Department Name: B.Sc (Garment Manufacturing Technology)

Semester – I

APPAREL PRODUCTION TECHNOLOGY-I

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT1L1
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Explain and they would have acquired knowledge on creation of styles, fitting techniques and pattern alteration.
2. Define body measurements and tools.
3. Classify the cutting techniques.
4. Explain about the styles and cutting process.
5. Ability to use industry terminology and equipment in appropriate ways.

APPAREL PRODUCTION TECHNOLOGY-I

Unit	Description	Hours
1	Apparel Industry: Introduction to apparel industry. Organization of apparel industry. Over view of apparel manufacturing technology.	10hrs
2	Pattern Development –Human anatomy, Human figure, types and variations, principles of 8/10 head theory. Anthropometric measurements, vertical, horizontal, circumference. Pattern making tools, & equipments.	12hrs
3	Methods of pattern making (drafting, draping, flat pattern techniques).Preparation of basic Bodice block, front, back, sleeve. Grain Line, Dart manipulation.	10hrs
4	Overview of cutting department- Machineries, fabric spreading, pattern laying, marker preparation, sorting, numbering &bundling, spreading, Types of lay- single ply, multiply, stepped ply.	10hrs
5	Forms of Spreading -One way face to face, two ways. Spreading methods-manual spreading, Spreading carriage, automatic spreading machine. fusing department-methods of fusing, fusing machines.	10hrs

References:

1. Rajesh Bheda “Managing Productivity in the Apparel Industry” CBSPublishers Distributors (2006)
2. Helen Joseph Armstrong “Pattern Making for Fashion Design”,Dorling Kindersley India Pvt.Ltd.(2009)
3. Mary Mathews, “Practical clothing construction” Thomson & co., madras,1974.
4. Jacob Solinger., “Apparel Manufacturing Handbook”, VanNostrandReinhold Company(1980).
5. Herold Carr and Barbara Iatham “The technology of clothing manufacture”, Obookservice1994.

SEWING TECHNOLOGY

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT1L2
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Classify the departments of garment export and tailor units.
2. Construct export garments, in correct sequence of operations.
3. Identify the special attachments in sewing machines.
4. To gain knowledge about stitching mechanism.
5. Ability to demonstrate the operation the industrial specialty machines terminology in the apparel construction process.

SEWING TECHNOLOGY

Unit	Description	Hours
1	Introduction to sewing, history of sewing machines, types of sewing machines, parts and functions.	10hrs
2	Introduction to Garment export departments, Difference between garment industry vs Tailoring units, Layout for Cutting , Sewing And Finishing Departments, Innovation of sewing machines.	12hrs
3	Formation of stitch, stitch types and classification. Introduction to principles of sewing technology, The components of sewing machinery and equipments .	10hrs
4	Introduction to production technology , Types of production process systems with advantages and Disadvantages	10hrs
5	Seams & seam finishes- definition, types of seams and seam finishes and their applications. Sewing machine maintenance, common problems and remedies.	10hrs

References:

1. Jacob So linger., “Apparel ManufacturingHandbook”, VanNostrand Reinhold Company (1980).
2. Herold Carr and Barbara Latham “The technology of clothing Manufacture”,Om book service 1994.
3 Laing R.M. Webster J. “Stitches and seams”, The textileinstitute1998.
4 Shaeffer Clair “Sewing for apparel Industry” Prentice Hall, NewJersey2001.
5 “Apparel Manufacturing Process”,Kunz.

TEXTILE FIBERS AND YARNS

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT1L3
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Identify the textile fibers.
2. Classify yarns and spinning methods
3. Compare to the natural and manmade fibers.
4. Different techniques used in sewing thread manufacturing.
5. Utilize the recent techniques in textile processing.

TEXTILE FIBERS AND YARNS

Unit	Description	Hours
1	Introduction to textiles, Fiber definition, classification of textile fibers- Natural, manmade, regenerated. Characteristics of textile fibers- Identification of textile fibers-Microscopic, Burning, Solubility, Visual.	12hrs
2	Spinning-Definition, Classification of spinning, Opening, cleaning, blending, doubling,Carding, combing, drawing, roving and ring frame.	10hrs
3	Textile Yarns- Definition, classification of yarns- Simple & Fancy yarns, and their applications.	10hrs
4	Yarn properties- Yarn linear density, size, twist in yarn, and twist direction, strength & uniformity, Yarn count.	10hrs
5	Introduction to manufacture of sewing threads – Definition of sewing thread numbering. methods of manufacturing and their properties.	10hrs

References:

1. Cook J. Hand book of Textile fibre, Vo1.1&II Marrow Wat Ford,England
2. Sreenivasamoorthy.H.V. “Introduction to textile fibers”,1987
3. Klien.W.G.”The technology of short staple spinning ‘Textileinstitute Manchester,1988.
4. Shenai V.A., Textile fibres, Sevak Bombay,1980.
5. B.C. Goswamy, “Textileyarn”.

APPAREL PRODUCTION TECHNOLOGY –I Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT1P1
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Define body measurements and tools
2. Ability to manipulate patterns using half scale pattern and create new style.
3. Classify the cutting techniques.
4. Explain about the styles and cutting process.
5. Analyzing the fusing and garment finishing.
6. Apply dart manipulation techniques to design, variation in garment components.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Pattern making tools & equipments. Methods of taking measurements.
2	Drafting of basic bodice block-front, back, sleeve.
3	Dart manipulations- French dart, side seam dart, arm hole, shoulder tip, mid shoulder, Neck dart, center front dart. Pivotal and Slash Spread method.
4	Facing- Armhole, neck, front placket, neck designs.
5	Variation of style lines (any 3)

GARMENT CONSTRUCTION–I Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT1P2
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Explain about the Fundamental components of Garment construction
2. Demonstrate the elements for Garment Decoration such as cuff, collar and piping.
3. Classify about the Garment seams and fullness.
4. Construct various forms of Plackets and Pockets.
5. Explain about the garment manufacturing unit.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Sewing machine- different kinds-functions-uses-attachment-practice on paper, stitching on fabric (straight, curves, corners and circular with back tack)
2	Sketching the Basic sewing machine and parts, threading the single needle lock stitch machine, loading bobbin and bobbin case, fixing and removing the needle, care and maintenance of sewing machines, oiling.
3	Sewing techniques - Basic hand stitches- basting, running, tacking, hand overcast, buttonhole, hemming stitches - plain & blind hemming, hook and eye.
4	Seam & seam finishes- Plain, flat fell, French, , lapped, Bound, edge , pinked, Variations of Tucks, gathers and Pleats.
5	Types of Pocket with Flap Square, Notch, Round, V-Shape. Types of Placket Single, Double, and Continuous.
6	Types of Cuff and Collar Preparation Cuff- Square, Round, Notch, Open collar, Collar with band.
7	Construction of Muslin basic bodice block - test fitting -Front, Back, and Sleeve. Piping- Neck, Armhole.

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Department Name: B.Sc (Garment Manufacturing Technology)

Semester – II

FABRIC FORMATION AND STRUCTURE

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT2L1
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Basic knowledge about handlooms and their parts with fabric production methods
2. Detailed information about power looms and their applications with operations in sequence.
3. Working mechanism of shuttle less loom and their applications.
4. Detailed information about all types of fabric weaves with design, draft, peg plan and uses.
5. Acquire knowledge on parameters for quality control in the preparatory processes and weaving.

FABRIC FORMATION AND STRUCTURE

Unit	Description	Hours
1	Introduction to fabric. Classification of fabric. Preparatory process to weaving. Methods of Fabric formation. Properties of different fabrics.	10hrs
2	Nonwoven- Introduction, types of nonwoven production techniques-spun lace, heat bounded, pulp air'laid,wet laid, melt blown, acupuncture, stitch nonwovens and their application.	12hrs
3	Weft winding, Types of warping. Passage of material through ordinary loom. Basic weaving Concepts, Basic motions of loom-Primary, Secondary & auxiliary motions. Description of dobby, jacquard.	10hrs
4	Classification of looms-Shuttle and shuttle less looms. Study of Rapier, water jet & air jet looms and their features. Comparison of various looms.	12hrs
5	Types of Weaves- Plain, twill & satin their derivatives, Decorative weaves – Ordinary & Brighten honey comb, ordinary honey comb weave ,huck a back. on-wovenfabrics.	10hrs

References:

1. Talukdar M.K "Introduction winding and warping" Bombay privatecircu3lation
2. Ormerod, "Modern preparatution and weavingmachine"
3. Robinson & preparation".Marks "Principles ofweaving"
4. Sengupta "Yarn
5. M.K.Talukdar" Weaving, Machines,Mechanisms,Management.

APPAREL PRODUCTION TECHNOLOGY-II

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT2L2
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Explain about the garment manufacturing unit.
2. Develop knowledge about Spreading, Marking and Cutting techniques.
3. Identify the special attachments in sewing machines.
4. Analyzing the fusing and garment finishing.
5. Develop knowledge on the techniques involved in grading for various sizes of body measurements.
6. Evaluate the techniques involved in pattern alteration for various body measurements and fitting problems.

APPAREL PRODUCTION TECHNOLOGY-II

Unit	Description	Hours
1	Apparel Industry: Grain lines, study of grain lines in fabrics and patterns lengthwise, widthwise bias and selvedges. Grading –Definition, principles of grading, types of grading, even & uneven grading, importance of Grading.	10hrs
2	Marker making- Types of marker making, types of lay plan, marker efficiency, Layout: Principles of layout, laying of different patterns on different types of fabric.	12hrs
3	Introduction to Spec sheet and its importance, creating tech pack. Production department: selection of production system- unit production system, progressive bundle system Conveyor belt System.	10hrs
4	Sleeves-.Definition, terms, classification of sleeves-Cap, puff, petal, lantern, bell, leg-o-mutton, wedding sleeve, bishop sleeve. Sleeve body combination-Kimono, Dolmen, Raglan, Drop Shoulder, Exaggerated armhole.	10hrs
5	Collars-Introduction and classifications- Peter pan, sailor, Mandarin /Chinese collar. Skirts- Introduction , flared skirt, umbrella skirt, gathered/ pleated skirt, godet and tire skirt.	10hrs

References:

1. Rajesh Bheda “Managing Productivity in the Apparel Industry” CBSPublishers & Distributors (2006)
2. Helen Joseph Armstrong “Pattern Making for Fashion Design”,Dorling Kindersley India Pvt.Ltd.(2009)
3. Mary Mathews, “Practical clothing construction” Thomson & co., madras,1974.
4. Jacob Solinger., “Apparel Manufacturing Handbook”, VanNostrandReinhold Company(1980).

Herold Carr and Barbara Iatham“The technology of clothing manufacture”, Om book service1994

ELEMENTS OF FASHION DESIGN

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT2L3
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Adapt elements & principles of design in context to Textiles and Apparels.
2. Choose suitable color dimensions and categories for textiles and apparels.
3. Explain the elements, principles of design.
4. Summarize the dynamics of fashion and the role of fashion designers and fashion forecasting process.
5. Explain to plan wardrobe design dress for different occasions and events.
6. Develop theme boards based on a theme. Create patterns and garment designs deriving inspirations from a theme.
7. Prepare patterns for basic blocks using draping techniques.

ELEMENTS OF FASHION DESIGN

Unit	Description	Hours
1	Introduction to fashion design and concept of fashion designing. Fashion- origin, Elements and principles of design.	12hrs
2	Introduction to fashion house, mass fashion and boutique. Fashion cycle, trends based on climate, age and gender.	10hrs
3	Colour- Definition, dimensions of colour, hue, value and intensity. Colour schemes-its importance & application.	10hrs
4	Draping-Introduction to draping, tools and equipments. Dress forms. Grain, Preparation of muslin for draping, fabric behavior. Principles and techniques of draping.	12hrs
5	Draping of foundation patterns-Bodice(Front and back), Skirts.	10hrs

References:

. 1.Inside fashion design, Sharon Lee Tate, Harper & Rowpublisher.
2. The Costumes and Textiles of India. Jamila BrijBhushar,
3. D.B. Taraporevala sons & co., Bombay.
4. Historic Costume, Lesla. K.T. Chas A bernd andCo.,
5. Draping for Apparel Industry. Helen JosephArmstrong.
6. Draping for fashion design. Hilde Jaffe, NurieRelis.

FABRIC ANALYSIS Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT2P1
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Detailed information about present trend fabrics.
2. Create design, draft and peg plan for different types of weaves.
3. Study of different fabrics characteristics and uses.
4. Study about decorative weaves (Graphical representation of weaves) with quality of fabric.
5. List out the uses of weaves.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Textile fibers-Visual identification of textile fibers. Testing Yarn- Twist ,Count, strength, uniformity of textile fibers, Sewing thread testing-Count, TPI.
2	Collection of fabrics used in apparels- a) Woven- **Plain, Twill, Satin** -Cotton, Silk, Polyester, Nylon. b) Nonwoven- Tea-bag, Fusing, Face clothes, composite, needle punched, napkins etc. c) Knitted – **Plain** -warp knitted, weft knitted, Rib, Interlock. **d)** Braided- Types of laces, Ribbons etc.
3	Analysis of fabric weaves – Design, Draft, Peg plan- Simple weaves for plain, Twill, Satin, Sateen, Rib, Basket, Even twill, Herring bone, Huck-a-back, Denim, Crepe.
4	Analysis of Decorative weaves- Design, Draft, Peg plan – Diamond, Honey comb, Brighten Honey comb, Velvet, Georgette, pile.
5	Calculation of analyzed fabrics- Count, GSM, Tear Strength, Ends/Inch, Pick/Inch, warp crimp%, weft crimp%.

GARMENT CONSTRUCTION–II Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT2P2
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Prepare the construction of sleeves, collar, pocket and Yokes.
2. Prepare garment construction of skirt.
3. To gain knowledge about stitching mechanism.
4. Analyzing the fusing and garment finishing.
5. Evaluate the techniques involved in alteration for fitting problems.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Sleeves-.Definition, construction of- Cap, puff, petal, lantern, bell, leg-o-mutton, wedding sleeve, bishop sleeve.
2	Sleeve body combination-Kimono, Dolmen, Raglan, Drop Shoulder, Exaggerated armhole.
3	Collars-Introduction and construction of - Peter pan, sailor , Mandarin/ Chinese collar.
4	Pockets – Accordion Pocket (book Pocket), welt pocket – single, double with flap.
5	Skirts- Introduction- flared skirt, umbrella skirt, gathered /pleated skirt, godet and tire skirt.

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Department Name: B.Sc (Garment Manufacturing Technology)

Semester – III

APPAREL MACHINERIES AND MAINTENANCE

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT3L1
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Classify the sewing machines.
2. Identify the sewing machine parts.
3. To know the stitch formation and sewing needles.
4. Utilize the recent techniques in RMG industries.

APPAREL MACHINERIES AND MAINTENANCE

Unit	Description	Hours
1	Sewing machine Types – Manual, Semi-automatic and Automatic sewing machines. Construction of Sewing Machine. Function and major Components of sewing machine and their application. Its care and maintenances	10hrs
2	Different types of machine beds-flatbed, raised bed, post bed, cylindrical bed and side bed, Types of belts- Flat belt and v belt….	10hrs
3	Introduction of stitches, stitch types, stitch diagrams or formation, and steps of stitch formation. Sewing machine needles- types – straight and curved, needle points, sizes and uses of needles.	10hrs
4	Transmission of power: circular motion, linear motion, displacement, velocity and acceleration. Determination of displacement and velocity diagram of needle bar and Determination of displacement and acceleration of single needle lock stitch machine.	12hrs
5	Threading, operation and application of over-lock flat-lock, double needle lock stitch, double needle chain stitch,button hole, button attach, bar-tack, zig-zag, feed off the arm sewing machines.	10hrs

References:

1. A.J Chuter "Introduction to clothing productionmanagement" 1988.
2. Jacob Soliner "Apparel manufacturing handbook" 1980.
3. Shaeffer Clair :Sewing for Apparel Industry" Prentice Hall, New Jersey 2001.
4. Sewing machine technicalmanualsM.K.Talukdar" Weaving, Machines,Mechanisms,Management.

ADVANCE PATTERN MAKING –I

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT3L2
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Compare basic measurement for boys and girls to develop children's basic boices.
2. Understand to create new design frocks, school uniforms and baba suit.
3. Identifying the basic charts and to create new designs for children's.
4. Study about fasteners, shirt buttons, zippers, laces, press buttons, hook and eye.
5. Able to understand the most economic layout of pattern pieces on fabric

ADVANCE PATTERN MAKING –I

Unit	Description	Hours
1	Introduction to children's wear, Standard measurement chart for boys and girls. Drafting of children's basic bodies block. Factors influencing fabric selection for infants and children's.	10hrs
2	Definition of infant, toddlers, preschoolers, and children's. Steps involved in designing and drafting of children wear. A-line/summer frock, yoke frock, tank up jumper.	12hrs
3	Introduction and classification-School uniform for boys &girls.	10hrs
4	Designing and drafting of pattern development for children using Specification sheet.	10hrs
5	Fasteners- press buttons, hook & eye, shirt button, button holes, concealed zippers & laces.	10hrs

References:

1. Pattern Making for Fashion Design, Helen Joseph Armstrong, Dorling Kindersley India Pvt. Ltd (2006)
2. Practical clothing construction, Mary Mathews, Thomson & co., madras,1974.
3. Apparel manufacturing Hand book, Jacob Solinger van Nostrand Reinhold Company. (1980).
4. Herold Carr and Barbara Iatham"The technology of clothing manufacture", Om book service1994

TRADITIONAL TEXTILES

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT3L3
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Identifying to know about designs of brocades and weaves of different arterials.
2. Understands about colours, design, costumes and embroideries and stitches.
3. Describe about traditional motifs and their influences on different countries.
4. Examine about costumes of different countries accessories, hairstyles etc.

TRADITIONAL TEXTILES

Unit	Description	Hours
1	**Traditional Textiles-** Traditional textiles of India, Classification, types and uniqueness. Woven-Brocades of Banaras, blauchari, chanderi, tanchoi, kanjivaram, himru,&amru and Dacca muslins,dyed,tie and dye.	12hrs
2	**Historic Costume-** Introduction – origin of clothing costume of India –Traditional costumes, accessories and ornaments.	10hrs
3	**Historic Costume** - Different states of India. Kashmir, Gujarat, Rajasthan, Assam, Manipur, Maharashtra, Karnataka and Kerala.	10hrs
4	Study of traditional motifs of different countries and their influence on Indian textiles.	10hrs
5	Study of traditional costume of – Persian, Mughal, Egyptian, China, Rome, French and America.	10hrs

References:

1. John Gillow & Nicholas"Traditional Indian Textiles" Thames & Hudson1993.
2. Sharon Lee Tate, "Inside fashion design", Harper & Rowpublisher.1977.
3. Lesla. K.T. Chas A bernd and Co., "HistoricCostume" 1975.
4. Dorris Flyn, "Costumes of India", Oxford & IBH publishingco., 1958.

APPAREL MACHINARIES AND MAINTENANCE Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT3P1
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Classify the different sewing machines
2. Identify the stitch formation and threads of sewing machines
3. To know the thread mount and operation of sewing machine
4. Utilize the recent techniques in RMG industries

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Thread mounting & Stitch adjustment of 4 thread Over-lock machine
2	Thread mounting & Stitch adjustment of 5 thread Over-lock machine
3	Thread mounting & Stitch adjustment of 6 thread Over-lock machine
4	Thread mounting & Stitch adjustment of 3 thread Flat-lock (Loop Making) machine
5	Thread mounting & Stitch adjustment of 5 thread Flat-lock machine
6	Thread mounting & Stitch adjustment of Double needle lock stitch machine
7	Thread mounting & Stitch adjustment of 2 needle Chain stitch machine
8	Thread mounting & Stitch adjustment of Electronic Button Holler machine
9	Thread mounting & Stitch adjustment of Electronic Button Attach machine
10	Thread mounting & Stitch adjustment of Electronic Bar-tacker machine
11	Thread mounting & Stitch adjustment of Single needle lock Zig Zag machine

GARMENT CONSTRUCTION–III Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT3P2
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Illustrate different design and styles for children's
2. Compare basic measurement for boys and girls to develop children's basic bodices.
3. Understand to create new design frocks, school uniforms and baba suit.
4. Identifying the basic charts and to create new designs for children's.
5. To understand the most economic layout of pattern pieces on fabric.
6. Study about fasteners, shirt buttons, zippers, laces, press buttons, hook and eye.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Introduction to children's wear, Standard measurement chart for boys and girls.
2	Children's wear for boys and girls. Stitching of . a) A-line/summer frock, b) yoke frock, c) Tank up jumper.
3	Design and construction of School uniform for boys & girls. a) Shirt b) Shorts c) Skirt
4	Design and construction of children wear using Specification sheet any one.
5	Fasteners- press buttons, hook & eye, shirt button, button holes, concealed zippers & laces.

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Department Name: B.Sc (Garment Manufacturing Technology)

Semester – IV

GARMENT PRODUCTION MACHINERY AND EQUIPMENTS

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT4L1
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Classify the cutting machines.
2. Identify the specialization sewing machines and feed mechanism.
3. To know the folders and attachments used in RMG industries.

GARMENT PRODUCTION MACHINERY AND EQUIPMENTS

Unit	Description	Hours
1	Cutting machine- classification and application – Straight, Circular or round knife cutting machine, band knife cutting machine, die cutting machine and automatic cutters.	10hrs
2	Different type of feed mechanism and their application – bottom/drop feed, needle feed, top and bottom feed, and differential feed mechanism.	12hrs
3	Different types of presser foot and their uses, types of fabric guides and their uses. Application of folders and attachments in sewing machines.	10hrs
4	Function of hook sets, types of hook sets: rotary and oscillating hook and uses, Function of loppers – types and uses.	10hrs
5	Threading and operation of embroidery machine, Conversion of design from computer to embroidery on the fabric. And automatic pocket attach machine.	10hrs

References:

1. A.J Chuter “Introduction to clothing productionmanagement” 1988
2. Jacob Soliner “Apparel manufacturing handbook” 1980
3. Shaeffer Clair :Sewing for Apparel Industry” Prentice Hall, New Jersey2001.
4. Sewing machine technicalmanuals.2006
5. Gerry cooklin “Introduction to clothing nmanufacture”1991.
6. Charline Phillips “Sewing machine attachment Handbook”..29 May 2009.

ADVANCE PATTERN MAKING –II

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT4L2
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Illustrate different design and styles for women's wear.
2. Analyze to get knowledge of measurement chart.
3. Explain the knowledge of basic shirt and trousers.
4. To create draft desired idea of one piece garment for women.
5. Creating new design and draft saree blouse and its variations,Salwar, kameez, and lehanga.
6. Construct the garment as per the pattern and drafting procedure.

ADVANCE PATTERN MAKING –II

Unit	Description	Hours
1	Introduction to women's garment - Standard measurement chart for men and women. Characteristics of men and women wear. Introduction to manual and computerized pattern development, mini marker. Software's used for pattern development.	12hrs
2	Handling special fabric- crape fabric, stretch fabrics, knit, checks, velvet, leather, fur &lace.	10hrs
3	Designing and drafting of women wear. Formal wear-Introduction, types of formal wear-Basic shirt and trouser /Skirt.	10hrs
4	Designing and drafting of women wear. Casual wear-Introduction, types of casual wear- Salwar, kameez and its variations.	10hrs
5	Designing and drafting of women wear. Ethnic wear-Introduction, types of ethnic wear- Basic saree blouse and its variations,/Lehanga and crop top.	10hrs

References:

1. Pattern Making for Fashion Design, Helen Joseph Armstrong, Dorling Kindersley India Pvt. Ltd(2006)
2. Practical clothing construction, Mary Mathews, Thomson & co., madras,1974.
3. Apparel manufacturing Hand book, Jacob Solinger van Nostrand Reinhold Company.(1980).

CHEMICAL PROCESSING OF TEXTILES

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT4L3
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Explain the different treatment for all type of fabrics.
2. Get the knowledge of different chemicals and auxiliaries used for wet processing and different machineries used in chemical processing.
3. Gain the knowledge of textile garment finishing techniques.
4. Classification of finishing techniques.

CHEMICAL PROCESSING OF TEXTILES

Unit	Description	Hours
1	Introduction to wet processing. Sequence of wet processing operations for cotton, silk, wool. Classification of textile processing machines	12hrs
2	Preparatory process: Singing and types of singeing. Desizing, types of desizing, Scouring, Bleaching and mercerization. Degumming of Silk.	10hrs
3	Introduction to finishing of textiles. Objects of finishing. Classification of finishing.	10hrs
4	Detailed Study of Temporary finishes-Drying, Sanforising, Calendering & permanent finishes- Durable press, Water proof, fire proof.	10hrs
5	Garment processing and finishing. Special finishes for denim fabric. Care and maintenance of woven fabric.	10hrs

References:

1. Textile Chemistry Vo.I,II and III, R H Peters, Elsewhere Publishing Co. New York. 1980
2. Chemical Technology of fibrous materials, Sadov, MIR Publications,1978.
3. Scouring and Bleaching of Cotton, J.T. Marsh, 1979, B IPublications.
4. Technology of Textile Processing Vo1 I,II,III, V AShenai, 1975, Sevak Publications.
5. Chemical processing of textiles- NCUTEPublication. 1987.

GARMENT PRODUCTION MACHINERY AND EQUIPMENTS Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT4P1
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Classify the specialized machines.
2. Identify the pneumatic machines and attachments uses in sewing machines.
3. To know the about embroidery and zigzag machines.
4. Utilize the recent techniques, attachments and designs in RMG industries.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Thread mounting & Stitch adjustment of 2needle Feed Of The Arm machine
2	Thread mounting, Setting and operating the Auto Zig machine
3	Thread mounting, Setting and operating the Key Holer machine
4	Thread mounting, Setting and operating the Embroidery machine
5	Thread mounting, Setting and operating the waist band attach machine
6	Setting and operating the collar trimming, turning & blocking machine
7	Setting and operating the cuff blocking machine
8	Setting and operating the front placket attachment folder in double needle lock stitch machine
9	Setting and operating the bottom hem folder in single needle lock stitch machine
10	Setting and operating the waist band folder in waist band attach machine
11	Thread mounting Setting and operating of the Automatic pocket attach machine

GARMENT CONSTRUCTION–IV Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT4P2
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Analyze to get knowledge of measurement chart.
2. Explain the knowledge of basic shirt and trousers.
3. To create stitching of desired idea for designer costume for women.
4. Creating new construction of saree blouse and its variations, Salwar, kameez, and lehanga.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Introduction to women's garment - Standard measurement chart for men and women. Characteristics of men and women wear.
2	Designing and construction of women wear. Formal wear-Introduction ,types of formal wear- a) Basic shirt b) trouser /Skirt. Consumption & calculation of fabric, trims and supporting materials, costing of the product.
3	Designing and construction of women wear. Casual wear-Introduction, types of casual wear- a) Salwar, b) kameez and its variations. Consumption & calculation of fabric, trims and supporting materials, costing of the product.
4	Designing and construction of women wear. Ethnic wear-Introduction, types of ethnic wear- a) Basic saree blouse and its variations, b) Lehanga and crop top. Consumption & calculation of fabric, trims and supporting materials, costing of the product.

SEC-1 Retail Management

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24SCGMT4L1
Total Contact Hours: 28	**No. of Credits:** 2
L:T:P 1:1:0	
Internal Assessment Marks: 10	**Duration of SEE:** 1.5*Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Gain knowledge on the fundamentals of retailing
2. Relate the aspects of customer behaviour and retailing
3. Acquire Knowledge on management of merchandise
4. Understand the importance of effective location for retailing
5. Understand the importance of atmospherics and space management of retail outlets
6. Develop skills in retail pricing and strategies in promotional activities.

SEC-1 Retail Management

Unit	Description	Hours
1	Introduction to Retail, Marketing, Management and Merchandising, terminologies Fashion retailing-History, Scope, Importance, Types (Domestic and International) techniques, channel of distribution.	5hrs
2	Marketing – types, four P‘s, fashion promotion advantages, trade shows, exhibitions, fashion shows, market survey and research .	5hrs
3	Merchandising -Types of merchandising, concepts, merchandise planning, sampling-Importance, counter sample.Brand building-Introduction, strategies, image building, brand expansion, global trends.	8hrs
4	Retail merchandiser, concept, quick response, Just –in-Time, merchandiser calendar, trend analysis, forecast analysis, concepts of apparel product line, planning, directing, coordinating and controlling.	5hrs
5	Introduction to customer relationship management, measuring customer relationship management, customer response, satisfaction, loyalty, customer relation and complaint management.	5hrs

References:

1. Lusch and Dunne “ Retail Management” South- Western Publishing, 2002
2. Pradhan, Swapna “ Retailing Management" Tata Mcgraw Hill Publications, 2011
3. Vedamani, Gibson “ Retail Management” Jaico Publications, 2012

4.Rabolt and Judy “Concepts and Cases in RetailandMerchandise Management" Fairchild Publication.

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Department Name: B.Sc (Garment Manufacturing Technology)

Semester – V

FABRIC DYEING AND PRINTING TECHNOLOGY

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5L1
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Detailed information about colouring and printing process of a textile materials.
2. Knowledge about auxiliaries required for printing and dyeing of different fabrics and yarns under various machineries.
3. To introduce students to understand the classification of dyes and their fastness properties for all type of dyes and suitable fabrics.
4. To provide a knowledge of different printing methods and their merits and demerits along with latest technology used in printing.

FABRIC DYEING AND PRINTINGTECHNOLOGY

Unit	Description	Hours
1	Introduction to dyeing process. Introduction to textile printing-An overview of the printing process. Selection of dyes/pigments/auxiliaries to suit the end use and classification of dyes.	10hrs
2	Study of Dyeing machines: Jigger, padding mangle and winch dyeing machines, cheese dyeing, jet dyeing and garment dyeing machines.	12hrs
3	Dyeing of textile material by direct, acid, basic, metal complex, vat, disperse and reactive dyes, fastness, properties of their dyes.	10hrs
4	Introduction to printing process. Printing paste ingredients and preparation styles of printing, direct, discharge and resist printing block screen and roller.	10hrs
5	Printing garment printing machine, flat bed and rotary screen printing, Developments in printing machinery.	10hrs

References:

1. Trotman ER, Dyeing & chemical technology of textile fibres. Charles Griffin co., London,1993.
2. James Ronald, Printing & Dyeing of Fabrics & Plastics, Mahajan book distb, 1996.
3. Shenai V.A, “Introduction to the chemistry of dye stuffs, Sevak pub,Mumbai,1991.

QUALITY CONTROL IN APPAREL INDUSTRY

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5L2
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Understand the concept of quality control.
2. To realize the importance of raw materials, knitted and woven defects.
3. Identify the different tests of yarns, fabric and interlinings, fusing.
4. Understand the symbols of label and washing techniques and care lable.
5. To know the process of seven tools of quality.

QUALITY CONTROL IN APPAREL INDUSTRY

Unit	Description	Hours
1	Definition of quality, quality control, quality assurance, grades & defects. Importance of Quality to meet international export level standards.	10hrs
2	Importance of fabric quality control. Knitted &woven fabric defects. Classification & Analysis. Fabric grading systems- 4 point & 10 point.raw material inspection-in Process inspection. Quality control in cutting room, sewing room, & finishing room, Charts and formats.	10hrs
3	Fabric tests- yarn count & construction, fabric stretch properties, dimensional changes due to laundering, dry cleaning, steaming & pressing. Bowing & skewness. Fabric thickness, Pilling & abrasion resistance. Testing sewing threads, buttons, snap fasteners, zippers & Fusible interlinings.	12hrs
4	Care labeling of apparels & textiles: care labeling of apparel ISO care symbols. Use of Static's in quality control. Introduction to AQL, ISO, TQM & Six sigma. Seven quality tools-process flow chart, cause & effect diagrams.	10hrs
5	Check sheets & histograms, Pareto analysis, scatter diagrams, statical process control chart, and use of these charts in quality management programs.	10hrs

References:

1. Carr and Latham, "Technology of clothing manufacture" 30 March 1994.
2. Pradeep. V. Mehta "Garment qualityconrol" 30 July 1992.
4. Bone. M " Textile quality; physical methods of product and process control.1958.

FABRIC SURFACE EMBELLISHMENT

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5L3
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Basic knowledge of tools and equipments, methods of transferring the design and its care.
2. Classify the basic embroidery stitches.
3. Understanding of different Indian traditional embroideries.
4. Creating new idea on present trending embroidery with unique designs.

FABRIC SURFACE EMBELLISHMENT

Unit	Description	Hours
1	Introduction **to** fabric surface embellishment, tools and materials used in surface embellishment-hand and machine; basic tools and equipment; selection of needle, a thread, and fabric; methods of transferring the design; steps involved in embroidering; care and preservation of embroidery articles.	10hrs
2	Embroidery – Definition, Classification, Methods & Implementation of basic embroidery stitch – Running, back, stem, chain, Lazy daisy, couching, blanket, herringbone, and fish bone.	10hrs
3	Feather- single and double, seed, cross, fly, satin, long and short, french knot, bullion knot, double knot.	10hrs
4	Traditional Indian embroidery- Introduction, History; embroidery of different states of India – Chamba Rumal of Himachal Pradesh, Chikankari of U.P, Kashida of Kashmir, Kutch and kathiwar of Gujarat; Pulkari of Punjab;Tradition back ground cloth, motifs, stitches, threads, colours, technique and articles made.	12hrs
5	Implementation of Patch work, Appliqué, Quilting- tools, material & techniques. Present trend embroideries – Aari work, Zardhosi, cutwork etc.	10hrs

References:

1. Ethnic embroidery of India, Usha srikant, Samata enterprises Mumbai.1998.
2. Indian embroidery- Kamaladevi chartophodhya, Wiley Einsterir Ltd, Delhi.31 March 2006.
3. Traditional Needle Arts, Katrin Cargill, Great Britain publisher. 13 February 1997.
4. Traditional Embroideries of India, Shaylaja. D. Naik, APH Corp, New Delhi 1996.
   Indian Embroidery, Savithri Pandit.

FABRIC DYEING AND PRINTING TECHNOLOGY Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5P1
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Detailed practice of dyeing textile material with different classes of dyes.
2. An overview of complete printing process with suitable ingredients.
3. Preparation of screen for screen printing.
4. Understand the fastness properties of different dyes suitable for different yarns and fabrics.
5. Produce creative printing and dyeing methods by using tie and dye method & stencil printing etc.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Dyeing of cotton yarn/fabric using direct dyes
2	Dyeing of cotton yarn/fabric using reactive dyes
3	Dyeing of cotton yarn/fabric using Vat/Soluble vat dyes
4	Dyeing of silk with acid and basic dyes
5	Dyeing of silk with metal complex dyes
6	Preparation of printing paste using pigment colours
7	Printing practice using hand blocks and screens with various classes of dyes.
8	Preparation of screens for screen printing
9	Resist style (Batik) of printing on fabrics
10	Tie and dye printing

CAD IN APPAREL INDUSTRY-I Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5P2
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Express fashion/ textile ideas through CAD
2. Examine the diversified usage of CAD in fashion/textiles
3. Transform creativity into CAD reality
4. Outline the diversified applications CAD.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Working on Windows. Operating system- Desktop and their components, my computer, Accessing control panel using mouse & key board, Managing documents-working on files & folders.
2	Working on Point –Tolls & menu, drawing & coloring. Working on MS- Office, MS-word, Excel power point tools & menu, printing & saving a document.
3	Corel Draw-Basics, file handling, shapes, lines & curves, colors & fills, working with text, Symbols, clip art.
4	Creation of motifs-Abstract, animated, geometric & floral design- its application on garment.

Elective /Optional

A- APPAREL MARKETING AND MERCHANDISING

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5E1A
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Development of apparel marketing strategies
2. Creating new concepts of the visual merchandising.
3. Evaluate the current new trends in retail marketing.

A- APPAREL MARKETING AND MERCHANDISING

Unit	Description	Hours
1	Marketing: Objectives and strategies. Types of markets- domestic international. Indian apparel marketing environment, consumer behaviour.	10hrs
2	Survey of marketing: Marketing concepts and terminology. Market segmentation. Visual merchandising: Definition and purpose. Brief introduction to colour and texture, line and composition and types of displays and setting.	10hrs
3	Role and Responsibilities of merchandiser, Merchandise buying: Buyers responsibilities and working with merchandising sources, merchandise planning: understanding consumer behavior, Planning and selection of merchandise assortment. Merchandising-Manufacturing interface.	12hrs
4	Apparel retailing: Types of retail operations. Single or multiple unit stores. Organization with in a store. The store image and positioning.	10hrs
5	New trends in retailing- Fashion advertising and publicity.	10hrs

References:

1. Mike Easey “Fashion marketing” 10 October 2008.
2. Tim Jackson and David Shaw “Fashion buying and merchandisingmanagement” 16 November2000.
3. Martin.M. Pegler “Visual merchandising anddisplay” 02 February 2016.
4. Philip Koller “Marketing Management” Analysis, planning, implementationand
5. control.2002.
6. Sharlekar. S.A Salvadore victor. S.J Nirmala Prasad.K “Principles ofmarketing”Delhi. July 1980.
7. Kulkarni, Padhan Patil “Modern Marketing Research” Himalayanpublishing house.2008.

B-BOUTIQUE MANAGEMENT

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5E1B
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Acquire knowledge on creating a business plan
2. Analyze the factors affecting boutique design and development
3. Acquire knowledge on boutique operations management
4. Create new strategies for marketing and promotion
5. Understand the procedure for financial planning and startup formalities
6. Develop project proposal to start a Fashion Boutique

B-BOUTIQUE MANAGEMENT

Unit	Description	Hours
1	Introduction to Boutique management – Roles and responsibilities, Skill sets required to set up a Boutique. Identifying target market and customer.	10hrs
2	Role of private, government, nongovernment agencies and financial institutions in organizing a boutique. Setting up of a boutique- selection and planning for different store layout, cottage and franchise boutique. Customer relationship management, boutique marketing tools and promotion.	10hrs
3	Choice of location and space management – space required, type of building, infrastructure requirement, staffing –selection of generalists and specialists.. Book keeping for boutique and maintaining stock.	10hrs
4	Boutique interior- Visual merchandising and store layout. Setting up of boutique window display, lighting, wallpaper, wall painting, furniture, fixtures and safety measures. Logo making, visiting cards.	12hrs
5	Project finance, cash control and cash flow analysis. Cost accounting- preparation of simple cost sheet, accounting for over heads.	10hrs

References:

1. Stewart B., “Opening Boutique Guide”, Bull City Publishing, 2016.
2. https://www.bizmove.com/starting-business/how-to-start-a-boutique-business.pdf
3. Wright C, “Business Boutique”, Ramsey Press, Tennessee, 2017.
4. https://www.thebalancesmb.com/department-store-mission-statements-4068552
5. https://www.entrepreneur.com/article/38290
6. https://www.smartsheet.com/retail-store-operations
5. https://www.shopkeep.com/blog/promotion-ideas-for-retail-stores.Traditional Needle Arts, Katrin Cargill, Great Britain publisher.
6. Traditional Embroideries of India, Shaylaja. D. Naik, APH Corp, New Delhi 1996.
   Indian Embroidery, Savithri Pandit.

C - CONSUMER BEHAVIOUR

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT5E1C
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. The students will be able to identify the dynamics of human behaviour and the basic factors that influence the consumer's decision process.
2. The students will be able to demonstrate how concepts may be applied to marketing strategy.
3. Students will be able to explore and compare the core theories of consumer behaviour in both consumer and organizational markets.
4. Students will be able to apply and demonstrate theories to real world marketing situations by profiling and identifying marketing segments.
5. Students will be able to appraise models of Consumer Behaviour and determine their relevance to particular marketing situations.

C - CONSUMER BEHAVIOUR

Unit	Description	Hours
1	Introduction to Consumer Behavior; Consumer Behavior and marketing Strategy, Methods of consumer research, Applications of consumer behaviour knowledge in marketing. Contributing disciplines and area like psychology, social psychology, economics, anthropology etc.	12hrs
2	Consumer needs, theories of Motivation and their applications. Process theories and content theories.Personality and self concept. Theories of personality.	10hrs
3	Attitudes and Attitude Change; Concept and measurement of attitudes. Strategies of attitude change, Attribution theory and Cognitive dissonance. Persuasion and persuasibility.	10hrs
4	Self Concept. Concept of Multiple Selves. Development of the self. Image Congruence assumptions. Social Comparison theory . Self-esteem. Body image and body esteem. Fashion, Cosmetics and Conspicuous consumption.	12hrs
5	Family-family life cycle and decision-making. Social Class. The concept and measurement. Mobility among social classes. Prestige products and status. Diffusion of Innovation and Opinion Leadership .	10hrs

References:

1.Assael, H. Consumer Behaviour and marketing Action, Ohio, South Western, 1995
2. Engle, J F etc. Consumer Behaviour, Chicago, Dryden Press, 1993 Electives (Mktg)
3. Howard, John A etc. Consumer Behaviour in marketing Englewood Cliffs, New Jersey, Prentice Hall Inc.1989
4. Hawkins, D I etc. Consumer Behaviour Implications for Marketing Strategy. Texas, Business, 1995
5. Mowen, John C. Consumer Behaviour , New York, MacMillan, 1993
6. Schiffman, L G and Kanuk, L L Consumer Behaviour New Delhi, Prentice Hall of India, 1994

SEC-2 ENTREPRENEURSHIP DEVELOPMENT

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24SCGMT5L2
Total Contact Hours: 28	**No. of Credits:** 2
L:T:P 1:1:0	
Internal Assessment Marks: 10	**Duration of SEE:** 1.5*Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Developing the new business plan.
2. Understand the role and responsibility of entrepreneur.
3. Create the new set up of textile and apparel Industry using government policies.

SEC-2 ENTREPRENEURSHIP DEVELOPMENT

Unit	Description	Hours
1	Introduction to entrepreneurship, development of entrepreneurship, role of entrepreneurs in development of apparel and fashion industry, entrepreneurship with reference to fashion and apparel industry in India.	5hrs
2	Entrepreneurial support by state, central financial institutions, organizations. Government policies with reference to textile and apparel industry.	5hrs
3	Business planning- Starting a new venture related to apparel industry, essentials of a successful centre. Formalities of opening a firm, the status of firm, Individual proprietor/partnership/ Pvt. limited company & public Ltd company, bank formalities, term loan, working capital, project financing.	8hrs
4	Location & plant layout-factors influencing plant location, building, structure, lighting, Ventilation, material handling, availability of labour, material management and transportation. Plant layout, ergonomics safety & security to be considered while planning the layout.	5hrs
5	Industrial sickness and remedies, tax planning, VAT, Patent Rules, Factory Act, Minimum wages, knowledge of exemptions & deductions.	5hrs

References:

1.The dynamics of entrepreneurial dev& management: Vasanth Desai, 6th edition Himalaya publish house.2001.
2. Fundaments of entreprenship – Hnandan. PHI learning Pvt Ltd. 23
3. Entrepreneurship Development & Management : M.B.ShuklaKitasMahal 28 August 2023.
4. Entrepreneurship tool kit : Harward Business School press
5. Entrepreneurship Development : Dr.S.S.KhankaS.Chand& co ltd
6. Entrepreneurship strecticgics resources 3rd edition: Monc.J..Dollinger
7. Fundamentals & Entrepreneurship: 2009: SangramKeshariMohanti PHI learning.

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Department Name: B.Sc (Garment Manufacturing Technology)

Semester – VI

INDUSTRIAL ENGINEERING

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT6L1
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Acquire knowledge of the various industrial engineering methods and tools associated with apparel manufacturing
2. Apply modern industrial engineering methods and scientific solutions to apparel manufacturing towards economic, environmental, and societal context.
3. Practice work measurement, method study and time study, work place engineering and lean manufacturing in the apparel manufacturing industry.
4. Practice operation breakdown, calculating thread consumption and calculate company costing.

INDUSTRIAL ENGINEERING

Unit	Description	Hours
1	Introduction to Industrial Engineering, Productivity: Total productivity, partial factor productivity –definition, productivity measurement methods and levels of productivity measurements.	10hrs
2	Definition and purpose of work measurement basic procedure and techniques of work measurements. Definition of time study, time study equipment and time study forms. Selection of job and steps in making a time study.	10hrs
3	Machine planning- definition, what are the factors affecting the machinery allocation. Machine layout- definition, Basic concept of machine layout, what are the factors affecting machine layout.	10hrs
4	Method study: definition ,basic procedure and selection of work, recording methods, movement of workers and materials, string diagram, workers type flow process chart, multiple activity chart and travel chart ,principles of motion economy and classification of movements, micro motion study and development of improved methods.	12hrs
5	Work study: definition, basic procedure of work study and its advantages. Introduction to incentive systems. Line balancing: Definition, what are the steps taken to have a properly balanced line, what are the factors affecting the line balance.	10hrs

References:

1. Wiley Eastern (P) Ltd., “Industrial engineering manual for textileindustry”1962.
2. Khanna O.P. and Sarup A., “Industrial Engineering andManagement”1 January 2020.

3.M.N. Pal, “Workstudy”Rajesh Beda, “Managing Productivity in ApparelIndustry” 30Aug 2006.

VISUAL MERCHANDISING

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT6L2
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Define and appreciate the significance and role of visual merchandising in a retail environment, in order to effectively present the merchandise to the consumers
2. Classify the various elements of Visual presentation and understand their significance in visually presenting a display
3. Analyze and identify the best suitable environment for merchandise including interior, exterior and point of displays
4. Appraise on various techniques used in presenting merchandise
5. Plan on optimizing the merchandise and retail space to customers
6. Summarize the various features available in a computer controlled visual merchandising.

VISUAL MERCHANDISING

Unit	Description	Hours
1	**FUNDAMENTALS OF VISUAL MERCHANDISING** Visual Merchandising-definition, objectives and scope. Types of display and display settings. Retail stores and approaches of visual merchandising -Types of retail stores, Approaches in Visual Merchandising in various stores-In house staffing, Department Store Approach, Small Store Approach. Role of Visual Merchandising in changing face of retailing.	10hrs
2	**ELEMENTS OF VISUAL PRESENTATION** Overview of the various elements – Color, lighting, line and composition, graphics and signage, store exteriors and interiors, sensory stimulants like scent, sound etc. Application of color schemes and color psychology to create mood in garment display.	10hrs
3	**MANNEQUINS AND FIXTURES** Mannequins and other human forms, alternatives to mannequins. Criteria for selection of fixtures, dressing fixtures, modular fixtures. Store exterior – Signs, Marquees, Outdoor Lighting, Banners, Planters, Awnings, Windows in Storefront Design, store fronts.	12hrs
4	**STORE INTERIORS AND POINTS OF DISPLAY** Focal points, island displays, risers and platforms, the runway the catwalk, counters and display cases, museum cases, demonstration cubes, ledges, shadow boxes, enclosed displays, fascia, t-walls. Point of purchase display, industrial disp lay, fashion shows, trade organizations and sources.	10hrs

5	**DISPLAY TECHNIQUES , STORE PLANNING AND EXECUTION OF A VISUAL PRESENTATION** , Floor plans and reading of floor plans – Plan-o-gram- definition, purpose and planning -theme, ensemble, racks, shelves, bins, etc. Assortment planning- Assortment planning, Optimize apparel assortments Display calendar and planning a display, scheduling the promotion, budgeting and safety factors in visual merchandising.	10hrs

References:

1. Pegler M.M., "Visual Merchandising and Display", IV Edition, Fair child Publications,NewYork,2001.
2. Diamond.J,Diamond,E.,"ContemporaryVisualMerchandising", Prentice
3. HallInc.NewJersey2003.
4. Diamond.E,FashionRetailing–AMultichannelApproach,IIEdition,Prentice HallInc.NewJersey2006.
5. RathP.M.,PetersonJ., Greensley.P, Gill.P, Introduction to Fashion Merchandising,DelmarPublishersInc.,NewYork1994.

6.CurtisE,FashionRetail,JohnWileyandSonsLtd,England,2004.

KNITTING TECHNOLOGY

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT6L3
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 4:0:0	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Complete information about the knitting from the history to new inventions in knitting technology.
2. Study of knitting elements helps to understand the complete cycle of knitting at different stages sequentially.
3. Recognize the structure and properties and in warp knitting
4. Study of types of knitting production technology and threads suitable for it.
5. Recognize the Latest developments in warp knitting.

KNITTING TECHNOLOGY

Unit	Description	Hours
1	Knitting- Definition, history.Classification of knitting. Comparison of woven & knitted fabrics. Types of knitting- Hand & machine, characteristics of knitted goods.	10hrs
2	General terms & principles of knitting technology, basic knitting elements, Knitting cycle of Beard needle& latch needle, comparisons between Latch and Beard.	10hrs
3	Study of Characteristics knitted structures -plain, jersey, rib, and interlock. Types of threading, production mechanism in circular Knitting.	10hrs
4	Properties essential for weft knitted fabrics and warp knitted fabrics. Study of warp knitted structures: working mechanism of Tricot and Rachel knitting machines.	12hrs
5	Care & maintenance of knitted materials & precautions during washing of knitted goods. Methods of maintenance.	10hrs

References:

1. David J Spencer, "Knitting Technology"Pergamon Press, 1985,New-York.
2. Ajgaonkar, Universal Publishing company, "Knitting Technology"Bombay 1998.
3. Ferry Bracken Berry "Knitted ClothingTechnology. 1992.

CAD IN APPAREL INDUSTRY-II Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT6P1
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Develop Computer aided pattern drafting for different apparels.
2. Develop the skill of grading various apparel patterns using CAD.
3. Create and manipulate efficient marker plans.
4. Construct specification sheets for garments as per requirements.
5. Estimate the fabric consumption.
6. Develop cut order plan.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	CAD-Basic pattern making terms editing notch parameters, tables and rule tables. Procedures for digitizing pattern preparation creating and developing the T-Shirts and Ladies top, Using standard measurements.
2	Working on grading –Tools components ,working on marker making – creating pattern and layout for shirt and trousers using standard measurements
3	Digitizing and ploting.
4	Working on Photoshop-Editing the pictures, Textile Design in CAD.

GARMENT CONSTRUCTION-V Lab

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24MJGMT6P2
Total Contact Hours: 52	**No. of Credits:** 2
L:T:P 0:0:4	
Internal Assessment Marks: 10	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 40	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. Able to understand the socio-economic cultural factors that contribute to the expansion of the men's wear.
2. To co-relate textile properties like fabric construction, texture and design with garment.
3. To be able to design and adopt according to market requirements and latest trends.
4. Analyze to get knowledge of measurement chart using specification sheet.
5. Explain the knowledge of basic shirt and trousers.
6. Creating new construction of Sherwani and Dhoti and jeans jacket.
7. Able to incorporate appropriate construction and finishing techniques.

List of Experiments / Programs (For a Lab Course)

Sl.No	Experiment / Program
1	Introduction to men wear-Characteristics of men wear. Drafting and construction of formal wear- a) Shirt b) Trouser for men using specification sheet, component drawing, consumption & calculation of fabric, trims and supporting materials, costing of the product.
2	Drafting and construction of casual wear - jeans jacket for men using specification sheet, component drawing, consumption & calculation of fabric, trims and supporting materials, costing of the product.
3	Drafting and construction of Ethnic wear - a) Sherwani b) Dhoti for men using specification sheet, component drawing, consumption & calculation of fabric, trims and supporting materials, costing of the product.

SEC-3 -Project Work

Course Title: B.Sc (Garment Manufacturing Technology)	**Course Code:** 24SCGMT6L3
Total Contact Hours: 52	**No. of Credits:** 4
L:T:P 0:0:4	
Internal Assessment Marks: 20	**Duration of SEE:** 3 Hours
Semester End Exam Marks: 80	

Course Outcomes (COs):

At the end of the course, students will be able to:

1. For Project work, should stitch a designer garment with present trend.
2. Report making as per Guide instruction.
3. Market servey is required according to the topic.

SEC-3 -Project Work

List of Experiments / Programs

Sl.No	Experiment / Program
1	Selection of topic for the project work is based on the interest of the student in consultation with project guide from any one of the core subjects.
2	Contents of the project work may include of the following sub-sections. a) Introduction b) Review of Literature c) Research design and Methodology d) Results and discussion e) Summary and conclusion f) Bibliography g) Annexure
3	Content of the project work is subjected to variation according to the requirements of the project work/ Domain subject.

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