

# Biju Patnaik University of Technology, Orissa

## Fashion Technology

3 <sup>rd</sup> Semester			4 <sup>th</sup> Semester		
Theory	Credit Hrs	Credit	Theory	Credit Hrs	Credit
BSCM1205 Mathematics -III	3-1-0	4	BSCM1210 Mathematics - IV	3-1-0	4
BSCC1212 Polymer Chemistry and Fiber Science	3-0-0	3	PCFT4203 Elements of Design & Colour.	3-0-0	3
PCFT4201 Elements of Fashion.	3-0-0	3	PCFT4204 Fabric Manufacture	3-0-0	3
PCFT4202 Yarn Manufacture	3-0-0	3	PCFT4205 GarmentManufacturing Technology-I	3-0-0	3
BECS2212 C++ & Object Oriented Programming	3-0-0	3	BECS2208 Database Management System.	3-0-0	3
HSSM3204 EngineeringEconomics & costing OR	3-0-0	3	HSSM3205 Organization Behavior OR	3-0-0	3
HSSM3205 Organisation Behaviour			HSSM3204 Engg. Economics & costing		
Credits (Theory)		<b>19</b>	Credits (Theory)		<b>19</b>
Practical					
BECS7212 C++ & Object Oriented Programming Lab	0-0-3	2	BECS7208Database Management System Lab	0-0-3	2
PCFT7202 Yarn Manufacture Lab.	0-0-3	2	PCFT7203 Basic Design Concept Lab.	0-0-3	2
PCFT7206 Fashion Illustration Lab.	0-0-3	2	PCFT7204Fabric Manufacture Lab	0-0-3	2
HSSM7203 Communication and Interpersonal Skills for Corporate Readiness Lab	0-0-3	2	PCFT7205Garment Pattern Making & Garment Construction Lab-1	0-0-3	2
Credits (Practicals / Sessionals)		<b>8</b>	Credits (Practicals / Sessionals)		<b>8</b>
		<b>27</b>			<b>27</b>

# BSCM1205 **Mathematics - III**

## **Module-I**

**(18 hours)**

Partial differential equation of first order, Linear partial differential equation, Non-linear partial differential equation, Homogenous and non-homogeneous partial differential equation with constant co-efficient, Cauchy type, Monge's method, Second order partial differential equation

The vibrating string, the wave equation and its solution, the heat equation and its solution, Two dimensional wave equation and its solution, Laplace equation in polar, cylindrical and spherical coordinates, potential.

## **Module-II**

**(12 hours)**

Complex Analysis:

Analytic function, Cauchy-Riemann equations, Laplace equation, Conformal mapping,

Complex integration: Line integral in the complex plane, Cauchy's integral theorem, Cauchy's integral formula, Derivatives of analytic functions

## **Module –III**

**(10 hours)**

Power Series, Taylor's series, Laurent's series, Singularities and zeros, Residue integration method, evaluation of real integrals.

### **Text books:**

1. E. Kreyszig," Advanced Engineering Mathematics:, Eighth Edition, Wiley India  
Reading Chapters: 11,12(except 12.10),13,14,15
2. B.V. Ramana, " Higher Engineering Mathematics", McGraw Hill Education,  
2008  
Reading chapter: 18

### **Reference books:**

1. E.B. Saff, A.D.Snider, " Fundamental of Complex Analysis", Third Edition,  
Pearson Education, New Delhi
2. P. V. O'Neil, "Advanced Engineering Mathematics", CENGAGE Learning,  
New Delhi

# BSCC1212 **Polymer Chemistry & Fiber Science**

## **Module-I**

( 12 hours )

Introduction to polymers, Classification of polymers, Chemistry of polymerization-condensation polymerization & addition polymerization, polymerization technique, bulk, solution, and emulsion polymerization with special reference to textile & clothing material. Molecular weight- weight average molecular, number average molecular weight, molecular weight and degree of polymerization, polydispersity and molecular weight, size of polymer molecule, geometrical structure of polymer molecules. Polymer degradation.

## **Module – II**

(12 hours )

Classifications of Textile Fibers according to their nature and origin. Characteristics of good textile fiber, essential and desirable properties of apparel grade textile fibers & technical grade textile fibers

Natural Fibres :- (Vegetable fibers )

Seed Fibres : Cotton - Cultivation and harvesting practices, Grading, morphological structure, physical and chemical properties and its applications.

Bast Fibres : Jute - Cultivation and Harvesting, Retting, Scutching, woollenisation of jute, structure of jute fibre, Physical & Chemical properties of jute fibre, applications of jute fibre.

Short description about other bast fibres - Hemp, flax, ramie, linen fibre , their Physical & Chemical properties and applications.

Leaf fibres - pineapple fibres, their properties & applications.

Natural Fibres :- (Protein Fibres )

Silk : Sericulture, Type of Silk fibers, Pre and post cocoon operation Degumming, Reeling, morphological structure of silk fiber etc. Physical and chemical properties of the silk fiber.

Wool : Wool - types of wool, grading of wool, morphological structure of wool fiber, physical & chemical properties of wool fiber and its application.

## **Module – III**

(12 hours)

### **Production Process of Man made fibers.**

Cellulose base fibers: Out line of the manufacturing of viscose rayon ,Polynosic , high weight modulus fiber, Cupramonium rayon, acetate and triacetate fiber,

Synthetic base Fiber: Out line of the manufacturing process of filament and Staple fiber with special reference to polyester, polyamide, poly propylene and acrylic fiber. Basic principles and need for drawing and heat setting for synthetic fibers.

Short description of high-tech fibers like Kevlar, nomex, carbon, glass, etc.

Textured Yarn Technology :- Importance of texturing. Brief description about different processes in textured yarn technology.

### **Reference Books :**

1. Textile Fibre, V. A. Shenai
2. Introduction to Textile Fibres, H. V. Sreenivas Moorthy
3. Dyeing & Chemical Technology of Textile Fibres, E. R. Trotman
4. Introduction to textiles, M. Joseph
5. Fibre Science and Tecnology, S.P.Mishra
6. Polymer Chemistry by Dr. S.K Mishra
- 7- Polymer Chemistry by V.R Gowariker, Viswanathan and sreedhar
- 8- Manmade fiber Technology by V.A.Shenai
- 9- Manmade fiber by A.K.Vaidy

# PCFT4201 **Elements of Fashion**

## **Module-I**

**(12hrs)**

Origin of fashion, Origin of clothing, Fashion language, Philosophy of design, Nature of fashion .Elements of fashion, Terminology of fashion: style, design, taste, classic, fad. Component of fashion: Silhouette, Texture, Details. Study of leading fashion designers; French, Italian, American, Indian. Costumes of ancient civilization; Egypt, Roman, French. Fashion trends,

## **Module-II**

**(10 hrs)**

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

## **Module-III**

**(13 hrs)**

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

## **Reference Books:**

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

# PCFT4202 Yarn Manufacture

## Module I

(16 hours)

### Cotton Ginning & mixing:

Objects of ginning, study of different ginning machines.

Objects of Mixing, general consideration for preparation of cotton mixing, scientific bale management, Methods of mixing and blending.

**Blow Room:** Principal action in opening and cleaning.. Study of various openers & cleaners like Mixing bale opener, unifloc, blendomat, monocylinder, axiflow cleaner, uniclean, CVT, etc. Measuring of opening and cleaning efficiency of different opener and cleaner. Comparison of lap forming unit and chute feed mechanism. Process parameters of Blow Room, Waste control in Blow Room.

**Carding:** Objects of Carding. Constructional Features of Carding Machine. Principles of carding & stripping actions, Study of different parts and function of a Carding Machine.. Mechanical and Actual draft. Card waste –types and control.. Defects in card Sliver and their causes and remedies. Production calculation. Study of the function of Auto leveler in Card.

**Draw Frame:** Objects of Drawing. Principles of doubling and drafting. Study of different parts and function of high speed Draw Frame Machine.. Design and principle of Auto leveler. Quality and Process parameters of Draw Frame department and its evaluation.

**Speed frame:** Objects of speedframe. Study of different parts and function of a modern speed frame machine. principles of drafting, twisting and winding in speed frame, Mechanism of package formation, process parameter and maintenance schedule.

**Combing:** Objects of Comber. Preparatory processes (of lap preparation for comber Machine. Mechanism of combing operation (Combing Cycle Process parameters & evaluation.

## Module-II

(12hours)

Ring spinning: Objects of ring spinning, Study of different parts and function, Principles of drafting, twisting, winding and mechanism of package formation, Common defects in ring spun yarn causes and remedies.

Post spinning: Objects of doubling, working principle and process parameters of ring doublers, TFO, dry and wet doubling, twist in doubled yarn, working principle of reeling Machine

## Module-III

(10hours)

New spinning system: Production process in rotor, air jet, friction spinning machines. Structure and properties of these yarns,

Study of different types of yarn: (ply, core spun, sewing thread, Slub, and melange yarn)

## Reference Books:

1. Manual Cotton Spinning-Vol.to 5, Textile Institute
2. A practical Guide to Opening & cleaning, W. Klien  
Draw frame, Speed frame & Comber, Ring Spinning ( All parts)
3. The Institute of Technology, Szalowski USE series on Textile Processing
4. Recent Advances in Spinning Technology, Salhotra
5. Spun Yarn Technology, Oxtoby

# BECS2212 C++ & Object Oriented Programming

## Module I

(08 hrs)

Introduction to object oriented programming, user defined types, structures, unions, polymorphism, encapsulation. Getting started with C++ syntax, data-type, variables, strings, functions, default values in functions, recursion, namespaces, operators, flow control, arrays and pointers.

## Module II

(16 hrs)

Abstraction mechanism: Classes, private, public, constructors, destructors, member data, member functions, inline function, friend functions, static members, and references.

Inheritance: Class hierarchy, derived classes, single inheritance, multiple, multilevel, hybrid inheritance, role of virtual base class, constructor and destructor execution, base initialization using derived class constructors.

Polymorphism: Binding, Static binding, Dynamic binding, Static polymorphism: Function Overloading, Ambiguity in function overloading, Dynamic polymorphism: Base class pointer, object slicing, late binding, method overriding with virtual functions, pure virtual functions, abstract classes.

Operator Overloading: This pointer, applications of this pointer, Operator function, member and non member operator function, operator overloading, I/O operators.

Exception handling: Try, throw, and catch, exceptions and derived classes, function exception declaration.

## Module III

(08 hrs)

Dynamic memory management, new and delete operators, object copying, copy constructor, assignment operator, virtual destructor.

Template: template classes, template functions.

Namespaces: user defined namespaces, namespaces provided by library.

## Text Books:

1. Object Oriented Programming with C++ - E. Balagurusamy, McGraw-Hill Education (India)
2. ANSI and Turbo C++ - Ashoke N. Kamthane, Pearson Education

## Reference Books:

1. Big C++ - Wiley India
2. C++: The Complete Reference- Schildt, McGraw-Hill Education (India)
3. "C++ and Object Oriented Programming" – Jana, PHI Learning.
4. "Object Oriented Programming with C++" - Rajiv Sahay, Oxford
5. Mastering C++ - Venugopal, McGraw-Hill Education (India)
6. "Object Oriented Programming with C++", David Parsons, Cengage Learning.

# HSSM3204 **Engineering Economics & Costing**

## **Module-I: (12 hours)**

Engineering Economics – Nature and scope, General concepts on micro & macro economics. The Theory of demand, Demand function, Law of demand and its exceptions, Elasticity of demand, Law of supply and elasticity of supply. Determination of equilibrium price under perfect competition (**Simple numerical problems to be solved**). Theory of production, Law of variable proportion, Law of returns to scale.

## **Module-II: (12 hours)**

Time value of money – Simple and compound interest, Cash flow diagram, Principle of economic equivalence. Evaluation of engineering projects – Present worth method, Future worth method, Annual worth method, internal rate of return method, Cost-benefit analysis in public projects. Depreciation policy, Depreciation of capital assets, Causes of depreciation, Straight line method and declining balance method.

## **Module-III: (12 hours)**

Cost concepts, Elements of costs, Preparation of cost sheet, Segregation of costs into fixed and variable costs. Break-even analysis-Linear approach. (Simple numerical problems to be solved)

Banking: Meaning and functions of commercial banks; functions of Reserve Bank of India. Overview of Indian Financial system.

### **Text Books:**

1. Riggs, Bedworth and Randhwa, “Engineering Economics”, McGraw Hill Education India.
2. D.M. Mithani, Principles of Economics. Himalaya Publishing House

### **Reference Books :**

1. Sasmita Mishra, “Engineering Economics & Costing “, PHI
2. Sullivan and Wicks, “ Engineering Economy”, Pearson
3. R.Paneer Seelvan, “ Engineering Economics”, PHI
4. Gupta, “ Managerial Economics”, TMH
5. Lal and Srivastav, “ Cost Accounting”, TMH

# HSSM 3205 **Organizational Behaviour**

## **Module I :**

The study of Organizational Behaviour : Definition and Meaning, Why Study OB  
Learning – Nature of Learning, How Learning occurs, Learning and OB.  
Foundations of Individual Behaviour : Personality – Meaning and Definition, Determinants of Personality, Personality Traits, Personality and OB.  
Perception – Meaning and Definition, Perceptual Process, Importance of Perception in OB.  
Motivation – Nature and Importance, Herzberg’s Two Factor Theory, Maslow’s Need Hierarchy Theory, Alderfer’s ERG Theory, Evaluations.

## **Module II :**

Organizational Behaviour Process : Communication – Importance, Types, Gateways and Barriers to Communication, Communication as a tool for improving Interpersonal Effectiveness, Groups in Organizations – Nature, Types, Why do people join groups, Group Cohesiveness and Group Decision-making Managerial Implications, Effective Team Building. Leadership-Leadership & Management, Theories of Leadership-Trait theory, Leader Behaviour theory, Contingency Theory, Leadership and Follower ship, How to be an effective Leader, Conflict-Nature of Conflict and Conflict Resolution. An Introduction to Transactional Analysis (TA).

## **Module-III :**

Organization : Organizational Culture – Meaning and Definition, Culture and Organizational Effectiveness. Introduction to Human Resource Management-Selection, Orientation, Training and Development, Performance Appraisal, Incentives Organizational Change – Importance of Change, Planned Change and OB techniques. International Organisational Behaviour – Trends in International Business, Cultural Differences and Similarities, Individual and Interpersonal Behaviour in Global Perspective.

## **Text Books :**

1. Keith Davis, Organisational Behaviour, McGraw-Hill.
2. K.Aswathappa, Organisational Behaviour, Himalaya Publishing House.

## **Reference Books :**

1. Stephen P. Robbins, Organisational Behaviour, Prentice Hall of India
2. Pradip N. Khandelwal, Organizational Behaviour, McGraw-Hill, New Delhi.
3. Uma Sekaran, “Organizational Behaviour”, TATA McGraw-Hill, New Delhi.
4. Steven L McShane, Mary Ann Von Glinow, Radha R Sharma” Organizational Behaviour” , TATA McGraw- Hill.
5. D.K. Bhattachayya, “Organizational Behaviour”, Oxford University Press
6. K.B.L.Srivastava & A.K.Samantaray, “Organizational Behaviour” India Tech
7. Kavita Singh, “Organizational Behaviour”, Pearson

## BECS7212 **C++ & Object Oriented Programming Lab**

1. Programs on concept of classes and objects.(1 class)
2. Programs using inheritance.(1 class)
3. Programs using static polymorphism.(1 class)
4. Programs on dynamic polymorphism.(1 class)
5. Programs on operator overloading.(1 class)
6. Programs on dynamic memory management using new, delete operators.(1 class)
7. Programs on copy constructor and usage of assignment operator.(1 class)
8. Programs on exception handling .(1 class)
9. Programs on generic programming using template function & template class.(1 class)
10. Programs on file handling.(1 class)

## PCFT7202 **Yarn Manufacture Lab.** (0-0-3)

1. Study of flow of materials in a Blow room line.
2. Study of flow of material in a Carding Machine. Various parts of the machine and functions.
3. Study of the different parts of the Draw Frame and the Flow of materials in the machine.
4. Study of the different parts of Speed Frame.
5. Study of the different parts of Ring Frame and the Flow of materials in the machine.
6. Study of the different parts of a Rotor spinning Frame and the Flow of materials in the machine.
7. Study of Flow of materials and different parts of a Ring doublers.
8. Study of Reeling, Bundling and Bailing Machine.

## PCFT7206 **Fashion Illustration Lab.** (0-0-3)

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

# HSSM7203 **Communication & Interpersonal skills for Corporate Readiness Lab.**

**Lab**

**30 hours**

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

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

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

## BSCM1210 Mathematics – IV

### Module-I

(20 hours)

#### Numerical methods:

Approximation and round of errors, Truncation error and Taylor's series

Roots of equation: The bisection method, the false-position method, fixed point iteration, the Newton-Raphson method, Muller's method

Linear algebraic equation: LU decomposition, the matrix inverse, Gauss-Seidel method

Interpolation: Newton divided difference interpolation, Lagrange Interpolation, Newton's forward and backward interpolation.

Numerical integration: The trapezoidal rule, The Simpson's rules, Gauss quadrature

Ordinary differential equation: Euler's method, Improvement of Euler's method, Runge-Kutta methods

### Module-II

(10 Hours)

#### Probability:

Probability, Random variables, Probability distributions, Mean and variance of distribution, Binomial, Poisson and Hypergeometric distributions, Normal distribution, Distribution of several random variables.

### Module-III

(10 Hours)

#### Mathematical Statistics:

Random sampling, Estimation of Parameters, Confidence Intervals, Testing of hypothesis, Acceptance sampling, Chi square test for goodness of fit, Regression Analysis, Fitting Straight Lines, Correlation analysis.

#### Text books:

1. S. C. Chapra and R. P. Canale, "*Numerical methods for Engineers*", Fifth Edition, McGraw Hill Education  
Reading Chapters : 2, 3(3.1, 3.2), 4(4.2, 4.3), 5(5.1, 5.2, 5.3), 6(6.4), 9(9.1, 9.2), 10(10.2), 13(13.1,13.2,13.5), 16(16.1, 16.2), 17(17.3), 20(20.1, 20.2, 20.3)
2. E. Kreyszig, "Advanced Engineering Mathematics", Eighth Edition, Wiley India  
Reading Chapters: 22, 23( except 23.5 and 23.8)

#### Reference books:

1. Jay L. Devore, "Probability and Statistics for Engineering and Sciences", Seventh Edition, Thomson/CENGAGE Learning India Pvt. Ltd
2. P. V.O'Neil, "Advanced Engineering Mathematics", CENGAGE Learning, New Delhi

# PCFT4203 **Elements of Design and Colour**

## **Module-I**

( 12 hours )

### **1. Elements of an Art and Principles of Design:**

Basic concept of Line, Direction, Shape, Size, Texture Value, Colour.

Repetition, Alternation, Harmony, Gradation, Contrast, Dominance and subordination, Unity, Balance.

### **2. Study of different types of motifs: - Natural Motif, Decorative Motif, Geometric Motif, Abstract Motif.**

## **Module-II**

( 12 hours )

### **3. Colour Theory :**

Definition of colour theories, Light Theory of colour, Chromatic Circle, Pigment Theory of Colour, Colour Wheel, Colour schemes- triad, mono chromatic, achromatic, polychromatic, analogous, Complementary Colour schemes . Attributes of Primary and Secondary Colours. Psychological effect of Colour; warm & cool colour. Rainbow colour

### **4. Colour Modification and Colour Harmony:**

**Modification of colour as a formation of tints, shades & colour greys**

High Key, Low Key and Mid Key.

Change in Hue, Change in value, Neutralized Colour or coloured grey.

Achromatic Harmony, Monochromatic Harmony, Analogues Harmony,

Complementary Harmony, Polychromatic Harmony.

## **Module-III**

( 8 hours )

### **5. Methods of Composing Textile Design :**

All Over Repeating Design, Half Drop, Diamond, Ogee base, Waved Line, Rectangular Drop Reverse, Sateen.

### **6. Application of Colour to woven and printed textiles. Factors influencing the Appearance and Ornamentation of Fabrics with reference to raw-material, weave and finish.**

## **Reference Books:**

1. WATSONS Textile Design and Colour, Gosciki Z. J.
2. Inside Fashion Design, Sharon Lee Tats
3. Pattern Design, Lewis F. day
4. Colour Harmony, Bride N. Whelan, Rockport Publishers.
5. The Costumes and Textiles of India, Jamila Brij Bhusan
6. Soamn, Jullian, 'Professional Fashion illustration' B.T. Batslord, London 1995
7. Drake, Nicholas, 'Fashion illustration today' Thamesis Hudson. London Publication

# PCFT4204 **Fabric Manufacture**

## **Module – I**

**(12 hours)**

### **Yarn Preparation:**

**Winding** - Objects of warp and weft winding, types of winding (precession and non precession), types of winding defects and their remedies, path of yarn in a modern winding machine.

**Warping** - Objects of warping, types of warping (Direct and Sectional types), path of yarn in a modern warping machine,

**Sizing** - Objects of sizing, sizing ingredients and their function, preparation of sizing paste, path of yarn in a slasher sizing machine.

**Drawing in** - Objects drawing and denting Method of drawing in, knotting gating.

## **Module-II**

**(15 hours)**

General Loom elements and mechanism. Primary Motions - Shedding, types of shedding mechanism, tappet shedding mechanism, timing of shedding, healed staggering, reversing motions. Picking, types of picking mechanism, over and under picking mechanism and their Comparison. Shuttle checking. Beating up mechanism, Function of reed, types of reed and reed count.

## **Module-III**

**(12 hours)**

Secondary and Auxiliary Motions in loom: Take up motion, working of the (5 wheel, 7 wheel and continuous) take up motion, Basic concepts of the let off motion, working of the let off motion,. Warp protector mechanisms (loose and Fast Reed Types), Principle and working of side weft fork, mechanical warp stop and electrical warp stop motion.

Fancy Fabric Formation: Functions of Dobby, Types of Dobby, Function of Jacquard, Drop Box Mechanism, Working of cow burn and pecks drop box motion. Production calculations related to a weaving machine, Different types of fabric defects their causes and remedies.

**Shuttle Less Weaving Machines-** Brief idea about Gripper, Rapiers, Air Jet and Water Jet Weaving Machines.

### **Book for Reference:**

1. An introduction to Warping and Winding- Dr.M.K.Talukdar
2. Industrial Practice in Yarn Winding- NCUTE
3. Sizing : Material,Method & Machine – D.B.Ajgaonkar
4. Weaving Mechanism – N.N.Banerjee
5. Weaving Mechanism – Robinson & Marks
6. Modern Preparation and Weaving machine – A.Ormerod.
7. Weaving Calculation - Sengupta

# PCFT4205 **Garment Manufacturing Technology - I**

## **Module-I**

**(14 hours)**

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

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

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

## **Module-II**

**(12 hours)**

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

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

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

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

## **Module-III :**

**(12 hours)**

**Basic Sewing techniques:**

**Stitch definition, classification & designation**

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

**Machine Stitches –** Chain stitch, Blind stitch, Lock stitch, Zigzag stitch, Over edge machine stitch, Safety stitch, Lettuce edging, Shirring stitch

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

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

**Seam finishing –** different methods.

## **Books for References:**

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

# BECS2208 Database Management System

## **Module I :** **(10 hours)**

Database System Architecture - Data Abstraction, Data Independence, Data Definitions and Data Manipulation Languages. Data models - Entity Relationship(ER), Mapping ER Model to Relational Model, Network .Relational and Object Oriented Data Models, Integrity Constraints and Data Manipulation Operations.

## **Module II :** **(12 hours)**

Relation Query Languages, Relational Algebra and Relational Calculus, SQL.

Relational Database Design: Domain and Data dependency, Armstrong's Axioms, Normal Forms, Dependency Preservation, Lossless design.

Query Processing Strategy.

## **Module III:** **(10 hours)**

Transaction processing: Recovery and Concurrency Control. Locking and Timestamp based Schedulers.

Database Recovery System: Types of Data Base failure & Types of Database Recovery, Recovery techniques

### **Text Books:**

1. Database System Concepts by Sudarshan, Korth (McGraw-Hill Education )
2. Fundamentals of Database System By Elmasari & Navathe- Pearson Education

### **References Books:**

- (1) An introduction to Database System – Bipin Desai, Galgotia Publications
- (2) Database System: concept, Design & Application by S.K.Singh (Pearson Education)
- (3) Database management system by leon &leon (Vikas publishing House).
- (4) Fundamentals of Database Management System – Gillenson, Wiley India
- (5) Database Modeling and Design: Logical Design by Toby J. Teorey, Sam S. Lightstone, and Tom Nadeau, “”, 4<sup>th</sup> Edition, 2005, Elsevier India Publications, New Delhi

## BECS7208 **Database Managements System Lab**

1. Use of SQL syntax: insertion, deletion, join, updation using SQL. (1 class)
2. Programs on join statements and SQL queries including where clause. (1 class)
3. Programs on procedures and functions. (1 class)
4. Programs on database triggers. (1 class)
5. Programs on packages. (1 class)
6. Programs on data recovery using check point technique. (1 class)
7. Concurrency control problem using lock operations. (1 class)
8. Programs on ODBC using either VB or VC++. (1 class)
9. Programs on JDBC. (1 class)
10. Programs on embedded SQL using C / C++ as host language. (1 class)

## PCFT7203 **Basic Design Concept Lab**

(Colour and Design)

1. To develop some design using basic concept of line, shape and texture through gradation, repetition, proportion and emphasis.
2. To develop design using different type of motifs (Natural Motif, Decorative Motif, Geometric Motif, Abstract Motif).
3. To produce floral, geometrical abstract and boarder design. Enlargement and deduction of design.
4. To develop Colour mixtures according to pigment theory of colour and show arrangement of the primary, secondary and intermediate Colour.
5. To develop Colour mixture according to light theory of Colour with primary, secondary and intermediate Colour.
6. To develop Colour modification using change in hue, change in value (tints and shades) and coloured grey.
7. To produce monochromatic contrast and to produce polychromatic contrast.
8. To study composition of design / motif using the followings:-  
All over unit repeat, half drop, diamond base, ogee base, sateen and wave line etc.
9. To produce at least five sketches by using different colour shades with own imagination.
10. Creation and manipulation of Colour using computers.

## PCFT7204 **Fabric Manufacturing Lab**

1. Study of passage of yarn through various parts of winding machine (Warp and Weft).
2. Study of passage of yarn through direct and sectional warpers.
3. Study of passage of yarn through slasher sizing machine.
4. Study of tappet shedding mechanism
5. Study of Different picking mechanisms.
6. Study of 5 & 7 wheel take up mechanism.
7. Study of the let off and loose reed mechanism.
8. Study of fast reed and warp stop motion
9. Study of dobby and jacquard
10. Study of Drop Box.
11. Study of shuttle less loom
12. Study of air jet loom.

## PCFT7205 **Garment Pattern Making and Garment Construction Lab-I**

### **Pattern Makeing :**

1. Method of taking important body measurements for gents and ladies garments.
2. Developing and creating different patterns by using of 3 techniques.  
i) Drafting, ii) Flat Pattern Technique, iii) Draping
3. Drafting basic bodice blocks for Child, Adult (men & women)
4. Drafting of skirts, sleeves, collars, yokes
5. Making of paper pattern of kids garment through design variations.

### **Garment Construction :**

1. Study of the Sewing machineries, different parts and functions.
2. Preparation of sample of basic stitches (Hand & machine)
3. Preparation of sample of different types of seam
4. Preparation of sample of different types of pockets
5. Preparation of sample of different types of Plackets
6. Preparation of sample of different necklines using facing and piping.
7. Preparation of sample of different type of sleeves & collars.
8. Making of sample of different cut and stitch – Kids.

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