MAHARSHI DAYANAND UNIVERSITY, ROHTAK
SCHEME OF STUDIES AND EXAMINATION
B.TECH (FASHION & APPAREL ENGG) SEMESTER-III
'F' Scheme w.e.f 2010-11

Course No.	**Course Title**	**Teaching Schedule**				**Marks of Class work**	**Examination**		**Total Marks**	**Duration of Exam**
		L	T	P	Total		Theory	Practical		
TT-201-F	Textile Raw Materials	3	1	-	4	50	100	-	150	3
FA-201-F	Traditional Indian Embroideries & Textiles	3	1	-	4	50	100	-	150	3
TC-203-F	Yarn Formation	3	1	-	4	50	100	-	150	3
FA-207-F	Apparel Production-I	3	1	-	4	50	100	-	150	3
MA-201-F	Applied Statistics & Operations Research	3	1	-	4	50	100	-	150	3
HUM-201-F	Engineering Economics	3	1	-	4	50	100	-	150	3
	Practicals									
TC-209-F	Yarn Formation Practical	-	-	3	3	50	-	50	100	4
FA-205-F	Fashion Sketching	-	-	3	3	50	-	50	100	4
FA-207-F	Traditional Indian Embroideries & Textiles	-	-	2	2	50	-	50	100	4
TT-213-F	Fibre Microscopy & Identification	-	-	2	2	50	-	50	100	4
Total		**18**	**6**	**10**	**34**	**500**	**600**	**200**	**1300**	

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

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

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.

Unit II

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.

Unit III

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.

Unit IV

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.

Reading List

Title	**Author**
Handbook of Textile Fibres	J Gordon Cook
Textile Fibres	HVS Murthy
Manmade Fibres	RW Moncrieff
Manufactured Fibre Technology	V B Gupta & V K Kothari

FA-201-F TRADITIONAL INDIAN EMBROIDERIES AND TEXTILES

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

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

Unit II

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

Unit III

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

Unit IV

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 atleast two samples with machine embroidery techniques

Reading list

Title	Author
Complete Guide to Needle work	Readers Digest
The Dictionary of Needle work	Sophia Cauteild and Blanche Saward
Ethnic embroidery of India	Usha Shrikant
Vandana embroidery	Arora's

Modern embroidery series	
Artistics embroidery designs	Ritu
Folk designs from India	Pradumna and Rosalba Tana

TC-203-F YARN FORMATION (COMMON WITH TC)

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

Introduction to objectives of processes like ginning, mixing and blending.

Introduction to various preparatory processes involved in the production of yarn viz. opening and cleaning (blow room and card), drawing (draw frame), combing (comber) and rove formation (speed frame) with the objectives of each process.

Unit II

Introduction to different processes involved in the production of yarn viz. conventional (ring spinning) and unconventional (rotor, air-jet and friction spinning etc) with the objectives of each.

Properties and end uses of different types of yarns such as ring spun, rotor spun, friction spun and air-jet spun etc.

Unit III

Objectives of plying and twisting of spun and filament yarns.

Objectives and process description of reeling.

Brief description of fancy yarns: ply cable yarn; core spun yarn, sewing threads, slub yarn, grindle, mélange yarns etc.

Unit IV

Essential properties of a sewing thread.

Concept of yarn quality and its importance,
Yarn numbering systems and calculations pertaining to conversions,

Reading list

Title	**Author**
Spun Yarn Technology	Eric Oxtoby
Textile Science	Corbmann
Short Staple Spinning Series	W. Klein

FA-203-F APPAREL PRODUCTION – I

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

Global Textiles and Apparel industry: History and evolution. Indian Textiles and Apparel Industry: History and Evolution .Indian Garment industry vis-à-vis leading countries. Apparel manufacturing countries: their features level of technology, product mix.

Unit II

Cutting: Objectives and methods of cutting; the planning, drawing, and reproduction of the marker, requirement of marker planning, marker plan efficiency, methods of marker planning and use.

Aids and Tool equipment for cutting- Band knife, clamp, click press, electrical cloth notcher, Straight knife cutter, Circular knife, portable rotary knife cutter, Cutting Board, Cutting Table, Drill, Pattern perforator, razor blade, Scissors, Shears, Face to face spreader, Manual spreader, one way spreader, Tubular knit spreader.

Unit III

Understanding of various fabrics and its effect on spreading and cutting techniques in relation to quality and productivity, the spreading of fabric to form a lay, requirement of spreading and different spreading method.

Tracing and marking Terminology - Chalked marking, chalked thread, color coding, pin marking, tailors tacks, thread tracing.

Unit IV

Types of pattern – Commercial pattern, Drafted pattern, Draped pattern, Graded pattern, Production pattern, Trade back pattern

Pattern Lay-out – Border design fabric, check fabric, Diagonal design fabric/ Diagonal print fabric, Diagonal weave fabric, Irregular design fabric, Knit fabric, Large print fabric, Light reflecting fabric, Napped fabric, Balanced plaid, pile fabric, unbalanced plaid, uneven plaid, plastic fabric, Even stripe, Uneven stripe.

Reading List

Title	**Author**
Clothing Technology	Carr and Latham
Apparel Industry Magazine	
World Clothing Manufacturer	

MA-201-F APPLIED STATISTICS AND OPERATIONS RESEARCH

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

Measures of Dispersion: Range, quartile deviation, standard deviation, moments, skewness and Kurtosis (definition, properties and associated numerical only)

Regression and Correlation: Karl Pearson's coefficient of correlation, rank correlation and line's of regression, curve fitting (linear, parabolic, and exponential)

Unit II

Theory of Probability: The concept of probability, additive and multiplicative laws of probability (Statements and associated numerical only)

Probability Distributions: Random variate, mathematical expectation, theorems on expectation, discrete and continuous probability distributions (definition and problems only). Univariate Binomial, Poisson and Normal distribution (properties and applications)

Unit III

Sampling Theory: Population and sample, types of sampling, sampling distribution of means and proportions (definition only)

Tests of Hypothesis and Significance: Definition of statistical hypothesis, null hypothesis, type I and type II errors and level of significance. Tests of significance for large and small samples (discussion) problem based on X^2 test for goodness of fit, t-test, F-test and Analysis of variance (one way and two way classifications)

Unit IV

Operations Research: Linear programming problem (formulation and solution by graphical approach only). Transportation problem including time minimizing problems, Basic Assignment problem, sequencing problems (n jobs, 2 machines and n jobs, m machine problems)

Project scheduling by PERT/CPM: Definition of network, critical path, floats, finding of critical path and floats.

Reading List

Title	**Author**
Mathematical Statistics	Ray and Sharma
Business Statistics	Gupta and Gupta
Theory and problems of probability and Statistics	Murray P Spiegel
Operation Research	P.K. Gupta, Manmohan
Operations Research for Management	Gupta and Sharma
Higher Engineering Mathematics	B.S. Grewal

HUM-201-F ENGINEERING ECONOMICS

(Common to CSE, ME, ECE, BME, EE, EEE, E&I, I&C, IT, CE, TT, FAE,TC)

L	T	P
3	1	-

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

NOTE: Examiner will set 9 questions in total, with two questions from each section and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each section.

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, Monopolistic 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

TC-209-F YARN FORMATION PRACTICAL (COMMON WITH TC)

L	T	P			
-	-	3	Class work	:	50
			Examination	:	50
			Total	:	100
			Exam duration	:	4 hrs

Discussion and demonstration of the various machines and of manufacturing processes involved in converting fibres to yarn viz. mixing, blending, opening, cleaning, carding, drawing, combing, rove formation, spinning, doubling etc.; Introduction to unconventional spinning machines/processes; Rotor spinning, Air-jet spinning and Friction spinning etc.; Simple Calculations pertaining to these machines/processes.

FA-205-F FASHION SKETCHING

L	T	P			
-	-	3	Class work	:	50
			Examination	:	50
			Total	:	100
			Exam duration	:	4 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.

FA-207-F TRADITIONAL INDIAN EMBROIDERIES AND TEXTILES PRACTICAL

L	T	P			
-	-	2	Class work	:	50
			Examination	:	50
			Total	:	100
			Exam duration	:	4 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, colour, thread, stitches and motifs :
UP – Chikankari
Panjab – Phulkari embroidery
Bengal – Kanthas, Baluchar
Kashmir - Kashida, Shawls
Karnataka-Kasuti
Gujrat –Bandhani, Sindh and Kutch Embroidery
Andhra Pradesh – Kalamkari, Pochampali
Orissa – Ikat
Himachal Pradesh – Chamba Rumal

TT-213-F FIBRE MICROSCOPY & IDENTIFICATION (Common with TT/TC)

L	T	P
-	-	2

Class work	:	50
Examination	:	50
Total	:	100
Exam duration	:	4 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.

MAHARSHI DAYANAND UNIVERSITY, ROHTAK
SCHEME OF STUDIES AND EXAMINATION
B.TECH (FASHION & APPAREL ENGG) SEMESTER-IV
'F' Scheme w.e.f 2010-11

Subject Code	**Course Title**	**Teaching Schedule**				**Marks of Class work**	**Examination**		**Total Marks**	**Duration of Exam**
		L	T	P	Total		Theory	Practical		
FA-202-F	Evolution of Clothing & Fashion	3	1	-	4	50	100	-	150	3
FA-204-F	Colour and Design Concepts	3	1	-	4	50	100	-	150	3
TC-204-F	Fabric Formation	3	1	-	4	50	100	-	150	3
TT-208-F	Fabric Structure	3	1	-	4	50	100	-	150	3
FA-206-F	Apparel Merchandising	3	1	-	4	50	100	-	150	3
FA-208-F	Apparel Production-II	3	1	-	4	50	100	-	150	3
	Practicals									
TC-208-F	Fabric Formation Practical	-	-	3	3	50	-	50	100	4
FA-210-F	Colour and Design Lab	-	-	3	3	50	-	50	100	4
FA-212-F	Elementary Garment Manufacturing Lab	-	-	2	2	50	-	50	100	4
FA-214-F	Design Ideas and Fashion Illustration	-	-	2	2	50	-	50	100	4
Total		**18**	**6**	**10**	**34**	**500**	**600**	**200**	**1300**	

FA-202-F EVOLUTION OF CLOTHING AND FASHION

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

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.

Unit II

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.

Unit III

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

Unit IV

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.

Reading List

Title	**Author**
The guide to historic costumes	Karen Baclaw Ski
Inside Fashion Business	Kitty G.Dickerson
Inside Fashion Design	Sharon Lee Tate
Fashion: From Concept to Consumers	Gini Stephon Frings
Understanding today's Fashion	

FA-204-F COLOUR AND DESIGN CONCEPTS

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

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

Unit II

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

Unit III

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.

Unit IV

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 allover patterns.

Reading List

Title	Author
Watson's Textile Design and colour	Watson
Colour mixing Bible	Watson – Guptill Publication
Colour: right from the start	Watson – Guptill Publication

TC-204-F FABRIC FORMATION (common with TC)

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

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.

Unit II

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.

Unit III

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

Unit IV

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.

Reading List

Title	**Author**
Principles of Weaving	Marks & Robinson
Cotton Yarn weaving	ATIRA
Textile Science	Corbmann
NCUTE's Manual	

TT-208-F FABRIC STRUCTURE (common with TT)

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

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

Simple Weaves: plain weave and its derivatives, ornamentation,

Unit II

Twill weave and its derivatives, ornamentation, effect of twist on prominence of twill lines, Sateen and Satin and their extensions. Crepe weave, diamond,

Unit III

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

Unit IV

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.

Reading List

Title	**Author**
Textile Design and Colour	Watson
Watson's Advanced Textile Design	W Watson
Grammer of Textile Design	H Nisbet
Woven Cloth Construction	Marks and Robinson

FA-206-F APPAREL MERCHANDISING

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

Merchandising: Concept and definition. Uniqueness of apparel merchandising. Different components and activities of merchandising–line, planning, line development and line presentation Fashion forecasting and its importance. Factors influencing fashion, Role of a merchandiser in an apparel industry, Essential qualifications of a merchandiser.

Unit II

Concept of retailing and wholesaling. Classification of retailer and wholesaler. Function performed by distribution channel members. Decision making in retailing. Pricing consideration and pricing strategy. Factors affecting pricing strategy. Setting up and changing of price. Terms and definitions used in pricing. Pricing strategy commonly adopted by an apparel merchandiser. Mode of disposition of unsold merchandise.

Unit III

Product line planning. Importance of planning, Different steps involved in product line planning. Different approaches of merchandise planning: Top -Down and Bottom –up, Approach and contemporary line planning. Relative merits and demerits of different approach. Concept and definition of assortment planning. Objective of assortment planning. Importance of balanced assortment. Product line development. Various ways of product line development. Line presentation and its importance in retailing. Visual merchandising.

Unit IV

Budgeting –concept and definition. Importance of budgeting. Various steps involved in budgeting. Dollar And unit control system. Integrating dollar and unit concept. Planning of inventory and reorder point. Cost associated with inventory. Economic order quantity**.**

Reading List

Title	**Author**
Apparel Merchandising	Martin Kunj
Fashion Merchandising and Marketing	Cynthia R. Easterling and Marian H. Jernigan
Fashion: From Concept to Consumer	Gini Stephens Fring
Fashion Buying	Helen Goworek
Fashion Marketing	Tony Hines

FA-208-F APPAREL PRODUCTION-II

L	T	P			
3	1	-	Class work	:	50
			Examination	:	100
			Total	:	150
			Exam duration	:	3 hrs

NOTE: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

Unit I

General introduction and an overview of sewing room operations, History of Sewing, Stages and evolution of Sewing machineries, Components of Sewing machine. Brief description of commercial, specialized Sewing machine for specialized applications in apparel industry, Care and maintenance of Sewing machines.

Unit II

Needles – Types of needles for Textile and Non textile materials, Hand and Sewing machine needles, Metallurgy and Shapes of Needles, Needle cutting Index, Damage to fabric by needle heating. Sewing Threads – Fibre types, thread composition – staple, continuous, core-spun, Thread finishes, Thread packages, Thread Sizing, Thread cost, Thread Properties and Seam Performance.

Unit III

Seam Classifications- Notations and applications, Terminologies – Seam Allowance, Seam Let out, Extended Seam Allowances, Rolled Seam edges. Differentiation between Exposed and enclosed seams, Inside and Outside Curved Seams, Stitched and Fused Seams, Stitched and Glued Seams.

Seam Finishes – Definition and Requirement, Types of Seam Finishes – Book Seam Finish, Net Bound Seam Finish, Single ply bound seam finish, Double stitched seam finish, Glued seam finish, pinked seam finish.

Unit IV

Hand Stitches- Introduction to hand stitches, Different hand stitches – Back stitch, Half back stitch, Modified back stitch, Blanket stitch, Blind stitch, Button hole stitch, Catch stitch, Blind catch stitch, Felling stitch, Overhand stitch, Padding stitch, Pick stitch, Running stitch, Saddle stitch, etc

Machine stitches- Blind stitch, Chain stitch, Double needle machine stitch, Hemi stitch, Lettuce edging, Lock stitch, Zigzag machine stitch, Over edge machine stitch, Purl edging, Picot edging, Safety Stitch, Scallop over edge, Shirring stitch, Elasticised shirring.

Sewing Problems- Damage to fabric along the stitch line, Seam pucker, Problems related to stitch formation.

Reading List

Title	**Author**
Apparel manufacturing handbook	Jacob Solinger
Clothing Technology	R. L. Friend

Clothing Technology Carrand Latham
Apparel Industry magazine
World Clothing Manufacture

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

L	T	P			
-	-	3	Class work	:	50
			Examination	:	50
			Total	:	100
			Exam duration	:	4 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 COLOUR AND DESIGN PRACTICAL

L	T	P			
-	-	3	Class work	:	50
			Examination	:	50
			Total	:	100
			Exam duration	:	4 hrs

Specification of color with hue, value and chroma, color combinations according to pigment theory of colour. Arrangement of the primary, secondary and intermediate colours in the Brewster's theory. Colour illusions , warm and cool colour effects, Modification of pigment colour with formation of tint, shades and coloured grays etc, Colour 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 colour effects. Compound colour and weave effects – stripe colour and weave effect, Check colour and weave effect, Special colour and weave effect, figured colour 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			
-	-	2	Class work	:	50
			Examination	:	50
			Total	:	100
			Exam duration	:	4 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

L	T	P			
-	-	2	Class work	:	50
			Examination	:	50
			Total	:	100
			Exam duration	:	4 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, colour 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.