

FINAL YEAR B.TEXT. (FASHION TECHNOLOGY) SEMESTER-I

SR. NO.	SUBJECTS	TEACHING SCHEME				EXAMINATION SCHEME				SUB. TOTAL
		L	T	DR	PR	PT	TW	OE	PE	
7.1	GARMENT PROJECT PLANNING & IMPLEMENTATION	4	---	---	---	100	50	---	---	150
7.2	INDUSTRIAL ECONOMICS & COSTING OF APPAREL PRODUCTS	4	---	---	---	100	---	---	---	100
7.3	ADVANCED GARMENT CONSTRUCTION	4	---	---	3	100	50	---	50	200
7.4	CAD-CAM FOR APPAREL MANUFACTURING	3	---	---	3	100	50	---	---	150
7.5	ELECTIVE-I	3	---	---	---	100	---	---	---	100
7.6	PROCESS MANAGEMENT IN APPAREL & FASHION INDUSTRY	4	---	---	---	100	---	---	---	100
7.7	SEMINAR-I	2	---	---	---	---	50	---	---	50
7.8	INPLANT TRAINNING - II	---	---	---	---	---	50	---	---	50
		24	---	---	6	600	250	---	50	900
	L =LECTURES									
	T =TUTORIALS TP - THEORY PAPER									
	DR=DRAWING TW - TERM WORK									
	PR=PRACTICALS									
	OE=ORAL EXAMINATION									
	PE=PRACTICAL EXAMINATION									
	LIST OF ELECTIVE-I									
	1. FASHION ACCESSORIES									
	2. ADVANCED STYLING & FORCASTING									
	3. TEXTILE PRODUCT ENGG.									

FINAL YEAR B.TEXT. (FASHION TECHNOLOGY) SEMESTER-II

SR. NO.	SUBJECTS	TEACHING SCHEME				EXAMINATION SCHEME				SUB. TOTAL
		L	T	DR	PR	PT	TW	OE	PE	
8.1	CLOTHING CARE & SCIENCE	4	---	---	3	100	50	---	50	200
8.2	IMPORT & EXPORT MANAGEMENT	4	---	---	---	100	50	---	--	150
8.3	APPAREL & FASHION BUSINESS MANAGEMENT	4	---	---	---	100	---	---	---	100
8.4	SMART TEXTILES & SPECIALITY GARMENTS	4	---	---	---	100	50	---	---	150
8.5	ELECTIVE -II	3	---	---	---	100	---	---	---	100
8.6	SEMINAR - II	2	---	---	---	---	50	---	---	50
8.7	DISSERTATION	---	---	---	6	---	50	100	---	150
		21	---	---	9	500	250	100	50	900
	L =LECTURES									
	T =TUTORIALS TP - THEORY PAPER									
	DR=DRAWING TW - TERM WORK									
	PR=PRACTICALS									
	LIST OF ELECTIVE-II									
	OE=ORAL EXAMINATION									
	PE=PRACTICAL EXAMINATION									
	1. FASHION COMUNICATION									
	2. CONSUMER BEHAVIOUR IN FASHION INDUSTRY									
	3. OPERATIONAL RESEARCH									

FINAL YEAR B.TEXT. - SEMESTER - I

7.1 GARMENT PROJECT PLANNING & IMPLEMENTATION (FT)

Lectures	-	4 hrs/week.
Theory Paper	-	100 marks.
Term Work	-	50 marks
Sub. Total	-	150 marks

1) Project Planning: -

Introduction, Capital investment required for project, Phases of Capital Budgeting, Difficulties in Capital expenditure, Phases involved.

2) Production Management analysis

Analysis of techniques for material utilization and cutting of raw materials for all types of sewn products principles and methods of costing, evaluation of equipment for examining, spreading, cutting, marking and ticketing - solution of production problems in spreading, cutting and cost control.

3) Machinery Specification, Selection & Calculation for No. of Machines:-

Selection of machines & machinery specifications required for the product in Shirts, trousers, knit goods, made-ups, suits, ladies dress material etc.

4) Calculation for no. of machines in garment:-

Preparation of organization for clothing industry, departments based on number of pieces and production of finished garment. Calculation regarding machinery, work allotment, production rates, amount of raw material required and no. of machinery required at different stages of garment manufacturing.

5) Plant & Machinery Layout: -

Significance of the concept, objectives and principles of layouts, kinds of layouts and their comparisons, flow pattern, work station design, tools and devices of making layouts, use of Auto-Cad for layouts, storage space

requirements, plant layout procedure, factors influencing layouts, selection of layout, effect of automation on plant layout, symptoms of bad layout. Layout aspects of garment unit.

6) Site Selection:-

Selection of site for Garment industry , General location, Actual selection of specific site, Calculation of spatial requirements, factors influencing site selection, Climatic considerations, geo-technical report, bearing pressure etc. General information about textile & garment manufacturing industry centers in India.

7) Civil/Building Construction:-

Consideration in building design, size, shape and configuration of building. Architectural & structural aspects of garment unit building. Building morphology, General principles of building construction & building functions, Types of factory buildings, Types of building construction. Material for construction with special reference to walls, roofs, floors, false ceilings, fire resistance, sound proof, etc. Colour schemes for buildings, interior & machinery in garment unit. Cost considerations in building construction, Organogram of building construction, Team, Tenders & Contracts.

8) Formulation of a Project Report for Garment Units:-

Assumptions, Machinery Organizations, Requirement of Miscellaneous Fixed Assets & Machinery Stores & Spares, Requirement & Calculations related to Electrical Power, Lighting, Water, Steam, Compressed Air, etc.

9) Materials Handling:-

Definition and importance of materials handling, functions and principles of materials handling, material handling methods, engineering and economic factors, relationship to plant layout, selection and type of material handling

equipments, study of different types of equipments used for materials handling in garment unit.

10) Labour Compliments:-

Types of labors required, labors compliment, labors and staff required for garment industry based on workload consideration.

11) Techno-economic Viability:

Calculations of cost of project – Means of Finance – Estimates of sales & production – cost of production – working capital requirement – Profitability Projection – Break even point – Projected cash flow statements.

REFERENCE BOOKS :-

1. Jacob Solinger., "Apparel Manufacturing Handbook ", Vannostrand Reinhold Company (1980).
2. Bethel, Tann , Atwater and Rung, " Production Control ", McGraw Hill Book Co., New York, (1948).
3. Biegel, John. E., "Production Control ", A Quantitative Approach" Prentice Hall Inc.,(1971) 2nd edition.
4. Apple. J. M., " Plant Layout and Materials Handling ", The Ronald Press Co., New York (1950).
5. Textile Project Management by A. Ormerod, The Textile Institute Publication.
6. Goal Directed Project Management by E.S. Andersen, K.V. Grude & Tore Hang, Coopers & Cybranl Publication.
7. Project, Planning Analysis, Selection Implementation & Review by Prasanna Chandra, Tata McGraw Hill Publishing Co. Ltd.,
8. Management of Textile Production, A. Ormerod. Newnes – Butter Wortrs Publication.
9. Plant location, Layout & Maintenance by Ruddle Reed.

10. Industrial Organisation & Engg. Economics T.R. Banga & S.C. Sharma,
Khanna Publishers, Delhi.
11. Norms for Process Parameters, Productivity etc. NITRA.
12. Trade Literature of Different Machinery Manufacturers.

FINAL YEAR B.TEXT. - SEMESTER - I

7.2 INDUSTRIAL ECONOMICS & COSTING OF APPAREL PRODUCTS (FT)

Lectures	-	4 hrs/week.
Theory Paper	-	100 marks.
Sub. Total	-	100 marks

- 1) Definition of Economics – Nature and scope – Economy types, Problems and Functioning, Basic Terms and concepts.
- 2) Human Wants – Consumption and standard of living – Demand analysis- consumers surplus – Demand and law of Demand – Elasticity of demand.
- 3) Theory of Distribution – General – Wages – Trade Unions and Industrial relations.
- 4) National Income – Concepts and importance – Inequalities of income and employment – Nature and Function of money – Monetary Standards – Theory of money and Prices – Credit and credit instruments – Banking – Central Bank – International Trade – Balance of payment – Foreign Exchange rate determination – Public Finance – Public expenditure – Public Revenue – Taxation , Public debt.
- 5) Communication – Functions of communication in an organization – The process of communication – Communication in the enterprise - Human behaviour and communication – Barriers and Breakdowns in communication – Effective communication –Electronics Media in Communication.
- 6) Estimating, aims of estimating – costing, aims of costing – difference between estimating and costing – types of estimates.
- 7) Elements of cost – material cost – labour cost, Different types of expenses – cost of product – advertisement cost, - going rate pricing. Selling cost. Pricing, full cost pricing, marginal cost pricing.
- 8) Analysis of over head expenses: introduction – factory expenses – administrative expenses – selling and distribution expenses – allocation

of over head expenses – depreciation – reasons for depreciation – methods of calculating depreciation – simple problem.

- 9) Costing of garments; factors that determine the price of garments – material cost – cost of yarn, cost of fabric production, cost of processing width of fabric, and design affecting cost – lot size, and cost of components – cutting cost – making and trim cost (CMT cost). Simple problems.
- 10) Packing & labeling cost – different types and functions. Uses of brand and size label – duty draw back etc. cost of bought out components, thread, Button, Zippers, Interlining, Shipment cost, cost calculation of ladies, Men and children’s wear – woven and knitted – simple problems.

REFERENCE BOOKS:-

- 1) Basic Economics by James A. Dgal, Nicholas Karatjas,
- 2) Applied Economics by Derek T Loblely,
- 3) Macro Economic Theory by M.C. Vaish,
- 4) Principles of Economics by D.N. Dwived.
- 5) Economics Analysis, Decision Making & Policy by George Leland Bach.
- 6) Elementary Economic Theory by K.K. Dewett & J.D. Varma.
- 7) Contemporary Economics by Milton H.
- 8) Johnson Maurice, E. Moore, “Apparel Product Development”, Om Book Service, 2001.
- 9) Katherin McKelvy, “Fashion Source Book”, Om Book Service, 2001.

FINAL YEAR B.TEXT. - SEMESTER – I

7.3 ADVANCED GARMENT CONSTRUCTION (FT)

Lectures	-	4 hrs/week.
Practical	-	3 hrs/week
Theory Paper	-	100 marks.
Term work	-	50 marks.
Practical Exam-		50 marks
Sub. Total	-	200 marks

1. Importance of grain in fabric cutting & garment construction, preparing the fabric for cutting, methods of straightening fabric ends, checking & straightening the fabric grains by various methods
2. Laying the pattern on fabric, marking , cutting, stay stitching, garment fitting & assembling
3. Creating styles through dart manipulation- drafting & draping technique, introduction to fullness .
4. Pattern alterations- general principles in: shortening, lengthening of blouse, increasing & decreasing of shoulder slope, necklines, sleeves & importance of alterations. Principles of good fit, alternation of patterns for defective, unusual figures.
5. Draping-Introduction on dress forms, draping skills – preparation of bodice pattern, skirt (A-line skirt, 6gore skirt, and circular skirt), sleeve, pant and collar (convertible collar, Peter Pan collar, turtle neck collar, shawl collar) in draping method. Techniques of draping – neckline cowl, side seam cowl, bias cowl, bustier, flounces, peplum.
6. Basic standard of professional sewing. Relationship between pattern making and the ultimate quality of finished sample. Analysis of component pieces and trimmings - planning a logical garment construction sequence. Planning a layout - Economic use of fabric yardage - maintaining grain lines - Interfacing, Lining.

7. Creating variety through surfacing trimmings- bias trimmings, ric-rac, ruffles, embroidery, smocking, faggoting, lace, appliqué, scalloped edging ,decorative fastenings
8. Constructional & design features of modern laying m/c., cutting equipment, fusing equipments, sewing machines & finishing equipment.

LIST OF EXPERIMENTS

1. Construction of Ladies Salwar
2. Construction of Ladies Kameez
3. Construction of Ladies Blouse
4. Construction of ladies trouser by draping method
5. Construction of men's casual shirt
6. Construction of men's jeans / shorts
7. Construction of children's night dress
8. Construction of baby's waistline frock
9. Construction of ladies single piece party wear
10. Construction of men's party wear.

REFERENCE BOOKS :-

1. Mary Mathews, Practical clothing construction-II, "Designing, drafting & tailoring."
2. Natalia bray, "Metric pattern cutting"
3. Metric Pattern Cutting for children's wear Winifred Aldrich
4. Patternmaking for Fashion Designers Lori A . Knowles
5. Flat Pattern Design Nora M. MacDonald
6. "Dress Pattern Designing" Natalie Bray
7. "Patternmaking for Fashion Design", Helen Joseph Armstrong

FINAL YEAR B.TEXT. - SEMESTER – I

7.4 CAD-CAM FOR APPAREL MANUFACTURING (FT)

Lectures	-	3 hrs/week.
Practical	-	3hrs/week.
Theory Paper	-	100 marks.
Term Work	-	50 marks
Sub. Total	-	150 marks

1. Introduction to computer

Introduction to computer - concepts of CAD / CAM. CAM in Garment Manufacturing. Complete pattern design system in preparation for grading, marker making and pattern manipulation.

2. Computerized production pattern making

Computerized production pattern making - Hardware, software and system programming to produce a sample production pattern. Computer aided manipulation of pattern pieces to create individual styles. Operation of garment CAD software. Computer application in sewing embroidery and garment design computer aided color matching- Computer used for purchase, inventory control and sales, computerization in quality control and production control.

3. Computer aided production planning in Garment Manufacturing

Introduction to finite scheduling concept and fast react software. Creating product and order planning, updating. Eliminate late deliveries - General set up, allowances and matrices - Analyzing loan balancing in different departments - control mechanisms - critical path and time tables.

4. CAM

Computer controlled machinery for garment manufacturing - automated layout planning by various techniques - Algorithm for computer production garment parts - intelligent systems - 3D scanning technology. Use of microcomputers for

production control in garment industry. Imaging techniques for various designs. Development of robotics for CAM.

5. Management Information System in garments Industry

EDI in garment technology. Concept of Enterprise Resource Planning (ERP) and computerization in exports/ documentation.

LIST OF EXPERIMENTS :-

1. Developing design, pattern and marker plan for children's wear – Baby frock using a one-way fabric of 38" & 42" width. Calculate the marker efficiency.
2. Developing design, pattern and marker plan for children's wear – Rompers using a two-way fabric of 38" & 42" width. Calculate the marker efficiency.
3. Developing design, pattern and marker plan for a Ladies top –using corduroy fabric of 44" & 52" width. Calculate the marker efficiency and develop a lay lot plan.
4. Developing design, pattern and marker plan for Men's Formal Trouser – using a pencil stripe fabric of 60" & 72" width. Calculate the marker efficiency.
5. Developing design, pattern and marker plan for a Ladies Skirt –using plaid fabric of 38" & 60" width. Calculate the marker efficiency. Develop a lay lot plan
6. Developing design, pattern and marker plan for a Men's Full arm shirt using a checks fabric of 52" B & 60" width. Calculate the marker efficiency. Develop a lay lot plan
7. Design a ladies party wear including accessories and develop a 3 D visual merchandise window display
8. Design a Men's Formal wear including accessories and develop a 3 D visual merchandise window display
9. Design a Children wear including accessories and develop a 3 D visual merchandise window display
10. Design a sari border / curtain for printing.

REFERENCE BOOKS:-

1. Winfred Aldrich, "CAD in Clothing and Textiles", Blackwell Science Ltd., 1994.
2. Patric Taylor, "Computer in the Fashion Technology", Om Book Service, 1997.
3. Stephen Gray "CAD / CAM in clothing and Textiles ", Gower Publishing Limited, 1998, ISBN 0-566-07673X.
4. Compilation of papers presented at the Annual world conference Sep 26 - 29, 1984 Hongkong, "Computers in the world of textiles ", The textile Institute ISBN: 0-0900739-69X.
5. W.Aldrich, " CAD in clothing and Textiles ", Blackwell Science 2nd edition, 1992, ISBN: 0-63 -3893 – 4
6. Jacob Solinger, "Apparel Manufacturing Handbooks ", Van no strand and Reinhold Company, 1980,ISBN:0-442-21904-0.

FINAL YEAR B.TEXT. - SEMESTER – I

7.5 FASHION ACCESSORIES (FT) (ELECTIVE-I)

Lectures	-	3 hrs/week.
Theory Paper	-	100 marks.
Sub. Total	-	100 marks

1. Introduction to accessory -definition, history and classification.
2. Accessory types. Head gears, footwear. bows, ties and belts, hand bags, and gloves and Mitts, Scarves, stoles and stacking, Sun glasses, Umbrellas
3. Materials and processes. Materials required material sourcing, design development and production, Eco-standards followed during the process.
4. Fashion trends and merchandising of accessories, Economic importance, Accessory Designers, Major Brand players.
5. Jewellery design and production. Types of Jewellery- Traditional Jewellery, Earrings, necklaces and bangles, Rings, pedants, bracelets and anklets. Textures and finishes given for the jewellery.
6. Introduction to gems, basic qualities of gems,
7. Travel accessories – kits, bags, trolley, suitcase
8. Seasons and fashion accessories

REFERENCE BOOKS :-

1. John Peacock, " The complete 20th Century Source Book", Thames and Hurlson, London, 2000 John
2. Peacock, " Fashion Accessories- Men", Thames and Hudson, London, 1996

3. Claire Billcocks," Century of Gavin Bags", Chartwell Books, New Jersey 1997
4. Malolow Blahnik- Co Collin Mac dolw, " Shoes -Fashion and Fantasies", Thames and Hudson, 1989
5. Gavin Waddell, "How fashion works" , Blackwell Publishing
6. Phyllis Tortora "The Fair child Encyclopedia of Fashion Accessories", OM publishers
7. Gini Stephens Frings, "Fashion from concept to consumer", Seventh edition
8. Dr. M.S. Sheshadri, "Apparel Marketing and Merchandising"

FINAL YEAR B.TEXT. - SEMESTER – I

7.5 ADVANCED STYLING & FORCASTING (FT) (ELECTIVE-I)

Lectures	-	3 hrs/week.
Theory Paper	-	100 marks.
Sub. Total	-	100 marks

1. Fabric styling

Exploration and use of the different fabrics and related materials for the research

purpose (Students shall collect sheer fabrics, coarse fabrics, prints, embroidery materials, threads, ribbons etc and prepare swatches using controlled crushing, systematic folding, smocking, tucking, cording, patchwork, quilting etc. for research purposes

2. Style lines in garments

- Classic princess
- Armhole princess
- Panel style line

3. Fashion Styling

Fashion styling for co-ordination, Typography and Design

4. Draping

Introduction, Terminology, Dummy preparation, Muslin preparation
Basic Bodice Block-Front, Back

5. Introduction to forecasting

Meaning of Fashion, Meaning of Forecasting , The role of a forecaster , The precision of the forecast , The fashion industry's components ,The fashion timetable, Information Network

6. Research Process in Forecasting

Market research – Consumer research, shopping, sales records, Primary sources, Secondary sources ,Tertiary sources , Tracking sales , Competition ,Demographics ,Value & life style , Publication ,Forecasting services, Plethora influences ,Observation posts , The new technology, Fashion of involvement , New uses of products ,related industries , networking

7. Processes of Reporting

Reporting – qualitative content, quantitative content, evaluating the collections

8. Process of implementation

Leadership theme, Strategic planning, Specialty stores.

REFERENCE BOOKS :-

1. Rita Prerna, “Fashion Forecasting- A mystery or a Method?”, Fair Child Publications
2. Beyond Design Sandra Keiser & Myrna B. Garner
3. Fashion Forecasting by Evelyn L. Brannon.
4. Fashion Forecasting by Janainc Munslow & Kathryn Mckelvcy.

FINAL YEAR B.TEXT. - SEMESTER - I

7.5 TEXTILE PRODUCT ENGINEERING (ELECTIVE-I) (FT)

Lectures	-	3 hrs/week.
Theory Paper	-	100 marks.
Sub. Total	-	100 marks

1) An Overview of Textiles & Textile design from Fiber to product, finished purchase in the global textile & clothing industries, Textile materials, processes & products, Textile organization, Categorizing textiles. Scope of product development, dimensions and objectives.

2) Selection of right materials and shaping them to meet the needs of function and aesthetic within the limitation of the available means of production. Knowledge of products and their behavior. Product design, specification and evaluation (for import substitution & export stimulation).

3) Managing Product Development Process and Projects :-

Product design specifications, concept generation and selection, embodiment design, design review and release, design changes and improvements. Product development process, the role and nature of design, project plan, types of design, organization, information and literature search, patents, standards & codes.

4) Market Research & Customer requirement analysis:-

The product life cycle, product position & benchmark analysis, market estimates, market segmentation & product diversification, lead-user analysis, customer requirement analysis.

5) Product Appraisal:-

Functional analysis, manufacturing analysis, economical analysis, aesthetic and ergonomic considerations, environment & safety, installation, service & maintenance, design theory & methodology.

6) Integration of performance & aesthetics in the manufacture of textile products.

7) Textile Designers:-

The diversity of textile design & textile designers, timing in the textile & clothing industries, printed & constructed textiles. The activities of a textile designer, how design work is done, Range planning, Range development, Range presentation. The Principles and Elements of Textile Design, inspiration for textile design pattern.

8) Commercial Aspects of Design :-

The organization & functions of a retail business, different types of retail structures, Merchandise, information generations.

9) Simulation of Specified properties or structure leading to the design:-

Scope & objectives, special yarns, woven fabrics, knitted fabrics, non-woven fabrics, Simulation of material texture by using Computer graphics

10) Some studies on the design of yarns & fabrics:-

Survey of earlier work, design based on structure & material properties, designing & using databases, a concept of overall designing procedure.

11) Case Studies –

Product mix, international quality yarn, sewing threads, core spun yarn, fancy yarns, suture threads, embroidery threads, twines & ropes. Fabric aesthetic characteristics, fabric handle, comfort. Tubular cloth, double cloth, elastic web, principles of fabric developments.

REFERENCE BOOKS :-

- 1) Quality Design & the Purchases, Paper Presented at 67th Annual Conference , Textile Institute Publication.
- 2) Hand Book of Textile Design Principles, Processes & practice by Jacquie Wilson, Textile Institute, Publication.
- 3) The Economics of Technological Change, Textile Progress by M.A. Hann & K.C. Jackson, Vol.11, No.3 The Textile Inst. Publisher.
- 4) Textiles by S.J. Kadolph, Anna L. Langford Prentice Hall Publication.
- 5) Textile Product Design & Marketing – Paper Presented at the Annual World Conference May, 4.7, 1987, Como, Italy, by The Textile Inst. Publication.
- 6) The Design Logic of Textile Products, Textile Progress Vol.27, no.3, by T. Matsuo and M.N. Suresh, The Textile Inst. Publication.

FINAL YEAR B.TEXT. - SEMESTER – I

7.6 PROCESS MANAGEMENT IN APPAREL & FASHION INDUSTRY (FT)

Lectures	-	4 hrs/week.
Theory Paper	-	100 marks.
Sub. Total	-	100 marks

1. INTRODUCTION TO PROCESS MANAGEMENT:-

Functional versus Processing Management, road map for process management, Selection of processes, Organize the process team, the planning phase of process management, define current process, Discover Customer needs & process flowcharts, Establish process measurements, Analyze process data, Design (Redesign) the process, Transferring & managing the process, impact of process Management, Key variables for process control.

Control parameters, apparel production parameters, planning and lead-time. Product development: Steps from prototype to production model, Importance of pre-production activities; Introduction to timetable concepts. Product data management: Understanding and interpretation of specification sheet.

2. OPERATION SEQUENCE DEVELOPMENT

Garment breakdown with machine and attachment details, development of production grid for garment construction, development of production flowchart.

3. BUNDLE TICKETS

Guidelines for bundle ticket design, functions of bundle tickets, bundle ticket control. Different manufacturing systems: Make through and Assembly line manufacturing - advantages and disadvantages. Lay lot planning: Numerical exercises on lay lot planning to optimize cutting cost, bundling, ticketing and cutting room control formats.

4. PRODUCTION PLANNING AND CONTROL

Capacity calculation for cutting, sewing and finishing. Determination of machine requirements for new factory. Line balancing: Determination and allocation of manpower and, machine for balanced production in existing plant for a given target.

5. QUALITY IN PRODUCT DEVELOPMENT

Quality assurance during product development - methods to avoid problems during pattern making, garment construction and other areas. Inspection procedures. Work-study in garment industry - methods to control time and cost.

Quality control for fabrics – different types of defects in fabrics – major and minor faults – fabric spection system. Quality control in pattern making, grading, marking and marker efficiency – Quality control in stitching and production analysis – co-coordinating department activities – Distribution of tickets & maintenance of records. Establishing merchandising standards. The quality control of trims accessories.

Tolerance and quality standard for fabrics, processing, cutting, stitching in garment industry, tolerances and quality standard for finished garments. Quality control system and standards for packing and packed goods, warehousing & shipping – cost of quality conformance- cost of non-conformance.

REFERENCE BOOKS :-

1. A.J. Chuter., " Introduction to Clothing Production Management ", Blackwell Scientific Publications
2. David J. Tyler., " Materials Management in Clothing Production ", Blackwell Scientific Publications Professional Books.
3. Grover E G and Hamby D. S " Hand Book of Textile Testing and Quality Control", Wiley Eastern Pvt. Ltd., New Delhi, 1969.
4. Jacco Solinger, "Apparel Manufacturing Handbook", Prentice Hall, 1993
5. Sammel Eliou, "Production Planning & Control", Wiley Eastern Pvt. Ltd..
6. Ruth E. Glock " Apparel M anufacturing" ,

FINAL YEAR B.TEXT. - SEMESTER - I

7.7 SEMINAR-I (FT)

Lectures	-	2 hrs/week.
Term work	-	50 marks.
Sub. Total	-	50 marks

Topic:-

In the beginning of the semester, every student individually will be assigned a seminar topic in the emerging / perspective field in the areas of Fashion Technology such as Garment/ Fashions, cutting, sewing, finishing, testing, garment processing, designs using softwares, merchandising, ornamentation technique etc.

Seminar Preparation & Presentation:-

Students will collect the information on the given subjects & submit the report both soft & hard copy on the dates specified by the concerned faculty. The seminar report will be of minimum 15 pages. The spacing between the lines will be 1.5. The font size will be 12 point with New Times Roman. The list of reference must be given at the end of seminar report. The list of reference should be written as per the Textile Research Journal format.

Term Work Marks:-

Seminar report	-	25 Marks
Presentation	-	25 Marks

FINAL YEAR B.TEXT. - SEMESTER - I

7.8 INPLANT TRAINING-II (FT)

Term Work - 50 Marks.

Total - 50 Marks

Objective:

To provide an opportunity to observe industrial activities & gather related technical and non technical information about industry working.

Training Period:

One Month after completion of second semester of Third year B.Text.FT

Industry:

Training with a boutique/ domestic garment production house for minimum of 4 weeks/ one month.

Observations:

Observe working of industry & collect data as per guidelines in the manual study machineries/ systems-/ practices.

During this period, students are required to study the layout, structure, process flow, Types of fabric, Types of Garment, Machinery Working & specification, layout, humidification, air supply system, material handling systems, inspection techniques, in-house quality practices, packing system for local & export market, industrial practices, supply chain management, retailing, branding & the other relevant data and information.

Training Report:

Report should have Title on cover of Report as per Format

Report should be prepared as per following sequence-

I Page Certificate from Institute as per Format

II	Page	Acknowledgement
III	Page	Programme of Training
III	Page	Introduction of Industry
IV	Page	Index with Page Numbers
V	Page	Plant/Dept. Layout
VI	Page	Organization Structure
VII	Page	Department wise / product wise report: Report should be based on Own Observations made, data collected during implant training (i.e. Study of Machinery, Actual Production & Efficiency. Production Control, Modern Developments in machines/ Process. Flow Chart of processes, speed of important plants, labour Allocation, Maintenance Practices, supply systems, retailing systems, branding, marketing, Process control & Quality control Activities etc roles and responsibilities of various workers/ Technical staffs. <u>Special study</u> : Mini project undertaken, costing, production planning & control, Target achievement, Information regarding humidification plant, Utility, electrical supply, store. purchase, Marketing, sales, samples, Layout of Mill etc.

Assessment:

Viva-voce to be conducted in the first semester of final year B. Text. Term work Marks are assigned on the basis of student's performance in viva-voce, conducted by internal & external examiners from related field.

FINAL YEAR B.TEXT. - SEMESTER - II

8.1 CLOTHING CARE & SCIENCE (FT)

Lectures	-	4 hrs/week.
Practical	-	3 hrs/week
Theory Paper	-	100 marks.
Term Work	-	50 marks
Practical Exam.	-	50 marks
Sub. Total	-	200 marks

1. Concept of woven and knit clothing care: essential and desirable properties of clothing, introduction to laundry process, Characteristics of various textile fibers, identification of fibers, laundry process for garment made from fibers like cotton, wool, silk, polyester and blends.
2. Water: sources of water, types and determination of hardness, methods of water softening.
3. Detergents: Classification and function of soap and detergents. Composition of commercial detergents. Properties and application of various laundry agents like bleaching, optical whitening agents, stiffeners, softeners.
4. Stain removal: Nature and classification of stains, principle and classification of stain removals, common stains and their removal.
5. Laundry: household and commercial laundry equipments like washing machine, ironing. Function of commercial laundry like hostel, hospital, hotel.
6. Dry cleaning: Objective, Solvents used and their properties, dry cleaning equipment.
7. Dyes and pigments: Dye / Fiber interaction, behavior dyes and pigments during use and laundering. Importance and measurement of color fastness to various agencies like washing, rubbing, light, perspiration, bleaching and sublimation.

8. Environmental aspects, reasons and principle of Eco-testing like banned dyes, formaldehyde, PCP, pesticides, heavy metals, their eco-norms and eco-label.
9. Measurement of color and terms like depth, K/S, tone, color difference
10. Care Labels: importance of care label. Various systems of care labeling, instructions for washing, drying, ironing, dry cleaning and bleaching.
11. Fabric properties for woven and knit clothing: concept, Significance, importance and evaluation of dimensional stability, Serviceability, drape, pilling, abrasion ,crease, thickness, surface property and texture., low stress mechanical properties and tailor ability. Fabric properties and making up process, fabric buckling and formability. Finishes used to improve these properties and to be taken during use and laundering.
12. Comfort properties of garment: thermal, permeability to air, moisture and light, water absorbency, wicking and retention.
13. Quality parameters for assessing sew ability: seam strength, seam pucker, seam slippage, needle cutting and seam appearance.
14. Fabric quality and apparel industry: fabric evaluation for total acceptable products, fabric inspection, final inspection of finished garments, wool mark product specifications.
15. Importance and testing of accessories like button, sliders and ornamentation.

LIST OF EXPERIMENTS :-

1. Identification of fibers from various garments.
2. Measurement of color and color difference using CCM.
3. Evaluation of color fastness to rubbing and sublimation.
4. Evaluation of color fastness to perspiration.
5. Evaluation of dimensional stability to washing and dry heat.

6. Evaluation of color fastness to washing and light.
7. Evaluation of seam efficiency.
8. Evaluation of needle cutting index.
9. Evaluation of dimensional and functional properties finished shirting.
10. Evaluation of dimensional and functional properties finished suiting.
11. Evaluation of dimensional and functional properties finished dress material/ upholstery fabric.
12. Evaluation of dimensional and functional properties finished knitted fabric- single and double jersey.

REFERENCE BOOKS :-

1. Dantiyagi S., "Fundamentals of Textile and their care", Oriental Longmans Ltd, New Delhi, 1980.
2. D. Naomi, 'Fabric Care',
3. Testing and quality management by V.K Khotari.
4. Textile fibers yarns and fabrics – Kaswel E. R
- 5 Physical testing of textiles by B.P Saville
6. Denlkar, "Household Textiles & laundry work", Atma Ram & Sons, Delhi, 1993.
7. Pradip V Mehta, Quality Control in Apparel Industry, NIFT pub., New Delhi, 2001
8. Harold Carr & Barbara Latham, The Technology of Clothing Manufacture, Oxford pub., ITSA, 1994
- 9 Gerry Cooklin, Introduction to Clothing manufacture, Blackwell science, UK, 1991.
- 10 .Chutler A J, Introduction to Clothing Production Management, Blackwell science, UK, 1998
- 11 .Ruth E C, Apparel Manufacturing & Sewn Product Analysis. , Pradip V Mehta,

12. Introduction to Quality Control, ASCQ quality Press, Marcel Dekker Inc, New. York, 1992.

13. Priya Bhargav, Tara Chand, "Textile and Laundry", Common Wealth Publishers.

FINAL YEAR B.TEXT. - SEMESTER – II

8.2 IMPORT & EXPORT MANAGEMENT (FT)

Lectures	-	4 hrs/week.
Theory Paper	-	100 marks.
Term Work	-	50 marks
Sub. Total	-	150 marks

1. Introduction to international trade.

The emerging global scenario-The business of international trade- Trade barriers- Foreign exchange-The euro dollar market-WTO- Trade liberalization.

2. International marketing

Introduction- International marketing channels-Market selection and market profiling-Product strategies- Promotion strategies-Export pricing-Export finance- Export risk insurance-Export packaging and labeling- Quality control and pershipment inspection

3. Foreign trade

Foreign trade control and-Exim policy-Export promotions-Export procedures and documents- Major problem of India's export sector

4. Firm Establishment

Introduction – Export Promotion Councils And Their Role – Registration Formalities – Registration Cum Membership Certificate – Import Export Code – Rbi Code.

5. Foreign Trade Documents: Need, Rationale And Types Of Documents Relating To Goods – Invoice – Packing Note And List – Certificate Of Origin – Certificate Relating To Shipments – Mate Receipt – Shipping Bill Certificate Of Measurement – Bill Of Lading – Air Way Bill – Documents Relating To Payment – Letter Of Credit – Bill Of Exchange – Letter Of Hypothecation – Bank

Certificate For Payment – Document Relating To Inspection – Certificate Of Inspection – Gsp And Other Forms.

6. Import Procedure:

Import License – Procedure For Import License – Import Trade Control Regulation Procedure – Special Schemes – Replenishment License – Advance License – Split Up License – Spares For After Sales Service License – Code Number – Bill Of Entry

7. Shipment And Customs:

Pre Shipment Inspection And Quality Control – Foreign Exchange Formalities – Pre Shipment Documents. Shipment Of Goods And Port Procedures – Customs Clearance Post Shipment: Formalities And Procedures – Claiming Duty Drawback And Other Benefits – Role Of Clearing And Forwarding Agents.

REFERENCE BOOKS:

1. International trade and Export management – Himalaya Publication, Mumbai (1998) Francis Cherunilam.
2. Exim Policy input Output norms – Duty exemption Scheme 2002-2007, Centax publication pvt. Ltd. New Delhi(April 2003 Fourth Edition.) R.K. Jain.
3. Promotion in the Merchandising environment Kristen K, Swanson, Judith C Everett- Fairchild Publication.
4. Hand Book Of Import And Export Procedures - Paras Ram
5. Govt. Of India : Hand Book Of Import And Export Procedures.
6. Bose. A. :” Streamline Your Export Paper Work”, International Trade Form, Oct – Dec 1965.
7. How To Start Export.
8. CBI Booklets – Netherland
9. ECGC Services And Guidelines
10. AEPC Booklets

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8.3 APPAREL & FASHION BUSINESS MANAGEMENT (FT)

Lectures	-	4hrs/week.
Theory Paper	-	100 marks.
Sub. Total	-	150 marks

1. Definition Of Marketing-Marketing Management-Marketing Concept-Meaning Importance Of Marketing In Developing Countries-Consumer Concept- Difference Between Agricultural Industrial And Consumer Goods – Function Of Marketing-Marketing Environment-Various Environmental Factors Affecting Marketing Function - Marketing Of Fashion Products – Importance Of Fashion Marketing
2. Buyers Behavior-Buying Motive Explanation Of Motivation-Marketing Segmentation Of Different Basics. Marketing Strategy-Market Structure- Definition And Types Of Channels- Channel Policy- Selection Criteria- Whole Sellers Retailers And Middle Men And Their Functions - Buying Office, Buying Agency.
3. Introduction-Definition Of Marketing Research- Nature & Scope –An Aid To Rational Decision-Market Research Methodology – Market Research Process – Implementation - Practical Case Studies In Fashion Marketing.
4. Sales Forecasting-Various Method Of Sales Functioning-Product Policy- Product Life Cycle- Product Mix- Modification And Elimination-Brand Policy-Packing Promotions Strategy- Selling And Salesmen Ship-Steps In Selling - Brand – Branding – Meaning & Definition – Selecting a Brand Name – Characteristics Of A ‘Good Brand’ Types Of Brands. Brand – Positioning – Types Of Positioning – Various Positioning Strategies – Need For “Made In India Label” (Common – Brand)

5. Pricing-Meaning To Seller And Buyer-Price Policies-Objective Factors Influencing Price Decisions-Competitors Reaction To Price-Multi Product Pricing Distribution Cost Analysis- Management Of Physical Distribution Marketing Risks

6. Advertising-Purpose-Budget Selecting Copy And Media-Criteria For Advertisement- Appropriation Testing Effectiveness - Visual Merchandising, Visual Merchandising Techniques- Display - Types Of Displays - Trade Fair Participation-Conducting Fashion Show- Fashion Show Norms

REFERENCE BOOKS : -

1. Marketing Management - Philip Kotler
2. Marketing Management – Sharlekar
3. Fashion Marketing – Mike Easey(Ed), Blackwell Science
4. Marketing Management - Rajan Nair

FINAL YEAR B.TEXT. - SEMESTER – II

8.4 SMART TEXTILES & SPECIALITY GARMENTS (FT)

Lectures	-	4 hrs/week.
Theory Paper	-	100 marks.
Term Work	-	50 marks
Sub. Total	-	150 marks

1. **The Future of Fibers and Fabrics** – Micro fibers and its applications, marketing, micro-encapsulation, Regenerated Fabrics, New flexibles- Metallics , Non- Wovens, Foams and rubbers, Glass and Fiber Optics- Ecological Concerns

2. **SEWING THREAD:** Properties – manufacture of cotton, viscose, polyester, nylon and polypropylene Threads.

Glass threads: Manufacture of glass filament and staple fibre – manufacture of staple fibre yarn – properties and application of filament and staple fibre yarns.

Asbestos Thread: Manufacturing process – properties and application of asbestos yarn.

ULTRA HIGH MODULUS FIBRE – carbon fibres – Aramid and related fibres

3. **TYRE CORDS AND FABRICS:** Requirements of tyre cord – suitability of various fibres – polyester and nylon tyre cords – manufacture of tyre cords – Physical and mechanical property requirements of tyre cord fabrics – Fabric design – Specifications. Rubberized textiles.

Belts : Conveyor belts – physical and mechanical properties – construction of belts – manufacture of conveyor belts – power transmission belts. **Hose:** Construction and application

4. **FILTER FABRICS:** General consideration of filtration of solids from liquids, solid from gases, solids from solids, liquid from liquids, liquids from gases and gases from gases.

Nonwoven filtration: Filtration in paper, cotton textile industry and viscose manufacturing industry – Cigarette filters

5. **FUNCTIONAL FABRICS:** Fire protection – thermal and electrical insulation – base cloth commonly used- material – coating techniques – waterproof fabrics – gauze fabrics, parachute fabrics.

6. **MEDICAL TEXTILES:** Surgical Threads. Cardio vascular textiles – knitted cardiac biological valves. Dialysate Textiles – hollow fibres as dialysis membrane. Hospital textiles – operating and post operating clothing – disposable drapes. Sanitary applications.

7. **GEO TEXTILES:** Geo Textiles functions – raw material – woven, non-woven, and knitted geo textiles, Three-Dimensional Textiles and Performs – Application of geo textiles for drainage application, separation application, soil reinforcement and filtration and erosion control.

8. **Electronic Textiles:** CAD, Design and virtual reality, the Cyborg, design in the cyborg age, Adapting to the environment

REFERENCE BOOKS : -

1. Floyd. K.L. and Taylor, H.M., Industrial Applications of Textiles,
2. Poundeyhimi. B. Vascular Grafts: Textile structures and their performance.
3. Mathews. A and Hardingham M., Medical and Hygiene Textile Production.
4. Bajaj. P. and Sengupta. A.K. Protective Clothings.
5. Indian Journal of Fibre and Textile Research.
6. Sandra Keiser & Myrna B. Garner “Beyond Design”
7. Sarah E.Braddock and Marie O’Mahony, “Techno Textiles- Revolutionary Fabrics for fashion and design

FINAL YEAR B.TEXT. SEMISTER-II
8.5 FASHION COMMUNICATION (FT) ELECTIVE-II

Lectures	-	3 hrs/week
Theory Paper-		100 marks
Sub. total	-	100 marks

1. **Introduction:** Fashion – a cultural perspective, the relativity of meanings, the individual, diversity
2. **The body in cultural context-** age and body image, sex and body image
3. **Dress as Nonverbal Communication:** Structure of dress communication systems- channels of transmission, Grammar, elements of dress signs, context of use, the present day cultural moment
4. **Dress in Human Interaction:** Multiple Identities, Rituals Identities and rich meanings, costume histories, Learning and producing the meanings of dress- association, production, involvement of perceivers, media and marketers in it, Impact of meanings- Dress as facilitator, Creativity and fun of expressions, Stereotypes, dress as a therapy or escape
5. **Appearance for Gender and Sexuality:** The sexual identity kit, Cross dressing, dress and gender- a historical perspective
6. **Individuality:** Individual level- Conformity and Individuality, Non-conformity, Group level- Dress and Group Identity, Societal level- school uniforms, Cultural level- collectivism and individualism
7. **Dress in workplace:** Dress and human interaction at work, Research on Dress in workplace, dress and ascribed roles, Dress and specific occupations, Societal implications of casual dress- casual dress from multiple perspectives
8. **Dress from infancy to Adolescence:** Childhood- physical co-ordination, cognitive development and symbol usage, socialization, appearance concerns, Adolescence- physical changes, cognitive and socio motional development
9. **Dressing throughout adulthood:** Early adulthood, Middle adulthood, Late adulthood, The flow of self history

10. **Race, Ethnicity, and Class:** Race and appearance, Ethnicity and appearance, Social class and Appearance
11. **Fashion as social process:** Cultural system, Fashion system, Negotiation with others, Negotiation with self
12. **Dress and World Religions:** Ideology and dress, Religion, Dress and Religious Fundamentalism, Dress modesty and Sexuality, Religious dress and social change
13. **Dress and Social Change:** Innovation, Powerful influences, Conflict, Capitalism
14. **Future Trends:** Trends in ethnicity and cultural images of Attractiveness- True equality, White Supremacist Takeover, White backlash, Influence of Aging Population on Concepts of Beauty- the fashionable, aged baby boomer, old is out, Diversity among Older segments, Technology and the Consumer- customization and multiple modes of access, Environmental Concerns, On to the Future

REFERENCE BOOKS:

1. Mary Lynn Damhorst, Kimberly A. Miller, Susan O. Michelman, "The Meanings of Dress"
2. Barnard M. , "Fashion as communication"
3. McCracken G., "Culture and consumption"
4. Berlo, D.K., "The process of Communication"
5. Berger, A.A. " Signs in Contemporary Culture"
6. Stone, G. P. "Appearance and the self"
7. Davis F. " Fashion, culture and identity"

FINAL YEAR B.TEXT. - SEMESTER – II

8.5 CONSUMER BEHAVIOUR IN FASHION INDUSTRY (FT) (ELECTIVE-II)

Lectures	-	3 hrs/week.
Theory Paper	-	100 marks.
Sub. Total	-	100 marks

1. Marketing Strategy: Three Phases of Marketing Strategy, Segmentation Studies, Bases for Segmentation, Demographic Segmentation, Marital Status, Psychological Segmentation, Socio-cultural Segmentation, Family Life Cycle, Use-Related Segmentation, Usage-Situation Segmentation, Benefit segmentation, Hybrid Segmentation Approaches, VALS
2. Perception :The Nature of Perception and Perception dynamics, Psychological Influences of Perception, A Consumer's Selective Exposure, Marketing Implications of Perception, Information Processing for Consumer Decision Making, Use of Isolation and Contrast, Individual Factors, Situational Factors, Magazine and Advertising Effectiveness, Nonfocused Attention, Hemispheric Lateralization, Impact on Marketing Strategy, Logos Influence on Image, Exposure to Magazines.
3. *Consumer Learning: Learning Process, Elements of Learning Theories, Behavioral Learning Theories- Concepts of Classical, Instrumental Conditioning, Modeling or Observational Learning, Conditions for Optimal Conditioning*
4. Information Processing: Issues In Information Processing, Retention, Limited and Extensive Information Processing, Issues in Involvement Theory, The Elaboration Likelihood Model, Measures of Consumers Learning,
5. Consumer Decision Making: Learning Objective, Consumer Decision-Making Process, Types of Consumer Buying Decisions, Marketing Implications of Involvement, Factors Influencing Buying Decisions, Cultural Influences on Buying Decisions, Value - Core American Values,

Culture and Advertising, Content Analysis, Consumer Fieldwork, Value Measurement Instruments, Value Measurement Survey Instruments.

6. Organizing for Advertising and Promotion: Objectives of Advertising, Advertising Functions, Appeal Advertising, Role of Advertising Agencies and Other Marketing Communications Organizations. 4 Types of Market Structure, Elements of the marketing communications mix, major objectives of marketing communications, Reminding, Value Adding, advertising strategy, Advertising Campaign, developing an advertising campaign.

REFERENCE BOOKS:

1. Jessica Mac Clintock , “The Fundamentals of Fashion - (Part Four)
2. Forecasting by Rita Prerna
3. Consumer Behavior – Buying, having and being by Michel R. Solomen.
4. Advertising and Promotion : An integrated marketing communications perspective by George E. Belch.

FINAL YEAR B.TEXT. - SEMESTER – II

8.5 OPERATIONAL RESEARCH (FT) (ELECTIVE-II)

Lectures	-	3 hrs / week.
Theory Paper	-	100 marks.
Sub. Total	-	100 marks

Human Resource Development

Introduction to Structure and Sectors of Clothing Industry - Job Analysis and Description – Job Specification – Recruitment and Selection – Kinds of Interview - Purpose of Appraisal – Criteria Of Appraisal – Methods Of Appraisal Methods – Limitations – HRD Methods And Processes – Sewing Room Supervisor’s Job And Training Needs - HRD In Indian Apparel Industry.

Plant Engineering & Line Balancing

Introduction to Garment Industry Plant Location – Location Economics – Plant Layout – Process Layout – Product Layout – Combination Layout – Introduction to Balancing Theory – Balance Control – Balancing Exercises For Garment Industry.

Work Study

Concept And Need – Method Study And Work Measurement – Techniques – Process Chart Symbol – Process Flow Chart – Flow Diagrams – String Diagrams – Multiple Activity Chart – Principles Of Motion Economy – SIMO Chart – Time Study Methods – Standard Time Data – Ergonomics With Special Reference To Garment Industry.

Production and Productivity

Methods of Production Systems – Job, Mass & Batch – Section Systems, Progressive Bundle System & ‘Synchro’ System – Conveyor Systems – Unit Production System – Quick Response. Productivity Concepts – Measurement Of Productivity – “Man Machine Material” – Criteria For Increasing Productivity.

Production Planning and Control

Function, Qualitative and Quantitative Analysis Of Production - Coordinating Departmental Activities - Basic Production Systems - Evaluating And Choosing The System - Flow Process And Charts For Garment - Scheduling Calculations - Assigning Operators Optimally – Setting Up Complete Balanced Production Lines To Produce Given Amount Of Garments

REFERENCE BOOKS : -

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

FINAL YEAR B.TEXT. - SEMESTER - II

8.6 SEMINAR-II (FT)

Lectures	-	2 hrs /week.
Term work	-	50 marks.
Sub. Total	-	50 marks

Topic:-

In the beginning of the semester, every student individually will be assigned a seminar topic in the emerging / perspective field in the areas of Fashion Technology such as Garment/ Fashions, cutting, sewing, finishing, testing, garment processing, designs using softwares, merchandising, ornamentation technique etc.

Seminar Preparation & Presentation:-

Students will collect the information on the given subjects & submit the report both soft & hard copy on the dates specified by the concerned faculty. The seminar report will be of minimum 15 pages. The spacing between the lines will be 1.5. The font size will be 12 point with New Times Roman. The list of reference must be given at the end of seminar report. The list of reference should be written as per the Textile/Garment/Fashion/Retail/ Research Journal format.

Term Work Marks:-

Seminar report	-	25 Marks
Presentation	-	25 Marks

FINAL YEAR B.TEXT. - SEMESTER – II

8.7 DISSERTATION (FT)

Duration	-	6 hrs / Week.
Term Work	-	50 Marks.
Oral Exam	-	100 Marks
Subject Total	-	150 Marks

OBJECTIVE:-

To provide an opportunity to students to work on any topic / problem/ experiment selected by them and to encourage them to think independently of their own, students are assigned dissertations. Project may be taken up by an individual or in a group.

TOPICS: - Project work shall be based on any of the following topics.

- 1) Fabrication of models / products, testing set up or setting up of an experimentation unit / apparatus / small equipment individually or in a group.
- 2) Extensive numerical analysis of some problem may be carried out using computer.
- 3) A report on the complete design, process charts, costing of a product / machine prototype.
- 4) Experimental verification on principles used in Textiles /Apparels/Fashion.
- 5) Design of equipment / project, gadget devices and its fabrication.
- 6) Extensive survey of industrial practices.
- 7) Working on industrial problems & remedial measures.

FORMAT OF THE PROJECT REPORT:-

The project report should be typed with double spacing on demy – size bond paper and in neatly bound form. The total number of typed pages should not be more than 70 pages and not less than 25 pages. The project report should be written in the following format.

- 1) Title Sheet
- 2) Certificate
- 3) Acknowledgement
- 4) Content
- 5) Abstract
- 6) List of figures / photographs / graphs / tables (apprising of illustrative matter such as the photographs, figures, tables and other data from handbook etc must be acknowledged on the appropriate pages of the report).
- 7) Introduction
- 8) Literature survey / Theory
- 9) Design / Experiment / Fabrication / Production / Actual work carried out of the same.
- 10) Observations / Results.
- 11) Discussion of results and conclusion
- 12) References: These references should be given in the standard format as that of international technical journals.
- 13) Annexure, apparatus etc if any.

Two copies of report should be submitted to the institute / department and one to the Library and one should remain with every student in a group.

Assessment of Dissertation Work:-

Term work of 50 marks is assigned for dissertation work. A dissertation committee will observe the progress of the work, arrange two presentations and based on the performance, term work marks will be assigned.

Oral Examination:-

One internal and one external examiner from industry / research organization / academia in each of the textiles / Garment / Fashion/Retailing/branding disciplines will be conducting oral examination.