

M.Sc Home Science (Textile & Clothing) 2010-11 onwards

Scheme of Instruction

	<i>M.Sc. TEXTILES AND CLOTHING</i>	Th	Internal assessment (IA)	Pds/ wk
Sem I				
001	Textile Chemistry	50	50	6
002	historic textiles	50	50	6
003	Clothing and fashion economics	50	50	6
004	Dyeing and printing	50	50	6
005	PRACTICAL(textile chemistry+ dyeing and printing)	100		8
	TOTAL- 400 (THEORY) + 100 (PRACTICAL)			
Sem II				
006	Fabric construction and woven fabric analysis	50	50	6
007	Research Methods & Statistics	50	50	6
008	Technical textiles	50	50	6
009	Clothing for special needs	50	50	6
010	PRACTICAL (Fabric Construction & WFA+ Textile Design)	100		8
	TOTAL-400 (THEORY) + 100 (PRACTICAL)			
Sem III	FROM 2011-2012 ONWARDS			
011	Textile testing and quality control	50	50	6
012	Fashion marketing and merchandising	50	50	6
013	Apparel design and construction/ Draping and Grading	50	50	6
014	Historic costumes	50	50	6
015	PRACTICAL (Textile Testing & Quality Control + Apparel Design and Construction/ Draping and Grading)	100		8

	TOTAL-400 (THEORY) + 100 (PRACTICAL)			
Sem IV				
016/017	Dissertation and seminar / Industry training(internship) and project report	500		

***Supervisor's guidance and field work**

Total marks= 2000

SEMESTER I

PAPER I TEXTILE CHEMISTRY

TH50, IA-50

UNIT I

a) Polymer Chemistry –polymers, methods of polymerization, classification of polymers, degree of polymerization, use of x-ray diffraction method in investigating molecular structure of textile fibers, orientation and crystallinity, their influence on fiber properties.

UNIT II

Chemistry of natural fibres

- a) Cellulosic Fibers: introduction to cotton and other cellulosic fiber, properties, longitudinal and cross sectional view, molecular structure, action of acids, alkalis, hydrocellulose, oxycellulose , mercerization.
- b) Regenerated cellulosic fibres- viscose rayon, cuprammonium rayon, Cellulose acetate, polynosic- their manufacture, properties and use.
- c) Protein fibers wool, silk chemical composition, molecular structure , Physical and chemical properties, action of acids, alkalis and other chemicals, felting of wool, degumming and weighting of silk, shrink proofing of wool.

UNIT III

- a) Synthetic fibres : polyester, polyamide and acrylonitrile fibres : chemistry of fibres :raw material, manufacturing process from polymer to fiber stage, physical and chemical properties and their uses in textiles and clothing, comparison of wet , dry and melt spinning methods.
- b) Other natural and synthetic fibres: their chemical composition, properties and uses namely - jute, flax, polyethylene, polypropylene, polyurethane fibres bicomponent fibres, special purpose fibres.

UNIT IV

- a) Scientific basis of dyeing and printing of textiles: classification of dyes, theory of dyeing, chemical structure of various classes of dyes, application of dyes on various substrates including blends.

- b) Scientific basis of scouring and bleaching of textile fibres and fabrics : role of soaps and detergents, scouring agents, bleaching agents, surface active compounds, optical brightening agents, methods of application of bleaching agents to different fibres like cotton , wool, silk, rayon.

UNIT V

Textile Finishing: classification of textile finishes- preparatory (scouring, desizing singeing, shearing, brushing), mechanical (calendar, moiré, schreiniés, embossing, pleating, stentering fulling and crabbing) chemical finishes (mercerization, parchementisation, carbonizing, ammoniating) and routine and special purpose finishes.

PRACTICAL

1. Identification of fibers in pure & blended fabrics.
2. Quantitative analysis of common blended fabrics.
3. Study of chemical properties of textile fibers.
 - i) Cotton
 - a) Copper no. of oxidized cotton.
 - b) Effect of weak & strong alkalies (mercerization) on cotton
 - ii) Wool
 - a) Action of acids.
 - b) Chlorination of wool.
 - c) Felting of wool.
 - iii) Silk
 - a) Weighting of silk.
 - b) Scrooping of degummed silk.
4. Determination of strength of bleach liquor.
5. Determination of total hardness of water.
6. Determination of soap destroying power of water.
7. Identification of dyes on fibers and fabrics.

UNIT I

Early textile fibers & their products, uses & impact in early civilization- India, China, Peru, Crete, Greece, Rome, Byzantine and barbarian era.

UNIT II

Historical development of natural fibers, cotton in India, Silk in Asia, Linen in Egypt, Wool in India & South America.

UNIT III

Development of weaving in India, Spain, Italy, France, England.

UNIT IV

Development of dyeing, printing & Painting.

- a) Resist dyed, printed & painting.
- b) Toile de Jouy of Ober Kamph.
- c) English Chintz & lines.

UNIT V

- a) Embroidery in historical perspective- India, China Persia, Europe.
- b) Study of following textiles with reference to their history, construction techniques, styles, colours, motifs, & centres of production.
 - i) Carpet
 - ii) Tapestries
 - iii) Laces
 - iv) Brocades
 - v) Shawls

PAPER III CLOTHING AND FASHION ECONOMICS
TH-50, IA-50

UNIT I

Origin of clothing, Theories of clothing (modesty, immodesty, protection, adornment), theory of fashion, fashion cycle, combined need theory, fashion silhouettes.

UNIT II

Social importance of clothing and how society affects the clothing choice.

UNIT III

- a) Fashion development: fashion terminology (ready to wear and haute couture etc), organizations world over for fashion development, France as fashion capital,
- b) Designers: Brief introduction to national and international fashion designers.

UNIT IV

- a) importance of textile industry in indian economy
- b) business environment in india
- c) production planning and control
- d) international trade

UNIT V

Textile and Clothing industry

- a) cotton, wool, silk, rayon and synthetics
- b) handloom
- c) knitwear
- d) readymade garment

UNIT I

Preparation of fabric dyeing & printing: scouring, bleaching & designing. Reagents used & their mode of application. Various stages of dyeing: dope dyeing, fiber, yarn, fabric and piece goods.

UNIT II**Dyeing :**

- a) Theories of dyeing, colour & chemical constitution.
Chemical classification of dyes, dyeing auxiliaries, dyeing machines for fibers, yarns or fabrics.
- b) Dyeing with indigenous (natural) dyes.

UNIT III

Dyeing defects and remedies.
Difference between dyeing & printing.

UNIT IV

- a) Styles of printing-
 - Direct style, dyed style, resists or reserve style, discharge style.
 - Special printing procedures- polychromatic dyeing, transfer printing, flock printing and carpet printing.
- b) Finishing and after treatment of printed goods at cottage and industrial level.

UNIT V

Testing dyed material-

Colour fastness properties. Definition, objectives & methods of testing- sunlight, crocking, washing, perspiration & dry cleaning. Use of gray scales for results.

PRACTICAL

1. Preparation of fabrics for dyeing & printing- scouring, bleaching & desizing cottage level for different & fiber, yarn, fabric and blends.
2. Dyeing of different types of fabrics and fibre blends using various dyes.
3. Report of visit to different dyeing & printing establishments.
4. Printing with block & screens.
Printing of various styles using different dyes.
 - a) Direct style-acid, reactive , azo, Vat.
 - b) Discharge style.
 - c) Mordant or dyed style.
 - d) Reserve style
 - e) Raised style.
5. Transfer Printing.

Finishing of dyed & printing goods-practices followed & equipment used at cottage level.

SEMESTER II

PAPER VI FABRIC CONSTRUCTION AND WOVEN FABRIC ANALYSIS TH-50, IA-50

UNIT I

Weaving

- a) Parts & functions of looms.
- b) Types of weaves
 - i) Basic- Plain, twill, satin
 - ii) Decorative-dobby, jacquard, leno, surface fig, Pile weaves etc.
- c) Draft & Peg Plans for graphical presentation

UNIT II

Knitting

- a) Circular wrap & weft knit structures.
- b) Geometry & properties of warp & weft knit structure.

UNIT III

Fabric faults / defects and their remedies.

UNIT IV

Spinning of simple & complex yarn, classification of yarn, use & purpose.

UNIT V

Textile design

- a) Color and weave effect for designing.
- b) Knotting & lace technology.

PRACTICAL

1. Weaving : Setting up a simple loom & weaving simple weave.
2. Knitting – setting the machines for basic knitting.
3. Fabric construction through non conventional methods.
4. Visit to spinning, weaving, & knitting mills.

PAPER VII: RESEARCH METHODS & STATISTICS TH-50, IA-50

1. A) Definition and identification of research problem, selection and sources of research problem, basic assumptions, limitation and delimitation of the problem. **Variables;** Type of variables, **Hypothesis;** Types of hypothesis, characteristics of hypothesis, functions of hypothesis, **Types of Movements scale-** Nominal or classificatory scale, ordinal or ranking scale, interval scale and ratio scale.
B) **Types of Research-** Historical, Descriptive, Experimental, Exploratory, Ex- Post- factor research, Longitudinal and cross-sectional, Case study, social, Participatory research, Explanatory research.
2. **Methods and techniques of data collection** – Group discussion, interviews, observation, questionnaire, schedule, case- study, home-visits. Attitudinal scales; Types of Attitudinal scales- likert scale, thoustone scale, Guttman. Reliability and validity test.
3. **Research Design-** Definition, Principles, Purpose. Type of study Designs (based on number of contacts, reference, period, nature of the investigation and commonly used study designs).

***Sampling-** Concept, principles, factors and sample size, types of sampling- probability sampling and non- probability sampling.*

Processing Data- Classification and Tabulation of Data, **Tables-** Types of Tables, **Graphs-** Histogram, line graph, bar chart, frequency polygon, pie chart. Measures control Tendency (Mean, Median, Mode).

Research report

4. A) Conceptual understanding of statistical measures. Classification and tabulation of data. Measurement of central of central tendency, measures of variation.

B) Binomial and Normal Distribution; Normal Probability Curve;
Testing of
Hypothesis: significance level , confidence limit.

C) Parametric and non parametric tests; Chi square test(goodness of fit, independence of attributes 2x2 and rxc contingency tables); t-test , f-ratio, analysis of variance- one way and two way classification.

5. a) Correlation , coefficient of correlation , rank correlation.

b) Reliability of mean , standard deviation and predictions;
Experimental designs- completely randomized design , randomized block design , Latin square designs, factorial design , trend analysis.

UNIT I

Unconventional fibers

- a) Regenerated cellulosic fibres,
- b) New generation bast fibres

UNIT II

Industrial textiles

Geo and agro textiles

special textile requirements for sports(types of fibres, fabrics, blends, knit structures)

UNIT III

Medical textiles

UNIT IV

Smart and Intelligent textiles

- a) Thermochromic/ photochromic textiles
- b) Aeronautical textiles and Electronic textiles
- c) Nano technology in field of textile finishing

UNIT V

Recent developments in textiles

- a) In machinery – knitting, Weaving, Dyeing and printing, Spinning technology etc.
- b) In fibre blends, yarns, fabrics and garment manufacturing.

UNIT I

Fitting affecting good fit, common problems encountered and remedies for fitting defects (upper& lower garments).

UNIT II

Clothing for people with special needs: Maternity and lactation period.

UNIT III

Clothing for old age.

UNIT IV

Clothing for physically challenged.

UNIT V

Evaluating the quality of apparel

- a) Identification of the components of apparel
- b) Fiber content, shaping devices, underlying fabrics, pockets, necklines, hem treatment, decorative details and alterations potential.
- c) Standards for evaluating the various components.

PRACTICAL (TEXTILE DESIGN)

UNIT I

Design analysis-

- a) Elements of design- Line & form, Colour & texture.
- b) Principles of design – Harmony, balance, proportion, rhythm & emphasis.

UNIT II

Basic sketching & painting sources: Fauna Flora

- a) Nature
- b) Architecture
- c) Traditional Arts & crafts
- d) Religions & Mythology.

UNIT III

Process of designing –

- a) Motif development- Geometrical, naturalized, stylized & abstract.
- b) Growth of Motif- Enlargement & reduction.
- c) Colour Application – colour harmonies & colour ways.
- d) Placement & repeats.
- e) Types of patterns- Central line , continuous, flowing, geometrical, abstract, decorative with fruit, flowers, foliage & with birds, animals & fruits etc.

UNIT IV

Design Application

- a) Media of application.
- b) Mood boards on given theme, design sheet for various end uses, color ways.

UNIT V

Preparation of a Portfolio.

SEMESTER III

PAPER XI TEXTILE TESTING AND QUALITY CONTROL **TH-50, IA-50**

UNIT I

Objectives & importance of textile testing, importance of standard, different types of standards, introduction to internal bodies such as ISI, ASTM & Bs etc.

UNIT II

- a) Selection of samples for testing – Random sampling- procedure for determination of properties of fiber, yarns & fabrics.
- b) Standard atmosphere test conditions – relative humidity various methods to measure relative humidity moisture content & moisture regain of textiles.

UNIT III

Fiber testing – Definition, objectives & method of testing staple length, mean length, short fiber percentage, fineness, maturity, tensile strength, elongation at break, interpretation of results.

UNIT IV

Yarn testing – Definition, Objectives & methods of testing count, denier twist diameter, crimp, tensile strength, elongation at break, stress-strain curve, elastic recovery, yarn appearance & evenness, interpretation of results.

UNIT V

Fabric testing

- a) Definition, objectives & methods of testing length, width, bow & skewness, thread count, ends & picks, weight, thickness, breaking strength, tear strength, bursting strength, abrasion resistance, shrinkage, stiffness, drapability, pilling & interpretation of results.
- b) Thermal properties of textile fibers.

PRACTICAL

- 1. Microscopic study of cross section & longitudinal section of textile fibers.
- 2. Moisture relations – use of oven & hygrometers.
- 3. Fiber testing – fibre length & evenness of length, fibre fineness, tensile strength, crimp,
elongation & elastic recovery, moisture regain.
- 4. Yarn testing – count , denier, twist, crimp, yarn appearance.
- 5. Fabric testing - ends & picks, weight, thickness, tensile strength, abrasion resistance,
crease recovery ,stiffness & drapability, colour fastness.

PAPER XII FASHION MARKETING AND MERCHANDISING
TH-50, IA-50

UNIT I

- a) Introduction – Nature & Scope, importance of marketing, Modern concept of marketing & marketing mix.
- b) Marketing Environment.
- c) Marketing Analysis- Sales Forecast, market segmentation.

UNIT II

Consumer behaviour analysis-

- a) Factors affecting consumer behaviour.
- b) Process of consumer buying, decision making.

UNIT III

Product Planning & development-

- a) Concept of Product line.
- b) Product mix & Product classification
- c) Development of new products.
- d) Brand name & trade marks.
- e) Packaging
- f) Product line cycle.

UNIT IV

- a) Pricing- factors affecting Price determination.
- b) Channels of distribution – their role & functions, selection, motivation & control.
- c) Methods of Promotion.
 - i) Advertising – Role & functions, Selection of media designing of message, Regulation of advertising in India.
 - ii) Personal selling- Selling as a career, characteristics of personal selling.
 - iii) Management of sales force selection, recruitment training motivation, compensation & evaluation & sales performance.

UNIT V

- a) Export marketing.
- b) Ethical social & legal aspects of marketing in India.
- c) Consumer Protection- consumer education and consumer movement.

**PAPER XIII APPAREL DESIGN AND CONSTRUCTION/ DRAPING
AND GRADING** **TH-50, IA-50**

UNIT I

Detailed study of industrial used for

- a) Cutting
- b) Sewing
- c) Finishing
- d) Embellishment

UNIT II

Study the interrelationship of needles, thread, stitch length & fabric.

UNIT III

Methods of pattern making

- a) Drafting
- b) Flat pattern
- c) Draping and grading

UNIT IV

Developing paper patterns

- a) Understanding the commercial paper pattern
- b) Layouts on different fabrics, widths & types.

UNIT V

Buying criteria for

- a) Knits, silks, denim & special fabrics.
- b) Readymade garments.

PRACTICAL

1. Designing through flat pattern- Dart manipulation.
2. Development of variation in sleeves, collars, necklines and bodice combinations.
3. Fashion Sketching

4. Development of slopers for skirt variations (Low and high waist, A- line, flared, circular, pleated, yoked with godet / peplum)
 5. Pockets and Placket
 6. Pattern markings, pattern envelope and guide sheet
 7. Introduction to draping and silhouette of the individual- dress form, Elements of fabric- woven, knitted. Development of pattern with variations in
 - a) One piece dresses
 - b) Two piece dresses
 - c) Dart less dresses(Incorporating various collars, sleeves, yokes, necklines, pockets and plackets etc.)
 8. Draping of bodice block and skirt block and their variation.
Draping of asymmetrical designs and preparing patterns.
 9. Introduction to grading
 - a) Terminology
 - b) Methodology – Track or stack method
 - c) Procedure for grading blocks to various sizes.
 - (i) Children – bodice block, sleeve block, skirt.
 - (ii) Women- bodice block, sleeve block, skirt.
- Preparation of portfolio
10. Term garments

UNIT I

Costume in ancient civilization.

- a) Egyptian
- b) Crete
- c) Greek
- d) Roman
- e) Byzantine

UNIT II

Indian costumes – Historical approach from ancient period to 20th Century emphasizing Indus Valley period, Mauryan period, Sunga Period, Kusan period, Gupta period.

UNIT III

Tribal costumes of India, study of Indian Sarees of different types of past & present.

UNIT IV

- a) European Costumes- 12th – 15th century.
- b) European Costumes- 16th & 17th Century
- c) European Costumes – 18th Century through 1875
- d) European Costumes – 1880 -20th Century.

UNIT V

Historic Costumes of China & Japan.

SEMESTER IV

IN LIEU OF PAPER XVI – DISSERTATION

The thesis / dissertation / survey report / field work shall be written & submitted in four copies. Only such candidates shall be permitted to offer Dissertation (if provided in the scheme of the examination) in lieu of the paper as have secured at least 60% or more marks in the aggregate of all the papers prescribed for the previous examination.

The dissertation shall be of 500 marks. The distribution of 500 marks of Dissertation will be as under –

1. seminar 1 (75 marks) Identifying topic and objectives
2. Seminar 2(75 marks) review, methodology and pilot study
3. seminar 3 (100 marks) report writing and presentation
4. seminar 4 (150 marks) Pre – submission seminar
(By the board of internal examiner)
5. Viva-voice on Dissertation 100 marks (By external examiner)

The board of internal examiners shall consist of

1. Principal or his/her nominee.
2. Head of the Department, &
3. Supervisor concerned.

The total of the three awards shall be taken as Final award.

N.B.- Where there is any difficulty in the constitution of the internal board according the procedure laid down above, the Principal will constitute the board.

OR

PAPER XVII Industry training(internship) with project report – 500 marks

1. SEMINAR 1 (75 marks) Identifying topic and objectives
2. Seminar 2(75 marks) review,methodology and pilot study(in between training)
3. seminar 3 (100 marks) report writing and presentation
4. seminar 4 (150 marks) Pre – submission seminar
(By the board of internal examiner)
5. Viva-voice 100 marks (By external examiner)