

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Semester Pattern

Syllabus

Of

**M.Sc. (HOME SCIENCE)
TEXTILE AND CLOTHING**

2012

**M.Sc. Semester Pattern in Textile and Clothing Subject (Home Science)
Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur , M.S. India**

Semester-I				
Paper	Subject Code	Name of Paper	Marks	Credits
Paper-I	1TC-T1	Textile testing & quality Control- Paper-I	100	25
Paper-II	1TC-T2	Advance Pattern marking & construction Techniques Paper-II	100	
Paper-III	1TC-T3	Textile Science Paper-III	100	
Paper-IV	1RMS-T4	Research Methods and Statistics-I. Paper-IV	100	
Practicals				
Practical-I	1TC-P1	Textile testing & quality Control- Practical I	100	
Practical-II	1TC-P2	Advance Pattern marking & construction Techniques Paper-II Practical-II	100	
Seminar-I	1TC-P3	Current Trends and issue in textile and Clothing*	25	
Semester-II				
Paper-I	2TC-T1	Advance Draping Paper-I	100	25
Paper-II	2TC-T2	Advance Textile Designing paper-II	100	
Paper-III	2TC-T3	Sociological and Psychological Aspects of Clothing and Historic Costume , Paper-III	100	
Paper-IV	2RMS-T4	Research Methods and Statistics –II, Paper-IV	100	
Practicals				
Practical-I	2TC-P1	Advance Draping Paper-I Practical-I	100	
Practical-II	2TC-P2	Advance Textile Designing paper-II Practical-II	100	
Seminar-I	2TC-P3	Current Trends and issue in textile and Clothing*	25	
Semester-III				
Paper-I	3TC-T1	Fashion Designing, Paper-I	100	25
Paper-II	3TC-T2	Programme Design and Evaluation in Textile Clothing, Paper-II	100	
Paper-III	3TC-T3	Textile Chemistry, Paper-III	100	
Project	3TC-PD	Project Design	125	
Practicals				
Practical-I	3TC-P1	Paper I (Fashion Designing) practical-I	100	
Sessional-I	3TC-S1	Paper I S (Sessional-I)	50	
Sessional-II	3TC-S2	Paper II S (Sessiona-II)	50	
Semester-IV				
Paper-I	4TC-T1	Entrepreneurship Development in Textile and Clothing, Paper-I	100	25
Paper-II	4TC-T2	Indian Textile Industry, Paper-II	100	
Paper-III	4TC-T3	Apparel Merchandising, Paper-III	100	
Project	4TC-PR	Research Project	125	
Practicals				
Practical-I	4TC-P1	Entrepreneurship Development in Textile and Clothing, Paper-I Practical-I	100	
Sessional-I	4TC-S1	Indian Textile Industry Paper II S (sessional)	50	
Sessional-II	4TC-S2	Apprel Merchandising Paper III S (Sessional)	50	
		Total	2500	100

M.Sc. (HOME SCIENCE)

TEXTILE AND CLOTHING

Semester –I

Paper-I

TEXTILE TESTING & QUALITY CONTROL

SUBJECT :- 1TC-T1

Periods:60hr/15hr per units

Marks:80Theory and 20 Internal

Objectives :

- 1 To acquire knowledge of various physical properties of textiles.
- 2 To develop an understanding of utility of different physical testing equipment.
- 3 To develop an understanding of the principles involved in different testing method of textiles.

Content – Theory

UNIT –1

- 1 Introduction, objectives, importance of standards, different type of standard based on established science. Introduction to international bodies such as I.S.I. and A.S.T.M.
- 2 Selection of textile material for research based on textile testing methods. Random Sampling procedure for determination of properties of fibers, yarn and fabric.

UNIT –II

- 3 Fabric dimensions and properties Fabric thickness - measurement of thickness of fabrics. Fabric weight per unit area and per unit length, crimp of yard in fabric crimp and fabric properties faults in fabric measurements of crimp percentage.
- 4 Measurement of air permeability, air permeability of fabrics, fabric drape. Drape meter crease resistance and crease recovery, abrasion testing of abrasion resistance. Different Color fastness tests.

UNIT –III

5 Fiber Testing-

Definition, objective and methods of testing staple length, mean length. Short fiber percentage. Fineness, maturity, tensile strength and elongation at break interpretation of results.

6 Yarn Testing-

Definition, objective method of testing, to test-count denier twist, diameter, tensile strength, elongation at break, stress strain curves, elastic recovery, yarn appearance, even-ness, interpretation of results.

UNIT – IV

7 Fabric Testing:

Pilling of fabric, pilling tester assessment of pilling.

Flammability some definition and terms. Used relating to flammability, flame proof material, factors affecting flame resistance.

8 Water and fabric relationship:

Water repellent wetting of fabric in rain method of testing spray and shrinkage test.

Practical-I

Textile testing & quality Control

Practical Subject Code- 1TC-P1

Periods: 8hr per week

Marks: 80Practical and 20 Internal

Practical:

- 1 Identification of textile fibers by microscopic burning and chemical test.
- 2 Quantitative estimation of mixtures of blends.
- 3 Determination of yarn count by Bees e.g. & yarn count balance.
- 4 Determination of Crease recovery tester.
- 5 Determination twist of the yarn by twist tester.
- 6 Determination of abrasion resistance of fabric.
- 7 Determination of pilling of fabric by using pilling tester.
- 8 Determination of stiffness by stiffness tester.
- 9 Determination of bursting strength of fabric.
- 10 Determination of shrinkage.

References :

- 1 J. E. Booth- Principle of Textile Testing – Meanness Butterworths London.
- 2 Grower & Hamley – Handbook of Textile Testing and quality control wileg.
- 3 John H. Skihltle – Textile Testing – Chemical Publishing Co. Inc. Brooklyn, New york.
- 4 ISI Specifications.
- 5 A.S.T.M. Standards.
- 6 Here J.W.S. and Paters P.H. The Physical Testing of Textile Fibres. The Textile Institute Heinmann 1975

Semester –I
Paper-II

ADVANCE PATTERN MARKING & CONSTRUCTION TECHNIQUES

Subject Code :- 1TC-T2

Periods:60hr/15hr per units

Marks:80Theory and 20 Internal

Objectives :

- 1 To enable students to select design and draft patterns for various garment based on body measurements.
- 2 To gain experience in handling of different fabrics and advanced construction techniques.
- 3 To develop understanding of the relation of the pattern and garment to the body measurement.

Content – Theory

Unit –I

- 1 Tools and equipment used for pattern marking and clothing construction. Varieties and special attachment. Common problems causes and remedies.
- 2 Importance of body measurement, how to take body measurements for different type of garment, taking and comparing measurements.

UNIT – II

- 3 Working with patterns -

Reading pattern envelope understanding pattern markings, Pattern marking – methods of making patterns.

(i) Drafting (ii) Draping (ii) Flat Patterns (iv) Use of commercial patterns.

Pattern alteration, lengthening and shortening patterns, making bust, shoulder, crotch length alteration, increasing and decreasing waistline and hipline, meckline and sleeve alteration.

- 4 Costing-

- a) Method of costing
- b) Element cost for fabric
- c) Calculating cost for a fabric
- d) Methods of project evaluation

UNIT-III

- 5 Pattern Grading-

Introduction to grading (a) General Principles (b) Practical principles, Basic grading applications- Master grades, Basic whole back, Front, Sleeve Collar, Neck piece. Different methods of grading patterns.

- 6 Fabric Types their selecting, Handling of different type of fabric. Preparation of fabric of cutting, layouts of different type of garment, basic cutting procedures (tracing, pinning and cutting) working with checks and strips.

UNIT – IV

- 7 Basic Stitches- Hand Stitches-tacking stitches. Working making up stitches-Quick slip stitch. Overcast stitch. Lockstitch, finishing touches interfacings and linings.
- 8 Study of fasteners, pocket, plackets, hem finish, trimming and decoration, applying collars, sleeves, types of sleeves.

Practical-II

Advance Pattern marking & construction Techniques

Practical Subject Code -1TC-P2

Periods: 8hr per week

Marks: 80 Practical and 20 Internal

Practical :

- 1 Making different type of paper pattern. With pattern marking and grading for different type of garment-skirt, top, salwar kamees and Infant, toddler and preschool and garments and also preparing envelop with details.
- 2 Designing cutting and stitching of following garments
 - 1 Party wear(Any one of garment)
 - 2 House coat with shawl collar/ night suit
 - 3 Skirt and jacket & top
 - 4 Trousers
- 3 Preparation of resource book on high fashion fabric.

References :

- 1 Doling Kindersley, The complete book of sewing.
- 2 Erwin Mable D. Practical Dress Design, New ork. Man Milan Co. 1964
- 3 Gerry Cookin, Pattern Grading for women's clothes, published by Om book service.
- 4 Gerry Cookline, Garments-Technology for Fashion Designers.
- 5 Juverk W.B. Easy Cutting.
- 6 Ireland Patric : Basic Fashion Design, London, B.T. Bastsford Ltd., 1972
- 7 Reader Digest- Complete guide to sewing, Reader's Digest Association, 1982
- 8 Strickland Getrude, A Tailoring Manual. New York, Mac Milan, 1976
- 9 Singers Sewing Book
- 10 Zarpekar K.R. System of cutting Bombya, Zarpekar Tailoring College.

Semester-I
Paper-III
Textile Science
Subject Code: - 1TC-T3

Periods:60hr/15hr per units

Marks:80Theory and 20 Internal

Objectives

1. To enable student to study the essential and desirable properties of textile fibre.
2. To acquire the knowledge of different type of fibers and yarns.
3. To gain knowledge of weaving
4. To understand the significance of Non woven-bonded fabrics.

UNIT –I

Introduction to Textiles-Textile fibers-Classification-Essential and desirable-properties of textile fibers. Natural fibers-cultivation, physical & chemical properties. Man-made fibers-manufacturing, physical & chemical properties.

UNIT-II

Study of new fibers- lycra, lyocel, ultra fine fibers, chanleleon, fibers, photo adoptive fibers, intelligent fibers, nano fibers & medical fibers. Brief study of manufacturing, physical & chemical properties.

Brief study of yarns, manufacturing process, Types of yarns, simple yarn ply yarn-novelty and fancy yarns. Texturising –important methods-types of textured yarns.

UNIT-III

Weaving introduction – passage of material through power loom- primary, secondary and auxiliary motions. Shuttle less looms – air jet looms- water jet looms- rapier looms- projectile looms-basic principles and operations. Knitting introduction-weft knitting & warp knitting-basic principles and operations.

UNIT-IV

Non woven-bonded fabrics –felt fabrics-laminated fabrics-decorative fabrics-braiding-netting-lace-crocheting & tatting industrial textiles-t Yfe cord Geo textiles-medical, nano-textiles textiles-smart textiles.

REFERENCE

- 1 Fiber to fabric, Begnard P. Corbman, McGrawHill Internatinal editins.
- 2 Principles of weaving-R.Marks & A. T. C. Robinson.
- 3 Knitting technology-D.B. Ajronkar
- 4 Bonded Fabrics-J.B. Kolker, Shirely Institute U.K
- 5 Non-Woven manufacture-NN. Banerjee
- 6 Industrial Application of Textiles-K.I. Floyd & H.M. Taylor, Textile Institute, Manchester.

Semester-I
Paper-IV
RESEARCH METHODS AND STATISTICS
Subject Code -1RMS-T4

Periods:60hr/15hr per units

Marks:80Theory and 20 Internal

Objectives:

- 1 To understand the significance of statistics and research methodology in Home science Research.
- 2 To understand the types, tools and method of research and develop the ability to construct data gathering instruments appropriate to the research design.
- 3 To understand the apply the appropriate technique for the measurement scale and design.

Content-Theory

UNIT-I

- 1 Definition of Research and Scope of Research in Home Science.
- 2 Anthropological and Epidemiological Research.
- 3 Selection of research problem: need, relevance and feasibility.

UNIT-II

- 1 Problem analysis : definition and stating hypothesis / objectives.
- 2 Literature search : Referencing, abstracting, computer search, bibliography.
- 3 Selection of research design: purpose, internal and external validity.
- 4 **Basic principles of research design :**
 - Fundamental, applied and action, exploratory and experimental survey and case study, ex-post recto, Longitudinal and cross sectional, co-relational.
- 5 Sampling :
Objectives of sampling, principles, limitations of sampling, types of error in sampling, major types of sampling, choice of sampling techniques, characteristics of good sample,
- 6 **Data Gathering Instruments:**
 - Primary and secondary data, schedule, questionnaire, observation and case study, scaling methods.
 - Validity, reliability, Sensitivity and specificity of research tools.

UNIT –III

- 1 **Scientific writing as a means of communication.**
 - Different forma of -scientific writing.
 - Articles in Journals. Research notes and reports, Review articles.
Monographs, Dissertations, Bibliographies.
- 2 **How to formulate outlines.**
 - The reasons for preparing outlines.
 - As a guide for plan writing.
 - As a skeleton for the manuscript.
 - -Kinds of outline.
 - -Topic outlines.
 - -Conceptual outlines
 - -Sentence outlines
 - -Combination of topic and sentence outlines.

3 **Drafting Titles Subtitles, Tables, Illustrations.**

* Tables as systematic means of presenting data in rows and columns and lucid way of indicating relationships and results.

* Formatting tables title, Body stab, Stab column. Column head. Spanner head. Box head.

* Appendices; use and guidelines.

UNIT – IV

1 **The Writing process**

- Getting Started.
- Use Out line as a starting device
- Drafting
- Reflecting, Re-reading
 - Checking organization
 - Checking headings
 - Checking content
 - Checking clarity
 - Checking Grammar.

2 **Parts of Dissertation / Research Report / Article**

- Introduction
- Review of Literature
- Method
- Results and Discussion

3 **Computer Application in Data analysis**

- Use of Ms-Office for Research
- MS Words
- MS Excel
- MS Power Point
- Use of SPSS for data Analysis

References :

- 1 Best J.W. (1983) : Research Education, Prentice Hall, New Delhi.
- 2 Dody, J.T. (1967) : An Introduction to Social Research, Appleton Center.
- 3 Philips, B.S. (1977) : Social Research Strategy and Tactics, Mac Millan.
- 4 Devdas R.P. (1971): Jamdnppi of Research Methodology, Shri Ramkrishna Mission Vidyalaya.
- 5 Young, P.V. and Schmid, C.F. (1986) : Scientific Social Survey and Research, Prentice Hall, New Delhi.
- 6 Shukal, M.C. and Gulashan, S.S. (1970) : Statistics Theory and Practice, S. Chand, New Delhi.
- 7 Gupta, S.P. (1970) : Statistical Methods, S. Chand Co., New Delhi
- 8 Garrett, H. : Statistics in education and Psychology.
- 9 Sinha S.L. : Statistics in psychology and Education, Anmol Publications Pvt. Ltd., New Delhi.
- 10 Daryab Singh : Principles of Statistics, Atlantic Publishers & Distributors.
- 11 Bernard Ostle : Statistics in Research.
- 12 M.H. Gopal : Introduction to Research Methodology for social Sciences.
- 13 C.R. Kothari : Research Methodology (Method Techniques)
- 14 Fedrick Lamson, Whitencey : The Elements of Research.
- 15 Good, Carter, Scales and Douglas: Methods of Research.

Practical-III
Current Trends in Textile and Clothing

Practical Subject Code 1TC-P3

Periods:2hr/week

Marks: 25 Internal

Current Trends and issues will have seminar presentation and carry Internal marks.

Semester –II
Paper-I
ADVANCE DRAPING
Subject Code 2TC-T1

Periods:60hr/15hr per units

Marks:80Theory and 20 Internal

Objectives:

- 1 To teach students in detail the principles of draping fabric on the dress form for pattern making.
- 2 To develop an understanding to design in three dimension with the understanding of design/ pattern.
- 3 To apply art principles of design in creating dreams designing and selecting suitable fabric particular design.

Content – Theory

UNIT-I

- 1 **Fashion Illustration-**
Aspect of fashion, good fashion illustration, design research and sources of ideas-films, T.V., painting, historic costume etc. Changes and development in fashion.
- 2 **Fashion Drawing-**
Basic figure drawing basic for men, women and children, anatomy, facial features movements and basic garment shapes. Quick sketching and interpretation of appeared design. Finished drawing.

UNIT –II

1. **Fashion Drawing-**Study of shaping devices gathers pleats darts, yokes, pockets cowls, princess line, sleeves collars etc.
2. Fashion accessories shoes headgear hand back neck wears, other accessories. Advertising and Sales promotion-Brand standard, labeling, Fashion Show, Exhibition, Display etc.

UNIT – III

- 1 Preparation of adhesive dress form. Equipment needed, grain, preparation of fabric for draping, draping steps.
- 2 Seam allowances marking and tracing. Making basic front and back skirt sleeve bodice block by draping on the dress form.
- 3 Draping on the dress form – dart manipulation, pleats, darts, tucks and gathers. Neckline variation, armhole variation, waistline variation. The princess waist, yokes, basic cowls and variation.

UNIT-IV

- 1 Skirts Flared, Skirt, Gored skirt, pleated skirt, hip yoke skirt.
- 2 Draping of collars- mandrin collar, Band collars, convertible collar, peterpan collar, shawl collar.
- 3 Draping sleeves-basic sleeve, dolmarn sleeve, raglan sleeve, kimonos sleeve.

Practical-I
Practical Subject Code: 2TC-P1
Advance Draping

Marks:80 Practical and 20 Internal

Periods:8hrs/week

Practical :

- 1 Sketches with various patterns and styles in garment on basic croguls for men, women and children, skirt/ blouse frocks, swim suit, height wear sports wear, summer wear, salver kameez.
- 2 Creating and constructing new styles in following garment by draping method.
(i) Skirts (ii) Blouse or Top (iii) Jacket (iv) Evening Dress (v) Salwer Kameez.

Referances :

- 1 Drake Micholas, Fashion Illustration today.
- 2 Koijiro Kamagai Children Fashion Illustration Dec. 1990.
- 3 Koijiro Kamagai, Fashion Illustratin @ L. Expressing Texture 1988
- 4 Hllihouse M.S. and Mansfield E.A. Dress Design- Draping and Flat Pattern London U.S.A.
Haughton Meffin Co.

Semester –II
Paper-II
ADVANCE TEXTILE DESIGNING
Subject Code -2TC-T2

Periods:60hr/15hr per units

Marks:80Theory and 20 Internal

Objectives :

- 1 To develop skills in textile design.
- 2 To train students in printing and dyeing methods.

Content-Theory

UNIT-I

- 1 Classification of different types of yard and fabric weaves-Jacquard, Swivel, Lappet, figure and dobby weave.
- 2 Methods of weave representation, repeat of weave drafts, requirement to drawing in weaving plan, lifting plan, peg plan, relation between weave draft and lifting plan basic weaves cockscrew weave checks and strips.

UNIT –II

- 1 Preparation of cloth for printing , printing paste ingredients and their functions, different types of thickeners, general principles of printing. Study of machinery used for printing such as table, roller stencil, flat bed screen, rotary screen faults and remedies in printing.
- 2 Styles of printing and their fixation methods

UNIT-III

- 1 Basic concept of dye and pigment. Classification of dyes. Influence of pre-treatment on dyeing proportion, classification of direct dye, principles and method of application of Direct dye. Faults and remedies in direct dyeing, various after treatment to improve fastness of direct dyed fabric.
- 2 Important step involved in reactive, vat, dyes and sulphur dyes, faults and remedies.

UNIT-IV

- 1 Dyeing of wool and silk with basic and acid dye & Cotton with vat & naphthol dye
Dyeing with natural dyes (vegetable dye) faults and remedies, after treatments.
- 2 Different methods of dyeing fiber yarn and piece dyeing. Dyeing of blends cross dyeing & union dyeing.

Semester-II
Practical-II
Advance Textile Designing
Practical Subject Code -2TC-P2

Periods:8hrs/week

Marks: 80Practical Theory and 20 Internal

- 1 Application of dyes and variation of shade. Direct dye for cotton, and viscose rayon acid dye for silk and wool vat dye for cotton, disperse and reactive for nylon.
- 2 Analysis of fabric- identification of different weave, fabric count.
- 3 Construction of sample of basic weave and figure weave on loom.
- 4 Preparation of samples of different type of printing block screen batik stencil, khadi and tie and dye.
- 5 Drawing and painting of different types of design for saree, dress material, bed cover, curtain etc.

References :

- 1 Birrel V. Textile Arts, harper & Brothers New York, 1958.
- 2 Bharbaiya : Batik for beginners author Baroda.
- 3 Clarke W. :An Introduction to Textile Printing.
- 4 Phyllis Tora Tora- Understanding textiles.
- 5 Shenai V. A. History of Textile Design.
- 6 Shenai V. A. Principles and practice of dyeing.
- 7 Watson : Textile design and colour, universal publishing corporation.
- 8 Storey J. Manual of dyes and fabric.
- 9 Russ S. S. Fabric printing by hand studio visata Ltd., London 1964.

Semester –II
Paper-III
SOCIOLOGICAL AND PSYCHOLOGICAL ASPECTS OF CLOTHING & HISTORIC COSTUME
Subject Code -2TC-T3

Periods:60hr/15hr per units

Marks: 80 Theory and 20 Internal

Objectives :

- 1 To enable student to study the psychological aspect of clothing in social situation.
- 2 To study the design and constructional details of historic costume and making use of knowledge in modern garment designing.
- 3 To enable students to gain knowledge on historic costumes and textiles of different countries.

Content- Theory

UNIT-I

- 1 Psychological aspects of clothing-
 - a) For adolescent adults and old age : self respects, human dignity, emotional response, sex desirability, self expression, individually.
 - b) Psychological effect of clothing on children.
- 2 Importance of effect of colour in clothing
 - a. Sex differences in use of colour.
 - b. Colours for different occasions and ceremonies.

UNIT-II

- 3 Sociological aspects of clothing-changes in society and culture.
Meaning of style fashion and fad influence of fashion and fashion changes, role of uniform, occupational clothes, national clothes.

Class distinction and socio- economics status. Family and social influencing.

UNIT-III

- 4 Origin and development of costume, Origin of clothing, Functions of clothing. Types of ornament used in the beginning. Tattooing and mutilation and other method of skin decoration.
- 5 Indian Costumes- Historic approach from ancient period to 20th Century emphasizing the mogal period, British period and post independence period.
- 6 Study of regional costumes of India of different states, Punjab, Maharashtra, Gujrat, Rajasthan, H.P. Assam, Manipur, Nagaland, Bihar, Andhra Pradesh, Tamil Nadu, Karnataka, Kerala, West Bengal, Kashmir, Mizoram, Meghalaya, Sikkim, Orissa, Madhay Pradesh, Tripura.

UNIT – IV

- 7 Costumes Of Ancient Civilization-
Egypt, Babylonics, Greece, Rome, England, France, Japan and America.
- 8 National Costumes of different counties Philippines, china, Burma, Arabia, India, Pakistan, (Study of Indian Sarees.)

References :

- 1 Akari Roshan : Ancient Indian Costumes, New Delhi, Art Heritage.
- 2 Devaport Millia : The Book of costumes, Vol. I, II , New York, Coroun Publishers.
- 3 Eoan CC : Costumes throughout the ages, New York J. B. Limancott.
- 4 Ghweey G.S.Indian Costume. Bombay Popular Prakashan, ,1951
- 5 Kemper Racher 4 : The History of costumes
- 6 Laver James : Costume through the ages, New York, Simon and schustar 1968
- 7 Moti Chandra : Costumes Textiles Cosmetics Costumes in Ancient and Medieval, New Delhi
Orient Publishers 1973.
- 8 J.C. Fluger-The Psychology of clothing
- 9 Mahal D. Erooin : Clothing for modern colliear Mac Millan Publisher.

Semester –II
Paper-IV

Statistical Research Method-II

Subject Code -2RMS-T4

Periods:60hr/15hr per units

Marks: 80 Theory and 20 Internal

Objectives

- To understand the significance and research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- To understand and apply the appropriate technique for the measurement scale and design.

Contents

UNIT I

1. Meaning and Scope of Statistics in Home Science :

- Concept of statistics.
- Scope of statistics.

2. Descriptive statistics : Classification, tabulation, frequency distribution, diagrammatic and graphic representation of data.

3. Measure of central tendencies : Mean, Median, Mode.

4. Concept of deviations : Range, Quartile deviation, Mean deviation, Standard deviation.

5. Concept of normal distribution curve and probability : use of normal distribution curve, skewness and kurtosis.

UNIT II

Elements of testing a Hypothesis :

- Concept of null hypothesis.
- Meaning of level of significance. Type I and Type II errors.
- Students 't' test for small samples for testing differences in proportion for means and differences in means.
- Large sample test (C.R. test) for testing significance of difference between mean of two groups.
- Analysis of variance (one way ANOVA, two way ANOVA).
- Correlation coefficient, Product moment method, rank difference method for small samples and scattered diagram method for large sample.
- Regression analysis and prediction: Simple and multiple regression.

UNIT III

Non parametric tests for testing null hypothesis :

- Application of Chi square test on :
 - equal probability type
 - normal distribution type
 - 2 x 2 contingency tables type
 - χ^2 test of independence.
- Participatory rapid assessment.
- Participatory learning assessment.

UNIT IV

1. The writing process

- Getting started.
- Use out line as a starting device
- Drafting
- Reflecting, Re-reading – Checking organization, Checking headings, Checking content, Checking clarity, Checking Grammar.

2. Parts of Dissertation/ Research Report/article

- Abstract
- Introduction
- Review of Literature
- Materials and Methods
- Results and Discussion
- Summary and Conclusion
- Bibliography
- Recommendation

3. Computer Applications in Data analysis

- Use of MS-Office for Research, MS Word, MS Excel, MS Power Point
- Graphic representation
- Use of SPSS for data Analysis

REFERENCES:

1. Best J. W. (1983) : Research Education, Prentice Hall, New Delhi..
2. Dody, J. T. (1967): An Introduction To Social Research, Appleton Center.
3. Philips, B.S.(1977): Social Research Strategy And Tactics, Mae Millan.
4. Devdas R.P. (197 1): Jamdnppi Of Research Methodology, Shri Ramakrishna Mission Vidyayala.
5. Young, P.V. And Schmid, C.F. (1968) : Scientific Social Survey And Research, Prentice Hall, New Delhi.
6. Shukla, M.C. And Gulshan S.S. (1970): Statistics Theory And Practice, S. Chand New Delhi.
7. Gupta S.P. (1970): Statistical Methods, S. Chand Company, New Delhi.
8. Garrett, H. : Statistics In Education And Psychology.
9. Sinha S.L. L Statistics In Psychology And Education, Anmol Publications Pvt. Ltd., New Delhi.
10. Daryab Singh Principles of Statistics, Atlantic Publishers & Distributors.

11. Bernard Ostle Statistics in Research.
12. M.H.Gopal : Introduction to Research Methodology for Social Sciences.
13. C.R. Kothari : Research Methodology (Methods & Techniques)
14. Fredrick, Lamson, Whitney: The Elements of Research.

Semester –II
Practical-III
Current Trends in Textile and Clothing
Practical Subject Code 2TC-P3

Periods:2hr/week

Marks: 25 Internal

Current Trends and issues will have seminar presentation and carry Internal marks.

Semester –III
Paper-I
FASHION DESIGNING
Subject Code: 3TC-T1

Periods:60hr/15hr per units.

Marks: 80 Theory and 20 Internal

Objectives:

1. To gain knowledge about fashion sketching.
2. To develop an understanding structural and decorative design.
3. To apply art principle of design in creating dress designing and selecting suitable fabric for particular design

UNIT – I

Fashion sketching- Introduction, Drawing. Aspects of drawing. Tools, Differences between normal and fashion figures. Human proportion-Head. The unit of measurement, average proportion. Method of determining an individual proportion -proportion of the womens figure. The balance like eight head theory, sketching of different fashion figures, basic garment shape and accessories.

UNIT-II

Design - definition, types - structural and decorative design and their requirements. Elements of design-Line, Form, shape, colour and texture. Principles of Design, balance rhythm, emphasis, harmony and proportion. Applications of principles and elements of design in dress.

UNIT-III

Colour - definition, colour theories - prang colour chart and munsell system. Dimensions of colour hue value and intensity & colour harmonies – Design, principles applied to colour in dress design.

Methods of Dress making - home made, tailor made and readymade garments. Merits and Demerits. Factors affecting selection of clothing - choice of clothing, accessories to express individuality and distinction in appearance. Applications of basic and principles in achieving pleasing personality

UNIT-IV

Dress design- standards for judging costume - Aesthetic requirements for dress suitability to the individuals. Factors in personality - planning a wardrobe. Requirements for health and modesty. Planning of dressing, selection of material, texture, pattern, and colour. Suggestion for person who have unusual problems in dress. Trimmings and decorations used in Dress. Adjuncts of dress- hats, hair dressing, shoes etc.,

REFERENCE :

1. **Fashion Sketch Book Written & Illustrated** by Bina Abling, Fair child publications. New York.
2. "**Inside the Fashion Business**" 4th edition by Jeanette.A.Jaranow, Mirianr.Guerreiro and Beatrice Judelle, Macmillan publishing company, New York.
3. Mary Mathews, "**Practical clothing construction**". Part II Cosmic press, Madras.
4. Mr.Jimsoy and Harriet "**Art and Fashion in clothing solution**", Iowa state, University Press, Iowa,

Semester –III
Practical-I
FASHION DESIGNING
Practical Subject Code: 3TC-P1

Periods: 8hrs per week

Marks: 80 Practical and 20 Internal

1. Eight head theory lay figure sketching. Drawing different fashion figures poses for garment and accessory displays.

2. Drawing and preparing samples for the following: Application of principles of

design in dress designing Prang colour

chart

Value chart

Intensity chart

Standard color harmonies

3. Design development - developing textile design suitable for over spot borders of all design for accessories and garments

4. Preparing samples for surface trimmings.

5. Drawing diagrams for fashion designing for the persons problems in who have unusual dress.

6. Planning wardrobes for different age groups.

7. A report on visit to fashion show and window displays.

Semester –III
Paper-II
Programme Design and Evaluation in Textile Clothing
Subject Code: 3TC-T2

Periods:60hr/15hr per units

Marks: 80 Theory and 20 Internal

Learning Objectives:- After completing this course students will be able to-

- understand the process of program designing.
- develop ability in planning programmes related to textile and clothing.

Theory

Unit-1 : Programme Planning-Meaning, and importance.

- Pre-requisite of developing plan.
- Programme planning processes. Implementation:-
- Aspects of Execution.
- Factors responsible for the successful conduction of a programme.

Unit-2 : Evaluation, Follow up and Documentation Evaluation

- Meaning and purpose of Evaluation.
- Types and tools of Evaluation. Follow up
- Need for follow up.
- Methods of follow up Documentation
- Need for reporting and recording.
- Aspects to be covered.

Unit-3: Training Programme on Dyeing and Printing

- Developing skill
- Developing New Shades.
- Quality Control and Testing

Unit-4: Skill development programme in-

- Embroidery techniques/Garment
- Designing / sewing techniques.

Unit-5: • Management Information System (MIS)

- Organization of exhibitions and fashion shows.

Semester –III
Programme Design and Evaluation in Textile Clothing, Paper II S (Sessional)

Internal Assessment (Sessional)

Subject Code 3TCP-S1

Period:4hr per week:

Marks: 50

1. Design consumer awareness/skill development/capacity building programme.
2. Implementation, Evaluation and follow up of the programme.
3. Visit ongoing programmes.
- 4 . Write reports of aforesaid programmes.

References :-

- 1) Albrechts, H. et. al. (1989). Rural Development Series Agricultural Extension Vol. I & II. Basic Concepts and Methods, Wiley Eastern Limited, New Delhi.
- 2) Chaubey, B.K. (1979). A Handbook of Extension Education, Jyoti Prakashan; Allahabad.
- 3) Dahama, O.P. and Bhatnagar, O.P. (1987). Education and Communication for development. Oxford and IBH Publishing Co., Pvt. Ltd., New Delhi.
- 4) Extension Education in Community Development. (1961). Ministry of Food and Agriculture. Government of India, New Delhi.
- 5) Pankajam, G. (2000). Extension -Third Dimension of Education, Gyan Publishing House; New Delhi.
- 6) Ray G.L. (1999). Extension Communication and Management. Naya Prokashi, Calcutta.

Semester –III
Paper-III

TEXTILE CHEMISTRY

Subject Code- 3TC-T3

Periods:60hr/15hr per units

Marks: 80 Theory and 20 Internal

Objectives:

- 1 To acquire the advanced knowledge of different kinds of natural and man made fibre.
- 2 To increase awareness of the students regarding the chemistry of cellulose, protein and synthetic fiber.

Content-Theory

UNIT – I

- 1 Classification to textile fibers.

Polymer Chemistry - Polymerization process, Functionality : Linear and cross linked polymer. Condensation and addition polymers. Polymerization techniques, Characteristics of Fibre, Forming Polymers, Melt, Dry & Wet Spinning.

- 2 Fiber Structure, Formation and arrangement of Crystalline and Amorphous region in fiber and their influence on various properties of fibres - Essential properties of fiber and general properties of fiber.

UNIT –II

- 1 Chemistry of cellulose fibers-Molecular structure of cellulose L.S. and C.S. of cotton. Capillary Structure of cellulose, swelling, reaction of cellulose, oxy cellulose and hydro cellulose.
- 2 Chemical properties and reaction of cellulose, mercerization. esterification and etherification. Process, treatment with liquid ammonia. Manufacture properties and uses of regenerated cellulose fibers, viscose rayon and cupramonium rayon, high wet modulus rayon, polymeric fibers, cellulose, acetates rayon's.

UNIT-III

- 1 Protein fiber - molecular structure of protein. Microscopic view of wool and silk. Physical chemical and thermal properties of wool and silk degumming and weighing of silk, felting of wool, shrink proofing of wool.
- 2 Synthetic fibers: Nylon, Polyester, Acetate, acrylic, their molecular structure, microscopic view. Physical, Chemical and Thermal properties. Blends - properties uses and analysis.

UNIT – IV

- 1 Dye Stuff Chemistry. Colour theory difference between a coloured compound and a dye. Suitable for textiles.

- 2 Classification of dyes. Azoic, Aniline black. Acid, Basic, Mordant, Disperse, Vat, Reactive, direct, pigment. Brief, introduction about chemical constitution, properties methods of application and suitability of various dyes to different fibers and their blends.

References :

- 1 Cookett, S. R. & Hilton K.A. Basic Chemistry of Textile
- 2 Hatsuch Bruce, E. Textile Chemistry in Laboratory.
- 3 Hatsuch Bruce B. Introduction to Textile Chemistry
- 4 Howard L. Meedles, Textile Fibers, Dyes, Finishes and Processes.
- 5 Moncrieff R. W. Man made fibers.
- 6 M.D. Pottem and Corbman, B.P. Fiber to Fabric.
- 7 Peter R.H. Textile Chemistry Vol. I The Chemistry of fibers. R.Mishra S. P.

A text book of Fabric science and technology. New Age International.

Semester-III

Textile Chemistry, Paper III (Sessional)

Practical Subject Code: 3TC-S2

Period:4hr per week:

Marks: 50

- 1 Preparation of different dyes.
- 2 Preparation of different types of detergents
- 2 Preparation of optical brightness
- 3 Preparation of Bleaches.

Semester –III
Project Design
Subject Code 3TC-PD

Periods: 5hr/week

Marks: 125 Internal

Note : See the Guidelines in Appendix B in the Direction.

Semester –IV
Paper-I

Entrepreneurship Development in Textile and Clothing

Subject Code - 4TC-T1

Periods:60hr/15hr per units

Marks: 80 Theory and 20 Internal

Learning Objectives :-

- To promote entrepreneurship skills among student
- To understand the process and procedure of setting up small enterprises.
- To develop management skills for entrepreneurship developments.

Theory

UNIT-1 •Entrepreneurship - Definition, concept and Characteristics.

- Government policies towards promotion of entrepreneurship.

UNIT-2 Agencies for development of entrepreneurship. Role of SSI, MIDC and NSIC, Banks and voluntary organizations.

- Personal Effectiveness - factors affecting entrepreneur's role, effective communication skill, achievement motivation, goal orientation psychological barriers to self employment, creativity, assertiveness and quick response.

UNIT –3

Importance of textile industry in Indian Economy-problems and prospects of textile industry. National Textile Policy.

UNIT-4

Principles marketing and merchandising for the domestic, and export Market, export policy of India.

Semester-IV
Practical -I
Practical Subject Code -4TC-P1
Entrepreneurship Development in Textile and Clothing

Periods:8hrs per week

Marks: 80 Practical and 20 Internal

Practicals :-

(1) Related Experience :-

- Visit to small scale industry.
- Visit Agencies that finance SSI.

(2) Project:-Survey of local market to know needs of consumer-

- Formation of project proposal.
- Report on visits.

3) Practical: Preparation of Articles based on following-

Dyeing, printing, embroidery. Garment manufacturing, soaps, detergents, stain removers.

Minimum two articles from the above are to be prepared and

organize exhibition-cum-sale of the prepared products.

References :-

- 1) Akhauri, M.M.P. (1990), Entrepreneurship for Women in India, NIESBUD, New Delhi.
- 2) Patel, V.C. (1987), Women Entrepreneurship - Developing New Entrepreneurs, Ahmedabad EB 11.
- 3) Hisrich, R.D. and Peters M.P. (1995), Entrepreneurship - Starting, developing and managing a new enterprise, INC USA.

Semester –IV
Paper-II
INDIAN TEXTILE INDUSTRY

Subject Code: 4TC-T2

Periods:60hr/15hr per units

Marks: 80 Theory and 20 Internal

Objective:

- i) To know India's growth and development in textile industry.
- ii) To analyze the percentage growth rate in textile industry.
- iii) To examine the development in Printing and Dying Industry..

UNIT-I

Origin, Growth and Development of Indian Textile Industry - Cotton, Wool, Silk, Rayon, -Man-Made Textiles, Ready made garments
Five year plans for the textile Industry - Recent plan and previous 5 Five year plans,
Organizations related to the Textile and clothing Industry Concept of GATT, MFA, WTO, AIC, Globalization)

UNIT-II

Technological developments in Fiber Industry, Significance and uses Technological developments in Yarn Industry, significance and uses.

UNIT-III

Technological developments in Fabric Industry - woven, significance and uses. Technological developments in Fabric Industry - knitting, significance and uses. Technological developments in Garment Industry, significance and uses.

UNIT-IV

Technological developments in Printing and Dyeing Industry, significance and uses.
Technological developments in Processing Industry, significance and uses.

REFERENCES :

1. Textiles - Fiber to fabric, Bernard P Corbman, 6th edition. Me Graw Hill Book Co, Singapore
2. Fabric forming systems, Peter Schwartz, Trevor Rhodes, Mansour Mohammed, Noyes Publications, New Jersey, USA(1996)
3. Fabric Care, Normia D'Souza, New Age International Pvt Ltd, New Delhi Journals: Ruddar Datt, KPM Sundharam, Indian Economy P:558, S. Chand & Company Ltd, New Delhi, 2006.
2. S. K. Misra & V. K. Puri, Indian Economy P.450, Himalaya Publishing House, Delhi, 2006.
3. Francis Cherunilam, Industrial Economies, Indian Perspective p.457, Himalaya

Publishing House, 1994.

4. Dr. Anupam Agrawal, Pratiyogita Darpan, Indian Economy P.110, Upkar Prakashan, Agra 2008.

5. Economic Survey, 2009-10

6. Textile Review – Nov., 2009, April 2010, Oct. 2010.

7. www.indianbusiness.nic.in

8. www.textilecommittee.com

9. www.business.mapsofindia.com

10. www.toxmin.nic.in

11. www.texprocil.com

12. www.economywatch.com

13. www.textilereview.com

Semester –IV
(Sessional)
Indian Textile Industry
Subject Code- 4TC-S1

Period:4hrs per week

Marks:50

- 1 Visit to different textile mills.
- 2 Technological developments in printing & dyeing industry.

Semester –IV

Paper-III

APPAREL MERCHANDISING

Subject Code: 4TC-T3

Periods:60hr/15hr per units

Marks: 80 Theory and 20 Internal

Objectives :

- 1. To increase awareness of the students regarding merchandising.**
- 2. To know the importance of LC amendments.**
- 3. To acquire the advanced knowledge of Boutique.**

UNIT-I

Introduction to Merchandising, Understanding fashion Merchandising , Scope of Merchandising, Fashion merchandising terminology, Role of Merchandiser)
Types of Merchandising - Export House – manufacturer- Buying house. Buying Agency - Selection of Buyer's & Buying Agency.

UNIT-II

Pre-buying Activity, Fabric types, properties and Behavior, selection of Fabric, Garment construction. Quality requirements, quality problems, Merchandiser's role after production, Delivery date extension, transport delays - Natural calamities. Importance of LC amendments

UNIT-III

Knowledge of Fashion Trends, Brands and Designers, Introduction to International designers. Business opportunities and avenues. Interdepartmental relationship for merchandiser. Boutique handling.

UNIT-IV

Marketing analysis - Advertising and Media Planning, Fashion shows and other events, industry tour and Project Role play, Surveys and organizing of exhibitions-Visual Merchandising.

REFERENCES:

- 1 Fashion Design and Product Development, Harold Carr and John Pomeroy, Black well Science Inc, Cambridge (1992)
- 2 Fashion Marketing, Mike Easey, Oxford University press, Wynford Drve, Don Mills, Ontario (1995)
- 3 Introduction to Fashion, Patrick John, B T Batsford Ltd, Ireland, Fullham road, London (1992).
- 4 Fashion From Concepts to Consumer, Stephens Frings, PrenticeHall,7th Edition 2002.
- 5 Marketing Management, Philip Kotler, Prentice Hall, 7th Edition 1996.

Semester –IV
(Sessional)

APPAREL MERCHANDISING
Subject Code- 4TC-S2

Period: 4 hrs per week

Marks: 50

- 1 Arranging fashion shows in the institute
- 2 Documentation Fashion Brands, & textile brands and textile symbols.
- 3 Organizing Exhibitions.

Semester –IV
Research Project (Viva voce)

Subject Code: 4TC-PR

Periods: 5hr/week

Marks: 125

Note : See the Guidelines in Appendix B in the Direction.