

**SCHEME OF STUDIES &
EXAMINATION FOR**

B. TECH.

**FASHION
TECHNOLOGY**

MAHARSHI DAYANAND UNIVERSITY, ROHTAK (HARYANA)
SCHEME OF STUDIES & EXAMINATION FOR
B. TECH. (FASHION TECHNOLOGY)

SEMESTER-III

‘F’ Scheme effective from 2011-12

SNo	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam
			L	T	P	Total	Class work	Theory	Practical	Total	
1	FT-201-F	Elements of fashion	3	1	-	4	50	100	-	150	3
2	MATH-201-F	Math –III	3	2	-	5	50	100	-	150	3
3	HUM-201-F	Engineering Economics	3	1	-	4	50	100	-	150	3
4	FA-201-F	Traditional Indian Embroideries & Textiles	3	1	-	4	50	100	-	150	3
5	TT-201-F	Textile raw materials	3	1	-	4	50	100	-	150	3
6	FA-207-F	Traditional Indian Embroideries & Textiles Lab	-	-	2	2	50	-	50	100	3
7	FT-202-F	Fashion Illustration Lab	-	-	2	2	50	-	50	100	3
8	FA-205-F	Fashion Sketching Lab	-	-	2	2	50	-	50	100	3
9	TT-213-F	Fibre microscopy & identification Lab	-	-	2	2	50	-	50	100	3
10	FT-203-F	Communication & Interpersonal skills for corporate readiness lab	-	-	2	2	50	-	50	100	3
		TOTAL	15	6	10	31	500	500	250	1250	

NOTE:

1. Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

MAHARSHI DAYANAND UNIVERSITY, ROHTAK (HARYANA)
SCHEME OF STUDIES & EXAMINATION FOR
B. TECH. (FASHION TECHNOLOGY)

SEMESTER-IV

‘F’ Scheme effective from 2011-12

SNo	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam
			L	T	P	Total	Class work	Theory	Practical	Total	
1	FA-202-F	Evolution of Clothing & Fashion	3	1	-	4	50	100	-	150	3
2	FA-204-F	Color & Design Concepts	3	1	-	4	50	100	-	150	3
3	TC-204-F	Fabric Formation	3	1	-	4	50	100	-	150	3
4	TT-208-F	Fabric Structure	3	1	-	4	50	100	-	150	3
5	MA-202-F	Applied Numerical Methods	3	1	-	4	50	100	-	150	3
6	FT-204-F	Garment Manufacturing Technology-I	3	1	-	4	50	100	-	150	3
7	FA-210-F	Color & Design Lab	-	-	2	2	50	-	50	100	3
8	TC-208-F	Fabric Formation Practical	-	-	2	2	50	-	50	100	3
9	FA-212-F	Elementary Garment Manufacturing Lab	-	-	2	2	50	-	50	100	3
10	FA-214-F	Design Ideas And Fashion Illustration Lab	-	-	2	2	50	-	50	100	3
		TOTAL	18	6	8	32	500	600	200	1300	

NOTE:

1. Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

2. Each student has to undergo practical training of 6 weeks during summer vacation and its evaluation shall be carried out in the V semester.

MAHARSHI DAYANAND UNIVERSITY, ROHTAK (HARYANA)
SCHEME OF STUDIES & EXAMINATION FOR
B. TECH. (FASHION TECHNOLOGY)

SEMESTER-V

‘F’ Scheme effective from 2011-12

SNo	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam
			L	T	P	Total	Class work	Theory	Practical	Total	
1	FT-301-F	Professional Ethics in Engineering	3	1	-	4	50	100	-	150	3
2	FT-302-F	Garment Manufacturing Technology-II	3	1	-	4	50	100	-	150	3
3	FT-303-F	Textile Design by using CAD	3	1	-	4	50	100	-	150	3
4	FT-304-F	Textile & Garment Testing	3	1	-	4	50	100	-	150	3
5	FT-305-F	Knitted Fabric Structure	3	1	-	4	50	100	-	150	3
6	FT-306-F	Garment pattern making & construction lab	-	-	2	2	50	-	50	100	3
7	FT-307-F	Textile & Garment Testing lab	-	-	2	2	50	-	50	100	3
8	FT-308-F	Textile Design Lab	-	-	2	2	50	-	50	100	3
9	FT-309-F	Garment Construction Lab	-	-	2	2	50	-	50	100	3
10	FT-319-F	Practical Training-I	-	-	2	2	-	-	-	-	-
		TOTAL	15	5	10	30	450	500	200	1150	

NOTE:

1. Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

2. Assessment of Practical Training-I, undergone at the end of IV semester, will be based on seminar, viva-voce, report and certificate of practical training obtained by the student from the industry. According to performance letter grades A, B, C, F are to be awarded. A student who is awarded ‘F’ grade is required to repeat Practical Training.

MAHARSHI DAYANAND UNIVERSITY, ROHTAK (HARYANA)
SCHEME OF STUDIES & EXAMINATION FOR
B. TECH. (FASHION TECHNOLOGY)

SEMESTER-VI

‘F’ Scheme effective from 2011-12

SNo	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam
			L	T	P	Total	Class work	Theory	Practical	Total	
1	FT-310-F	Garment Production Machines & Equipments	3	1	-	4	50	100	-	150	3
2	FT-311-F	Fashion Marketing & Merchandising	3	1	-	4	50	100	-	150	3
3	FT-312-F	Garment Processing & Finishing	3	1	-	4	50	100	-	150	3
4	FT-313-F	Fashion Designing using CAD	3	1	-	4	50	100	-	150	3
5	FT-314-F	Dyeing of Textiles	3	1	-	4	50	100	-	150	3
6	FT-315-F	Dyeing & Computer Color Matching Lab	-	-	2	2	50	-	50	100	3
7	FT-316-F	Fashion Design Lab	-	-	2	2	50	-	50	100	3
8	FT-317-F	Garment Chemical Processing Lab	-	-	2	2	50	-	50	100	3
9	FT-318-F	Communication Skills & Seminars	-	-	2	2	50	-		50	3
		TOTAL	15	5	8	28	450	500	150	1100	

NOTE:

1. Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.
2. Each student has to undergone practical training of 6 weeks during summer vacation and its evaluation shall be carried out in the VII semester.

MAHARSHI DAYANAND UNIVERSITY, ROHTAK (HARYANA)
SCHEME OF STUDIES & EXAMINATION FOR
B. TECH. (FASHION TECHNOLOGY)

SEMESTER-VII

‘F’ Scheme effective from 2011-12

SNo	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam
			L	T	P	Total	Class work	Theory	Practical	Total	
1	FA-403-F	Textile & Fashion Costing	3	1	-	4	50	100	-	150	3
2	FA-405-F	Automation in Garment Industry	3	1	-	4	50	100	-	150	3
3	FA-409-F	Fashion Selection	3	1	-	4	50	100	-	150	3
4	FT-401-F	Apparel Production Planning & Scheduling	3	1	-	4	50	100	-	150	3
5		Elective-I	3	1	-	4	50	100	-	150	3
6	FA-415-F	Fashion Design by CAD lab	-	-	2	2	50	-	50	100	3
7	FA-417-F	Garment Industry Practice Lab	-	-	2	2	50	-	50	100	3
8	FT-408-F	Seminar	-	-	2	2	50	-	-	50	3
9	FA-419-F	Minor Project	-	-	2	2	50	-	50	100	3
10	FT-409-F	Practical Training-II	-	-	2	2	-	-	-	-	-
		TOTAL	15	5	10	30	450	500	150	1100	

NOTE:

1. Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

2. Assessment of Practical Training-I, undergone at the end of IV semester, will be based on seminar, viva-voce, report and certificate of practical training obtained by the student from the industry. According to performance letter grades A, B, C, F are to be awarded. A student who is awarded ‘F’ grade is required to repeat Practical Training.

3. Project load will be treated as 2 hours per week for Project Coordinator and 1 hour for each participating teacher. Project will commence in VII semester where the students will identify the Project problem, complete the design/procure the material/start the fabrication/complete the survey etc., depending upon the nature of the problem. Project will continue in VIII semester.

Elective 1:

FT-402-F	Home Textile
FT-403-F	Operational Research
FT-404-F	Computer Aided Pattern Making (CAPM) for Men’s And Women’s Wear
FA-407-F	Computer Aided Designing
FA-411-F	Indian Business Environment
FA-409-F	Fashion Selection

MAHARSHI DAYANAND UNIVERSITY, ROHTAK (HARYANA)
SCHEME OF STUDIES & EXAMINATION FOR
B. TECH. (FASHION TECHNOLOGY)

SEMESTER-VIII

‘F’ Scheme effective from 2011-12

SNo	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam
			L	T	P	Total	Class work	Theory	Practical	Total	
1	FA-402-F	High Tech Garments	3	1	-	4	50	100	-	150	3
2	FA-404-F	Quality Assurance in Fashion Industry	3	1	-	4	50	100	-	150	3
3	FA-406-F	Fashion Accessories	3	1	-	4	50	100	-	150	3
4		Elective-II	3	1	-	4	50	100	-	150	3
5	FA-414-F	Fashion Draping & Grading Lab	-	-	2	2	50	-	50	100	3
6	FA-416-F	Advance Fashion Construction Lab	-	-	2	2	50	-	50	100	3
7	FT-408-F	Seminar	-	-	2	2	50	-	-	50	3
8	FA-420-F	Project Work	-	-	4	4	50	-	100	150	3
		TOTAL	12	4	10	26	400	400	200	1000	

NOTE:

1. Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

2. Project load will be treated as 2 hrs. per week for the project coordinator and 1 hour for each participating teacher. Project involving design, fabrication, testing, computer simulation, case studies etc., which has been commenced by students in VII semester, will be completed in VIII semester.

Elective II:

FA-408-F	Retailing & Fashion Promotion
FA-410-F	Chemical & Mechanical Finishing of Textiles
FA-412-F	Advance Fashion Construction Techniques
FT-405-F	Apparel Marketing & Merchandising
FT-406-F	Home Fashions
FT-407-F	Garment Finishing

MATH-201-F

MATHEMATICS-III

L T P
3 2 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Fourier Series and Fourier Transforms : Euler's formulae, conditions for a Fourier expansion, change of interval, Fourier expansion of odd and even functions, Fourier expansion of square wave, rectangular wave, saw-toothed wave, half and full rectified wave, half range sine and cosine series.

Fourier integrals, Fourier transforms, Shifting theorem (both on time and frequency axes), Fourier transforms of derivatives, Fourier transforms of integrals, Convolution theorem, Fourier transform of Dirac-delta function.

Section-B

Functions of Complex Variable: Definition, Exponential function, Trigonometric and Hyperbolic functions, Logarithmic functions. Limit and Continuity of a function, Differentiability and Analyticity, Cauchy-Riemann equations, necessary and sufficient conditions for a function to be analytic, polar form of the Cauchy-Riemann equations. Harmonic functions, application to flow problems. Integration of complex functions. Cauchy-Integral theorem and formula.

Section-C

Power series, radius and circle of convergence, Taylor's Maclaurin's and Laurent's series. Zeros and singularities of complex functions, Residues. Evaluation of real integrals using residues (around unit and semi circle only).

Probability Distributions and Hypothesis Testing : Conditional probability, Bayes theorem and its applications, expected value of a random variable. Properties and application of Binomial, Poisson and Normal distributions.

Section D

Testing of a hypothesis, tests of significance for large samples, Student's t-distribution (applications only), Chi-square test of goodness of fit. Linear Programming: Linear programming problems formulation, solving linear programming problems using (i) Graphical method (ii) Simplex method (iii) Dual simplex method.

TEXT BOOKS:

1. Engg Mathematics -- Babu Ram, Pearson India
2. Advanced Engg. Mathematics -- F Kreyszig.
3. Higher Engg. Mathematics -- B.S. Grewal.

REFERENCE BOOKS:

1. Advance Engg. Mathematics -- R.K. Jain, S.R.K.Iyenger.
2. Advanced Engg. Mathematics -- Michael D. Greenberg.
3. Operation Research -- H.A. Taha.
4. Probability statistics for Engineers -- Johnson and. PHI

HUM-201-F

ENGINEERING ECONOMICS

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Definition of Economics - various definitions, Nature of Economic problem, Production possibility curve Economic laws and their nature. Relation between Science, Engineering, Technology and Economics. Concepts and measurement of utility, Law of Diminishing Marginal Utility, Law of equi-marginal utility - its practical application and importance.

Section-B

Meaning of Demand, Individual and Market demand schedule, Law of demand, shape of demand curve, Elasticity of demand, measurement of elasticity of demand, factors effecting elasticity of demand, practical importance & applications of the concept of elasticity of demand. Meaning of production and factors of production; Law of variable proportions, Returns to scale, Internal and External economics and diseconomies of scale.

Section-C

Various concepts of cost - Fixed cost, variable cost, average cost, marginal cost, money cost, real cost opportunity cost. Shape of average cost, marginal cost, total cost etc. in short run and long run. Meaning of Market, Types of Market - Perfect Competition, Monopoly, Oligopoly, Monoplistic Competition (Main features of these markets)

Section-D

Supply and Law of Supply, Role of Demand & Supply in Price Determination and effect of changes in demand and supply on prices. Nature and characteristics of Indian economy (brief and elementary introduction), Privatization - meaning, merits and demerits. Globalisation of Indian economy - merits and demerits. Elementary Concepts of VAT, WTO, GATT & TRIPS agreement.

TEXT BOOKS:

1. Principles of Economics -- P.N. Chopra (Kalyani Publishers).
2. Modern Economic Theory – K.K. Dewett (S.Chand)

REFERENCE BOOKS:

1. A Text Book of Economic Theory Stonier and Hague (Longman's Landon)
2. Micro Economic Theory -- M.L. Jhingan (S.Chand)
3. Micro Economic Theory -- H.L. Ahuja (S.Chand)
4. Modern Micro Economics --S.K. Mishra (Pragati Publications)
5. Economic Theory - A.B.N. Kulkarni & A.B. Kalkundrikar (R.Chand & Co.)
6. Indian Economy -- Rudar Dutt & K.P.M. Sundhram

FT-201-F

ELEMENTS OF FASHION

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Origin of fashion, Origin of clothing, Fashion language, Philosophy of design, Nature of fashion .Elements of fashion, Terminology of fashion: style, design, taste, classic, fad.

Section-B

Component of fashion: Silhouette, Texture, Details. Study of leading fashion designers; French, Italian, American, Indian. Costumes of ancient civilization; Egypt, Roman, French. Fashion trends.

Section-C

Principle of fashion. Environmental factor Demographic & Psychographics, Economic factors, Sociological factor, Psychological factor. Fashion influence & theories of fashion adoption. Movement of fashion, the cycle of fashion; stages of cycle. Factors influencing fashion movement (accelerating & retarding factors). Fashion prediction

Section-D

Leaders of fashion, Birth of fashion; designers role, manufacturer's role, retailer's role, insight & intuition of sources of design. Trade shows, fashion promotion and advertisement. Retailing: an overview on different types of retail store. Merchandising: role of a merchandiser, little idea about visual merchandising.

Text Books:

1. Inside Fashion Design -Kitty G.Dikerson
2. Inside Fashion Business -Kitty G. Dikerson
3. Elements of color & design –Sumathi G.J.

FT-202-F

FASHION ILLUSTRATION LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

1. Human figure drawing with the help of blocks.
2. Sketching of different body parts (normal figures & fashion figures).
3. To learn & practice free-hand sketching techniques.
4. Sketch cloque figure with pencil in different postures.
5. To learn media & techniques for illustration: fashion figure with pencil shading, pencil / steedler color, wax crayons, water color & micro tip pen.
6. Kid's fashion: illustration of different types of kids wear.
7. Casual & formal wear illustration.
8. Adult fashion: Illustration of --- wedding wear, party wear, seasonal wear, sports wear, etc.....

Note: At least 5 to 10 more exercises to be given by the teacher concerned.

FA-205-F

FASHION SKETCHING LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Usage of different dry and wet colour mediums in sketching e.g. shading, filling etc.

Normal figure proportions, Grid theory for formation of fashion figure.

Fashion Figure proportions, Fashion figure in different views, as Front View, 3/4th View, Back View, Side View.

Flashing of the fashion figure in different views.

Movement figures - principles to form a movement figure, sketching of the movement figures in various postures /body positions.

Variations of body parts - Arms, Hands, legs, Feet. Facial figure proportions - Features, Hairstyles.

Developing Silhouettes – draping, fold lines, prints etc.

Photo analysis, Fabric rendering, Simple illustration on fashion figures.

TT-213-F

FIBRE MICROSCOPY & IDENTIFICATION LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Principle of microscopy, Microscopic identification of fibres, preparation and mounting of specimen for longitudinal view, Cross-section cutting. Microtomy - cork method, metal plate method, Hardy's Microtome, Mountants and reagents for fibre microscopy; Identification of fibre by burning as well as solubility tests. Standard scheme of analysis of homogenous fibre blends by physical and chemical methods, Qualitative and quantitative determination of components.
Preparation of reagents used for chemical analysis.

FT-203-F

**COMMUNICATION & INTERPERSONAL SKILLS FOR
CORPORATE READINESS LAB**

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

This course will focus on communication in professional (work-related) situations of the kind that BPUT graduates may expect to encounter on entering the professional domain.

Some typical forms of work-related communication, oral or written, are listed below. Practice activities for all four skills can be designed around these or similar situations.

1. Gaining entry into an organization
 - i. Preparing job-applications and CVs
 - ii. Facing an interview
 - iii. Participating in group discussion (as part of the recruitment process)
 2. In-house communications
 - a. Superior/ Senior □ . subordinate / junior (individual □ . individual / group)
 - i. Welcoming new entrants to the organization, introducing the workplace culture etc.
 - ii. Briefing subordinates / juniors : explaining duties and responsibilities etc.
 - ii. Motivating subordinates / juniors ('pep talk')
 - iii. Instructing/ directing subordinates/ juniors
 - iv. Expressing / recording appreciation, praising / rewarding a subordinate or Junior
 - v. Reprimanding / correcting / disciplining a subordinate/junior (for a lapse); Asking for an explanation etc.
 - b. Subordinate / Junior / Superior / Senior
 - i. Responding to the above
 - ii. Reporting problems / difficulties / deficiencies
- Offering suggestions

FT-204-F

GARMENT MANUFACTURING TECHNOLOGY - I

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Garment Classification: Men, Women and Children, Fabric Selection: selection of fabric according to dress style, occasion, and figure.

Pattern making- Objectives, Importance of paper pattern, Types of paper patterns, Methods of pattern making- a) Drafting b) Flat pattern c) Draping, Measurements and its importance. Tracing and marking terminology- Chalked marking, chalked thread, color coding, pin marking, tailors tacks, thread tracing.

Pattern layout- according to types of fabrics, different types of lays, economy of fabrics in layouts, cloth layouts. Working with different fabrics. Principle of fitting- ease, line, grain, set, balance. Grading.

Section-B

Marker Planning: Requirement of the marker planning Efficiency of marker plan, methods of marker panning and marker use.

Spreading: The requirements of the Spreading process, methods of spreading, the nature of fabric packages.

Cutting: The objectives of cutting, Requirements of cutting, Bundling- labeling. Cutting room layout, cutting room organization.

Tools & equipment for cutting – Band knife, click press, electrical notcher, Straight knife, Circular knife, Cutting Board, Cutting Table, Drill, Pattern perforator, Shears .

Section-C

Basic Sewing techniques: Stitch definition, classification & designation

Hand stitches - Hand stitch needle , Back stitch (Half back, Prick) , Blanket stitch, Blind stitch, Catch stitch, Felling stitch, Pick stitch ,saddle stitch, Button hole/eyelets, Over hand stitch, Running stitch, hemming.

Machine Stitches – Chain stitch, Blind stitch, Lock stitch, Zigzag stitch, over edge machine stitch, Safety stitch, Lettuce edging, Shirring stitch.

Seam terminology – curved seam, enclosed seam, exposed seam, extended seam allowances, intersecting seam, Rolled seam edges.

Section-D

Classification of different types of seam – Plain seam, Flat seam, French seam, Edge seam, Flat fell seam, Run and fell seam, lapped seam, Bound seam, Corded seam, Slot seam, piped seam, fused seam, Padded seam, Seams of fur, Seam of lace, Top stitched seam, Tucked seam, Welt seam, Taped seam, Zigzag seam, Safety stitched seam

Seam finishing – different methods.

TEXT BOOKS:

1. Apparel Manufacturing hand book — Jacob Solinger.
2. Clothing Technology – R.L. Friend,
3. Clothing Technology – Carr & Latham,
4. The Technology of Clothing Manufacture – Carr and Latham

TT-201-F TEXTILE RAW MATERIALS (COMMON WITH TT/TC)

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

General definitions and important terminologies related to textiles; Classification of fibres; Essential and desirable properties of textile fibres and their role in final products; Advantages and disadvantages of natural and manmade fibres. Flow charts showing processes involved in textile industry. Cotton: Geographical distribution, structure and properties (physical and chemical); Different Varieties including organic as well as Bt cotton and their properties; Applications.

Section-B

Bast and leaf fibres such as jute, hemp, sisal and ramie etc: Geographical distribution, extraction, properties and their uses. Varieties of natural silk, rearing of silk worm, properties and uses of various types of silk; silk reeling, throwing and weighing.

Section-C

Varieties, sorting and grading of wool, chemical and physical properties of wool, processes involved in the removal of impurities from raw wool; numbering systems of woollen and worsted yarns. General principles of manufacturing of man made fibres.

Section-D

Brief outline of the manufacturing processes of important man-made fibres, viz. rayons (Viscose and Acetate), polynosic, tencel, nylons, polyester, acrylics, polypropylene, polyolefins, polyacrylonitrile and some technical speciality fibres like spandex/lycra etc (only flow charts); their Important physical and chemical properties and applications.

TEXT BOOKS:

1. Handbook of Textile Fibres -- J Gordon Cook
2. Textile Fibres --- HVS Murthy
3. Manmade Fibres -- RW Moncrieff
4. Manufactured Fibre Technology -- V B Gupta & V K Kothari

FA-201-F TRADITIONAL INDIAN EMBROIDERIES AND TEXTILES

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Basic know-how embroidery techniques: Requirements of embroidery. Tools and Equipment required for embroidery

Section-B

Sample preparation with basic embroidery stitches and their derivatives like chain stitch; stem stitch, darning stitch, Herring-bone, open chain, satin, button-hole, bullion knot, Lasydaisy stich

Section-C

Working with Indian Traditional Embroidery with special reference to fabric, embroidery threads, colors, colors, stitches, and motifs)

- a) Chickankari - Lucknow
- b) Phulkari - Punjab
- c) Kanthas - Bengal
- d) Applique work – Orissa and Gujarat

Section-D

Sampling and Sourcing of Traditional Indian Textiles with the special reference of materials, colors, motifs and production processes -

- a) Ikat and Patola
- b) Kalamkari
- c) Chanderi
- d) Kota
- e) Brocades
- f) Bandhani
- g) Block Printed Textiles

Preparation of at least two samples with machine embroidery techniques.

TEXT BOOKS:

1. Complete Guide to Needle work-- Readers Digest
2. The Dictionary of Needle work-- Sophia Cauteild and Blanche Saward
3. Ethnic embroidery of India -- Usha Shrikant
4. Vandana embroidery -- Arora's
5. Modern embroidery series
6. Artistics embroidery designs -- Ritu
7. Folk designs from India -- Pradumna and Rosalba Tana

**FA-207-F TRADITIONAL INDIAN EMBROIDERIES AND TEXTILES
PRACTICAL**

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Practice of different basic embroidery stitches.

Usage of different basic stitches for embroidery and sampling of textiles of different states as mentioned with respective references to material, color, thread, stitches and motifs:

- UP – Chikankari
- Punjab – Phulkari embroidery
- Bengal – Kanthas, Baluchar
- Kashmir - Kashida, Shawls
- Karnataka - Kasuti
- Gujarat – Bandhani, Sindh and Kutch Embroidery
- Andhra Pradesh – Kalamkari, Pochampali
- Orissa – Ikat
- Himachal Pradesh – Chamba Rumal

FA-202-F

EVOLUTION OF CLOTHING AND FASHION

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Origin of clothing. Objectives of clothing and costumes, Main archetypes of costumes, Principles of history of fashion. Theories of clothing-Protection, adornment, modesty and combined need theory etc. Fashion and its meaning, Principles and history of fashion, Classification of fashion. Fashion product Life cycles. Sources of Fashion, Factors affecting fashion movement like cultural, socio-psychological, etc.

Section-B

Effect of various factors such as communication, industry, economy, sports etc on fashion. Fashion leadership theories. Important fashion capitals, National and International fashion designers, National and International fashion markets and fashion weeks.

Section-C

Indian history of costumes: Concept and comparison of costumes of all stages of pre-historic and medieval period, Study of Costumes, jewellery, footwear, hairstyles etc. in India in different periods as – Vedic and post vedic period, Maurian Period, Gupta period Kushan and Kanishka period.

Section-D

Global history of costumes: Concepts and history of classical costumes in Greek civilization and Roman civilization. History of costumes in Egyptian and Byzantine civilization. History of costumes in the western world starting from the origin up to the Reign of Charles and Louis with the emphasis on famous fashion centers and famous fashion designers. Important national and international fashion designers.

TEXT BOOKS:

1. The guide to historic costumes -- Karen Baclaw Ski
2. Inside Fashion Business -- Kitty G. Dickerson
3. Inside Fashion Design -- Sharon Lee Tate
4. Fashion: From Concept to Consumers -- Gini Stephon Frings
5. Understanding today's Fashion

FA-204-F

COLOR AND DESIGN CONCEPTS

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

COLOR – Concept and specifications of color, Light and color phenomenon, Additive and Subtractive combinations, Color theories as light theory, pigment/ Brewster color theory. Color wheel – primary, secondary, sub-secondary and tertiary colors, Rainbow colors. Color combination techniques in fabric and garments. Psychological effects of color, Warm and Cool colors. Color harmony. Definition of Color as per C.I.E., Tristimulus value, Hue and Chroma; Color gamut

Section-B

Color combination techniques in fabric and garments. Color contrast in fabric and garments. Application of color combination and harmony in designing of clothing/fabric. Modification of colors as formation of tint, shades and colored grays etc. Color intensity charts. Outline for the movement of colors in fashion with the factors affecting the choice of color. Elements of design of a motif : line, dot, curve, color and texture. Different Types and their applications.

Section-C

Composition of designs Geometric ornamentation, conventional treatment of natural and artificial forms, adoption and reproduction of earlier designs. Construction of symmetrical figures, Reversing inclined figures. Arrangement of figures - unit-repeating design, the drop device, drops reverse designs, sateen system of distribution (with reference to half drop, diamond base, ogee base, rectangular base lines). Construction of designs from incomplete repeat.

Section-D

Study of Pattern: – historical precedents. Symmetry – principle concepts, perspectives and its application, classification of motifs, border patterns, all over patterns, Counterchange motifs, border patterns and all over patterns.

TEXT BOOKS:

1. Watson's Textile Design and color -- Watson
2. Color mixing Bible --Watson – Guptill Publication
3. Color: right from the start --Watson – Guptill Publication

TC-204-F

FABRIC FORMATION (common with TC)

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to warp and weft preparatory processes in relation to production of fabrics with flow charts. Winding : Objectives of winding, Flow of material through a winding machine, different devices of a winding machine viz. yarn clearers, yarn tensioners, waxing device, knotter, splicer, balloon breaker, automatic bobbin replacement. Brief description of Random and Precision winding, assembly winding, rotary motion of drum and traverse motion.

Section-B

Warping: Objectives of warping, Direct and sectional warping: flow of material through these machines, steps of preparation of beam on these machines. Types of creel. Sizing: Objectives of sizing. Brief introduction to Types of sizing viz aqueous and solvent slasher sizing machine, foam sizing, sinter roller sizing, hot melt sizing and single end sizing, Sizing ingredients: adhesives and different categories of additives.

Section-C

Pirn winding and Drawing-in: Objectives and flow of material through these operations. Shuttle Looms: Definition of handloom, plain loom, and automatic loom. Introduction to various mechanisms of a loom viz. primary, secondary and auxiliary motion

Section-D

Shuttleless looms: Classification, Their advantages over shuttle looms. Brief description of Sulzer projectile loom, rapier looms, air-jet looms, water jet looms and their salient features. Fabric Analysis: Simple calculations for fabric weight per unit area, linear weight, cover and cover factors.

TEXT BOOKS:

1. Principles of Weaving -- Marks & Robinson
2. Cotton Yarn weaving -- ATIRA
3. Textile Science -- Corbmann
4. NCUTE's Manual

TT-208-F

FABRIC STRUCTURE (common with TT)

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Basic Concepts: Importance of fabric structure, Classification of fabrics, Notation of Weave, drafting plan, peg plan and denting.

Section-B

Weaves: plain weave and its derivatives, ornamentation, Twill weave and its derivatives, ornamentation, effect of twist on prominence of twill lines, Sateen and Satin and their extensions.

Section-C

Crepe weave, diamond, mockleno, Cork-screw, honey comb, huck-a-back, bedford cords, welt and pique fabrics.

Section-D

Decorative Weaves: Extra warp and weft figuring, Backed cloth, Double cloth, treble and multiply belting structures. Draft, peg plan and denting plan for all simple and decorative weaves, Particulars of common varieties of these fabrics.

TEXT BOOKS:

1. Textile Design and Color -- Watson
2. Watson's Advanced Textile Design -- W Watson
3. Grammer of Textile Design -- H Nisbet
4. Woven Cloth Construction -- Marks and Robinson

MA-202-F

APPLIED NUMERICAL METHODS

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A Interpolation and curve fitting

Interpolation problem, Lagrangian polynomials, Divided differences, Interpolating with a cubic spline, Bezier curves and B-spline curves, Least square approximations.

Section-B Non-Linear & Simultaneous Linear Equations

Bisection method, Linear Interpolation methods, Newton's method, Muller's method, fixed-point method.
Elimination method, Gauss and Gauss-Jordan method, Jacobi's method, Gauss-Seidal method, Relaxation method.

Section-C Numerical Differentiation and Integration

Derivatives from differences tables, higher order derivatives, Extrapolation techniques, Newton-cotes integration formula, Trapezoidal rule, Simpson's rules, Boole's rule and Weddle's rule, Romberg's Integration.

Section-D Numerical Solution of Ordinary & Partial Differential Equations

Numerical Solution of Ordinary Differential Equations : Taylor series method, Euler and modified Euler method, Runge-Kutta methods, Milne's method, Adams-Moulton method, Power method for Eigen values by iteration.

Numerical Solution of Partial Differential Equations : Finite difference approximations of partial derivatives, solution of Laplace equation (Standard 5-point formula only), one-dimensional heat equation (Schmidt method, Crank-Nicolson method, Dufort and Frankel method) and wave equation.

TEXT BOOKS:

1. Applied Numerical Analysis : Curtis F. Gerald and Patrick G. Wheatley-Pearson, Education Ltd.
2. Numerical Method : E. Balagurusamy T.M.H.

REFERENCE BOOKS:

1. Numerical Methods for Scientific and Engg. Computations: M.K. Jain, S.R.K. Iyenger and R.K. Jain-Wiley Eastern Ltd.
2. Introductory Methods of Numerical Analysis S.S. Sastry, P.H.I.
3. Numerical Methods in Engg. & Science : B.S. Grewal.

TC-208-F FABRIC FORMATION PRACTICAL (common with TC)

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Basic principles of woven fabric analysis: estimation of data for cloth reproduction, Identification of yarns and materials used in their construction.

Weave analysis, Sett, Cover factor, Count and weight calculations for simple and compound woven structures, Specifications of standard woven fabric.

Discussion and Demonstration of various machines and of manufacturing processes involved in converting yarns to fabric winding, warping, sizing, Drawing-in, weaving by Hand looms, Plain Looms.

Automatic Shuttle Looms, Shuttleless Looms and Knitting, Passage of material through them and brief study of their essential components and mechanisms.

Simple production and efficiency calculations pertaining to these processes.

FA-210-F

COLOR AND DESIGN PRACTICAL

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Specification of color with hue, value and chroma, color combinations according to pigment theory of color. Arrangement of the primary, secondary and intermediate colors in the Brewster's theory. Color illusions, warm and cool color effects, Modification of pigment color with formation of tint, shades and colored grays etc, Color and gray intensity charts. Types of lines, dots and curves and their effects, To produce floral, geometrical, abstract and border designs. Enlargement and reduction of designs. Simple Weave and color effects. Compound color and weave effects – stripe color and weave effect, Check color and weave effect, Special color and weave effect, figured color and weave effect. Placement of figures and motifs – half drop, double ½ drop, diamond base, ogee base, rectangular, horizontal, vertical etc.

FA-212-F ELEMENTARY GARMENT MANUFACTURING LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Introduction to different aids, tools and equipments for cutting and their applications as well.

Preparation of different types of pattern and pattern layout Selection for different types of needle according to stitching components. Selection procedure for different types of sewing and embroidery threads. Utility of different Aids and tools for Garment Construction, Basting Operation. Study of sewing machineries, Different tools and Work aids, Application of different trims and components. Study of Fusing and pressing machine procedure.

FA-214-F DESIGN IDEAS AND FASHION ILLUSTRATION LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Designing and sketching of different types of fashion details: necklines, sleeves, collars, pockets, yokes, skirts, waistlines, pleats, tucks, plackets etc.

Developing fabric textures like velvet, tie and dye, batik, denim, fur, leather, net, satin, organdie, etc.

Illusion in garments: line, print, color and silhouette

Designing of various garments from the following categories: Children wear, Ladies' wear, Men's wear, Evening wear, Nightwear, Kitchen wear, summer wear, winter wear and party wear, etc.

Advanced designing of the garments based upon innovative/motivational designing e.g. electronics, sports, jewelry, modules, camouflage, etc.

FT-301-F

PROFESSIONAL ETHICS IN ENGINEERING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Engineering Ethics: Senses of 'Engineering Ethics' – Variety of moral issues – Types of inquiry – Moral dilemmas – Moral Autonomy – Kohlberg's theory – Gilligan's theory – Consensus and Controversy – Professions and Professionalism – Professional Ideals and Virtues – Uses of Ethical Theories.

Section-B

Engineering as Social Experimentation: Engineering as Experimentation – Engineers as responsible Experimenters – Research Ethics - Codes of Ethics – Industrial Standards - A Balanced Outlook on Law – The Challenger Case Study.

Section-C

Engineer's Responsibility for Safety: Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis – Reducing Risk – The Government Regulator's Approach to Risk - Chernobyl Case Studies and Bhopal.

Responsibilities and Rights: Collegiality and Loyalty – Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination.

Section-D

Global Issues: Multinational Corporations – Business Ethics - Environmental Ethics – Computer Ethics -Role in Technological Development – Weapons Development – Engineers as Managers– Consulting Engineers – Engineers as Expert Witnesses and Advisors – Honesty –Moral Leadership – Sample Code of Conduct.

TEXT BOOKS:

1. Mike Martin and Roland Schinzinger, "Ethics in Engineering", McGraw Hill, New York, 2005.
2. Charles E Harris, Michael S Pritchard and Michael J Rabins, "Engineering Ethics – Concepts and Cases", Thompson Learning, 2000.

REFERENCE BOOKS:

1. Charles D Fleddermann, "Engineering Ethics", Prentice Hall, New Mexico, 1999.
2. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, 2003
3. Edmund G Seebauer and Robert L Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, 2001.
4. Prof. (Col) P S Bajaj and Dr. Raj Agrawal, "Business Ethics – An Indian Perspective", Biztantra, New Delhi, 2004.
5. David Ermann and Michele S Shauf, "Computers, Ethics and Society", Oxford University Press, (2003)

FT-302-F GARMENT MANUFACTURING TECHNOLOGY - II

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Sewing needles- their type, characteristic and use. **Sewing threads** – fibre types, thread composition, thread finishes, and thread properties and their relationship with needles. Sewing Machine feeding mechanism and sewing machine beds.

Detailed Knowledge on different kind of Stitching machines – Chain, lock, blind, zigzag, button hole, multineedle and multithread Stitching m/c, their mechanism, function and different parts.

Section-B

Principle and utility of the following machine used in garment manufacturing – Bar tacking machine, Over edging m/c, Interlock m/c, Double need high speed m/c, Button attaching and button hole making m/c.

Trims and use of other components : Labels and motif, Lining, Interlining, Wadding, Lace, Braid , Elastic, Hook and loop fastening, Zip Fasteners, Buttons, Shoulder pad, Tuck button, snap fastener etc. Defects and remedies, Care and maintenance of sewing machines.

Section-C

Sewing problems: Problems in stitch formation, problems of pucker, problems of damage to the fabric along the stitches.

Pressing: Need of pressing, Types of pressing, Pressing equipments and methods, Pleating , State of pressing. Garment finishing machines.

Fusing Technology: Requirement of fusing, method of fusing, fusing process.

Section-D

Introduction to Garment Factory: Small and large garment manufacturing firms, Production ,Planning and Control at each and every stages of garment manufacturing from Raw material sourcing ,pattern making , cutting ,stitching to finishing.

Packing: different types of packing, packing materials, labels and tags.

TEXT BOOKS:

1. Apparel Manufacturing hand book — Jacob Solinger.
2. Clothing Technology – R.L. Friend
3. Clothing Technology – Carr & Latham
4. The Technology of Clothing Manufacture – Carr and Latham

FT-303-F

TEXTILE DESIGN BY USING CAD

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Fundamentals of CAD-Definition, Hardware & Software requirement of CAD. Design process, Application and use, Creating the manufacturing Data base & benefits of CAD. Hardware in CAD: Introduction, Design work station, Graphics terminal, input & output devices, central processing unit & secondary storage.

Section-B

Computer graphics software & database: Introduction, Software configuration of a graphic system, function of a graphic package, Extruding, Transformation, Corel draw, Adobe photo shop,

Section-C

Basic drawing techniques: Drawing line, Circle, Rectangle, Arc, Polyline, Ellipse, Elliptical Arc, Polygon, Doubts, Creating point objects, Changing point styles, Free hand sketching, Removing objects, Displacing, Duplicating, Orientation. Principles of woven design creation on computers. Principles & elements of colour, colour selection & application through CAD. Weave simulation, Draping & 3D image on CAD.

Section-D

Operational principles of various tools of CAD software for woven, knitted & Printed design. Principles of CAD for woven design making & developing, use of Anthropometric data for CAD based textile design. Working principle of electronic dobby, electronic jacquard & electronic punching m/c. Concept and procedure of textile design developing CAD software.

TEXT BOOK:

1. CAD/CAM by Groover & Zimmer

FT-304-F

TEXTILE & GARMENT TESTING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to textile testing, moisture in relation to textiles, relative humidity, and absolute humidity, standard testing atmosphere, measurement of moisture content and moisture regain

Section-B

Fibre dimension: Methods of measurement of fibre length, fineness, strength, maturity of cotton, **Yarn dimension :** Yarn linear density-direct and indirect system; Conversion from one system to another, Measurement of yarn count, linear density of plied and cable yarn, Yarn twist – Type of twist and its measurement technique. **Yarn evenness** – Importance of yarn evenness and instrument used for its measurement. Yarn hairiness. ASTM yarn grading.

Section-C

Measurements of different dimensional and Physical properties of Fabrics: - length, width, thickness, weight / area, threads / unit length, crimp, stiffness, crease recovery, drape, fabric cover and fabric handle, shrinkage, air permeability, water permeability, Abrasion and pilling resistance of the fabric, Thermal insulation, flammability.

Section-D

Mechanical properties of Textiles: Measurement of mechanical behavior of textiles; stress- strain curve; Yarn tensile strength and elongation. Fabric strength testing - Tensile strength, Tearing strength. Bursting strength. **Garment Testing:** - Seam strength, Seam slippage, Shrinkage, pulled strength. **Chemical Testing:** - Color fastness to washing, light, rubbing, water etc. shade difference in one color, problem related to embroidery fabric. FAST and KAWABTTA evaluation system for fabric handle.
Eco- parameters requirement for garments.

TEXT BOOKS:

1. Textile Testing by J.E Booth
2. Physical Properties of textiles by Harley & Morton
3. Principle of Textile Testing: J.E. Booth
4. Textile Mathematics, Vol-I, II, III : J. E. Booth
5. Textile Yarn: B. C. Goswami
6. Physical Methods of Investigating Textiles: Meredith and Hearle
7. Finishing of Garments and Knits - NCUTE Publications

FT-305-F

KNITTED FABRIC STRUCTURE

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Knit Stitch, float stitch, Tuck stitch, Symbolic (Graph paper) representation of stitches, Diagrammatic representation of stitches. Patterning mechanism: Pattern wheel, Patterndrum, peg drum machine, punched steel tape, Jacquard punched paper roll Jacquard, Electronic devices for needle selection.

Section-B

Derivatives of plain knit: Design development of single jersey - piques, Accordion type of fabrics, plated fabrics.

Ornamentation of rib structure 2X2 rib structure, half cardigan, Full cardigan, derivatives of Inter lock structures; Eight lock, Punto-di-Roma, Ottoman rib, Bourrelet, TEXI- pique. PIN-JUCK Milano rib, French Pique, Swiss Pique

Section-C

Representation of warp knit structures. Point Paper, Chain-Link Notation, single fabrics: Chain stitch, Tricot lap, Extension of 1 and 1 lapping, Full tricot, Lock Knit, Reverse Lock Knit, satin, Loop raised fabrics, Queen's cord, Sharkskin, Blind lap, open work effects, Marquissette, sand- flair net, Hexagonal net.

Section-D

Study of fleece fabrics, Study of knitted fabrics with Elastomeric yarn – Different combinations for different properties

TEXT BOOKS:

1. Ajgaonkar, D.B, "Knitted Technology", Universal Publishing Corporation, Bombay, 1998.
2. Foster Jack Stroud, Harington Raymond, "Structure & Fabric", Blackwell Science Ltd., 1996.
3. Anbumani, N., Knitting Technology, New Age Publishers 2005.
4. Spencer, D.J., Knitting Technology, pergaruoa Press 2007.

FT-306-F GARMENT PATTERN MAKING AND CONSTRUCTION LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

1. Drafting of different unisex garment (Kids)
2. Style variation of dart manipulation
3. Make samples of sleeves
4. Make samples of different types of skirt
5. Make samples of gathers, tucks, pleats, flares, gored and godet.
6. Ladies top with yoke as a special feature
7. A traditional Indian Garment.
8. Gents Kalidar Kurta
9. Gents Shirt
10. Grade Paper-Pattern to various sizes according to body measurements

Note: At least 5 to 10 more exercises to be given by the teacher concerned.

FT-307-F

TEXTILE & GARMENT TESTING LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

1. To determine the fibre length, yarn count and twist of single and double yarn.
2. To find out the thickness, cover factor and GSM of a given fabric sample.
3. To find the Bending length & Flexural rigidity, Bending Modulus of a given fabric/garment Sample.
4. To find the Air Permeability & Flammability of a given fabric sample.
5. To find the crease recovery, pilling assessment of a given fabric/garment Sample.
6. To find the drape and shade difference of a given fabric sample.
7. To find the abrasion resistance of a fabric.
8. To find the tensile strength and tearing strength of given fabric sample
9. To measure the seam strength and bursting strength of garment.
10. To determine the blend composition of fabrics used for garment.

Note: At least 5 to 10 more exercises to be given by the teacher concerned.

FT-308-F

TEXTILE DESIGN LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Analysis of following cloths in respect to fabric parameter and design with drafting lifting plan:

1. Plain & its derivatives
2. Twill & its derivative
3. Sateen & satin
4. Honey comb,
5. huck- a- back,
6. Muck leno,
7. Bed ford cord,
8. Extra warp and extra weft
9. Pile fabric
10. Back cloth & double cloth

FT-309-F

GARMENT CONSTRUCTION LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

1. To impart knowledge on Garment making
2. To teach the students about types of seams and stitches, sewing threads and their qualities
3. To impart knowledge on various garment parts and their variations.
4. To impart knowledge on use of accessories for garments
5. Step by step construction of Ladies Salwaar
6. Step by step construction of Ladies Kameez
7. Step by step construction of Ladies top (2 sessions)
8. Step by step construction of Ladies Blouse (2 sessions)
9. Step by step construction of Ladies trouser (2 sessions)
10. Step by step construction of Ladies Brassiers
11. Step by step construction of Ladies Panties

Note: At least 5 to 10 more exercises to be given by the teacher concerned.

FT-310-F GARMENT PRODUCTION MACHINES AND EQUIPMENTS

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Cutting Equipment: Cutting Aids, Scissors and Shears.

Section-B

Principle, mechanism and utility of following machines: Bar tacking machine, Over- edging machine, Interlock machine, double needle high-speed machine, Industrial lock stitch machine, Button attaching and buttonhole making machine, Feed-of-the arm machine. Special embroidery machines.

Section-C

Programmable logic circuit (PLC), Robotics, Tension, Needle pressure, Needle temperature measurement on sewing machine.

Section-D

Pressing and Fusing process and equipment.

Handling of garments between different processes

TEXT BOOKS:

1. Knitted Clothing Technology -- Brackenburry
2. The Technology of Clothing Manufacture -- Harold Carr, Barbara Latham
3. Introduction to Clothing Manufacture -- Gerry Cooklin

FT-311-F

FASHION MARKETING & MERCHANDISING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Domestic Vs International Marketing, Challenges for International Marketing, Exploration of Fashion Industry, Marketing and Careers within the industry, Core components, Primary markets, Producers of material, Secondary markets, Design and Production.

Section-B

Present scenario of textile and apparel industry in India. Challenges and prospects of these industries. International Marketing environment, Identifying foreign apparel markets, International marketing mix – PLC model, Pricing decision, Channels of distribution, Promotion mix in International context. Modes of entering foreign market for apparel exports, Merits and demerits of each method.

Section-C

Exports – INCO terms, Export procedure and documentation, export assistance – various schemes, sources of information, export promotion council etc., terms of payment, export finance. Export houses – working of export houses, categories – star trading export house etc.

Section-D

Outsourcing merchandising, visual merchandising. Business process off shoring/Outsourcing, Concept of supply chain management. India's leading Export houses, Trends in apparel industry.

TEXT BOOKS:

1. International Marketing Management -- Varshney and Bhattacharya
2. Nabhi's Publication on Export -- Govt Handbook
3. International Marketing -- Onkvisit & Shaw
4. International Marketing -- Cateora

FT-312-F

GARMENT PROCESSING & FINISHING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Brief study on Machineries for dyeing of Fabric - Jigger, Padding Mangle, Winch, rotary drum, H.T.H.P dyeing, Jet dyeing machine, their functions and uses.

Garment Dyeing: different Garment dyeing method and procedure for knitted and woven garments. Dyeing processes and fastness properties.

Section-B

Garment Printing – study of different method of printing example flat bed printing, screen printing and roller printing. Study of different type of printing used on Garment – Khadi Printing. Foam Printing, Metallic Printing, Fluorescent Printing, Plastizol Printing, High Density printing. Transfer Printing techniques.

Section-C

Garment Finishing – Finishing process for garments made of woven fabric, Process for finishing garment made of denim fabric, Finishing of Knitted Garment, Enzyme Finishing for garments, Garment Finishing machinery. Fire retardant, foam and soil release finish for garment.

Section-D

Functional finishing of garment for specific use- medical application, environ protection, space application, marine application, sports application, defence application etc. **Care of Garment** – Suitable techniques for removal of stains on clothing (due to coffee, tea, curry, blood, oil, ink, mildew, paints, rust, etc. Techniques of Dry cleaning for clothing of different textile fibre, Equipment in laundering. Use of washing machine. Indigenous Laundering agent and their uses.

TEXT BOOKS:

1. Dyeing and Chemical Technology of Textile Fibres E. R. Trotman
2. Technology of Bleaching, V. A. Shenai
3. Technology of Dyeing, V. A. Shenai
4. Finishing of Garments and Knits, NCUTE Publication.
5. Finishing of Garments & Knitwears, NCUTE pilot programme
6. Garment Manufacturing Technology, NCUTE Publication
7. The care of Textile Product, Phyllis G.Torota

FT-313-F

FASHION DESIGNING USING CAD

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Elements of designs and their development using CAD software. Principles of motif generation on computers / motif for border, motif for all over design.

Section-B

Principles & elements of color. Color selection & application through CAD.

Section-C

Different types of layers – Top, Fashion, Model, and Background. Library –Pattern, Fold, Texture, colour, Decoratation.

Section-D

Developing of various dress designs using the software tools

E – Style and Sketch Studio

E – material and colour way studio – colour change, change of pattern, fabric structure etc.

E – Photo and draping studio – changing of textures of existing photos and samples Layout size

TEXT BOOKS:

1. Inside Fashion Design --Kitty G.Dikerson
2. Inside Fashion Business --Kitty G. Dikerson
3. Elements of color & design –Sumathi G.J.

FT-314-F

DYEING OF TEXTILES

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

General methods of dyeing by important classes of dyes on natural, regenerated (Viscose, Polynosic, modal, Loycell) and man-made fibres (Polyester, Nylon, Acrylic and etc.), yarns, fabrics and garments, e.g. direct, acid, basic, vat, azoic, sulphur, reactive and disperse dyes e.t.c., pigment dyeing.

Section-B

Chemical auxiliaries used in dyeing. Colour measurement and fastness (light, washing, perspiration, sublimation, chlorine, etc.) properties.

Section-C

Dyeing of blends, P/C, P/W, P/V etc., Mass colouration.
Study of machinery used in dyeing of Fibre, Yarn, Woven and Knitted fabrics and Garments.

Section-D

Dyeing of denim using Indigo dye, Pigment dyeing technology, factors affecting dyes build-up on cellulosic material, continuous Indigo dyeing range, new indigo vetting and dyeing techniques. Rectifying and Stripping of dyes from substrate,

TEXT BOOKS:

1. Technology of Dyeing -- V A Shenai
2. Dyeing and Chemical Technology of Textile Fibres -- E R Trotman
3. A glimpse of the Chemical Technology of Textile Fibres -- R R Chakraverty

FT-315-F

DYEING & COMPUTER COLOR MATCHING LAB

L T P

0 0 2

Class Work Marks: 50

Exam Marks: 50

Total Marks: 100

Duration of exam: 3 hrs.

Dyeing of cotton, rayon and Flax by direct, reactive, sulfur, vat, azoic dyes. Dyeing of wool and silk by acid, metal complex dyes. Nylon with acid dyes. Carrier, HTHP, Thermosoling dyeing of PET. Dyeing of acrylic with basic dyes. Dyeing of cotton/polyester and Polyester/viscose blend dyeing. After treatment of direct dyes. Rectification and Stripping of dyes. Tie-dyeing. Identification of dyes on substrate. Measurement of fastness properties. Perspiration Light, Washing, Rubbing etc. Measurement of sublimation fastness. Computer colour matching, Familiarization with the principles and working of computer colour matching instrument. Making of database of dyes, shade matching, shade correction, colour difference, measurement, shade sorting,

FT-316-F

FASHION DESIGN LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Developing the basic blocks, marking information on blocks. Adaptations of the basic blocks, Principle of dart manipulation by (i) slash and spread method (ii) pivotal transfer method. Style variations of dart manipulation – pleats, tucks, gathers, dart clusters, radiating darts, terminating darts. Fitting problems and their identification. Commercial paper pattern – symbols used in commercial patterns, envelopes for commercial paper patterns, guide sheet and other relevant information.

FT-317-F

GARMENT CHEMICAL PROCESSING LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

1. Measurement of fastness properties to washing of dyed garments
2. Measurement of fastness properties to light of dyed garments
3. Measurement of fastness properties to rubbing of dyed garments.
4. Printing of fabric using hand block method.
5. Printing of fabric using screen printing method.
6. Garment dyeing by suitable method.
7. Laundering of garments.
8. Drying of garments
9. Finishing of the Garment using various techniques.
10. Measurement of washing fastness of different fabric by launder meter.

FT-318-F

COMMUNICATION SKILLS & SEMINARS

L T P
0 0 2

Class Work Marks: 50
Total Marks: 50

Purpose: To enable a student to be familiar with Communication skills.

Student is expected to learn

- a. How to make a presentation
 - i. Verbal
 - ii. Non Verbal
 - iii. LCD based Power Point
 - b. How to write a report
 - i. Abstract
 - ii. Body
 - iii. Conclusions
 - iv. Executive Summary
 - c. Group Discussion
 - i. Share the work with a group
 - ii. Modularization of the work
 - iii. Shareware Development
 - d. Communication
 - i. Horizontal
 - ii. Vertical
- Students will be given a topic of importance and are expected
 - a. To present the topic verbally in 30 minutes
 - b. To present the topic as a report in 30 pages

FA-403-F

TEXTILE AND FASHION COSTING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

General Cost Concept: Classification of cost (Fixed, Variable, Semi-variable and Total Cost), Cost elements (direct, indirect), planning and storage of materials, pricing and control of materials, computation and control of labour cost, Remuneration and incentives to labour. Over head costs: Classification and accumulation, allocating service department costs, distribution and absorption, marketing and administration, depreciation and miscellaneous.

Section-B

Methods of costing: Single or output costing, job order cost system, introduction to other methods of costing.

Cost control techniques: standard costing, variance analysis (Materials and labour, overheads, sales and marketing). Cost control and cost reduction. Research and development cost: cost of product design, R & D budget, accounting treatment.

Section-C

Costing in textile industry: Cost structure, raw material cost, labour cost and other expenses. Yarn realization, determination of cost per kg of yarn, per meter of fabric. Cost of dyeing/printing per meter fabric. Value loss, selling price decision of fabric. Costing in apparel industry: Raw material cost, labour cost and other expenses. Cost analysis of different garments with example.

Section-D

Dollar Planning and control: Introduction, Responsibilities for a dollar plan, Requirements of a dollar plan, Approach to a dollar plan, Elements of the dollar plan (planned sales, Planned Stock – Stock turnover, Stock/Sales ratio. The relationship between stock turnover and stock/sales ratio). Retail inventory method- Advantages, Applications, The dollar plan in action. Control system, Controls and Fashion consideration.

TEXT BOOKS:

1. Advanced cost accounting -- B.M.L. Nigam, G.L. Sharma
2. Fashion Buying & Merchandising--Sidney Packard
3. Fashion Design & Product Development -- Harold Carr / John Pomeror
4. Costing of apparel -- Michael Jeffry

FA-405-F

AUTOMATION IN GARMENT INDUSTRY

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Automation in the apparel Industry. Automation in the retail industry. Computer integrated manufacturing in the textile industries.

Section-B

Automated material handling. Robotics. Requirement for automation in today's textile manufacturing environment.

Section-C

Quick response & Technology, Evolution of computer integrated manufacturing systems. Emerging technologies,

Section-D

Nature of trade & future of the apparel industry.

TEXT BOOKS:

1. Automation in the textile industry -- G.A. Berkstresser, D.R. Buchanan, P. Grady
2. From fibres to apparel -- D.R. Buchanan , G.A. Berkstresser, P. Grady

FA-409-F

FASHION SELECTION

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Children's Wear: Size categories for children's wear – infants, toddlers, young children and older girls. Selling seasons – Fall/Back to school, Holiday, Cruise/spring and Summer. Common fibres, fabrics, prints and trimmings. Sources of inspiration for children's wear. Designing of some garments.

Section-B

Women's Wear: Tops and Coats – different bodices, use of darts, ease gorges and yokes to design tops, different types of sleeves and placket finishes, knit styling.

Section-C

Women's Wear: Skirts – Basic skirt shapes and their variations, skirt lengths and waistband treatment.

Dresses – Different dress categories like junior dresses, contemporary dresses, Missy dresses. Designing of some women's wear garments

Section-D

Men's wear – Historical development of menswear, menswear manufacturing plant, menswear designer. Sources of inspiration, constructional details in menswear. Designing of menswear.

TEXT BOOKS:

1. Inside Fashion Design --Sharon Lee Tate
2. Inside Fashion Business--Kitty GDickerson

FT-401-F APPAREL PRODUCTION PLANNING & SCHEDULING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to production, Operations, Concept of production, Productivity components of production, Production planning & control, its Objective, function & organization of various departments in apparel industry

Section-B

Production planning order preparation, material planning, process planning, loading & scheduling in apparel industry. Work measurement: Uses of work measurement, data, and basic procedure of work measurement.

Section-C

Motion & Time study: Definition & scope of motion & time study, Data for sewing work study, improvement of production efficiency, Production analysis (qualitative & quantitative).

Section-D

Co-ordination of activities: Layering & marker planning , Cutting room planning, planning of sewing room, Material management in clothing production Quick response in apparel manufacturing . Different production system.

TEXT BOOKS:

1. Introduction to clothing production management -- A.J. Chutter
2. Production management in apparel industry -- Rajesh Bheda

FA-415-F

FASHION DESIGN by CAD LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Introduction to graphical representations – live graphics, pixel graphics. Graphic systems and peripherals. Graphic standards/formats, file conversion initiatives, drawing simple geometric figures. Implementation of various aspects and commands of Corel Draw including 2D and 3D graphic design, other Design Software (Textile and Garments) and drawing objects such as Line, Circle, Arc, Ellipse, Elliptical Arcs, Xlines, Rays, Multiline, Polylines, Rectangles, Polygons, Donuts and Spline etc.

FA-417-F

GARMENT INDUSTRY PRACTICE

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

FT-408-F

SEMINAR

L T P
0 0 2

Class Work Marks: 50
Total Marks: 50

Resume / Report Preparation /Letter writing: Students prepare their own resume and report.

Presentation Skills: Students make presentations on given topics.

Group Discussion: Students participate in group discussions.

Interview Skills: Students participate in Mock interviews.

Note: Classroom sessions are practice sessions.

FA-419-F

MINOR PROJECT

FT-402-F

HOME TEXTILE

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Classification of Textiles: Clothing, Home furnishing and Technical Textiles.

Section-B

Introduction to furnishing fabric: Classification based on end use & application Properties requirement, Raw material used Manufacturing process, product specification, property & performance requirement of the following home textiles

Section-C

Floor and wall covering- carpets, rugs/durries, cushion, pads, wall hanging and decoratives. Home decorative -Draperies, Curtains, Sofa and car sheets, Accessories, process parameter and technique used to produce these fabrics

Section-D

Bed linen-Bed covers, pillow covers, mattress and blanket cover. Kitchen linen: Disc cloth, cheese cloth, hand towel, freeze cover, covers for other appliances such as tea kettle cover, table cloth, kitchen apron, Wipers-woven & non woven wiper

TEXT BOOKS:

1. Textile & Clothing -Garg, Saini, Gupta

FA-411-F

INDIAN BUSINESS ENVIRONMENT

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Nature, Components and Determinants of Indian Business environment. General concept: GNP, GDP, BOT, BOP, Fiscal Policy, Monetary Policy, Fiscal Deficit, etc.

Section-B

New economic policy, EXIM Policy, Economic Reforms – Liberalization, Privatization, Globalization.
Public enterprise reforms and Disinvestments programmes.

Section-C

Financial Institutions and their role.
Concept of Stock exchanges and Role of SEBI.
World Bank and IMF and their impact on Indian Business Environment.

Section-D

WTO – Genesis, Agreement, Rounds, Impact on Indian Business Environment, Indian Business Scenario.
National textile policy and Role of BIFR.

TEXT BOOKS:

1. Indian Economy --TR Jain
2. Economic Environment of Indian Business-- Mishra & Puri
3. Business Environment --Francis Cherunilam
4. International Marketing --Cateora
5. International Marketing-- Onkvisit & Shaw

FA-407-F

COMPUTER AIDED DESIGNING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Fundamentals of CAD: Definition, History , Hardware and Software requirements of CAD, Design Process, Application, Use, Creating the manufacturing Data base and benefits of CAD. Hardware in CAD: Introduction, Design workstation, Graphics terminal, input and output devices, central processing unit and secondary storage.

Section-B

Computer Graphics Software and Database – Introduction, Software configuration of a graphic system, functions of a graphic package, transformations, Database structure and content, wire frame versus solid modeling. CAD features and CAD integration. Drawing aids, free hand sketching, Enhancement drawing. Feature based design process.

Section-C

Introduction to Computer Graphics – What is Computer Graphics, Computer graphics applications, Computer Graphics Hardware and Software. Two dimensional graphics primitives – Point and Lines, Line drawing algorithms: DDA, Bresenham's; Circle drawing algorithms: midpoint circle drawing algorithm, Bresenham's circle drawing algorithm.

Section-D

Introduction to Software Packages: Introduction to Auto-CAD: Features, Basic Drawing Techniques: Drawing Line, Circle, Rectangle, Arc, Polyline, Ellipse, Elliptical Arc, Polygons, Donuts, Corner rounding, Chamfering, Displacing, Duplicating, Removing Objects. Introduction to Corel Draw – Features and basic drawing techniques. Introduction to Photoshop – Features and basic drawing techniques.

TEXT BOOKS:

1. Computer Aided Design & Manufacturing--Mickle P Groover, Emory-- W.Zimmers Jr
2. Computer Graphics Principles & Practices --James D Foley, Andeies Second Edition -- Van Da Shvan K Feiner. John F Hughes
3. Computer Graphics--Donald Mearn & M Pauline Baker
4. Mastering AUTOCAD 2004 & AUTOCAD LT--George Omura

FT-403-F

OPERATIONAL RESEARCH

L T P

3 1 0

Class Work Marks: 50

Exam Marks: 100

Total Marks: 150

Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Linear Programming: Formulation of LP problem: Solution of LP problem by graphical method, simplex method.

Section-B

Transportation problem: Northwest corner rule, inspection method, Vogle Approximation method. Application of optimality test. Inventory Control: ABC analysis; Fixation of inventory level, EOQ (Wilson's Formula), Problems related to above theoretical aspects.

Section-C

PERT / CPM: Drawing of CPM and PERT networks, finding critical path. Project cost control, determining the value of z- variate in the case of PERT networks, S.D, variances etc.

Section-D

Game theory; Rule of Saddle point determination, Rule of dominance, Mixed strategy approach, Graphical Approach, Problems related to above theoretical aspects.

TEXT BOOKS:

1. J. Heizer, B.Render., "Production and Operations Management", Prentice Hall (1993), ISBN: 0-205-14048-3.
2. Hamdy A. Taha, "Operations Research an introduction", Macmillan Publishing Company, New York, Third Edition, 1982.

REFERENCE BBOOKS:

1. Hamdy A. Taha, "An introduction to Operations Research", Macmillan Publishing Company, New York, Fifth Edition, 1996
2. Narayan Bhat U, "Elements of Applied Stochastic processes" John Wiley and Sons, 1972.
3. Frederick S. Hiller and Gerald J. Liberman, "Introduction to Operations Research", McGraw-Hill, Industrial Engineering Series, International edition, 1995

FT-404-F

**COMPUTER AIDED PATTERN MAKING (CAPM) FOR
MEN'S AND WOMEN'S WEAR**

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Selection of software – Flexibility, upgradability, ease of use- Documents etc. the software, selection of hard ware – configuration selection – software compatibility.

Section-B

Simulation techniques, Solid modeling shading –drafting using AutoCAD with special reference to apparel– pattern making laying of material.
Using CAD to identify grain – grain line – notches – true bias – seam allowance- cut mark – pocket mark etc. take body measurements of Men's & Women's garments and create pattern using CAD.

Section-C

Create the surface design techniques using CAD.
Creating patterns with CAD for Men's & Women's Wear, Pattern making – grading – marker efficiency – using CAD. Computer aided colour matching.

Section-D

Solving fitting problems of Men's & Women's garments using CAD. Principles of a good fit; alteration of pattern for defective figures – Develop patterns using CAD for Men's & Women's Wear – Shorts – Trousers Chinoo – Shirts (2 types) SB Coat, DB Coat.

TEXT BOOKS:

1. Gerry Cooklin, "Master Patterns and grading for women's out size", Blackwell Science, 1995.
2. Winifred Aldrich, "Metric Pattern cutting for Men's Wear", Om Book service, 1997.

REFERENCE BOOK:

1. Gerry Cooklin, "Pattern grading for Children's cloths", Blackwell Science, 1996

FA-409-F

FASHION SELECTION

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Division of garment in respect to age group for kids wear- popers, liberty, bodice, waddling set, rompers, dunes, jumper etc. Development and adaption guidelines for basic blocks for kids. various prints used for kids- Nursery prints, baby prints etc.

Section-B

Designing for women's wear- blouse, skirt, trousers, evening wear, knit wear, fabric designing for women in stripes.

Section-C

Designing of men's wear- Shirts, trouser, jacket, waistcoat, over garment, leisure wear, knit wear, fabric designing for men in checks.

Section-D

Fashion selection- selection of fabric, color, design, styles for infant, children, teenager, men, women, in respect to climate, region, culture, religion. . Selection of accessories and furnishing for men and women wear.

TEXT BOOKS:

1. Fabric form and flat pattern cutting- Winifried
2. Fashion source Book - Mikelvey
3. Inside fashion design- Tate
4. Textile and fashion- Mote

FA-402-F

HIGH TECH GARMENTS

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

High Tech Garments – Definition and different types. Brief idea about properties and uses of specialty fibers like Nomex, Kevlar, Glass fiber, components as conductive yarns, shape memory materials, phase change material used in high tech garments.

Protective clothing: General requirement of protective clothing. Chemical protective clothing (CPC) – Areas of use, CPC items for air-born, liquid hazard. Different chemicals used parts of CPC, Performance evaluation – Permeation, Solubility and diffusion theory, Barrier effectiveness, structural integrity.

Section-B

Thermal Protective Clothing - Combustion mechanism, fire governing parameters, Requirements, designing of TPC, Construction, various parameters affecting flame retardancy, Performance evaluation.

Pesticide Protective Clothing – Requirements of protective clothing, different areas, different parts of PPC, Performance evaluation of PPC. Antimicrobial clothing – Requirement, microbiology of skin clothing interface, approach to produce antimicrobial fabrics, performance evaluation. Ballistic Protective clothing – Requirements, principle of mechanism, different fibers and fabrics, soft and hard armor, Factors influencing performance

Section-C

Medical Responsive Garments – Definition, requirements, fibres, classification, working of artificial tandem and alignments, kidney, heart, surgical product, cardiovascular graft, sterilization, wound care. Smart Electronic Clothing – Requirement, different sensor, processing of conductive yarn, implementation level of SOT, superhuman wardrobe, application in defense.

Section-D

Sportswear – Requirement, different fibers used, approaches for manufacture. Breathable **Fashion** – Introduction, principle, classification and use. Moisture management fabric, polar technology, power dryetc. High visibility **Fashion** – Introduction, requirements, material, different classifications, and design features. Smart Colourants – Definition different types and application.. Different parts of space suit. Different parts of space suits.

Different textiles used as packaging material-types and properties

TEXT BOOKS:

1. The Super modern Wardrobe Bolten, Andrew
2. Smart Fibres, Fabrics & Clothing Tao, Xiaoming
3. Protective Clothing System & Material Raheel, Masturaed

FA-404-F

QUALITY ASSURANCE IN FASHION INDUSTRY

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Definition & importance of Quality, Quality Control – Principles of Quality Control, total quality control, statistical quality control, quality circle, quality and profitability, Tools of quality control, Quality control in fusing.

Section-B

Inspection – Definition, inspection, loop, raw material inspection, in-process inspection, final inspection, comparability checks.

Section-C

ISO-9000 series of standards, Quality assurance, TQM, Six Sigma.

Section-D

Care labeling of apparel and textiles – American care labeling system, British care labeling system, and Japanese care labeling system.

TEXT BOOKS:

1. An Introduction to Quality Control for the apparel -- Pradip V Mehta
2. Industry Managing Quality in the Apparel Industry -- Satish Bhardwaj & P V Mehta
3. The Technology of Clothing Manufacture -- Harold Care & Barbaa Latham

FA-406-F

FASHION ACCESSORIES

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Fashion Accessories – definition and classification. Usage of different raw materials as leather, fur, beads, metal etc. Various notion and trims used in fashion accessories.

Leather Accessories: Brief idea about processing of leather, fashion leather terminology, care of leather.

Section-B

Leather Garments: Pattern making, needle and sewing thread specifications and finishing of garments. Leather Footwear: Parts of shoe, brief shoe designing – as last, development last, pattern making, die-manufacturing, cutting, fitting, assemblage of remaining components, bottoming, finishing, caring of footwear.

Handbags and belts: Construction and style of each.

Section-C

Jewellery Designing: Different metals and stones, faceted cuts used for jewellery designing. Brief production tech as fusing, soldering, cutting etc, stone settings, Different jewellery styles as rings, bracelets, necklaces, tiara etc. Different stone setting as buttercup inlay etc.

Section-D

Other accessories:

Glove: Material used component part of glove, glove construction, care of glove.

Hosiery: Materials, Construction, Sizes and Care.

Hats: Construction, care of hats.

Scarves: Construction, Care and styles.

TEXT BOOKS:

1. Know your Fashion Accessories -- Meadows
2. Fashion Apparel & Accessories -- Diamond, Jay & Ellen

FA-414-F

FASHION DRAPING & GRADING LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Illustration for the techniques of draping to get the fault free draped pattern. Practice of draping of basic bodice to the dress-form. Variations in bodices as per the designing details. Draping of basic skirt and hence skirt variations.

Fundamentals & techniques for Grading with the use of size-charts etc. Grading of basic bodices by z-track and 3-track method. Computerized grading on Lectra software.

Practice on software available for draping and grading.

FA-416-F

ADVANCE FASHION CONSTRUCTION LAB

L T P
0 0 2

Class Work Marks: 50
Exam Marks: 50
Total Marks: 100
Duration of exam: 3 hrs.

Practice of pattern making and construction of shirts, pants/trousers and Jackets/Coats. Development of Design of Men's tailored clothing. Making of Flat sketches, Moodboard, Storyboard and Portfolio.

Computerized Apparel Design: Introduction to "Basics of Computer Aided Design for Apparel Design". Usage of different drawing and measuring tools. Basic Block construction and digitization of patterns. Pattern making of different garments, e.g. skirts, jackets through assembly of lines, points, derived pieces, fold etc.

Introduction to Grading techniques. Application of grading system to basic blocks and adaptations.

Introduction to Marker planning and marker making for different garments for maximum fabric utilization.

Introduction to the plotting methods and techniques.

TEXT BOOKS:

1. Inside the Fashion Business -- K G Dickerson
2. Fashion from Concept to Consumer -- G S Fringes
3. Pattern-making for Fashion Design -- H J Armstrong
4. Introduction to Fashion Design

FA-420-F

PROJECT WORK

FA- 410-F CHEMICAL & MECHANICAL FINISHING OF TEXTILES

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to textile finishing. Aim and scope. Classification of finishes. Various mechanical finishes in industrial practices, like drying, conditioning, calendaring, sanfonrising, heat setting, Crabbing, decatizing, milling, peaching, raising and shrink finishing of wool etc.

Section-B

Various chemical finishes like softening, stiffening, delustering of rayon, polyester, and organo finish. Silky finish of polyester. Weighting of silk.

Section-C

Introduction to specialty finishes – finishing of denim fabrics, anti-crease finish, water repellent finish, flame-proof and flame-retardant finish, soil and oil repellent finish, anti-static finish, rot and mildew proofing, antimicrobial, stone wash some other specialty finishes.

Section-D

Machinery involved in these finishes. Methods of evaluation of various finishes on textile materials.

TEXT BOOKS:

1. An Introduction to Textile Finishing -- JT Marsh
2. Textile Auxiliaries & Finishing Chemicals -- AA Vaidya, SS Trivedi
3. Textile Finishing --VA Shenai

FA-412-F ADVANCE FASHION CONSTRUCTION TECHNIQUES

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Production Scheduling, Patterning and cutting procedures, Garment assembly.

Section-B

Pattern making and construction techniques of shirts, pants/trousers and Jackets/Coats, Swimwear, sportswear/Actionwear, Capes or hoods.

Section-C

Development of Men's Ready-to-wear, Design and production procedures of Men's tailored clothing.

Section-D

Presentation techniques – Flat sketches, Mood board, Storyboard, Portfolio.

TEXT BOOKS:

1. Inside the Fashion Business -- K G Dickerson
2. Fashion from Concept to Consumer -- G S Frings
3. Pattern-making for Fashion Design -- H J Armstrong

FT-405-F APPAREL MARKETING AND MERCHANDISING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Scope & potential of apparel product in domestic & International market exploration of fashion industry, marketing & Carriers within the industry, Primary market, producers of material , secondary market, design & production Present scenario of apparel industry in India – challenges & prospects of these industries

Section-B

Foundation of marketing & Merchandising trade causes of growth & benefits of culture, law etc. Instruments of trade policy.

Introduction to retailing, types of retailers & ownership, elements of retail mix, Store organization .Retailing market strategy & benefits of retail marketing ,analysis of area & site selection, layout planning & space allocation. Basic profit factor – The relationship of markup to profit. Retail pricing & repricing Inventory control

Section-C

International marketing environment, identifying foreign apparel markets, International marketing mix- PLC model, pricing decision, channels of distribution. Models of entering foreign market for apparel export, Merits& demerits of each method.

Unit 5. Export procedure & documentation, export assistance- various scheme, sources of information, role of export promotion counseling, terms of payment, export finance.

Section-D

Working of export houses, categories – star trading export house. Out sourcing, apparel merchandising buying, merchandising planning. Visual merchandising, Brand & Brand Building. Business process of off--sourcing / out sourcing. Retailing & promotion of fashion.

TEXT BOOKS:

1. International marketing management – Vasshney & Bhattachary
2. Nabhi's Publication on export- Govt. Handbook
3. International marketing - Cateora

FT-406-F

HOME FASHIONS

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to Home Fashion.

Section-B

Different home fashion fabrics – Table Linens, Bedspreads, Curtains, other draperies.

Section-C

Advanced fabric structures – Brocade, Damask, Gauze, Leno, Upholstery fabrics.

Section-D

Floor Coverings – Carpets (domestic and machine made and rugs).

TEXT BOOKS:

1. Watson's Advanced Textile Design -- Z J Grosicki
2. Textile Fabrics and their Selection, 7th Ed -- Isabel B. Wingate
3. Textile Fabrics & their Selection, 3rd Ed -- Isabel Wingate
4. Fashion & Furnishing International

FT-407-F

GARMENT FINISHING

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Garment dyeing: Fabric and sewing thread selection, accessories selection, dye selection, garment-dyeing machinery.

Section-B

Washing: Stone washing, acid washing, enzyme washing, bio polishing, emerisation, bleaching, laser fading and ozone fading.

Section-C

Finishing: Optical brightening, mercerization, liquid ammonia, treatment, stiffening, softening, crease resistant and crease retentive finish, anti-static finish, anti-bacterial finish, water proofing, flame proofing, soil release finish, mildew and moth proofing.

Section-D

Stain removal – Oil, colour matter, chemicals. Use of care labels and standards / norms for care labels. Garment laundering equipments and procedures.

TEXT BOOKS:

1. Harrison. P (Editor), "Garment Dyeing: Ready to wear fashion from the dye house", The Textile Institute, U.K. 1988) ISBN: 1870812131
2. Noemia D' Souza., "Fabric Care", New Age International (P) Ltd. Publisher, Chennai, 1998, ISBN: 81-224-1143-6.

REFERENCE BOOKS:

1. Marsh, J.T., "An Introduction to Textile Finishing", Chapman and Hall Ltd., London, 1979.
2. Shenai, V.A., "Technology of Textile Finishing", Sevak Publications, Bombay, 1995.
3. Hall, A.J., "Textile Finishing" Elsevier Publishing Co. Ltd., 1986

FA-408-F

RETAILING AND FASHION PROMOTION

L T P
3 1 0

Class Work Marks: 50
Exam Marks: 100
Total Marks: 150
Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to Retailing, types of Retailers and Ownerships. Elements of Retail Mix. Store Organizations. Retailing market strategy and benefits of Retail marketing. Analysis of area and site selection.

Section-B

Departmentalization, Layout planning and space allocation. Basic Profit Factors- the relationship of Markup to Profit. Retail Pricing & re-pricing. Inventory control.

Section-C

Planning and Direction of Fashion advertising and different kinds of Advertising.

Section-D

Scheduling and planning (Public Media, Newspaper, Magazine, radio, Television, Direct mailing, etc.), Retailing and fashion promotion, Co-operative advertising, the advertising department in a retail store, Advertising agencies, Publicity, Special events, Visual presentation (Window, Interior). The buyer's role in promotion.