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A. CIRCUIT BRANCHES

I  Faculty of Electrical Engineering
   1. B.E. Electrical and Electronics Engineering
   2. B.E. Electronics and Instrumentation Engineering
   3. B.E. Instrumentation and Control Engineering

II Faculty of Information and Communication Engineering
   1. B.E. Computer Science and Engineering
   2. B.E. Electronics and Communication Engineering
   3. B.E. Bio Medical Engineering
   4. B.Tech. Information Technology

B. NON – CIRCUIT BRANCHES

I  Faculty of Civil Engineering
   1. B.E. Civil Engineering

II Faculty of Mechanical Engineering
   1. B.E. Aeronautical Engineering
   2. B.E. Automobile Engineering
   3. B.E. Marine Engineering
   4. B.E. Mechanical Engineering
   5. B.E. Production Engineering

III Faculty of Technology
   1. B.Tech. Chemical Engineering
   2. B.Tech. Biotechnology
   3. B.Tech. Polymer Technology
   4. B.Tech. Textile Technology
   5. B.Tech. Textile Technology (Fashion Technology)
   7. B.Tech. Plastics Technology
**SEMESTER III**
(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

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### ELECTIVE IV

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AIM
To encourage students to actively involve in participative learning of English and to help
them acquire Communication Skills.

OBJECTIVES
- To help students develop listening skills for academic and professional purposes.
- To help students acquire the ability to speak effectively in English in real-life
  situations.
- To inculcate reading habit and to develop effective reading skills.
- To help students improve their active and passive vocabulary.
- To familiarize students with different rhetorical functions of scientific English.
- To enable students write letters and reports effectively in formal and business
  situations.

UNIT I
Technical Vocabulary - meanings in context, sequencing words, Articles- Prepositions,
intensive reading& predicting content, Reading and interpretation, extended definitions,
Process description

Suggested activities:
1. Exercises on word formation using the prefix ‘self’ - Gap filling with preposition.
2. Exercises - Using sequence words.
3. Reading comprehension exercise with questions based on inference – Reading
   headings
4. and predicting the content – Reading advertisements and interpretation.
5. Writing extended definitions – Writing descriptions of processes – Writing
   paragraphs based on discussions – Writing paragraphs describing the future.

UNIT II
Phrases / Structures indicating use / purpose – Adverbs-Skimming – Non-verbal
communication - Listening – correlating verbal and non-verbal communication -Speaking
in group discussions – Formal Letter writing – Writing analytical paragraphs.

Suggested activities:
1. Reading comprehension exercises with questions on overall content –
   Discussions analyzing stylistic features (creative and factual description) -
   Reading comprehension exercises with texts including graphic communication -
   Exercises in interpreting non-verbal communication.
2. Listening comprehension exercises to categorise data in tables.
3. Writing formal letters, quotations, clarification, complaint – Letter seeking
   permission for Industrial visits– Writing analytical paragraphs on different
   debatable issues.

UNIT III
Cause and effect expressions – Different grammatical forms of the same word -
Speaking – stress and intonation, Group Discussions - Reading – Critical reading -
Listening, - Writing – using connectives, report writing – types, structure, data collection,
content, form, recommendations .
Suggested activities:
1. Exercises combining sentences using cause and effect expressions – Gap filling exercises using the appropriate tense forms – Making sentences using different grammatical forms of the same word. (Eg: object – verb / object – noun)
2. Speaking exercises involving the use of stress and intonation – Group discussions – analysis of problems and offering solutions.
3. Reading comprehension exercises with critical questions, Multiple choice question.

UNIT IV
12
Numerical adjectives – Oral instructions – Descriptive writing – Argumentative paragraphs – Letter of application - content, format (CV / Bio-data) - Instructions, imperative forms - Checklists, Yes/No question form – E-mail communication.

Suggested Activities:
1. Rewriting exercises using numerical adjectives.
2. Reading comprehension exercises with analytical questions on content – Evaluation of content.
3. Listening comprehension – entering information in tabular form, intensive listening exercise and completing the steps of a process.
4. Speaking - Role play – group discussions – Activities giving oral instructions.

UNIT V
9
Speaking - Discussion of Problems and solutions - Creative and critical thinking – Writing an essay, Writing a proposal.

Suggested Activities:
1. Case Studies on problems and solutions
2. Brain storming and discussion
3. Writing Critical essays
4. Writing short proposals of 2 pages for starting a project, solving problems, etc.
5. Writing advertisements.

TOTAL: 60 PERIODS

TEXT BOOK

REFERENCES
Extensive Reading:

Note:
The book listed under Extensive Reading is meant for inculcating the reading habit of the students. They need not be used for testing purposes.

MA2161 MATHEMATICS – II

UNIT I ORDINARY DIFFERENTIAL EQUATIONS
Higher order linear differential equations with constant coefficients – Method of variation of parameters – Cauchy’s and Legendre’s linear equations – Simultaneous first order linear equations with constant coefficients.

UNIT II VECTOR CALCULUS

UNIT III ANALYTIC FUNCTIONS
Functions of a complex variable – Analytic functions – Necessary conditions, Cauchy – Riemann equation and Sufficient conditions (excluding proofs) – Harmonic and orthogonal properties of analytic function – Harmonic conjugate – Construction of analytic functions – Conformal mapping : w= z+c, cz, 1/z, and bilinear transformation.

UNIT IV COMPLEX INTEGRATION

UNIT V LAPLACE TRANSFORM

Definition of Inverse Laplace transform as contour integral – Convolution theorem (excluding proof) – Initial and Final value theorems – Solution of linear ODE of second order with constant coefficients using Laplace transformation techniques.

TOTAL : 60 PERIODS

TEXT BOOK
REFERENCES

PH2161 ENGINEERING PHYSICS – II L T P C 3 0 0 3

UNIT I CONDUCTING MATERIALS

UNIT II SEMICONDUCTING MATERIALS

UNIT III MAGNETIC AND SUPERCONDUCTING MATERIALS

UNIT IV DIELECTRIC MATERIALS

UNIT V MODERN ENGINEERING MATERIALS

TOTAL : 45 PERIODS
TEXT BOOKS
2. Charles P. Poole and Frank J.Ownen, ‘Introduction to Nanotechnology’, Wiley India(2007) (for Unit V)

REFERENCES

CY2161 ENGINEERING CHEMISTRY – II

AIM
To impart a sound knowledge on the principles of chemistry involving the different application oriented topics required for all engineering branches.

OBJECTIVES
• The student should be conversant with the principles electrochemistry, electrochemical cells, emf and applications of emf measurements.
• Principles of corrosion control
• Chemistry of Fuels and combustion
• Industrial importance of Phase rule and alloys
• Analytical techniques and their importance.

UNIT I ELECTROCHEMISTRY
Electrochemical cells – reversible and irreversible cells – EMF – measurement of emf – Single electrode potential – Nernst equation (problem) – reference electrodes – Standard Hydrogen electrode -Calomel electrode – Ion selective electrode – glass electrode and measurement of pH – electrochemical series – significance – potentiometer titrations (redox - Fe²⁺ vs dichromate and precipitation – Ag⁺ vs Cl⁻ titrations) and conduct metric titrations (acid-base – HCl vs, NaOH) titrations,

UNIT II CORROSION AND CORROSION CONTROL

UNIT III FUELS AND COMBUSTION
UNIT IV PHASE RULE AND ALLOYS

UNIT V ANALYTICAL TECHNIQUES

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES

ME2151 ENGINEERING MECHANICS L T P C
3 1 0 4

OBJECTIVE
At the end of this course the student should be able to understand the vectorial and scalar representation of forces and moments, static equilibrium of particles and rigid bodies both in two dimensions and also in three dimensions. Further, he should understand the principle of work and energy. He should be able to comprehend the effect of friction on equilibrium. He should be able to understand the laws of motion, the kinematics of motion and the interrelationship. He should also be able to write the dynamic equilibrium equation. All these should be achieved both conceptually and through solved examples.

UNIT I BASICS & STATICS OF PARTICLES
UNIT II EQUILIBRIUM OF RIGID BODIES 12

UNIT III PROPERTIES OF SURFACES AND SOLIDS 12

UNIT IV DYNAMICS OF PARTICLES 12

UNIT V FRICTION AND ELEMENTS OF RIGID BODY DYNAMICS 12
Translation and Rotation of Rigid Bodies – Velocity and acceleration – General Plane motion.

TOTAL: 60 PERIODS

TEXT BOOK

REFERENCES
UNIT I   BASIC CIRCUITS ANALYSIS  12

UNIT II   NETWORK REDUCTION AND NETWORK THEOREMS FOR DC AND AC CIRCUITS  12
Network reduction: voltage and current division, source transformation – star delta conversion.
Thevenins and Novton & Theorem – Superposition Theorem – Maximum power transfer theorem – Reciprocity Theorem.

UNIT III  RESONANCE AND COUPLED CIRCUITS  12

UNIT IV   TRANSIENT RESPONSE FOR DC CIRCUITS  12
Transient response of RL, RC and RLC Circuits using Laplace transform for DC input and A.C. with sinusoidal input.

UNIT V    ANALYSING THREE PHASE CIRCUITS  12
Three phase balanced / unbalanced voltage sources – analysis of three phase 3-wire and 4-wire circuits with star and delta connected loads, balanced & un balanced – phasor diagram of voltages and currents – power and power factor measurements in three phase circuits.

TOTAL : 60 PERIODS

TEXT BOOKS

REFERENCES
UNIT I  CIRCUIT ANALYSIS TECHNIQUES  12

UNIT II  TRANSIENT RESONANCE IN RLC CIRCUITS  12

UNIT III  SEMICONDUCTOR DIODES  12

UNIT IV  TRANSISTORS  12
Principle of operation of PNP and NPN transistors – study of CE, CB and CC configurations and comparison of their characteristics – Breakdown in transistors – operation and comparison of N-Channel and P-Channel JFET – drain current equation – MOSFET – Enhancement and depletion types – structure and operation – comparison of BJT with MOSFET – thermal effect on MOSFET.

UNIT V  SPECIAL SEMICONDUCTOR DEVICES (Qualitative Treatment only)  12

TOTAL : 60 PERIODS

TEXT BOOKS

REFERENCES
UNIT I  ELECTRICAL CIRCUITS & MEASUREMENTS  12

Operating Principles of Moving Coil and Moving Iron Instruments (Ammeters and Voltmeters), Dynamometer type Watt meters and Energy meters.

UNIT II  ELECTRICAL MECHANICS  12

UNIT III  SEMICONDUCTOR DEVICES AND APPLICATIONS  12


UNIT IV  DIGITAL ELECTRONICS  12
Binary Number System – Logic Gates – Boolean Algebra – Half and Full Adders – Flip-Flops – Registers and Counters – A/D and D/A Conversion (single concepts)

UNIT V  FUNDAMENTALS OF COMMUNICATION ENGINEERING  12

Communication Systems: Radio, TV, Fax, Microwave, Satellite and Optical Fibre (Block Diagram Approach only).

TOTAL : 60 PERIODS

TEXT BOOKS

REFERENCES
A – CIVIL ENGINEERING

UNIT I SURVEYING AND CIVIL ENGINEERING MATERIALS 15


UNIT II BUILDING COMPONENTS AND STRUCTURES 15
Foundations: Types, Bearing capacity – Requirement of good foundations.


TOTAL: 30 PERIODS

B – MECHANICAL ENGINEERING

UNIT III POWER PLANT ENGINEERING 10

UNIT IV I C ENGINES 10
Internal combustion engines as automobile power plant – Working principle of Petrol and Diesel Engines – Four stroke and two stroke cycles – Comparison of four stroke and two stroke engines – Boiler as a power plant.

UNIT V REFRIGERATION AND AIR CONDITIONING SYSTEM 10

TOTAL: 30 PERIODS

REFERENCES:
GE2155 COMPUTER PRACTICE LABORATORY – II

LIST OF EXPERIMENTS

1. UNIX COMMANDS
   Study of Unix OS - Basic Shell Commands - Unix Editor

2. SHELL PROGRAMMING
   Simple Shell program - Conditional Statements - Testing and Loops

3. C PROGRAMMING ON UNIX
   Dynamic Storage Allocation-Pointers-Functions-File Handling

TOTAL : 45 PERIODS

HARDWARE / SOFTWARE REQUIREMENTS FOR A BATCH OF 30 STUDENTS

Hardware
- 1 UNIX Clone Server
- 33 Nodes (thin client or PCs)
- Printer – 3 Nos.

Software
- OS – UNIX Clone (33 user license or License free Linux)
- Compiler - C

GS2165 PHYSICS LABORATORY – II

LIST OF EXPERIMENTS

1. Determination of Young’s modulus of the material – non uniform bending.
2. Determination of Band Gap of a semiconductor material.
3. Determination of specific resistance of a given coil of wire – Carey Foster Bridge.
5. Spectrometer dispersive power of a prism.
6. Determination of Young’s modulus of the material – uniform bending.

• A minimum of FIVE experiments shall be offered.
• Laboratory classes on alternate weeks for Physics and Chemistry.
• The lab examinations will be held only in the second semester.
LIST OF EXPERIMENTS
1. Conduct metric titration (Simple acid base)
2. Conduct metric titration (Mixture of weak and strong acids)
3. Conduct metric titration using BaCl\textsubscript{2} vs Na\textsubscript{2}SO\textsubscript{4}
4. Potentiometric Titration (Fe\textsuperscript{2+} / KMnO\textsubscript{4} or K\textsubscript{2}Cr\textsubscript{2}O\textsubscript{7})
5. PH titration (acid & base)
6. Determination of water of crystallization of a crystalline salt (Copper sulphate)
7. Estimation of Ferric iron by spectrophotometry.

- A minimum of FIVE experiments shall be offered.
- Laboratory classes on alternate weeks for Physics and Chemistry.
- The lab examinations will be held only in the second semester.

ME2155 COMPUTER AIDED DRAFTING AND MODELING LABORATORY

List of Exercises using software capable of Drafting and Modeling

1. Study of capabilities of software for Drafting and Modeling – Coordinate systems (absolute, relative, polar, etc.) – Creation of simple figures like polygon and general multi-line figures.
2. Drawing of a Title Block with necessary text and projection symbol.
3. Drawing of curves like parabola, spiral, involute using Bspline or cubic spline.
4. Drawing of front view and top view of simple solids like prism, pyramid, cylinder, cone, etc, and dimensioning.
5. Drawing front view, top view and side view of objects from the given pictorial views (eg. V-block, Base of a mixie, Simple stool, Objects with hole and curves).
6. Drawing of a plan of residential building ( Two bed rooms, kitchen, hall, etc.)
7. Drawing of a simple steel truss.
8. Drawing sectional views of prism, pyramid, cylinder, cone, etc,
10. Creation of 3-D models of simple objects and obtaining 2-D multi-view drawings from 3-D model.

Note: Plotting of drawings must be made for each exercise and attached to the records written by students.

List of Equipments for a batch of 30 students:

1. Pentium IV computer or better hardware, with suitable graphics facility -30 No.
2. Licensed software for Drafting and Modeling. – 30 Licenses
3. Laser Printer or Plotter to print / plot drawings – 2 No.
EE2155 ELECTRICAL CIRCUIT LABORATORY (Common to EEE, EIE and ICE)  L T P C  0 0 3 2

LIST OF EXPERIMENTS
1. Verification of ohm’s laws and kirchoff’s laws.
2. Verification of Thevenin’s and Norton’s Theorem
3. Verification of superposition Theorem
4. Verification of maximum power transfer theorem.
5. Verification of reciprocity theorem
6. Measurement of self inductance of a coil
7. Verification of mesh and nodal analysis.
8. Transient response of RL and RC circuits for DC input.
10. Frequency response of single tuned coupled circuits.

TOTAL: 45 PERIODS

EC2155 CIRCUITS AND DEVICES LABORATORY  L T P C  0 0 3 2

1. Verification of KVL and KCL
2. Verification of Thevenin and Norton Theorems.
3. Verification of superposition Theorem.
4. Verification of Maximum power transfer and reciprocity theorems.
5. Frequency response of series and parallel resonance circuits.
6. Characteristics of PN and Zener diode
7. Characteristics of CE configuration
8. Characteristics of CB configuration
9. Characteristics of UJT and SCR
10. Characteristics of JFET and MOSFET

TOTAL: 45 PERIODS

ENGLISH LANGUAGE LABORATORY (Optional)  L T P C  0 0 2 -

1. Listening:
   - 5
   Listening & answering questions – gap filling – Listening and Note taking- Listening to telephone conversations

2. Speaking:
   - 5
   Pronouncing words & sentences correctly – word stress – Conversation practice.
Classroom Session

   Group Discussions etc
2. Goal setting – interviews – stress time management – situational reasons

Evaluation

(1) Lab Session – 40 marks
   - Listening – 10 marks
   - Speaking – 10 marks
   - Reading – 10 marks
   - Writing – 10 marks

(2) Classroom Session – 60 marks
   - Role play activities giving real life context – 30 marks
   - Presentation – 30 marks

Note on Evaluation

1. Examples for role play situations:
   a. Marketing engineer convincing a customer to buy his product.
   b. Telephone conversation – Fixing an official appointment / Enquiry on availability of flight or train tickets / placing an order. etc.

2. Presentations could be just a Minute (JAM activity) or an Extempore on simple topics or visuals could be provided and students could be asked to talk about it.

REFERENCES:


LAB REQUIREMENTS

1. Teacher – Console and systems for students
2. English Language Lab Software
3. Tape Recorders.
OBJECTIVES
The course objective is to develop the skills of the students in the areas of Transforms and Partial Differential Equations. This will be necessary for their effective studies in a large number of engineering subjects like heat conduction, communication systems, electro-optics and electromagnetic theory. The course will also serve as a prerequisite for postgraduate and specialized studies and research.

UNIT I  FOURIER SERIES
9 + 3

UNIT II  FOURIER TRANSFORMS
9 + 3

UNIT III  PARTIAL DIFFERENTIAL EQUATIONS
9 + 3
Formation of partial differential equations – Lagrange’s linear equation – Solutions of standard types of first order partial differential equations - Linear partial differential equations of second and higher order with constant coefficients.

UNIT IV  APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS
9 + 3
Solutions of one dimensional wave equation – One dimensional equation of heat conduction – Steady state solution of two-dimensional equation of heat conduction (Insulated edges excluded) – Fourier series solutions in cartesian coordinates.

UNIT V  Z-TRANSFORMS AND DIFFERENCE EQUATIONS
9 + 3

TEXT BOOK

REFERENCES
AIM
The aim of this course is to create awareness in every engineering graduate about the importance of environment, the effect of technology on the environment and ecological balance and make him/her sensitive to the environment problems in every professional endeavour that he/she participates.

OBJECTIVES
At the end of this course the student is expected to understand what constitutes the environment, what are precious resources in the environment, how to conserve these resources, what is the role of a human being in maintaining a clean environment and useful environment for the future generations and how to maintain ecological balance and preserve bio-diversity.

UNIT I
INTRODUCTION TO ENVIRONMENTAL STUDIES AND NATURAL RESOURCES

UNIT II
ECOSYSTEMS AND BIODIVERSITY

Field Study of Common Plants, Insects and Birds - Field Study of Simple Ecosystems – Pond, River, Hill Slopes, etc.
UNIT III ENVIRONMENTAL POLLUTION

Definition – Causes, Effects and Control Measures of:-(A) Air Pollution (B) Water Pollution (C) Soil Pollution (D) Marine Pollution (E) Noise Pollution (F) Thermal Pollution (G) Nuclear Hazards – Soil Waste Management:- Causes, Effects and Control Measures of Urban and Industrial Wastes – Role of an Individual in Prevention of Pollution – Pollution Case Studies – disaster Management:- Floods, Earthquake, Cyclone and Landslides.
Field Study of Local Polluted Site – Urban/Rural/Industrial/Agricultural.

UNIT IV SOCIAL ISSUES AND THE ENVIRONMENT


UNIT V HUMAN POPULATION AND THE ENVIRONMENT


TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To introduce the Mechanical Engineering Fundamentals to the Petroleum Engineering Students.

OBJECTIVES
Students gain knowledge in the application of Mechanical and thermodynamics principles in the design and operation of Equipments and Machineries of Petroleum Industries.

UNIT I  LAWS OF THERMODYNAMICS  10
Basic concepts and hints; Zeroth law; First Law of Thermodynamics – Statement and application; Steady flow energy equation; Second law of Thermodynamics—Statement; Limitations Heat Engine; Heat Pump, Available energy, Kelvin—Plank statement and Clausius statement; Equivalence entropy; Reversibility: Entropy charts; Third law of Thermodynamics—Statement.

UNIT II  HEATING AND EXPANSION OF GASES :  5
Expressions for; work done; Internal energy, Hyperbolic and polytropic processes; Free expansion and Throttling.

UNIT III  AIR STANDARD EFFICIENCY  5
Carnot cycle; Stirlings Cycle: Joule Cycle; Otto Cycle; Diesel Cycle; Dual combustion Cycle.

UNIT IV  I.C. ENGINES  4
Engine nomenclature and classifications; SI Engine: CI Engine; Four Stroke cycle?; Two stroke cycle; Performance of I.C. Engine; Brake thermal efficiency; Indicated Thermal Efficiency, Specific fuel consumption.

UNIT V  STEAM AND ITS PROPERTIES  4
Properties of steam; Dryness fraction; latent heat; Total heat of wet steam; Superheated steam. Use of steam tables; volume of wet steam; Volume of superheated steam; External work of evaporation; Internal energy; Entropy of vapour, Expansion of vapour, Rankine cycle; Modified Rankine cycle.

UNIT VI  STEAM ENGINES AND TURBINES  3
Hypothetical indicator diagram of steam engine; Working of a simple steam engine; steam turbines—Impulse and Reaction types—Principles of operation.

UNIT VII  SIMPLE MECHANISM  3
Kinematic Link, Kinematic Pair Kinematic Chain; Slider Crank mechanism and inversions; Double slider crank mechanism and inversions.

UNIT VIII  FLY WHEEL  4
Turning moment Diagram; Fluctuation of Energy; Design of fly wheel.

UNIT IX  DRIVES  5
Belt and rope drives; Velocity ratio; slip; Ratio of tensions; Length of belt; Maximum HP; simple compound and Epicyclic gear trains.
UNIT X BALANCING
Balancing of rotating masses in same plane; Balancing of masses rotating in different planes.

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES

TT2201 ELECTRICAL ENGINEERING

(Common to Fashion Technology & Textile Technology)

AIM
To introduce the principles of Electrical Engineering and the concepts of DC and AC machines.

OBJECTIVES
After the completion of this course, Students gain knowledge in fundamentals of Electrical Engineering and the operational and design aspects of DC and AC motors and drives.

UNIT I

UNIT II

UNIT III
Principle of operation of DC machines - emf equation – types of generators – Magnetization and Load characteristics of DC generators – types and characteristics of DC motors – torque equation – DC motor starters (three point) – Efficiency calculation and Swimburne’s test O Speed control.

UNIT IV
UNIT V

Basic principles of indicating instruments – moving coil and moving iron instruments – dynamometer type wattmeters – induction types energy meter – measurement of single and three phase power.

TEXT BOOKS

REFERENCES
1. Electrical technology – Edward Hughes.
2. Introduction to electrical Engineering – Naidu & Kamakshaiah
3. Electrical Technology – Vincent Del Toro

FT 2201 PATTERN MAKING

AIM
To impart knowledge on human body measurement and creation of pattern for costumes.

OBJECTIVES
- To teach the students the science of measuring human sizes and creating a pattern from the measurements.
- To develop commercial pattern and grading of various sizes from the basic pattern

UNIT I BASIC PATTERN MAKING

UNIT II DRAFTING
Basic principles & methodologies used to draft standard size block patterns for men, women & kids wear- viz., shirts, pants, skirts, blouses, jackets, dresses etc.

UNIT III DRAFTING OF SLEEVE & COLLAR

UNIT IV DART MANIPULATION
Pattern making by manipulation of dart – and advance dart manipulation. Manipulation as seen through existing suppressions points (Bust points), away from suppression points, as gathers or tucks, as multiple darts. Methods: Slash & Spread, Pivot, difference between permanent pattern (Draft) Working patterns & Production patterns. Importance of drill hole marks in the darts; seam allowances and its importance Importance of notches: Balances marks & grain lines.
UNIT V  GRADING  9
Principles of Grading – Master and Basic Grades – Basic Back Grades, Basic Front
Grading, Basic Sleeve Grading, Basic Collar Grading, Basic Facing Grading. Trousers
Grading, Jacket Grading, Shirt Grading, Grading Men’s Waist Coat – Size Chart.
Displacement of Bust Dart to Waist line – Side seam, arm hole – Neck arc Front edge,
Women’s Sizing Chart, Selecting a Grading System, Multi Track Grading. A Simplified
System.

TOTAL : 45 PERIODS

TEXT BOOKS
1. Gerry Cooklin “Introduction to Clothing Manufacture”, Blackwell Scientific
Publications SP 1990.
2. Gerry Cooklin “Master Patterns & Grading for Women’s Outsize”, Blackwell

REFERENCES
1. Gerry Cooklin “Master Patterns & Grading for Men’s Outsize”, Blackwell Scientific
2. Gillian Holman - Pattern Cutting Made Easy, Blackwell Scientific Publications

FT 2202  TEXTILE SCIENCE  L T P C
3 0 0 3

AIM
To impart Knowledge on Textile Fibre Science.

OBJECTIVES
The students should acquire Knowledge on Cultivation, Production.
Physical & Chemical Properties and Identification methods of natural and synthetic
fibres.

UNIT I  9
Definitions – Fibre, Textile fibre, Staple, Filament, Yarn, Thread. Properties of Textile
Fibre – Physical, chemical Biological, Thermal properties – Classification of Textile
 Fibers – Definition – Moisture Regain, Moisture Content, Absolute Humidity, Relative
 Humidity.

UNIT II  9
Production & Cultivation of Natural Fibers, Cotton, Silk, Wool, Jute.

UNIT III  9
Production sequence of Man Made Fibers: Viscose Rayon, Acetute Rayon,
Cuprammonium Rayon – Production Sequence of Synthetic Fibers: Polyester, Nylon,
Acrylic.

UNIT IV  9
Production Sequence of Specality fibers: Elastometric Fibers – Production Sequence of
UNIT V
Identification of Textile Fibers – Microscope Test Chemical Test, Burning Test, Feeling Test & Breaking Test.

TOTAL : 45 PERIODS

TEXT BOOK
2. Fibre to Fabric By Corbman.

REFERENCES
1. Advances in Fibre Science * The Textile Institute, UK 1992 Mukhopadnyay S.K.

TT2207 ELECTRICAL ENGINEERING LAB
L T P C
0 0 3 2
(Common to Fashion Technology & Textile Technology)

AIM
To introduce the Electrical Engineering and the concepts of DC and AC machines

OBJECTIVES
After the completion of this course, students, gain knowledge in fundamentals of Electrical Engineering and the operational and design aspects of DC and AC motors and drives.

LIST OF EXPERIMENTS
1. Open circuit characteristics of D.C. shunt generator.
2. Load characteristics of D.C. shunt generator
3. Load characteristics of D.C. compound generator
4. Load test on D.C. shunt motor
5. Study of D.C. motor starters
6. O.C. and S.C. tests on single phase transformer
7. Load test on single phase transformer
8. Load test on 3-phase squirrel cage induction motor
9. Study of 3-phase induction motor starters
10. Load test on 3-phase slip ring induction motor
11. O.C. and S.C. tests on 3-phase alternator
12. Synchronization and V-curves of alternator

TOTAL : 45 PERIODS

LIST OF EQUIPMENTS
1. D.C. shunt generator.
2. D.C. shunt generator
3. Compound generator
4. D.C. shunt motor
5. D.C. motor starters
6. Single phase transformer
7. 3-phase squirrel cage induction motor
8. 3-phase induction motor starters
9. 3-phase slip ring induction motor
10. 3-phase alternator
11. Alternator
AIM
To introduce the Mechanical Engineering fundamentals to the petroleum engineering students.

OBJECTIVES
Students gain knowledge in the applications of Mechanical and Thermodynamics principles in the design and operation of equipments and machineries of petroleum industries.

LIST OF EXPERIMENTS
1. Heat balance test on Diesel engine
2. Mechanical load test on petrol engine
3. Morse test on multi cylinder petrol engine
4. Volumetric efficiency on Diesel engine
5. Volumetric efficiency on two state reciprocating compressor
6. COP in compression refrigeration cycle
7. Test on Air conditioning system
8. Viscosity Index, Flash and Fire point of Lubricant
9. Valve timing diagram in Diesel engine
10. Port timing diagram

LIST OF EQUIPMENTS
1. Diesel Alternator Set
2. Diesel Engines
3. Petrol Engines
4. Multi Cylinder Petrol engine
5. Two stroke Reciprocating Compressor
6. Compression Refrigeration Cycle
7. Air Conditioning System
8. Viscosity, Flash and Fire point apparatus
9. Stream power plant
10. Two stroke engines
11. Bomb calorimeter
12. Orsat apparatus
13. Gas calorimeter

AIM
To impart knowledge on human body measurement creation of pattern for costumes.

OBJECTIVES
- To teach the students science of measuring human sizes and creating a pattern from the measurements.
- To develop commercial pattern and grading of various sizes from the base pattern.
1. Developing pattern & Grading for Children’s wear
   i. Baba suit
   ii. Rompers
   iii. Round neck T-Shirt
   iv. Baby frock

2. Developing pattern & Grading for Ladies wear
   i. Salwar Kameez
   ii. Blouses
   iii. Skirt & Top
   iv. Brassier & Panties
   v. Nighty

3. Developing Pattern & Grading for Men’s Wear
   i. Men’s Shorts
   ii. Men’s Formal Shirt
   iii. Men’s Formal Trousers
   iv. Jeans

Pattern Making and Grading Lab

Requirements of Equipments (for a batch of 30 students)

1. Cork Top Tables : 15

2. Dummies
   Male : 38" Chest half -1
   Male : 42" chest full -1
   Male : 44" chest Half -1
   Male : 44" chest full with hand -1
   Female : 32.5" bust half -1
   Female : 34.5" bust full -1
   Female : 36.5" bust half -1
   Female : 36.5" bust full with hand -1
   Female : half – 85 cm Half -1

3. Mannequins
   i. Babbies

   Girl - 77.8 cm -1
   Girl - 118.5cm -1
   Boy - 80.5 cm -1
   Boy - 127 cm -1

   ii. Teenage Girls & Boys

   Boy - 139 cm -1
   Girl - 151 cm -1
   Girl - 157.6 cm -1

   iii. Adults

   Male - 178 cm -1
   Male - 182.5 cm -1
   Female - 157.6cm -1
   Female - 178 cm -1
4. Mechanical grading machine - 1
5. Skirt Length Marker - 1
7. Jewellery bust half head -1
8. Jewellery bust Indian face -1
10. Pattern making kit - 30
   L scale
   Hip curve
   Meter scale
   French curve
   Tracing wheel
   Measuring tape
   Tailor’s chalk
   Pencil
   Set square
11. Grading scale -10
12. Pattern master -10
13. Paper cutting scissors - 30

Requirements of consumables (To be brought by students)
1. Long lasting Patterns - 50
2. See- through plastic sheets - 50
3. Brown sheets - 100
4. 1: 4 Scale - 10
5. 1: 2 Scale - 10
6. Marking Scales - 50
7. Marking Chalks - 50
8. Carbon Paper - 100
9. Cloth for draping - 10m
10. Tapes - 2 pkts
11. Marking pencils - 50

TOTAL : 45 PERIODS

MA2263       PROBABILITY AND STATISTICS
             L T P C
             3 1 0 4
             (Common to Biotech, Chemical, Fashion, Petroleum, Polymer, Plastic)

OBJECTIVES
At the end of the course, the students would

- Acquire skills in handling situations involving more than one random variable and functions of random variables.
- Be introduced to the notion of sampling distributions and have acquired knowledge of statistical techniques useful in making rational decision in management problems.
- Be exposed to statistical methods designed to contribute to the process of making scientific judgments in the face of uncertainty and variation.
UNIT I  RANDOM VARIABLES  9 + 3
Discrete and continuous random variables - Properties - Moments - Moment generating functions and their properties. Binomial, Poisson, Geometric, Negative binomial, Uniform, Exponential, Gamma, and Weibull distributions.

UNIT II  TWO DIMENSIONAL RANDOM VARIABLES  9 + 3
Joint distributions - Marginal and conditional distributions – Covariance - Correlation and Regression – function of a random variable-Transformation of random variables - Central limit theorem.

UNIT III  TESTING OF HYPOTHESIS  9 + 3
Sampling distributions – Testing of hypothesis for mean, variance, proportions and differences using Normal, t, Chi-square and F distributions - Tests for independence of attributes and Goodness of fit.

UNIT IV  DESIGN OF EXPERIMENTS  9 + 3

UNIT V  RELIABILITY AND QUALITY CONTROL  9 + 3
Concepts of reliability-hazard functions-Reliability of series and parallel systems- control charts for measurements (x and R charts) – control charts for attributes (p, c and np charts)
Note : Use of approved statistical table is permitted in the examination.

TOTAL : 60 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on Garment making.

OBJECTIVES
- To teach the students about types of seams and stitches, sewing threads & their quality.
- To impart knowledge on various garment parts and their variations.
- To impart knowledge on use of accessories for garments.

UNIT I
Basic Sewing Techniques:
Seams: Definition, Types of seams, seam quality, seam performance, factors to be considered in the selection of seam, seam finishes, seam defects.
Stitches: Definition, stitch classes, stitch parameters, factors to be considered in the selection of stitches. Stitching defects.
Sewing Thread: Types, construction, sewing thread quality, selection of sewing thread.

UNIT II
Sleeves: Types of sleeves, plain, puffs, gathered, bell, bishop, circular, leg-o-mutton, Magyar sleeves dolman, kimono. Method of application. Mounting of sleeve – one piece, two piece.
Collars: Classification – full, flat, roll, partial roll, puritan collar, sailor collar, square collar, ruffled collar, scalloped collar, mandarin, convertible, tie, shawl reverse and notch collar.

UNIT III
Yokes: Definition – Selection of yoke design, different styles of yoke. Simple yoke – yokes with or without fullness – midriff yokes, methods of attaching yokes.
Fullness: Definition types, Darts – single, double, pointed darts, tucks, pin tucks, cross tucks, piped tucks, shell tucks, pleats, knife pleats, box pleats, invertible box pleats, kick pleats, flare, godets, gathers, shirrings, single or double frills. Ruffles.
Hemming Techniques: Definition, factors to be considered in the selection of hems, types of machine stitched hem, hand stitched hem.

UNIT IV
Plackets: Types, regular, top stitched with edge stitch, top stitched wit one leg of pressure foot distance, concealed plackets, kurta plackets. Sleeve packet: faced placket, continuous bound placket and diamond placket.
Waist Band: One piece, two piece and tailor waist band, elastic applied.
Cuffs: Types, square shape, round shape.

UNIT V
Introduction and construction techniques of garment closures. Application of zippers-fly, kissing lap, button & button holes, hooks, and eye snaps. Velcro, eyelets, cords. Basic standard of professional sewing. Relationship between pattern making and ultimate quality of finished sample, steps in the construction of sample, planning a logical garment construction sequence, planning a layout, analysis of component pieces and trimmings, economic use of fabric yardage, time effective sewing techniques.

TOTAL : 45 PERIODS
TEXT BOOKS

REFERENCES

TEXT BOOKS
REFERENCES
3. Non Wovens 77

FT2253 WOVEN FABRIC STRUCTURE & DESIGN L T P C
3 0 0 3

AIM
To impart knowledge on various fabric structures / designs and their variations.

OBJECTIVES
To teach the students different types of woven fabric designs, their graphical representation and converting the design into peg plan for weaving.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Double cloth: Classification – self stitched – face to back – back to face – Combination face to back and back to face stitched double cloth. Wadded double cloth – weft and warp Wadded double cloth – Center warp & Weft Stitched double cloth. Basic Dobby, Jacquard Design.

TOTAL : 45 PERIODS

TEXT BOOK

REFERENCES
AIM
To teach the students various process in garment manufacturing and different types of machines used.

OBJECTIVES
- To expose the students to various types of machines used for fabric spreading and cutting.
- To teach the students, functioning of different types of sewing machines and formation of different stitch.

UNIT I
9

UNIT II
9
Introduction to cutting machines – Types and functions of cutting machines – straight knife, round knife, band knife, cutting machines – Notches, drills, die cutting machines – Computerised cutting machines – maintenance of cutting machines – common defects in cutting & their remedies.

UNIT III
9
Seam quality – effect of stitch type on seam quality. Selection of seam and stitch.

UNIT IV
9

UNIT V
9
Maintenance of SNLS machine – Common defects and remedies.

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To teach the students the technology of wet processing.

OBJECTIVES
- To teach the students the various bleaching, dyeing, printing & finishing technologies for the various fabrics & garments.
- To educate the students on pollution control techniques.

UNIT I BLEACHING
Bleaching of cotton with hypochlorites, hydrogen peroxide and sodium chlorites – jigger dyeing, winch dyeing – calendering – steam calendering.

UNIT II DYEING

UNIT III PRINTING
Block, roller, flat bed, rotary and transfer printing Techniques – pigments – reactive – Discharge and resist printing – advantages and disadvantages – screen making – engraving – study of chest and rotary screen printing machines to knitted goods.

UNIT IV FINISHING
Garment finishes – Different types of finishes – Enzyme wash, stone wash, acid wash, salt and pepper finish, peach finish, sand blasting, - wrinkle free finish.

UNIT V

TOTAL : 45 PERIODS

TEXT BOOK

REFERENCES
AIM
To impart knowledge on Garment making

OBJECTIVES

- To teach the students about the types of seams and stitches, sewing threads and their quality.
- To impart knowledge on various garment parts and their variations
- To impart knowledge on use of accessories for garments.

1. Prepare samples for basic Hand stitches, seams, darts & pleats.
4. Preparing samples for collars – Peter Pan collar, Full shirt collar, Shawl collar.
5. Preparing samples for pockets – patch pocket, bound pocket & front hip pocket.

BASIC GARMENT CONSTRUCTION LAB

MACHINES REQUIRED: (for a batch of 30 students)
1. Single needle lock stitch machine 30 Nos
2. Steam Iron Box 3 Nos

CONSUMABLES:
Needles
Canvas material
Sewing threads
Fusing canvas
Elastics
Sponge
Fasteners

TOTAL: 45 PERIODS

FT2258  DYEING AND PRINTING LAB

AIM
To teach the students the technology of wet processing

OBJECTIVES
To teach the students the various bleaching, dyeing, printing and finishing technology for the various fabrics and garments.
1. Identification of fibres- Polyester/Cotton, Polyester/Viscose & Cotton/Viscose.
2. Bleaching of cotton using Hypochlorites.
4. Dyeing of cotton with Direct dyes.
5. Dyeing of cotton with Reactive dyes.
7. Dyeing of Polyester using carrier.
8. Dyeing of Knitted Fabric.
9. Determination of Fastness to washing after dyeing.
10. Determination of Shrinkage for woven fabrics/garments.
11. Discharge style- printing on cotton.
12. Resist style- printing on cotton.

TOTAL : 45 PERIODS

Dyeing and Printing Lab

LIST OF EQUIPMENTS
(For a batch of 30 students)

<table>
<thead>
<tr>
<th>S. No</th>
<th>Description</th>
<th>Quantity required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chemical and dyes</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>HTHP Beaker dyeng machine</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Pilot Winch</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Sample cone/cheese dyeing machine</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Pilot curing Chamber</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Pilot curing Chamber</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>pH meter</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Oven (upto 200°C)</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Burners</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>Glass wares and apparatus (Beakers of required volume, Pipette with extracting device, burette, Glass rods, Measuring jars 10ml, 100ml and 500ml)</td>
<td>25 each</td>
</tr>
<tr>
<td>11</td>
<td>Stainless steel vats (500 ml)</td>
<td>30</td>
</tr>
<tr>
<td>12</td>
<td>Water bath</td>
<td>15</td>
</tr>
<tr>
<td>13</td>
<td>Thermometers</td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td>Stirrer</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Ager</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Electronic Balance (0.01g to 300g)</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>Printing screen</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Printing table</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>Squeezee</td>
<td>1</td>
</tr>
</tbody>
</table>
AIM
To develop software to design and simulate the fabric structure and its characteristics.

LIST OF EXPERIMENTS
1. Develop a Dobby Design & prepare a 2D simulation
2. Develop a Jacquard Design & prepare a 2D simulation
3. Develop a Print Design & prepare a 2D simulation
4. Develop a Dobby design with different weaves
5. Develop a Jacquard design & prepare a card punching for the same.
7. Dobby & jacquard cloth analysis.
8. Extra warp & extra weft figuring.
9. Double cloth & terry towels.

TOTAL : 45 PERIODS

Textile CAD & Fabric Structure Lab

LIST OF EQUIPMENTS REQUIRED

Textile Fabric Designing Soft Wares:

Module : Designing Dobby Design
         Designing Jacquard Design
         Designing Print design.

Hard Ware : Pentium III / higher PCs – 15 Nos with suitable
           Configuration to Support the Software
           Printer 1 No
           Plotter 1 No
           Scanner 1 No
           Counting Glass 15 Nos
           GSM Cutter & Scale 2 No
           Beesley’s Balance 2 No
           Course length tester 1 No
           Electronic Balance. 1 No
GE2025 PROFESSIONAL ETHICS IN ENGINEERING

UNIT I ENGINEERING ETHICS

UNIT II ENGINEERING AS SOCIAL EXPERIMENTATION
Engineering as Experimentation – Engineers as responsible Experimenters – Research Ethics - Codes of Ethics – Industrial Standards - A Balanced Outlook on Law – The Challenger Case Study

UNIT III ENGINEER’S RESPONSIBILITY FOR SAFETY

UNIT IV RESPONSIBILITIES AND RIGHTS

UNIT V GLOBAL ISSUES

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on embroidery and Ornamentation techniques and machines

OBJECTIVES
- To impart knowledge on hand & machine embroidery and ornamentation needles and threads
- To impart knowledge on different embroidery structures
- To impart knowledge on different computerized embroidery machines

UNIT I

UNIT II
Knowledge, classification & practice of hand embroidery stitches- running, couching, button hole, satin, long & short, wheat, chain, stem, herringbone, cross stitch, knotted stitches, fish bone etc. Some Indian traditional embroideries – Phulkari, Kasuti, Kashmiri embroidery, kutch work, chikkankari, kantha, tribal embroideries- stitches, designs, colors and materials used.

UNIT III
Knowledge & practice of the following machine embroideries and surface ornamentations– eyelet work, cutwork, Richelieu work, lace work, drawn thread and fabric work, patch work, mirror work, applique, shaded embroidery, shadow work, badala work, bead and sequins work, bobbin thread embroidery etc.

UNIT IV

UNIT V
CAD Softwares used for embroideries – process of designing, types of stitch applications, punching. Types of embroidery machines and their working –vertical embroidery machines, multi-head embroidery machines- Special attachments in Embroidery machines

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on principles and procedures for Children’s and Men’s apparel Construction

OBJECTIVES
- To impart knowledge on principles of taking measurements and Construction of Children’s and Men’s wear
- To impart knowledge on fabric selection and minimizing of fabric consumption for Children’s and Men’s wear

UNIT I
Study of various types of kids wear and children’s wear; measurements required for construction of kids & children’s wear (Baba suit, Baby frock, shorts, Rompers, Pedal pushers). Selection of fabrics, trimmings, seams for Children’s wear. Factors affecting selection

UNIT II
Pattern lay rules, common method of layout for asymmetric design, strips, checks and one way design for children’s garments. Fit for children’s garments.

UNIT III
Step by step procedure for construction and minimizing fabric consumption for men’s Boxer shorts, formal shirts with regular collar, button down collar- plackets – back tucks center and side tucks – Balancing of designs – Asymmetric & symmetric designs - checks & stripes.

UNIT IV

UNIT V

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on design and manufacture of women’s wear & lingerie

OBJECTIVES
- To impart knowledge on principles of body measurements for women’s wear & lingerie
- To impart knowledge on manufacturing different types of women’s wear, lingerie selection of fabric and accessories.

UNIT I
Importance and principles of taking body measurements – measurement required for construction of women’s garments – preparing basic patterns for bodice, sleeves, bifurcated garments, necklines – hood.

UNIT II

UNIT III

UNIT IV

UNIT V

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCE
AIM
To educate the students about warp and weft knitted fabric structures and their variations

OBJECTIVES
- To educate the students on basis of knit structures and mechanisms available for design variation.
- To educate the students on single jersey knit structure and its derivatives
- To impart knowledge on double jersey knit structure and its derivatives
- To educate the students on warp knit structure and its derivatives

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

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

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

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

UNIT V
Study of fleece fabrics, Study of knitted fabrics with Elastomeric yarn - Different combinations for different properties

TOTAL: 45 PERIODS

TEXT BOOKS
AIM
To impart knowledge on yarn, fabric and garment testing and quality control

OBJECTIVES
- To impart knowledge on sampling and yarn quality parameters testing
- To impart knowledge on fabric and garment quality parameters testing

UNIT I
SAMPLING TECHNIQUES: Definition – random- Biased- Techniques for fibre, Yarns and fabrics Standard RH and temperature for testing and mechanical processing


UNIT II

UNIT III

UNIT IV
FABRIC PERMEABILITY: Shirley air permeability tester – Fabric water permeability tester – Friction measuring instruments.

UNIT V
APPAREL TESTING: Seam strength testing – Seam severance testing. Evaluation of interlinings quality Colour fastness testing Apparel dimensional stability testing

TOTAL: 45 PERIODS

TEXT BOOK

REFERENCES
2. BSI,”BSI Hand books”, British Standard Institution, Manchester.
6. Sreenivasam . S, Test of CIRWT, MUMBAI.
AIM
To impart knowledge on yarn, fabric and garment testing and quality control.

OBJECTIVES
- To impart knowledge on sampling and your quality parameters testing.
- To impart knowledge of fabric and garment quality parameters testing.

LIST OF EXPERIMENTS
Determination of count of yarn and CV %
Determination of yarn Strength (Lea strength) CV% and CSP
Determination of yarn Appearance – Grades.
Determination of yarn evenness and Imperfections
Determination of single yarn Twist and CV%
Determination of Fabric Tensile strength CV%
Determination of crimp in Yarn
Determination of Abrasion Resistance
Determination of Fabric bursting strength
Determination of fabric washing fastness
Determination of Shrinkage of knitted and woven fabrics
Determination of color fastness to rubbing - Crock meter
Analyzing of Woven and knitted fabric EPI, PPI, Wales and courses per inch, loop length, GSM, Cover factor.
Determination of fabric stiffness and crease recovery angle
Determination of fabric Drape

TOTAL: 45 PERIODS

TEXTILE TESTING & QUALITY CONTROL LAB

LIST OF EQUIPMENT:

- Wrap Reel and weighing balance - 1
- Automatic wrap reel and lea strength tester - 1
- Yarn Appearance tester - 1
- Yarn evenness tester - 1
- Single yarn twist tester - 1
- Fabric tensile strength tester - 1
- Crimp tester - 1
- Abrasion tester - 1
- Fabric bursting strength tester - 1
- Washing machine - 1
- Crock meter - 1
- Fabric stiffness tester & Crease recovery tester - 1
- Drape meter - 1
- Beesley’s Balance - 1
- Counting Glass - 30
AIM:
To impart knowledge on Garment making

OBJECTIVES:
- To teach the students about types of seams and stitches, sewing thread and their quality
- To impart knowledge on various garment parts and their variations
- To impart knowledge on use of accessories for garments

LIST OF EXPERIMENTS
Step by step Construction of Children’s Baba suit
Step by step Construction of Children’s Rompers
Step by step Construction of Children’s Frock
Step by step Construction of Men’s Shorts
Step by step Construction of Men’s Formal Shirt (2 sessions)
Step by step Construction of Men’s Formal Trouser (2 sessions)
Step by step Construction of Men’s Casual Trouser (2 sessions)

TOTAL: 45 PERIODS

GARMENT CONSTRUCTION LAB I

MACHINES REQUIRED: (For a Batch of 30 Students)

<table>
<thead>
<tr>
<th>Machine</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single needle lock stitch machine,</td>
<td>15</td>
</tr>
<tr>
<td>Flat lock machine with elastic attachment,</td>
<td>1</td>
</tr>
<tr>
<td>Feed off the arm machine,</td>
<td>1</td>
</tr>
<tr>
<td>Over lock machine,</td>
<td>3</td>
</tr>
<tr>
<td>Button holing &amp; button stitching machine.</td>
<td>1 each</td>
</tr>
<tr>
<td>Ironing Table</td>
<td>1</td>
</tr>
<tr>
<td>Steam Iron Box</td>
<td>1</td>
</tr>
</tbody>
</table>

CONSUMABLES: (to be brought by students)

Needles
Canvas Material
Sewing Threads
Fusing canvas
Elastics
Sponge
Fasteners
AIM:
Globalization has brought in numerous opportunities for the teeming millions, with more focus on the students’ overall capability apart from academic competence. Many students, particularly those from non-English medium schools, find that they are not preferred due to their inadequacy of communication skills and soft skills, despite possessing sound knowledge in their subject area along with technical capability. Keeping in view their pre-employment needs and career requirements, this course on Communication Skills Laboratory will prepare students to adapt themselves with ease to the industry environment, thus rendering them as prospective assets to industries. The course will equip the students with the necessary communication skills that would go a long way in helping them in their profession.

OBJECTIVES:
- To equip students of engineering and technology with effective speaking and listening skills in English
- To help them develop their soft skills and people skills, which will make the transition from college to workplace smoother and help them to excel in their jobs
- To enhance students’ performance at Placement Interviews, Group Discussions and other recruitment exercises.

I. PC BASED SESSION (WEIGHTAGE-40%) 24 PERIODS

A. ENGLISH LANGUAGE LAB (18 Periods)

1. LISTENING COMPREHENSION (6)

   Listening and typing – Listening and sequencing of sentences –
   Filling in the blanks – Listening and answering the questions

2. READING COMPREHENSION AND VOCABULARY (6)

   Filling in the blanks - Cloze Exercises – Vocabulary building –
   Reading and answering questions

3. SPEAKING (6)

   **Phonetics:** Intonation – Ear Training – Correct Pronunciation –
   Sound recognition exercises -Common Errors in English

   **Conversations:** Face to Face Conversation - Telephone conversation –
   Role plays activities (Students take on roles and engage in conversation)

B. CAREER LAB (6 periods)

(Samples are available to learn and practice in the class room session)

1. RESUME / REPORT PREPARATION / LETTER WRITING (1)

   Structuring the resume / report – Letter writing / E-mail communication –
   Samples
2. PRESENTATION SKILLS (1)

- Elements of an effective presentation
- Structure of a presentation
- Presentation tools
- Voice Modulation
- Audience analysis
- Body Language
- Video Samples

3. SOFT SKILLS (2)

- Time Management
- Articulateness
- Assertiveness
- Psychometrics
- Innovation and Creativity
- Stress Management & Poise
- Video Samples

4. GROUP DISCUSSION (1)

- Why is GD part of selection process?
- Structure of a GD
- Moderator-led
- And other GDs
- Strategies in GD
- Team work
- Body Language
- Mock GD
- Video Samples

5. INTERVIEW SKILLS (1)

- Kinds of Interviews
- Required Key Skills
- Corporate culture
- Mock Interviews
- Video Samples

II. CLASS ROOM SESSION (WEIGHTAGE-60%) 24 PERIODS

- Resume / Report Preparation /Letter writing: Students prepare their Own resume and report. (2)
- Presentation Skills: Students make presentations on given topics. (8)
- Group Discussion: Students participate in group discussions. (6)
- Interview Skills: Students participate in Mock interviews. (8)

Note: Classroom sessions are practice sessions.

EQUIPMENTS / SOFTWARE REQUIRED FOR COMMUNICATION SKILLS LABORATORY

I. PC BASED SESSION: (For 60 user network environment)

60 P-IV PCs and one server

Server
- PIV system
- 1 GB RAM / 40 GB HDD
- OS: Win 2000 server
- Audio card with headphones (with mike)
- JRE 1.3
Client Systems
P111 or above
256 or 512 MB RAM / 40 GB HDD
OS: Win 2000
Audio card with headphones (with mike)
JRE 1.3

Interactive Teacher Control Software:

English Language Lab Software:

Career Lab software:

II. CLASS ROOM SESSION:

ESSENTIAL:

a) Handicam Video Camera (with video lights and mic input)
b) Television - 29”
c) Collar mike (1) and cordless mikes (3) with audio mixer
d) DVD Recorder / Player

DESIRABLE:

LCD Projector with MP3 / CD / DVD provision for audio / video facility

REFERENCES:

GUIDELINES FOR THE COURSE

COMMUNICATION SKILLS LABORATORY

A batch of 60 / 120 students is divided into two groups – one group for the PC-based session and the other group for the Class room session.

The English Lab (2 Periods) will be handled by a faculty member of the English Department. The Career Lab (2 Periods) may be handled by any competent teacher, not necessarily from English Department

RECORD NOTEBOOK: At the end of each session of English Lab, review exercises are given for the students to answer and the computer evaluated sheets are to be compiled as record notebook. Similar exercises for the career lab are to be compiled in the record notebook.
INTERNAL ASSESSMENT: The 15 marks (the other 5 marks for attendance) allotted for the internal assessment will be based on the record notebook compiled by the candidate. 10 marks may be allotted for English Lab component and 5 marks for the Career Lab component.

END SEMESTER EXAMINATION: The end-semester examination carries 40% weight age for English Lab and 60% weight age for Career Lab.

Each candidate will have separate sets of questions assigned by the teacher using the teacher-console enabling PC–based evaluation for the 40% of marks allotted.

The Career Lab component will be evaluated for a maximum of 60% by a local examiner & an external examiner drafted from other Institutions, similar to any other lab examination conducted by Anna University.

TT2071  APPAREL PRODUCTION AND CONTROL  L T P C
3 0 0 3

AIM
To impart knowledge on Apparel production systems, production process planning and control

OBJECTIVES
• To impart knowledge on different production systems
• To impart knowledge on production scheduling, planning and process control techniques.

UNIT I  INTRODUCTION
Control parameters, apparel production parameters, planning & lead Time. Product development Steps from prototype to production model, importance of pre-production activities; Introduction to timetable concepts. Product data management understanding & interpretation of specification sheet

UNIT II  OPERATION SEQUENCE DEVELOPMENT
Garment breakdown with machine & attachment details, development of production gird for garment construction, development of production flowchart.

UNIT III  BUNDLE TICKETS

UNIT IV  PRODUCTION PLANNING AND CONTROL
Capacity calculation for cutting, sewing & finishing. Determination of machine requirements for new factory. Line balancing: Determination & allocation of man power & machine for balanced production in existing plant for a given target
UNIT V  QUALITY IN PRODUCT DEVELOPMENT  9
Quality assurance during product development – methods to avoid problems during pattern making, garment construction and other areas. Inspection procedures. Work – study in garment industry – Methods to control time and cost

TOTAL: 45 PERIODS

TEXT BOOKS:

REFERENCES:

FT2352  ADVANCED PATTERN MAKING  L T P C
3 0 0 3

AIM
To impart knowledge on pattern making for children, men and women’s garments

OBJECTIVES
• To teach the students to create patterns with seam and cutting allowance for Children, men and women’s garments
• To teach students in solving fitting problems in patterns
• To impart knowledge on draping techniques

UNIT I  9
Development of Design and patterns using ¼ scale for women's formal wear – Trousers and shirt. Women’s casual wear – house coat, Ladies jeans Women’s party wears – Single piece party dress, Churidhar.

UNIT II  9
Development of Design and patterns using ¼ scale for Men’s formal wear – Shirts, Trousers. Men’s casual wear – Pyjama, Bermudas, Men’s - party wear – Sherwani Kurtha

UNIT III  9
Development of Design and patterns using ¼ scale for Children’s Uniform, Children’s Play time dress, Children’s Night dress.

UNIT IV  9
Solving fitting problems for Men’s wear, Women’s wear. Children’s wear – Principles of good fit, alternation of patterns for defective, unusual figures
UNIT V
Draping—Introduction on dress forms, draping skills—preparation of bodice pattern, skirt (A-line skirt, 6 gore skirt, circular skirt), sleeve, pant and collar (convertible collar, peter pan collar, turtle neck collar, shawl collar) in draping method. Techniques of draping—neckline cowl, side seam cowl, bias cowl, bustier, flounces, peplum

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES

GARMENT PRODUCTION MACHINERY & EQUIPMENT- II L T P C
3 0 0 3

AIM:
To impart the knowledge about various machineries and equipments used in garment manufacturing process.

OBJECTIVES:
- To impart knowledge on fabric spreading, marker making machines and equipments and their advancements
- To educate on different types of cutting machines, cutting blades and their merits and demerits
- To teach the students about various types of cutting machines, their selection and trouble shooting in sewing machines

UNIT I
Introduction to special sewing machines – Types of special machines – Overlook, Flat lock, Button hole sewing, Button sewing, Feed of arm, Riveting.

UNIT II

UNIT III
UNIT IV 9

UNIT V 9
Special purpose sewing machines – Feed of Arm, Button Hole sewing, button sewing, Bar tack, blind stitch machines – Automation in sewing machines – Unit production system – Computerized anal Sewing machines.

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES
UNIT V

Study of different types of household/industrial washing machines - rotary – swirling – pressure – tumble wash etc

TOTAL: 45 PERIODS

TEXT BOOKS

FT2357 COMPUTER AIDED GARMENT DESIGN LAB L T P C
0 0 3 2

AIM
To use Computer and relevant software to develop and design patterns for Garments

LIST OF EXPERIMENTS

Developing design, pattern and marker plan for children’s wear – Baby frock using a one-way fabric of 38” & 42” width. Calculate the marker efficiency.
Developing design, pattern and marker plan for children’s wear – Rompers using a two-way fabric of 38” & 42” width. Calculate the marker efficiency.
Developing design, pattern and marker plan for a Ladies top – using corduroy fabric of 44” & 52” width. Calculate the marker efficiency and develop a lay lot plan.
Developing design, pattern and marker plan for Men’s Formal Trouser – using a pencil stripe fabric of 60” & 72” width. Calculate the marker efficiency.
Developing design, pattern and marker plan for a Ladies Skirt – using plaid fabric of 38” & 60” width. Calculate the marker efficiency. Develop a lay lot plan
Developing design, pattern and marker plan for a Men’s Full arm shirt using a checks fabric of 52” & 60” width. Calculate the marker efficiency. Develop a lay lot plan
Designs a ladies party wears including accessories and develop a 3D visual merchandise window display
Design a Men’s Formal wear including accessories and develop a 3D visual merchandise window display
Design Children wear including accessories and develop a 3D visual merchandise window display

TOTAL: 45 PERIODS

COMPUTER AIDED GARMENT DESIGN LAB

LIST OF EQUIPMENTS

(For a batch of 30 Students)
Pattern Drafting, Grading and Marker Planning Software – 30 Copies

Fashion Designing Software:
1. Fashion Studio 1 Copy
2. Textronics 1 copy
Karat Cad 1 Copy
Module: Fashion Studio 1 Copy
Design & Repeat
Colour Reduction
Story Board & Cataloguing

General Soft Ware: Adobe
Corel Draw
Any one 15 Copies
Illustrator

Hardware Specifications: 30 Nos
(With Suitable configuration to support the
Software)
Plotter & Scanner - 1 each
Spreading & Cutting machine - lab Model (Preferable) - 1 each

FT2358 GARMENT CONSTRUCTION LAB II L T P C
0 0 3 2

AIM:
To impart knowledge on Garment making

OBJECTIVES:
- To teach the students about types of seams and stitches, sewing threads and their qualities
- To impart knowledge on various garment parts and their variations.
- To impart knowledge on use of accessories for garments

LIST OF EXPERIMENTS
Step by step construction of Ladies Salwaar
Step by step construction of Ladies Kameez
Step by step construction of Ladies top (2 sessions)
Step by step construction of Ladies Blouse (2 sessions)
Step by step construction of Ladies trouser (2 sessions)
Step by step construction of Ladies Brassiers
Step by step construction of Ladies Panties

TOTAL: 45 PERIODS

GARMENT CONSTRUCTION LAB II
MACHINES REQUIRED
(For a batch of 30 Students)

Folding clips ¼”, ½”, 3”.
- 2 each
Rib cutting machines
- 1
Single needle lock stitch machine
- 15
Flat lock machine with elastic attachment
- 1
Feed off the arm machine
- 1
Over lock machine
- 3
Button holing & button stitching machine
- 1 each
Cylinder bed Sewing machines
- 1(Preferable)
Collar & Cuff recessing machine
- 1(Preferable)
CONSUMBALES:
(To be brought by students)

Needles
Canvas material
Sewing threads
Fusing canvas
Elastics
Sponge
Draw cords
Fasteners

FT2359  DESIGN COLLECTION  L T P C
0 0 3 2

AIM:
To understand fashion forecasting and develop suitable garments

OBJECTIVES:
To understand Fashion Forecasting in terms of colour, pattern and Fabric
• To learn preparation of Story board
• To learn selection of Design details, fabric and accessories
• To develop Miniature garments

TOTAL: 45 PERIODS

EXPERIMENTS
Forecasting colours, pattern and fabric for the ensuing seasons based on international forecast
Collections of fabric swatches and colours based on future forecast
Preparation of story boards/Mood boards
Illustrating Fashion Models
Selection of Fabric Swatches
Selection of Surface Ornamentation techniques
Preparation of various Styles for Selected fabrics
Selection of Seams, Necklines, Collars, Sleeves etc
Selection of Accessories
OBJECTIVE
Knowledge on the principles of management is essential for all kinds of people in all kinds of organizations. After studying this course, students will be able to have a clear understanding of the managerial functions like planning, organizing, staffing, leading and controlling. Students will also gain some basic knowledge on international aspect of management.

UNIT I  OVERVIEW OF MANAGEMENT  9

UNIT II  PLANNING  9

UNIT III  ORGANIZING  9

UNIT IV  DIRECTING  9
Creativity and Innovation - Motivation and Satisfaction - Motivation Theories Leadership - Leadership theories - Communication - Hurdles to effective communication - Organization Culture - Elements and types of culture - Managing cultural diversity.

UNIT IV  CONTROLLING  9
Process of controlling - Types of control - Budgetary and non-budgetary control techniques - Managing Productivity - Cost Control - Purchase Control - Maintenance Control - Quality Control - Planning operations.

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on productivity and work study methods and their application

OBJECTIVES:
- To impart knowledge on productivity and factors affecting productivity
- To impart knowledge on work study methods and their application in Apparel industry

UNIT I
9
Productivity in industry Productivity and standards of living Productivity of materials, productivity of land, buildings, machineries and Manpower Total time to do a job Factors tend to reduce productivity, work content and time. Reducing work content due to the product, due to the process method, reducing ineffective time, due to management, due to the worker

UNIT II
9
Work – study: Definition, work-study and productivity, Base procedure of work-study. Work study and the management. Work-study and the supervisor, Work-study and the worker, work-study, working condition and the working environment

UNIT III
9
Method study: definition and objects of method study. Basic procedure, selection of work, Recording, examining, development of method Factory lay out and movement of workers and material. String diagram, Man type flow process chart, multiple activity chart, travel chart. Principle of motion economy classification to movements Two-handed process chart, micro motion study, SIMO chart, Define, installs and maintain improved method.

UNIT IV
9
Work measurement: Definition, purpose, procedure and uses. Techniques of work measurement Work sampling: need and use time study: definition, basic time study equipment. Time study forms, selecting the job, steps in making a time study breaking the job into elements: Sample size, timing card element: stop watch procedure. Time Study rating, calculation of standard time, setting time standards for work with machineries

UNIT V
9
Application of work study techniques in cutting, stitching and packing in garment industry Comparative study of different manufacturing systems used in the garment production – group system, batch system- industrial system

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on principles of Apparel costing and factors affecting cost.

OBJECTIVES
- To impart knowledge on elements of apparel cost and factors affecting cost.
- To educate on principles of cost estimation and actual cost.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Packing & labeling cost – different types and functions Uses of brand and size label – duty draw back etc. cost of bought out components, thread, Button, Zippers, Interlining, Shipment cost, cost calculation of ladies, Men and children’s wear – woven and knitted – simple problems.

TOTAL: 45 PERIODS

TEXT BOOKS
AIM
To impart basic knowledge in the area of Quality Assurance in Fabric Manufacture and Garment Production

OBJECTIVES
- To study the concepts of Quality Assurance
- To study the Process and Quality Control Parameters in Fabric and Garment Production
- To know in detail the various aspects of Quality Management related to Garment Production

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

TOTAL: 45 PERIODS

TEXT BOOKS
REFERENCES
2. Sammel Eliou, “Production Planning & Control”, Wiley Eastern Pvt. Ltd

FT2404 COMPUTER APPLICATION IN APPAREL INDUSTRY L T P C
3 0 0 3

AIM
To impart knowledge on application of CAD / CAM techniques in Apparel Industry

OBJECTIVES
- To impart knowledge on CAD / CAM applications in Apparel designing and manufacturing
- To impart knowledge on Computer application in Apparel Production Planning and Control

UNIT I 9

UNIT II 11

UNIT III 9
Computer application in sewing embroidery and garment design computer aided color matching – computer controlled overhead transport & warehouse storage systems. Computerized unit production systems used in apparel industry.

UNIT IV 7
Concept of electronic based smart garments, use of graphics for fabric and a garment designs product designs, color work on CAD system for printing

UNIT V 9
E-Commerce in apparel industry – ERP, concept of ERP and its application in garment unit – Electronic data interchange – computer aided management and production control

TOTAL: 45 PERIODS

TEXT BOOKS:
AIM
To practice use of fashion forecasting to develop garments.

OBJECTIVITIES
- To develop Miniature garments using fashion forecasting and design collection.
- To understand documentation of “garment design” along with costing.

EXPERIMENTS
Preparation of Miniature garments as per the design collection (FT1357)
Preparation of costing sheet for each garment designed
Documenting the Design Collection in suitable format and Final Presentation
(Minimum of 4 garments are to be developed in the course)

TOTAL : 45 PERIODS

LIST OF EXPERIMENTS
Study of Threading and Stitches per inch in single Needle Lock Stitch Machine.
Study of Threading and stitches per inch over lock stitch machine.
Adjustment of needle thread & Lopper thread tension and feed ratio in over lock stitch machine.
Study of threading and stitches per inch Flat lock stitch machine.
Adjustment of needle thread & Lopper thread tension and feed ratio in Flat lock stitch machine.
Study of button sewing machine
Study of Button Holing machine
Study of Feed of the arm Machine.
Study of Flat lock elastic attaching machine
Study of Electronic Zig – Zag Sewing machine.

LIST OF EQUIPMENTS
(For a Batch of 30 students)

<table>
<thead>
<tr>
<th>Machine</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Needle Lock Stitch machine</td>
<td>30</td>
</tr>
<tr>
<td>Over lock Stitch machine</td>
<td>1 No</td>
</tr>
<tr>
<td>Flat lock Stitch machine</td>
<td>1 No</td>
</tr>
<tr>
<td>Button sewing machine</td>
<td>1 No</td>
</tr>
<tr>
<td>Button Holing machine</td>
<td>1 No</td>
</tr>
<tr>
<td>Feed of he arm machine</td>
<td>1 No</td>
</tr>
<tr>
<td>Flat lock elastic attaching machine</td>
<td>1 No</td>
</tr>
<tr>
<td>Electronic Zig- Zag Sewing machine</td>
<td>1 No</td>
</tr>
</tbody>
</table>

TOTAL : 45 PERIODS
UNIT I  INTRODUCTION  9

UNIT II  TQM PRINCIPLES  9
Leadership – Strategic quality planning, Quality statements - Customer focus – Customer orientation, Customer satisfaction, Customer complaints, Customer retention - Employee involvement – Motivation, Empowerment, Team and Teamwork, Recognition and Reward, Performance appraisal - Continuous process improvement – PDSA cycle, 5s, Kaizen - Supplier partnership – Partnering, Supplier selection, Supplier Rating.

UNIT III  TQM TOOLS & TECHNIQUES I  9

UNIT IV  TQM TOOLS & TECHNIQUES II  9

UNIT V  QUALITY SYSTEMS  9

TOTAL : 45 PERIODS

TEXT BOOK

REFERENCES
AIM
To impart knowledge on different photography techniques and equipments. To impart knowledge on different printing techniques.

OBJECTIVE
- To educate on principles of photography. Different techniques and lighting methods
- To educate on different types of photography equipments. Photography for different media. Printing techniques.
- To impart knowledge on videography and computer applications in photography.

UNIT I

UNIT II
Camera definition – parts of camera- classification and types of camera – Applications Disadvantages.

UNIT III
Photography techniques and equipment for different fields. Modeling, newspaper, magazines –occasions –Fashion shows.

UNIT IV

UNIT V

TOTAL : 45 PERIODS

TEXT BOOKS
AIM To impart knowledge on application of software for fashion and textile design

OBJECTIVE
- To teach students about selection and use of software for fabric and garment design.

UNIT I
Selection of software, different software available for textile designing and fashion designing. Important of design using CAD. Special tools & Skills & program application for lines drawing & images using software like Corel draw & photo shop.

UNIT II
Study of features & working of textile designing software. Developing designs for dobby, jacquard, knit & printing. Weave terms, sample swatch card, categorizing fabrics.

UNIT III
Current use of fashion designing software in industry & designing field, creating a basic pattern motif, editing a basic motif, creating a toss repeat, color selection, working with color, color edition, rendering textures & lighting, 3D-Simulation – story board & cataloging.

UNIT IV
Developing garment designs for men’s, women’s & children’s fashion figures along with accessories, developing a design library of garment details.

UNIT V
Use of CAD, graphic designs, principles, 3D-studio max- making design portfolio & catalog.

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCE

AIM To impart knowledge on enterprise development, labour laws and marketing principles applied to apparel Industry.

OBJECTIVE
To equip the students with the organizational structure of apparel Industry in India.
To teach entrepreneurship, Labour law and marketing principles.
UNIT I

UNIT II
Setting up a small garment unit - study of land, Norms of SA-8000, capital, labour market demand etc. preparing a project, large scale industry its advantages over SSI. Bank assistance, marketing – national & international marketing.

UNIT III

UNIT IV

UNIT V

TOTAL : 45 PERIODS

TEXT BOOKS

FT2024 FASHION MARKETING L T P C 3 0 0 3

AIM
To impart knowledge on principles marketing, marketing research. Domestic and international market.

OBJECTIVE
- To educate about principles of marketing, factors affecting domestic and international market, fashion trends and consumer behaviour.

UNIT I

UNIT II
Fashion, Fad, style – Application – Society Fashion and individual fashion – their Coordination - wardrobe.
UNIT III
Applied illusions – Physical effects- Overall height- over all weight – Covering body
defects by design – Visual design in Dress in Australia - Brazil – Germany - India –
Japan - Nigeria.

UNIT IV
Fashion marketing Research – Purpose of research -research design & data sources –
Sampling methods – data Collection – Forecasting Fashion – Market Segmentation -
Fashion marketing mix.

UNIT V
Fashion Products and its importance – Fashion Industry & new Product Development –
Fashion Designers role in apparel market – Branded Products – personal labels – stores
that seek the merchandise.

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES

FT2025 COMPUTER AIDED PATTERN MAKING (CAPM) FOR MEN’S AND
WOMEN’S WEAR
L T P C
3 0 0 3

AIM
To impart knowledge on Techniques and software for pattern making and their
application to men’s and women’s wear.

OBJECTIVE
• To teach techniques of computer aided pattern making.
• To teach pattern making for men’s and women’s wear using software

UNIT I
Selection of software – Flexibility, upgradibility, ease of use- Documents etc. the

UNIT II
Simulation techniques, Solid modeling shading –drafting using AutoCAD with special
reference to apparel– pattern making laying of material.

UNIT III
Using CAD to identify grain – grain line – notches – true bias – seam allowance- cut
mark – pocket mark etc. take body measurements of Men’s & Women’s garments and
create pattern using CAD. Create the surface design techniques using CAD.
UNIT IV
Creating patterns with CAD for Men’s & Women’s Wear, Pattern making – grading –
marker efficiency – using CAD. Computer aided colour matching.

UNIT V
Solving fitting problems of Men’s & Women’s garments using CAD. Principles of a good
fit; alteration of pattern for defective figures – Develop patterns using CAD for Men’s &

TEXT BOOKS
1. Gerry Cooklin, “Master Patterns and grading for women’s out size”, Blackwell

REFERENCES

FT2026 CREATIVITY, INNOVATION, AND NEW PRODUCT DEVELOPMENT

AIM
To impart knowledge on product creation, evaluation and costing techniques

OBJECTIVE
- To impart knowledge on the concept of product design and development
- To impart knowledge on feasibility and evaluation of new product.
- To impart knowledge on prototype creation and testing. Patent laws.
- To educate on market research.

UNIT I INTRODUCTION
The process of technological innovation – factors contributing to successful technological
innovation – the need for creativity and innovation – creativity and problem solving –
brain storming - different techniques.

UNIT II PROJECT SELECTION AND EVALUATION
Collection of ideas and purpose of project – selection criteria – screening ideas for new
products (evaluation techniques).

UNIT III NEW PRODUCT DEVELOPMENT
Research and new product development – Patents – patent search – patent laws –
International code for patents – intellectual property rights (IPR).

UNIT IV NEW PROJECT PLANNING
Design of prototype- testing – quality standards – marketing research – introducing new
products.

UNIT V MODEL PREPARATION & EVALUATION

TOTAL: 45 PERIODS
TEXT BOOKS

REFERENCES

FT2027 GARMENT FINISHING

AIM
To educate the students in techniques and machinery for dyeing and finishing of garments.

OBJECTIVE
• To equip the students with the knowledge of dyeing techniques for apparel
• To equip the students with the knowledge of applying different finishes on garments

UNIT I

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

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

UNIT IV

TOTAL : 45 PERIODS

TEXT BOOKS:

REFERENCES
AIM
To impart knowledge on application of CAD / CAM in apparel industry

OBJECTIVE
- To educate the students the use of computer based systems in various activities of apparel industry – garment design, pattern making, grading and marker planning
- To educate the students on the concept of computer aided manufacturing, production planning and control
- To equip the students with knowledge of application of computer based management systems.

UNIT I
Introduction to computer – Concepts of CAD / CAM. Applications of CAD / CAM in apparel industry. Effectiveness of using CAD / CAM in Apparel production and enterprise management.

UNIT II
Concept of computerized pattern making – selection of hardware and software, a sample pattern. Computer aided manipulation of pattern pieces to create individual styles, grading and marker planning. Application of garment design CAD software. Computer application in purchase, inventory control and sales, computerization in quality control and production control.

UNIT III

UNIT IV
Computer controlled machinery for garment manufacturing – automated layout planning by various techniques – Algorithm for computerised production of garment parts – 3D scanning for body measurements. Imaging techniques for various designs. Development of robotics for CAM.

UNIT V
Management Information System in garments Industry – EDI in garment technology. Concept of Enterprise Resource Planning (ERP) and computerization in exports / documentation.

TOTAL : 45 PERIODS

TEXT BOOKS:

REFERENCES
UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To use OR principles in developing project engineering schedule and network of project constructions.

OBJECTIVES:
- To Find solution to the correct route in implementing the projects.

UNIT I

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

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

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

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on techniques of product and production process analysis and control

OBJECTIVE
- To impart knowledge on product analysis with respect to quality, standards and cost.
- To impart knowledge on production process evaluation, control and manufacturing information systems work study.

UNIT I
6
Product analysis; Relationship between quality and construction of a seven product – geometric principles of draping, drafting and industrial patterns – product specifications.

UNIT II
8
Production control and Engineering; Industrial engineering concepts – Development and application of standard data for pre-costing and factory scheduling – Basic production systems – production control charts. Manufacturing Information system; Systems and procedures.

UNIT III
10
Production Management analysis; Analysis of techniques for material utilization and cutting of raw materials for all types of sewn products; principles and methods of costing, evaluation production problems in spreading, cutting and cost control.

UNIT IV
11
Plant Layout; Definition – Types of production layout, criteria for evaluation of a plant layout, determining minimum space requirement, calculation grid, plant size location, Basic production fine layout, Government regulations for plant layouts.

UNIT V
10
Time and motion study; General approach for making a time and motion study, preliminary data for time and motion study sheet; sewing work study, Principles of work cycle timing methods, objectives of time study, statistical approaches – statistical calculation of time study – operator efficiency distributions. Evaluating motion study data – Principles for improving sewing and pressing operations.

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart the knowledge of pollution, policies, detection of hazardous dyes and chemicals and their eco friendly alternatives.

OBJECTIVE
- To impart knowledge on chemical constitution of dyes and chemicals used in apparel industry
- To impart knowledge on detection of hazardous chemicals, legislation banning them, allowances and eco friendly alternatives.

UNIT I

UNIT II
Alternative dyes and chemicals – structure – Identification by chromatographic techniques.

UNIT III
Finishes – banned items – allowable dosages – alternatives to finishes

UNIT IV

TOTAL : 45 PERIODS

TEXT BOOK

REFERENCES

AIM
To impart the knowledge on testing fibre, yarn, fabric and garment for various utility properties.

OBJECTIVE
- To impart knowledge on effect of physical and chemical properties of fiber, yarn, fabric and garments on apparel utility characteristics – appearance, comfort, durability, protection and care.

UNIT I
Fabric Appearance
Fibre structure, selection of fibre, yarn structure and fabric construction; their effect on fabric appearance. Study of properties such as pilling, fastness, and luster.
UNIT II
Comfort
The effect of fibre properties, yarn structure and fabric construction on the fabric properties such as drapability, air permeability, moisture absorption, bending rigidity, shear rigidity, selection of fibres and yarn structure and its effect on comfort properties, effect of fabric construction.

UNIT III
Durability
Study of tensile, tearing strength, bursting strength with respect to fibre properties, yarn structure and fabric design.

UNIT IV
Fabric as Protection.

UNIT V
Easy care
The fibre properties and chemical treatments that decide the fabric properties such as crease recovery, shrink ability, pilling formation.

UNIT VI
Fabric Engineering
For the given end use, designing of fabric from selection fibre, type of yarn manufacture, fabric design to finishing treatments.

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To impart knowledge on technology of protective garments – selection of fibres and yarns, fabric parameters and finishes applied.

OBJECTIVE
- To educate the knowledge on selection and properties of fibres and yarns for protective garments
- To educate on fabric structure and manufacturing techniques for protective wear and garment manufacturing process for protective apparels.

UNIT I
Selection of fibres-Suitability and properties of high performance fibres for various protective clothing – chemical composition and physical structure, characteristics and working of various fibres according to different end uses like thermal protection, ballistic protection, anti-microbial protection, Protection against cold etc.

UNIT II

UNIT III
Chemical finishes for protective garments:
Use of coated fabrics – different types of finishes like fire retardant finishes, for different textile materials, water repellent finishes, anti-microbial finishes. Chemical finishes against radiation and chemicals – method of application of those finishes. Protective finishes for health care garments.

UNIT IV
Garment construction
Method of construction of garments according to various protective end uses like protection against cold, ballistic protection, use of different fabric type (knitted, woven, and Non-woven), coated / laminated in different places. Use of interlining and composites. 3D structures. High tech textiles – variable electronics. Protective garments for industrial and apparel end uses.

UNIT V
Evaluation of protective fabrics

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES
AIM
To equip the students with the knowledge on merchandising concept, use of Merchandising.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

TOTAL : 45 PERIODS

TEXT BOOKS

REFERENCES