

B.SC (GMT) VI Semester

DSC16-INDUSTRIAL ENGINEERING

Course Title INDUSTRIAL ENGINEERING	Course code: 21BSC6C16GML
Total Contact Hours: 52	Course Credits: 4
Internal Assessment Marks: 40	Duration of SEE: 2
Semester End Examination Marks: 60	

Course Outcomes (CO's):

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.

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

1. Contribute to the success of companies through effective problem solving.
2. To gain Knowledge of effective design development and implements.
3. Improve integrated systems that include people, materials, information, equipment and environments.
4. To get success of companies through right quality and quantity and right delivery.

DSC16-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.	11hrs
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.	11hrs
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.	10hrs
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”
2. Khanna O.P. and Sarup A., “Industrial Engineering andManagement”
3. M.N. Pal, “Workstudy”Rajesh Beda, “Managing Productivity in ApparelIndustry”

Date

Course Coordinator

Subject Committee Chairperson

DSC17-ENTREPRENEURSHIP DEVELOPMENT

Course Title: ENTREPRENEURSHIP DEVELOPMENT	Course code:21BSC6C17GML
Total Contact Hours: 52	Course Credits: 4
Internal Assessment Marks: 40	Duration of SEE: 2
Semester End Examination Marks: 60	

Course Outcomes (CO's):

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.

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

1. To develop entrepreneurship skills among the students. To familiarize the students with the process and procedure of setting up new enterprises.
2. To study the business planning
3. To study about the factory acts.

DSC17-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.	10hrs
2	Entrepreneurial support by state, central financial institutions, organizations. Government policies with reference to textile and apparel industry.	10hrs
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.	11hrs
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.	11hrs
5	Industrial sickness and remedies, tax planning, VAT, Patent Rules, Factory Act, Minimum wages, knowledge of exemptions & deductions.	10hrs

References:

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

Date

Course Coordinator

Subject Committee Chairperson

DSC18-KNITTINGTECHNOLOGY

Course Title KNITTINGTECHNOLOGY	Course code:21BSC6C18GML
Total Contact Hours:52	Course Credits: 4
Internal Assessment Marks: 40	Duration of SEE: 2
Semester End Examination Marks: 60	

Course Outcomes (CO's):

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.

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

1. To study the history and invention of knitting machines and comparison of woven and knits, hand and machine knitting
2. To study the general terms and principles of knitting technology, types of needles and knitting cycles of all needles.
3. To know the characteristics of weft knitted structures and warp knitted classification, types of thread used for knitting.
4. To describe the methods of circular, tricot knitting machines.
5. To study the care and maintenance of knitted material.

DSC18-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.	11hrs
4	Properties essential for weft knitted fabrics and warp knitted fabrics. Study of warp knitted structures: working mechanism of Tricot and Rachel knitting machines.	11hrs
5	Care & maintenance of knitted materials & precautions during washing of knitted goods. Methods of maintenance.	10hrs
References:		
<ol style="list-style-type: none"> 1. David J Spencer, "Knitting Technology"Pergamon Press, 1985,New-York. 2. Ajaonkar, Universal Publishing company, "Knitting Technology"Bombay 1998. 3. Ferry Bracken Berry "Knitter ClothingTechnology. 		

Date

Course Coordinator

Subject Committee Chairperson

DSC16P-CAD IN APPAREL INDUSTRY-II Lab

Course Title: CAD IN APPAREL INDUSTRY-II Lab	Course code: 21BSC6C16GMP
Total Contact Hours:56	Course Credits: 2
Internal Assessment Marks: 25	Duration of SEE: 3
Semester End Examination Marks: 25	

Course Outcomes (CO's):

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.

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

1. To understand the fundamentals and principle of CAD
2. To improved practical knowledge in CAD
3. To gain the practical knowledge in PDS , Grading and Marker Making.
4. To gain the practical knowledge in Digitizing and Ploting.

List of Experiments

Practical -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.
Practical -2
Working on grading –Tools components ,working on marker making – creating pattern and layout for shirt and trousers using standard measurements
Practical -3
Digitizing and plotting.
Practical – 4
Working on Photoshop-Editing the pictures, Textile Design in CAD.

Date

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DSC17P-GARMENT CONSTRUCTION-V Lab

Course Title: GARMENT CONSTRUCTION-V Lab	Course code: 21BSC6C17GMP
Total Contact Hours:56	Course Credits: 2
Internal Assessment Marks: 25	Duration of SEE: 3
Semester End Examination Marks: 25	

Course Outcomes (CO's):

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.

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

1. To familiarize with growing men's wear market with special reference to local, national brands.
2. To understand the usage of appropriate textile materials for the development of men's wear.
3. To gain knowledge of standard measurement charts for men.
4. To develop types of formal wear and its construction.
5. To design construction of casual wear and style lines.
6. To design construction of ethnic wear like Sherwani and Dhoti and jeans jacket.
7. To develop the skill for creating a men's wear collection.

List of Experiments

Practical -1
Introduction to men wear-Characteristics of men wear. Drafting and construction of formal wear- shirt and trouser for men using specification sheet, component drawing, consumption & calculation of fabric, trims and supporting materials, costing of the product.
Practical -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.
Practical -3
Drafting and construction of Ethnic wear - Sherwani and Dhoti for men using specification sheet, component drawing, consumption & calculation of fabric, trims and supporting materials, costing of the product.

Date

Course Coordinator

Subject Committee Chairperson

DSE-E-2- A- APPAREL RETAIL MANAGEMENT

Course Title: APPAREL RETAIL MANAGEMENT	Course code: 21BSC6E2GMLA
Total Contact Hours:42	Course Credits: 3
Internal Assessment Marks: 40	Duration of SEE:3
Semester End Examination Marks: 60	

Course Outcomes (CO's):

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.

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

1. To enable acquire knowledge of the different principles and frameworks that form the foundation of the retail industry
2. To interpret and analyze strategic planning of Fashion retailers.

DSE-E-2- A -APPAREL 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.	9hrs
2	Marketing – types, four P's, fashion promotion advantages, trade shows, exhibitions, fashion shows, market survey and research .	8hrs
3	Merchandising -Types of merchandising, concepts, merchandise planning, sampling-Importance, counter sample. Brand building-Introduction, strategies, image building, brand expansion, global trends.	9hrs
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.	8hrs
5	Introduction to customer relationship management, measuring customer relationship management, customer response, satisfaction, loyalty, customer relation and complaint management.	8hrs

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
Rabolt and Judy “Concepts and Cases in RetailandMerchandise Management" Fairchild Publications, 1997

Date

Course Coordinator

Subject Committee Chairperson

DSE-E-2- B- TOTAL QUALITY MANAGEMENT

Course Title: TOTAL QUALITY MANAGEMENT	Course code: 21BSC6E2GMLB
Total Contact Hours:42	Course Credits: 3
Internal Assessment Marks: 40	Duration of SEE:3
Semester End Examination Marks: 60	

Course Outcomes (CO's):

1. Execute the six sigma features in TQM
2. Development of Statistical Process in Industry
3. Maintain the ISO quality Standards.

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

1. To Study the Evolution of quality and concept.
2. To know the TQM Tools
3. To study six sigma
4. To understand Statistical process.

DSE-E-2- B -TOTAL QUALITY MANAGEMENT

Unit	Description	Hours
1	Introduction- Evolution of quality, Definition, Concept and Features of TQM.	8hrs
2	TQM tools- Benchmarking: Definition, concepts, benefits, elements, reasons for benchmarking, process of benchmarking, FMEA, Quality Function Deployment (QFD)- House of Quality, QFD Process, Benefits, Taguchi Quality Loss Function, Total Productive Maintenance (TPM)- Concept and need.	9hrs
3	Six Sigma- Features of six sigma, Goals of six sigma, DMAIC, Six Sigma implementation.	8hrs
4	Statistical Process Control- Central Tendency, The seven tools of quality, Normal curve, Control charts, Process Capability.	9hrs
5	Quality Systems- ISO 9000, ISO 9000:2000, ISO 14000, other quality systems.	8hrs

References:

1. James R Evans and William M Lindsay “ The Management and Control of Quality” Sixth Edition.
2. Oakland J S “TQM-Text with Cases” Third Edition.
3. Suganthi L and Anand Samuel “ Total Quality Management”
4. Janakiraman B and Gopal R K “ Total Quality Management-Text and Cases”

Date

Course Coordinator

Subject Committee Chairperson

V-2 -VISUAL MERCHANDISING

Course Title: VISUAL MERCHANDISING	Course code: 21BSC6V2GML
Total Contact Hours:42	Course Credits: 3
Internal Assessment Marks: 40	Duration of SEE:3
Semester End Examination Marks: 60	

Course Outcomes (CO's):

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.

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

1. To know the objectives of visual Merchandising
2. Overview of the visual various elements
3. To know the display techniques.
4. To know the execution of the visual presentation.

V-2 -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.	9hrs
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 moodingarment display.	8hrs
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.	8hrs
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 display, fashion shows, trade organizations and sources.	8hrs

5	<p>DISPLAY TECHNIQUES , STORE PLANNING AND EXECUTION OF A VISUAL PRESENTATION</p> <p>, 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.</p>	9hrs
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References:

1. Pegler M.M., “Visual Merchandising and Display”, IV Edition, Fair child Publications, New York, 2001.
2. Diamond J., Diamond E., “Contemporary Visual Merchandising”, Prentice Hall Inc. New Jersey 2003.
3. Diamond E., Fashion Retailing – A Multichannel Approach, II Edition, Prentice Hall Inc. New Jersey 2006.
4. Rath P.M., Peterson J., Greensley P., Gill P., Introduction to Fashion Merchandising, Delmar Publishers Inc., New York 1994.
5. Curtis E., Fashion Retail, John Wiley and Sons Ltd, England, 2004.

Date

Course Coordinator

Subject Committee Chairperson