entrepreneurial Training; Traits/Qualities of an Entrepreneurs; Entrepreneur; Manager Vs. Entrepreneur.

Unit II
Opportunity / Identification and Product Selection: Entrepreneurial Opportunity Search and Identification; Criteria to Select a Product; Conducting Feasibility Studies; Project Finalization; Sources of Information.

Unit III
Small Enterprises and Enterprise Launching Formalities : Definition of Small Scale; Rationale; Objective; Scope; Role of SSI in Economic Development of India; SSI; Registration; NOC from Pollution Board; Machinery and Equipment Selection; Project Report Preparation; Specimen of Project Report; Project Planning and Scheduling using Networking Techniques of PERT / CPM; Methods of Project Appraisal.

Unit IV
Role of Support Institutions and Management of Small Business : Director of Industries; DIC; SIDO; SIDBI; Small Industries Development Corporation (SIDC); SISI; NSIC; NISBUD; State Financial Corporation SIC; Marketing Management; Production Management; Finance Management; Human Resource Management; Export Marketing; Case Studies.

Unit V
Incentives and subsidies – Subsidized services – subsidy for market. Transport – seed capital assistance – Taxation benefit to SSI role of entrepreneur in export promotion and import substitution.

References
Semester VI Elective III - C Apparel Brand Management

Unit I
Introduction: Brand – introduction, functions, brand significance; branding – types and strategies international apparel brands - identification of perspectives and challenges to build brand- Indian garment brands and prospects of Indian brands

Unit II
Brand Appraisal: Brand appraisal – Definition and methods - exploration, market, customer, competition analysis, reasoning of brands importance and methods involved - laddering, emotional and rational, Brand mapping – circle, prism and triangle

Unit III
Positioning: Positioning – definition, types – benefit, usage, features, users, price, value technology, tradition, perceptual map – product class and customer segment; positioning strategies – non functional values, brand loyalty and pyramid; positioning strategies of international garment retailers

Unit IV
Identity And Extension: Brand identity and articulation – name, colour, design, logo and symbols, brand service advertising and cross cultural influence; brand extension – need and types; labelling and licensing of apparel products – types, license agreement, and international property rights; need for developing brand names and labels for apparel manufactured and exported from India

Unit V
Brand Measurement: Brand measurement- definition, need and methods – audit, track, brand overtime – managing brand image - need, concepts of management, forces affecting brand and maintenance of brand, Study on brands and brand management of Indian Garment

References
5. Branding – Vanauken, Jaico Books, Delhi
7. Personal Branding – Montoya, Jaico Books, Chennai