

**SEMESTERWISE COURSE DISTRIBUTION OF M. Sc. HOME SCIENCE
IN TEXTILE AND APPAREL DESIGNING**

FIRST SEMESTER

Sl.No	Course Code	Name of Course	Credit Hours			Max Marks
			L	T	P	
1.	MTA-101	Advanced Textile Designing and Woven Fabric Analysis	2	0	1	100
2.	MTA-102	Advanced Apparel Construction	1	0	2	100
3.	MTA-103	Fashion Marketing and Merchandising	2	0	0	100
4.	MTA-104	Ecotextile and Environment	2	0	0	100
5.	MHS-105	Research Methodology	2	0	0	100
6.	MTA-106	Practical based on MTA-101				100
7.	MTA-107	Practical based on MTA-102				100
8.	BHS-103	Introduction to Clothing Construction*	1	0	2	S/NS
TOTAL						700

S/NS- Satisfactory /Non-satisfactory

* Remedial Course for ZBC group

SECOND SEMESTER

Sl.No	Course Code	Name of Course	Credit Hours			Max Marks
			L	T	P	
1.	MHS- 201	Statistical Methods	3	1	0	100
2.	MTA-202	Computer Orientation	1	0	1	100
3.	MTA-203	Textile Auxiliaries and Colour Designing	2	0	2	100
4.	MTA-204	Fashion Designing and Accessories	1	0	2	100
5.	MTA-205	Historic Textiles and Costume	2	0	1	100
6.	MTA-206	Practical based on MTA-202 and MTA-203				100
7.	MTA-207	Practical based on MTA-204 and MTA-205				100
8.	BHS- 203	Introductory Textile Science*	2	0	1	S/NS
TOTAL						700

S/NS- Satisfactory /Non-satisfactory

* Remedial Course for ZBC group

M.Sc. TEXTILE AND APPAREL DESIGNING

SEMESTER I

Course Code	Course Title	L-T-P	Credits
MTA-101	Advanced Textile Designing and Woven Fabric Analysis	2-0-1	3
MTA-102	Advanced Apparel Construction	1-0-2	3
MTA-103	Fashion Marketing and Merchandising	2-0-0	2
MTA-104	Ecotextile and Environment	2-0-0	2
MHS-105	Research Methodology	2-0-0	2
BHS-103	Introduction to Clothing Construction*	1-0-2	3
	Total	10-0-5	15

SEMESTER II

Course Code	Course Title	L-T-P	Credits
MHS- 201	Statistical Methods	3-1-0	3
MTA-202	Computer Orientation	1-0-1	2
MTA-203	Textile Auxiliaries and Colour Designing	2-0-2	4
MTA-204	Fashion Designing and Accessories	1-0-2	3
MTA-205	Historic Textiles and Costumes	2-0-1	3
BHS- 203	Introductory Textile Science*	2-0-1	3
	Total	11-1-7	18

SEMESTER III

Course Code	Course Title	L-T-P	Credits
MTA-301	Recent Advances in Textiles and Apparel Designing	3-0-0	3
MTA-302	Textile Industry and Trade	2-0-0	2
MTA-303	Textile Quality Analysis	2-0-2	4
MTA-304	Fiber Chemistry	2-0-1	3
BHS- 305	Fabric Formation and Finishes*	2-0-1	3
	Total	11-0-4	15

SEMESTER IV

Course Code	Course Title	L-T-P	Credits
MTA - 401	Seminar	0-0-2	2
MTA - 402	Thesis/ Project	0-0-15	15
	Total	0-0-17	17

Total Credits = 65

* Remedial Course for ZBC group

SEMESTER- I

Course Code	Course Title	Credits
MTA-101	Advanced Textile Designing and Woven Fabric Analysis	3
MTA-102	Advanced Apparel Construction	3
MTA-103	Fashion Marketing and Merchandising	2
MTA-104	Ecotextile and Environment	2
MHS-105	Research Methodology	2
BHS-103	Introduction to Clothing Construction*	3
	Total	15

*** Remedial Course for ZBC group**

ADVANCED TEXTILE DESIGNING AND WOVEN FABRIC ANALYSIS

Course Code: MTA-101

Credits 3 (2-0-1)

Course Outline

THEORY:

1. History and development of spinning, weaving and handlooms. Spinning of yarns, classification of woven fabrics. Operation in woven cloth production.
2. Shuttleless looms- projectile, rapier, air jet, water jet. Weaving: multiple shed loom, automatic controls in modern looms & scope of modern methods of weaving; detailed preweaving processes.
3. Study of design, draft and peg plan for different weaves; weave calculations; advantages and disadvantages. Construction of elementary weaves: plain, twill, satin and sateen weaves. Colour and weave effects.
4. Planning for various weave designs using CAD- stripes, checks etc.; leading to application and change of fabric texture, print and colour.
5. Complex and fancy structures- leno, crepe, double and back cloth, honey comb, mock leno, diaper, diamond, warp and weft figuring, terry and pile
6. Dobby and jacquard patterning devices
7. Methods of carpet making

PRACTICALS:

1. CAD commands; creating stripes and checks using various commands; Creating weave library, Developing motifs by scanning and drawing using the CAD commands.
2. Simulation and graph/ point paper; Developing a computer aided portfolio of different motifs, Creation of special effects layers and layer settings. Creation of grid and editing the object. Development of carpet designs using CAD
3. Preparation of woven samples of basic and other fancy weaves using CAD.

REFERENCES:

1. Grosick Z. J. *Watson's Textile Design & Colour*. Butterworths.
2. Grosick Z. J. *Watson's Advanced Textile Design*. Universal Publication.
3. Grosick Z. J. *Watson's Advanced Textile Design - Compound Woven Structures*. Universal Publication.
4. Marjory Joseph. *Illustrated Guide for Textiles*. Rine Hort & Winsoten, New York.
5. Radha Krema. *Manual of Non Wovens*. Textile Trade Press.
6. Sen Gupta. *Weaving Calculations*. DB Taraporawala Sons.
7. Talukdar M. K. *Weaving Machines, Mechanism and Management*. Mahajan Publication
8. Davis L. Marisn. *Visual Design in Dress*. Prentice Hall.
9. Prakash K. *Impression- A Classic Collection of Textile Designs*. Design points.
10. Prakash K. *Traditional Indian motifs for weaving & Textile printing*. Design points.
11. Winfred Aldrich. *CAD in Clothing & Textiles*. BSP Professional Books.
12. Rene Weiss chase. *CAD for fashion Design*. Prentice Hall.

ADVANCED APPAREL CONSTRUCTION

Course Code: MTA-102

Credits 3(1-0-2)

Course Outline

THEORY:

1. Role of computers in textile and apparel designing production, creation of design in apparel; texture variation. Use of 3D software for customization of created designs as per end uses,
2. Advanced techniques of pattern making- incorporating style lines & fullness.
3. Basic pattern and its fitting
4. Fitting problems in blouse, sleeves, skirts and men's tailored garment
5. Selection of fabrics for particular items in clothing: fabric for test copy, underlining or supporting fabrics, face fabrics etc.
6. Advance sleeve variations, types of pants.
7. Draping, trueing and stitching- dart less shirt, draping and stitching skirts; draping collars, sleeves, cowls, Flounces, ruffles and peplums.
8. Various functional and decorative types of pockets, zippers, belts, tie and bows.
9. New developments in fabrics and innovations in construction techniques as well as improved features in commercial pattern.

PRACTICALS:

1. CAD Commands: Introduction to commands from different tool groups- file menu, freehand tools, geometric tool, selection tool, selection utility tool, colour and general utilities tool. Command bars and assistants; Menu bar and options; drawing tools; colour rendering. Texture mapping and creating effects; Development of library and printing draped figures, Use of digitizer to convert the drafted basic pattern in computer and then modification of design..
2. Sample preparation: Princess line variations; Vests and their types, collars; sleeves- kimono and raglan variations, Skirt; pants and application of pattern making techniques to garment designing and construction.
3. Illustration of designs of dresses for children, ladies and fashion figures through sketching.

REFERENCES:

1. Bane, A. *Creative Clothing Construction*. McGraw-Hill publication.
2. Connie Amaden, Crawford. *The Art of Fashion Draping*. Fair Child Publication.
3. Janine Mee and Michal Purdy. *Modelling on the Dress Stand*. BSP Professional Books.
4. Natalie Bray. *Dress Fitting*. Blackwell publication.
5. Hollen, N. R. *Pattern making by flat pattern method*. Burgen Publishing Co., Minnesota
6. Lewis, V. S. *Comparative Clothing Construction Techniques*. Surjeet Publication, Delhi
7. Shoben, Martin. *Pattern Cutting and making up: The professional Approach*. CSB Publishers and Distributors (P) Ltd, New Delhi

FASHION MARKETING AND MERCHANDISING

Course Code: MTA-103

Credits 3 (3-0-0)

Course Outline

THEORY:

1. **Dynamics of fashion:**
Fashion terminology, factors influencing fashion, origins of fashion, the producers of fashions, profile of the fashion industry.
2. **Marketing and Merchandising:**
Core Concepts, marketing mix and marketing environment, marketing and merchandising environment of India.
3. **Market segmentation, targeting and positioning (STP):**
Concepts and methods of market segmentation, need for positioning, Positioning through various means, formulation of positioning maps.
4. **Product in relation to fashion:**
Classification of fashion, product life cycle, the process of product development, the making of a brand, branding strategies, brand management and brand image building.
5. **Promotion and distribution:**
Role of promotion, Methods of promotion: Advertising, sales promotion, Personal Selling: designing and management of different methods of promotion and their employment in relation to cost effectiveness and product life cycle. Different channels of distribution: selection and management, designing and management of retail outlet.
6. **Pricing:**
Principles and methods of pricing: pricing in relation to product type, product life cycle, distribution outlet etc.
7. **Domestic Vs Export market:**
Principles of marketing and merchandising for the domestic and export market.

REFERENCES:

1. Kotler, P., *Marketing Management*. McGraw Publishing.
2. Wells Burnette Morianty. *Advertising- Principles and Practices*. Prentice Hall.
3. Frings, *Fashion from Concept to Consumer*. Prentice Hall.
4. Sen Gupta. *Brand Positioning*. Tata McGraw Hill Publishing.
5. Oleon Peter. *Consumer Behaviour and Marketing Strategy*. McGraw Publishing.
6. Darlie Koshy. *Effective Export Marketing of Apparel*. Global Business press.

REFERENCES:

1. Kotler, P., *Marketing Management*. McGraw Publishing.
2. Wells Burnette Moriarty. *Advertising- Principles and Practices*. Prentice Hall.
3. Frings, *Fashion from Concept to Consumer*. Prentice Hall.
4. Sen Gupta. *Brand Positioning*. Tata McGraw Hill Publishing.
5. Oleon Peter. *Consumer Behaviour and Marketing Strategy*. McGraw Publishing.
6. Darlie Koshy. *Effective Export Marketing of Apparel*. Global Business press.

ECOTEXTILES AND ENVIRONMENT

Course Code: MTA-104

Credits 3 (3-0-0)

Course Outline

THEORY:

1. Industrialization, eco-balance and textile ecology. Air, noise and water pollution by mechanical and chemical textile processing and their effect.
2. German Ban, Indian Ban, Banned dyes, Eco-parameters, Eco-friendly Textiles.
3. Oeko- Tex Standard 100.
4. Sensitizing Dyestuffs- Allergenic Dyes, Carcinogenic Amines, harmful dyes viz., Disperse, azo, acid, direct (commercial name and C. I. number), Testing of Banned azo dyes.
5. Red listed chemicals as per Eco- specification, Testing of textiles and auxiliaries, effluents discharge.
6. Health hazards of textile workers working in various textile units and their remedial measures.
7. Testing Facilities, Government and Private, Laboratories, Testing Methods, sources of contamination of harmful chemicals in textiles.
8. Eco- management for textile industry and global scenario, Indian and International environmental legislations. Eco labeling, management and auditing.

REFERENCES:

1. Shenai, V.A. *Ecology and Textiles*, Sevak Publication, Mumbai.
2. Shenai, V.A. *Toxicity of Dyes and Intermediates*, Sevak Publication, Mumbai.
3. Shenai, V.A. *Azo dyes- Facts and Figures*. Sevak Publication, Mumbai.
4. Lever Kusen. *German Legislation on Azo Dyes*. Dystar, Textifarben, Germany.
5. Mark K. H., Woodlings and Atlas S.M., *Chemical after Treatment of Textiles*. John Wiley & Sons.
6. Skinkle J.H., *Textile Testing*. D.B. Taraporewala.

RESEARCH METHODOLOGY

Course Code: MHS- 105

Credits 2 (2-0-0)

THEORY:

1. Need for social science research: definition on scope in human ecology. Research approaches and types; historical, case study, descriptive and experimental, ex-post-facto, field experiments, field studies, survey research, evaluation, action research, cross-sectional and longitudinal studies, participatory approach, rapid rural appraisal techniques.
2. Research design; defining concepts hypotheses formulation, randomness, basic assumptions and the limitations of the problems. Conceptualization of study, operationalization of variables and types of variables.
3. Sample and sampling techniques; steps in sampling design, criteria for selecting a sampling procedure, characteristics of a good sample design. Methods of data collection: questionnaire, interview schedule, observation, base- line data, secondary data. Instruments; concepts of measurement, reliability and validity of instruments. Data processing methods and data analysis.
4. Scientific reporting: Interpretation and generalization, general guidelines for presenting data, tables, graphs and illustrations, summary techniques, conclusions and recommendations, presentation of report format, foot notes, bibliographical citations. Preparation of an abstract.

PRACTICALS:

1. Project proposal formulation.
2. Review of literature.
3. Hypothesis formulation and testing.
4. Methods of data collection.
5. Data processing and report writing.

REFERENCES:

1. Badarkar, P.L. and Wilinon, T. S., *Methodology and Techniques of Social Research*. Himalaya Publishing House. Mumbai.
2. Bhatnagar, G. L. *Research Methods and Measurements in Behavioural and Social Sciences*. Agri. Cole Publishing academy, New Delhi.
3. Kothari, C. R. *How to write and publish a scientific paper*. Surjeet book Depot. Nai sarak Delhi.

INTRODUCTION TO CLOTHING CONSTRUCTION

Course Code: BHS-103

Credit Hours 3(1-0-2)

Course Outline

THEORY:

- 1 Sewing equipment and other tools required for measuring, drafting, cutting and stitching, Sewing machine: Parts of machine, their use and care
- 2 Clothing Construction Terminology
- 3 Constructional processes: Hand stitches, seam and seam finishes, disposal and finishes, plackets and edge finishing, suitability for different fabrics and clothing articles.
- 4 Preparation of fabric for layout and cutting; stay stitching
- 5 Anthropometric measurements: Importance and techniques
- 5 Unit construction method and fitting
- 6 Importance and function of clothes
- 7 Clothing requirements of infants, toddler, pre-school and elementary school children

PRACTICAL:

- 1 Demonstration on sewing equipment and tools, sewing machine and its care
- 2 Preparation of samples of basic hand stitches, machine stitches, edge finishing, fullness, finishing of necklines, placket opening, fastners, mending and patching
- 3 Introduction to anthropometric measurement
- 4 Demonstration on the preparation and layout of the different fabrics of plain, print, plaid, check and lines.
- 5 Drafting, cutting and stitching of different children's garments (bib, panty, bloomer, jhabla, frock)
- 6 Apron, petticoat and hand bag

REFERENCES:

1. Carson, Bytra. *How you look and dress*. Webster Division, McGraw Hill Book company, London
2. Bane, A. *Creative Clothing Construction*. McGraw-Hill publication.
3. Natalie Bray. *Dress Fitting*. Blackwell publication.
4. Lewis, V. S. *Comparative Clothing Construction Techniques*. Surjeet Publication, Delhi.
5. Mansfield, Evelyn. A. and Lucas, Ethel, L., *Clothing Construction*. Houghton Mifflin Company, London.
6. Doongaji, sherie and Deshpande, Rustham., *Basic Process and Clothing Construction*. New Raj Book Depot, New Delhi.
7. Erwin, Mabel, D. and Kinchen, a. Lila, *Clothing for Moderns*. MacMillan Publishing Co., New York.
8. Gwna, E. J. and Oerke, B. V., *Dress*. Peoria Chas A. Bennett Co. INC. Illinois.

SEMESTER- II

Course Code	Course Title	Credits
MHS- 201	Statistical Methods	3
MTA-202	Computer Orientation	2
MTA-203	Textile Auxiliaries and Colour Designing	4
MTA-204	Fashion Designing and Accessories	3
MTA-205	Historic Textiles and Costumes	3
BHS- 203	Introductory Textile Science*	3
	Total	18

* Remedial Course for ZBC group

STATISTICAL METHODS

Course Code: MHS- 201

Credits 3 (3-0-0)

Course Outline

THEORY:

1. Introduction; Discrete and continuous Random variables, Probability.
2. Binomial, Poisson and normal distributions with application,
3. Sampling distribution of mean, Chi square, t and F. Standard error
4. Statistical hypotheses, two types of errors, critical region, test statistics, level of significance, power of a test.
5. Test based on normal deviate, t, F and chi- square distributions
6. Analysis of variance for one way and two way classified data.
7. Scatter diagram, definition of correlation, Pearson's product moment correlation coefficients with its properties. One- two and more than two sample tests for correlation coefficients, Regression, fitting of linear regression equation using least squares method, tests of significance for regression coefficients, Test of comparison of two regression coefficients.
8. Fitting of multiple linear regression equation, Calculation of multiple and partial correlation coefficients with associated test of significance. Non- linear regression analysis, fitting of some simple non- linear regression functions.
9. Sampling Versus complete Enumeration, simple Random sampling with and without replacement, Procedure of drawing a Simple random sample. Stratified Random Sampling, Estimation of population mean along with its standard error.

REFERENCES:

1. Agarwal, B. L., *Basic Statistics*. Tata McGraw Hill Publishing.
2. Snedecor, G. W. and Cochran, W. G. *Statistical Methods*. Iowa State University Press.
3. D. N. Elhance. *Fundamentals of statistics*. Blackwell Scientific Publications.
4. Kappoor and Saxena, *Mathematical Statistics*. Macmillan Co.
5. Singh and Verma, *Agricultural Statistics*. Blackwell Scientific Publications.
6. Hall and Knight. *Higher Algebra*. Macmillan Co.

COMPUTER ORIENTATION

Course Code: MTA-202

Credits 2 (1-0-1)

Course Outline

THEORY:

1. Introduction to operating systems: Computers and peripherals. Introducing systems software windows.
2. DOS and WINDOWS; some important commands, Editors and Software Packages. Execution of software package for the following: Matrix Algebra: Value of determinants, addition, subtraction and multiplication of matrices, inverse of matrix, solution of simultaneous equations.
3. Plotting of graphs and diagrams:
4. X-Y plotting of straight line, 2nd degree of curves frequency table, Histogram, bar diagram and Pie diagram.
5. Use of software (spreadsheet) for statistical computations :
6. Mean, Median, range, Standard deviation, coefficient of variation, correlation and linear regression analysis, t-test (one sample, two sample), chi- square test of independence and goodness of fit
7. Simple exercise of data base preparation, retrieval and report generation. Planning and preparing presentations.

REFERENCES:

1. Vasan, M. *Asset International Computer Courses*. Window Concepts: Aptech Ltd. Andhei road, Mumbai.
2. Gooking. *Illustrated Computers Dictionary for Dummies*. IDB Books, Pustak Mahal, New Delhi.
3. Jain, V. K. *Computer for Beginners*. Pustak Mahal, Delhi.
4. Lone. *Memory Management for Dummies*. IDB books, Pustal Mahal, New delhi.
5. NIIT Global Net. *Introduction to M. S. Word*. Sona Printers Pvt. Ltd. Okhla.

TEXTILE AUXILIARIES AND COLOUR DESIGNING

Course Code: MTA-203

Credits 3(2-0-1)

Course Outline

THEORY:

1. Definition, classification and role of textile auxiliaries,
2. Processing operations which require use of textile auxiliaries. Spinning, Sizing, Desizing, Scouring and mercerizing, Bleaching, Dyeing, Printing and Finishing
3. Stiffening agents Optical brightening agents, Softeners, Water repellents, Wetting agents, Thickeners, Humectants Leveling agents, Flame retarding agents, Surfactants, Carriers/swelling agents, Cross linking agents, Sequestering agents, Dispersing agents, Antistatic agents. Antifoaming agents, Dye fixing agents.
4. Chemistry of dyes and pigments- composition, structure, properties, affinity towards fibers, method of application, fixing, after treatments and fastness properties.
5. Advanced dyeing techniques
6. Printing auxiliaries; advanced printing techniques; assessment for colourfastness

PRACTICALS:

1. Dyeing of various textiles using different dyes: - Cellulosic fabric, Protein fabric, Man made fabric, Synthetic fabric
2. Developing, designing & printing of following articles by using different printing techniques (block, screen, stencil or spray) and dyes. -Bed sheet, Sari, Suit
3. Visit to finishing units
4. Project report

REFERENCES:

1. Tortora, P. G., *Understanding Textiles*, New York, MacMillan Publication.
2. Wynne, A., *Textiles*, Mac Muller Education Ltd. London.
3. Shenai, V. A., *Technology of Printing*, Vol. IV, Sevak Publication.
4. Shenai, V. A., *Technology of Textile Processing.*, Sevak Publication.
5. Hall, A. J. *The Standard Handbook of Textiles*. Newnes-Butter-worths, London.
6. Hollen, N. and Saddler, J., *Textiles*. Macmillan Company, New York.
7. Anderson, F. D., *Tie-dyeing and Batik*, Octopus Books Limited. London.
8. Grosicki, Z. Watson's. *Textiles Design and Colour*. Universal Publishing Corporation, Bombay.
9. Bernard P. Corbman., *Textiles - Fiber to Fabric*. McGraw-Hill.
10. Nisbel H., *Grammer of Textile Design*. D.B. Taraporevale Sons.
11. Shenai. V. A., *Chemistry of Textile Axillaries*. Sevak Publication.
12. Shenai. V. A., *Technology of Bleaching and Mercerizing*. Sevak Publication.
13. Vaidya A and Trivedi, *Textile Auxiliaries & Finishing Chemicals*. ATIRA, Ahemadabad.
14. Vilensky G., *Textile Science*. CBS publication.
15. Bogley M., *Textile Dyes, Finishing and Auxiliaries*. Garland Publication.
16. Fiscus, G. and Grunenwald D., *Textile Finishing: A Complete Guide*. Textile Institute, Manchester.
17. Hall, K. J., *Textile Finishing*. Heywood.

FASHION DESIGNING AND ACCESSORIES

Course Code: MTA-204

Credits 3(1-0-2)

Course Outline

THEORY:

1. Fashion terminology
2. Evolution of fashion
3. Psychology of fashion
4. Factor determining fashion trends
5. Fashion forecasting and creation
6. Fashion affecting fashion creation
7. Fashion cycle
8. Techniques and tools used for fashion sketching
9. Fashion theories
10. Brief introduction to national and international fashion designer
11. Sources of advanced fashion information
12. Fashion careers and job opportunities
13. Introduction to Fashion accessories, fashion trends in accessories, Product development and designing- trims, footwear, handbags, belts, buttons and buckles, hats and scarves. Jewellery, neckties, handkerchiefs, eye wear and watches.

PRACTICALS:

1. Drawing fashion figures with different elevations
2. Drawing facial features
3. Textures and patterns
4. Accessory designing, Hair styles and headgears
5. Development of portfolio
6. Study of specification sheet
7. Development of a portfolio on a particular theme:
 - i. Casual wear, Sports wear, Party wear
8. Organization of fashion show

REFERENCES:

1. Brockman, H.L., *The Theory of Fashion Design*. Sydney, Johan, Wiley and Sons.
2. Ireland, P. J., *Fashion Design Drawing*. London. B.T. batsford Ltd.
3. Ireland, P. J. *Basic Fashion Design*. London. B.T. batsford Ltd.
4. Ireland, P. J., *Fashion Drawing for Advertising*. London, B. T. batsford Ltd.
5. Jabenis, E., *The Fashion Director*. Sydney, Johan, Wiley and Sons.
6. Bhargav R., *Design Ideas & Accessories*. Jain Publication.
7. Carr Harold and John Pomeroy. *Fashion Design & Product Development*. Blackwell Science.
8. Taylor P., *Computers in Fashion Industry*. Heinemann.

HISTORIC TEXTILES AND COSTUMES

Course Code: MTA-205

Credits 3(2-0-1)

Course Outline

THEORY:

1. Introduction, Historic background and detailed study of ancient, medieval and contemporary Indian costumes.
2. Study of traditional dyed, printed, embroidered and non-woven textiles of Greece, Egypt, France, Rome, America and China– fiber content, fabrics, motifs, colours, dyes and designs used.
3. History and evolution of traditional costumes of Egypt, Rome, France, Greece America and China.
4. Detailed study of decorative motifs and techniques

PRACTICALS:

1. Preparation of models with different costumes and jewellery of -Egyptian costumes, Grecian costumes, Roman costumes, American costumes
2. Collection of traditional textile print & surface designs of the above countries and documentation;
3. Designing textile surface with combination of motifs of different countries.
4. Documentation of various styles of men & women's garments of the above countries.
5. Designing outfits for men & women to suit to the current trends;
6. Preparation of one article using embroidery and motifs of ancient / traditional period.
7. Visit to a museum

REFERENCES:

1. Pandit, S., *Indian Embroidery – It's variegated charms. Latest edition.* Vinu Bai Patel, Baroda.
2. Dhamija, J.S., *Handicrafts of India.* National book trust, India.
3. Dhaniya, J and Jain, J., *Handwoven Fabrics of India.* Mapin publishing Ltd., Ahmedabad.
4. Annalce Gold., *One World of Fashion.* Fair Child Publication.
5. Blanche Payne., *History of Costumes from the Ancient Egyptian to the Twentieth Century.* Harper & Row.
6. Jack Cassin Scott., *The Illustrated Encyclopedia of Costume and Fashion.* Studio Vista.
7. John Peacock., *A Complete Guide to English Costume Design and History - Costume 1066–1990's.* Thames & Hudson.
8. Pamela Stecker., *Fashion Design Manual.* MacMillan publication.

Note: A visit to museum and art galleries will be organized to give the practical knowledge of traditional costumes to students.

INTRODUCTORY TEXTILE SCIENCE

Course Code: BHS-203

Credits 3 (2-0-1)

Course Outline

THEORY:

- 1 Introduction, terminology and classification of textile fibers
- 2 Natural fibers: Cotton, flax, jute, hemp, ramie, silk, wool, specialty hair fibers and asbestos
- 3 Man made fibers: Rayon, acetate, nylon, polyester, acrylic, glass fibers
- 4 Yarn classification; characteristics and their use
- 5 Introduction to methods of fabric construction: Weaving, knitting, lace making, felts and nonwoven
- 6 Blends and Mixtures
- 7 Labels and tags used in textiles and consumer education
- 8 Laundry equipment; their use and care, principles and methods of washing and finishing
- 9 Cleansing agents: water, detergents, soaps and other laundry reagents- acidic, alkaline reagents and bleaching agents
- 10 Additives used in laundry: stiffening and blueing agents
- 11 Stain removal: classification, general rules and methods of removing stains. Care, storage and disinfectants of clothes

PRACTICAL:

- 1 Identification of fibers: visual inspection, burning, microscopic and solubility tests
- 2 Study and identification of common fabrics available in the market and thread count
- 3 Removal of common stains from fabrics
- 4 Demonstration of laundry equipment
- 5 Washing, ironing and finishing of textile articles: cotton, silk, wool, synthetic/blend, zari embroidery and lace articles
- 6 Visit to Processing unit/ Textile mill

REFERENCES:

1. Dantyagi, Susheela. *Fundamentals of Textiles and Their Care*. Orient Lonman Limited. New Delhi.
2. Deulkar, Durga. *Household Textiles and laundry Work*. Atma Ram and sons, Ltd.. Delhi.
3. Hollen, N. and Saddler, J. *Textiles*. Macmillan Comapany. New York.
4. Potter, M. D. and Corbman, B. P. *Textiles: Fiber to Fabric*. Macmillan Hill Co. New York.
5. Stout, E. E. *Introduction to Textiles*. John Wiley and Sons. Inc. New York.
6. Totoro, P. G. *Understanding Textiles*. Macmillan Publishing Comapany. New York.

SEMESTER- III

Course Code	Course Title	Credits
MTA-301	Recent Advances in Textiles and Apparel Designing	3
MTA-302	Textile Industry and Trade	2
MTA-303	Textile Quality Analysis	4
MTA-304	Fiber Chemistry	3
BHS- 305	Fabric Formation and Finishes*	3
	Total	15

* Remedial Course for ZBC group

RECENT ADVANCES IN TEXTILES AND APPAREL DESIGNING

Course Code: MTA-301

Credits 3(2-0-1)

Course Outline

THEORY:

1. Recent researches in production and manufacture of textile fibers. Developments in Nano-fiber and microfiber.
2. Recent researches in production and manufacture of textile yarns.
3. Recent researches in production and manufacture of textile fabrics.
4. Chemical processing of natural and synthetic textiles and their conversion into clothing.
5. Developments in the field of functional textiles and clothing; use of special techniques in textile processing.
6. Thrust areas of contemporary research and future projections.
7. Importance and classification of technical textiles. Medical Textiles; Special textiles for industrial applications; automotive textiles; Industrial textiles. Agro textiles; geo-textiles; Phase Change Materials; Shape Memory Materials; Chromic Materials.
8. Conductive Materials and other Functional Materials- characteristics and its applications.

REFERENCES:

1. Allison Mathews. *Medical and Hygiene Textile Production*. Intermediate Technology Publication.
2. Cookling Gerry. *Garment Technology for Fashion Designers*. Blackwell Science.
3. Padmanabhan A.R., *A Practical Guide to Textile Testing*. SITRA, Coimbatore. Prentice Hall.
4. Skinkle J. H. *Textile Testing*. D.B. Taraporewala.
5. Related Journals of Apparels and Textiles

TEXTILE INDUSTRY AND TRADE

Course Code: MTA-302

Credits 2(2-0-0)

Course Outline

THEORY:

1. Textile industry in India- history and development, role and its importance in Indian economy.
2. Textile Management in India: organizational structure, organized and decentralized sector, market structure.
3. Status of textile industry in India - cotton, wool, silk, rayon, jute, handlooms, knitting and garment industry; Government Textile & Clothing policies.
4. Textile Research Association, Apparel Export Promotion Council, Textile Craft Council.
5. Economics and marketing concepts, demand, supply, market and marketing, marketing process. Approaches to marketing, price, cost, product.
6. Factors influencing the production and consumption of textiles.
7. Factors affecting the cost of textile and pricing policies. Causes for price fluctuations.
8. Trends and Problems of Indian Textile export and import.
9. Quality control institutions and quality regulation in India.
10. Different textile mills, khadi and village industry commission, weaving service centers, handloom sector, co-operative societies and research associations.
11. Study of Apparel parks, GATT, TUF, ISO 9000 and ISO 140000 standards

REFERENCES:

1. Cooklin, G., *Introduction to Clothing Manufacture*. Blackwell Scientific Publications.
2. Karpan., *Change in Trends in Apparel Industry*. Abhishek Publication.
3. Kathryn Moore Greenwood. *Fashion Innovation & Marketing*. Macmillan co.
4. Kitty Dickerson. *Textiles & Apparels in Global Economy*. Merrill Prentice Hall.

TEXTILE QUALITY ANALYSIS

Course Code: MTA-303

Credits 4(2-0-2)

Course Outline

THEORY:

1. Importance of textile testing, standardization and quality control, functions of BIS and other standards.
2. Terminology used in textile testing
3. Sampling techniques- fiber, yarn and fabric; Moisture relations in textiles- effect of moisture, humidity on properties of textiles, standard conditions of testing.
4. Chemical structure based properties of fibers
5. Study of physical properties of textile fibers, yarns and fabrics
6. Fiber-- Staple length, mean length, maturity, short fiber percentage fineness, evenness, diameter, fiber strength, elongation and crimp.
7. Yarn- count, denier, crimp, twist, strength and elongation
8. Fabric-- strength, breaking, bursting, tear and ballistic strength, static electricity, thermal conductivity, air permeability, water repellency, thickness, shrinkage, pilling, abrasion resistance, colour fastness.
9. Apparel Testing- Quality factors in sewing, pressing, folding and finishing; quality aspects of trims and fasteners, Inspection techniques; quality auditing system in apparel industry
10. National and International organization and objectives of various organizations related to textile testing.

PRACTICALS:

1. Methods of measuring various physical properties of textiles by using different instruments and interpretation of results.
2. Fiber staple length, mean length, maturity, short fiber percentage, fineness, evenness, fiber strength, elongation, diameter, air permeability
3. Yarn strength, elongation, count, denier, crimp, twist, stress-strain curve, elastic recovery
4. Fabric strength, breaking, bursting, tear and ballistic strength, thermal conductivity, air permeability, water repellency, thickness, shrinkage, pilling, abrasion resistance, colourfastness to washing, light, rubbing or crocking and perspiration

REFERENCES:

1. Vilensky, L. D. and Gohl, E. P.G., *Textile Science*. CBS Publication and distributor, New Delhi.
2. Mishra, S.P. A., *Text Book of Fiber Science & Technology*. New Age International
3. Wynne. A., *Textiles*. Macmillan Education Ltd., London
4. *AATCC Technical Manual*. 1966. Vol. 68. USA American Association of Textile Chemist.
5. *AATCC Technical Manual*. 1993. Vol. 69. USA American Association of Textile Chemist.
6. *AATCC Technical Manual*. 1995. Vol. 70. USA American Association of Textile Chemist.
7. *AATCC Technical Manual*. 1998. Vol. 73. USA American Association of Textile Chemist.
8. Angappan. *Textile Testing*. SSM Institute of Technology, Komarapalayam.
9. Booth J. L., *Principles of Textile Testing*. Butterworth.
10. *ISI Hand Book of Textile Testing*. ISI.

FIBER CHEMISTRY

Course Code: MTA-304

Credits 3 (2-0-1)

Course Outline

THEORY:

1. Chemistry of polymers- polymerization, types, degree and characteristics;
2. Structure of textile fibers (cellulosic, protein and man made fibers), general molecular bonding, length, orientation and requirements of fiber forming substances.
3. Fiber Structure- repeating units, bonds, reactive groups and Acids/alkali reactions, action of heat, light and microorganisms on different fibers and physio- chemical properties of:
 - a. Cellulosic fibers: cotton, linen, rayon, acetate, lyocell
 - b. Protein fibers: wool, silk
 - c. Synthetic fibers: nylon, polyester, acrylic, spandex
 - d. Minor fibers: alginate, soybean, casein, zein, rubber etc.
4. Bi-component and biconstituent fibers- Types of configuration and characteristics.
5. Study of new fibers; blending- principles, technology and types.

PRACTICALS:

1. Fiber testing: cross sectional view of cotton, wool, silk, polyester and acrylic;
2. Chemistry of cellulose, protein and synthetics- effect of heat, acid and alkali, detection of damage caused to cellulose
3. Quantitative analysis of fiber blends and mixtures

REFERENCES:

1. Andrea Wynne. *Textiles*. Macmillan.
2. Bernard P. Corbman, *Textiles- Fiber to fabric*. McGraw- Hill.
3. Lyle D. S., *Modern Textiles*. John Wiley & Sons.
4. Majory L. Joseph. *Introductory Textile Science*. Rinehart & Winston.
5. Vilensky G. *Textile Science*. CBS publication.
6. Wingate I. B., *The Fabrics- Their Selection*. Prentice Hall

FABRIC FORMATION AND FINISHES

Course Code: BHS- 305

Credits 2 (2-0-0)

Course Outline

THEORY:

1. Method of fabric formation: basic weaves, Non woven fabric construction; felts and non-woven, knitted fabric; warp knitting, weft knitting, circular knitting
2. Looms: Shuttle looms, shuttleless looms, gripper loom, rapier loom, water jet and air jet loom
3. Introduction to fabric finishes
 - a) processes of removing impurities from fabrics: scouring, degumming, carbonizing
 - b) Basic finishes that alter hand or texture; felting, singeing, stiffening, decatizing
 - c) Surface finishes: Bleaching, delustering, calendaring, beetling, napping, flocking, burnt out design, plisse design, acid design, tenetring, shearing and brushing
 - d) Functional finishes: water proof and water repellent finish, soil repellent finish, shrinkage control, wrinkle resistance, durable press finish, flame retardant finish, mildew proof, rot proof, moth proof finishes, antistatic and antibacterial finishes
4. Adding colour to textiles: Natural dyes and synthetic dyes
5. Classification of dyes: Direct dyes, acid dye, basic dye, vat dye, sulphur dye, azoic dye, mordant dye, disperse dye, reactive dye and pigments
6. Dyeing techniques; solution dyeing, fiber and yarn dyeing, piece dyeing, cross dyeing, union dyeing and tone on-tone dyeing
7. Standardization and quality control of fabrics
8. Textiles and environment: Health hazards to workers and consumers, toxicity of chemicals, textile as a source of air and water pollution

PRACTICAL:

1. Preparation of basic weaves on cardboard
2. Fabric finishes: Mercerization, scouring, bleaching, flame retardant, fabric shrinkage test
3. Identification of various fabric finishes
4. Knitting machine and its parts; accessories and their use, pattern making: sample of tuck stitches, slip stitches and multi coloured knitting
5. Preparation of samples: Screen printing, Block printing, stencil printing, tie and dye and batik with different dyes.

REFERENCES:

1. Cheetham, R.C., *Dyeing Fiber Blends: The processing of blends unions and mixtures containing natural or man-made fibers*. D. Van Nostrand Company Ltd., London.
2. Hall, A. J. *Textile Finishing*, Heywood Books. London.
3. Hall, A. J. *The Standard Handbook of Textiles*. Newness Butter Worths. London.
4. Hollen, N. and Saddler, J. *Textiles*. Macmillan Company.
5. *ISI Handbook of Textile Testing*. Indian Standards Institution, New Delhi.

SEMESTER- IV

Course Code	Course Title	L-T-P	Credits
MTA - 401	Seminar	0 - 0 - 2	2
MTA - 402	Thesis/ Project	0 - 0 - 15	15
	Total	0-0-17	17

THESIS/ PROJECT

Course Code: MTA-402

Credits 15 (0-0-15)

- I. Every student shall be required to conduct research on a topic selected in consultation with the Advisory Committee constituted for the purpose.
- II. The Advisory Committee for guiding the student's research shall be appointed by the HOD/Principal of the College and shall comprise of at least three members from the concerned and related departments.
- III. The students shall be required to submit the results of research in the form of a Thesis dissertation. The thesis shall be forwarded to the External examiner for evaluation at least twenty days before the date of the Viva-voce examination. The external examiner shall be appointed by the Kumaun University. If the examination report of the dissertation is satisfactory, the external examiner shall be invited to conduct viva- voce examination. The grading of the thesis shall be done satisfactory or unsatisfactory by the external examiner. In case the result of thesis dissertation is unsatisfactory, the thesis shall be revised as per recommendation of the external examiner and resubmitted within 30 days by concern student.
- IV. There will be an option for students to do project work in lieu of thesis research. Each student's project shall be guided by an advisory committee consisting of at least three members and the student will have to submit report on their project work. The evaluation of the project work shall consist of evaluation of the project report and viva- voce examination to be conducted by external examiner. The grading for the project and the viva-voce shall be satisfactory or unsatisfactory as in case of thesis dissertation.