

AC 10/02/2012
Item No. 4.48

UNIVERSITY OF MUMBAI



Syllabus
SEMESTER I & SEMESTER II
Program: M.Sc.
Course: Home Science
Branch III: Textile and Fashion Technology
(Credit Based Semester and Grading System with
effect from the academic year 2012–2013)

SEMESTER I

Course Code	Title	Credits	Periods	Marks
PSHSIII101	Research Methods and Statistics	4	4	100
PSHSIII102	Global Marketing and Merchandising	4	4	100
PSHSIII103	Fiber Science	4	4	100
PSHSPIII101	Practicum in Research Methods	2	3	50
PSHSPIII102	Physical and Chemical Textile Testing	2	4	50
PSHSPIII103	Pattern Drafting	2	3	50
PSHSPIII104	Fashion Illustration	3	3	75
PSHSPIII105	Apparel Design and Production - Woven	3	3	75
	Total:	24	28	600

Course Code	Title	Lectures/week	Marks	Credits
PSHSI101	Research Methods and Statistics	4	100	4

RESEARCH METHODS AND STATISTICS

No. of Credits: 4

Objectives

1. To build in students appreciation for high quality research in each of their specialisations.
2. To introduce students to the skills needed in conducting a research in their specialisation.
3. To introduce students to principles of good scientific writing.
4. To enable in students the skills in selecting, computing, interpreting and reporting statistics.

Course Content	Lectures
UNIT I 1 A. Introduction and Overview (a) What is a research? (b) Objectivity and subjectivity in scientific inquiry: Premodernism, modernism, and postmodernism (c) Steps in the research process (d) Importance of research in general, and in each discipline (e) Illustration of research in each of the three specialisations: Foods, Nutrition, and Dietetics; Human Development; and, Textile and Fashion Technology (f) Qualitative versus quantitative research 1 B. The beginning steps in the research process (a) Identifying broad areas of research in a discipline (b) Identifying interest areas; using multiple search strategies (c) Prioritising topics; specifying a topic; feasibility (d) Review of literature/scholarly argument in support of study (e) Specifying research objectives/hypotheses/questions	15
UNIT II 2 A. Variables (a) Definition (b) Characteristics (c) Types (d) Levels of measurement 2 B. Measurement (a) Conceptual definitions and operational definitions (b) Types of validity and reliability in quantitative research 2 C. Data entry in quantitative research (a) Codebook and mastersheet (b) Creating data files and data management	15
UNIT III	15
3. A. Introduction and overview to statistics	

	<p>(a) Role of statistics in (quantitative) research (b) Definition/changing conceptions (c) Prerequisite concepts in mathematics (e.g., properties of the summation sign, basic algebra)</p> <p>3 B. Descriptive Statistics for summarizing ratio level variables</p> <p>(a) Frequencies and percentages (b) Computing an average/measure of a central tendency Mean, median, mode(s) Contrasting the mean vs. median Computing an average when there are outliers or extreme values in the data set Robust measures of the center (5% trimmed mean; M estimators) Quartiles and percentiles (d) Computing a measure of variability or dispersion Why? (inadequacy of the mean) Minimum value and maximum value Range Interquartile range Variance and standard deviation (e) Discrete and continuous variables (f) Histograms and line graphs</p>	
UNIT IV	<p>4 A. Descriptive Statistics for summarizing nominal, ordinal and interval level variables</p> <p>4 B. Demonstration of computer software such as the Statistical Package for the Social Sciences (SPSS)</p> <p>(a) Data entry (b) Data Management (c) Descriptive Statistics</p> <p>4. C. Probability: Foundation of Advanced/Inferential Statistics</p> <p>(a) Definition (b) Role of probability in research and statistics (c) Elementary concepts in probability Sample space, experiment, event/outcome/element of the sample space Equally likely outcomes and the uniform probability model Stabilization of the relative frequency</p>	15

References:

Bhattacharyya, G.K. & Johnson, R. A. (1977). *Statistical concepts and methods*. NY: John Wiley.
Dwiwedi, R. S. (1997). *Research methods in behavioral sciences*. Delhi: Macmillan India.
Gravetter, F. J. & Waillnau, L. B. (2000). *Statistics for the behavioral sciences*. Belmont, CA: Wadsworth/Thomson Learning.
Kerlinger, F. N. & Lee, H. B. (2000). *Foundations of behavioral research*. Orlando, Florida: Harcourt.
Leong, F.T.L. & Austin, J. T. (Eds.) (1996). *The psychology research handbook*. New Delhi: Sage.

Course Code	Title	Lectures/week	Marks	Credits
PSHSI102	Global Marketing, Merchandising and Entrepreneurship	4	100	4

GLOBAL MARKETING, MERCHANDISING AND ENTREPRENEURSHIP

No. of Credits: 4

Objectives

1. To equip students with the knowledge of the fashion world.
2. To provide knowledge of international trade.
3. To impart knowledge of marketing and merchandising.
4. To enhance entrepreneur skills.

Course Content		Lectures
UNIT I	<p>Language of fashion and textile design</p> <ol style="list-style-type: none"> i. Definition and nature of Fashion Business ii. Principles of Fashion iii. Terminology: Style, Fashion (high and mass fashion), Design, Taste, Classic, Fad, Trend, any others iv. Components of Fashion/Design Elements & Principles: v. Fashion Cycle vi. Movement and Theories of fashion vii. Fashion forecast and fashion shows <p>Leading international designers and their labels</p> <p>Organization and operation of the fashion business: Women's wear, menswear, children's wear, fashion accessories, home fashions</p>	15
UNIT II	<p>Information Technology for Merchandising</p> <ol style="list-style-type: none"> i. Quick response business systems: ii. Customer driven systems (POS) iii. Universal product code (UPC) iv. E-commerce, (ERP), Enterprise Resource Planning v. Electronic data interchange (EDI) vi. Smart labels and Radio frequency identification vii. Time based competition, Agility, Partnering (external and internal) <p>Merchandising systems</p> <ol style="list-style-type: none"> i. Business to business relationships-wholesaling, ii. Business to ultimate consumer transactions- retailing iii. Line planning: evaluating merchandising mix and forecasting offerings, Merchandise budgets and assortment plans, delivery and allocation plans iv. Determining the length of selling periods: timing merchandising calendars (selling and transition periods) v. Forecast based merchandise plans (regional and local economic and cultural influences during the period trend and end of period trend analysis) vi. Line development: Line concept/ finished goods buying/ sourcing, product development (creative design, line adoption, technical design) vii. Line presentation: internal line presentation, wholesale online presentation and retail line presentation <p>Dimensions of planning product lines</p> <ol style="list-style-type: none"> i. Pricing dimensions ii. Assortment dimensions: Merchandise assortment, SKU stock keeping unit <p>Line development and computer technology: CAD systems, PDS, PIMS, Videoconferencing, Customization: Body scanning, Interactive on-line fashion information services, Web based data management systems</p>	15
UNIT III	<p>Role & responsibilities of a merchandiser</p> <p>Market Knowledge and four P's</p> <p>Market Segmentation</p> <ol style="list-style-type: none"> i. Factors for segmentation: Demographic trends, psychographics, social 	15

	<p>force, government influences, economic trends</p> <p>ii. Market penetration and development</p> <p>iii. Product development and diversification</p> <p>Strategic Planning Definition, Marketing calendar, Line preview date, Critical path method, Line plan summary, Sales forecast, Shelf stock plan, Style status report, Order tracking</p> <p>Traditional & Contemporary line planning</p> <p>Quality assurance</p> <p>i. Definition and importance of quality management</p> <p>ii. Consumers' perception of quality, company responsibility</p> <p>iii. Deming's 14 points, Juran's 10 steps to quality improvement, Sigma six strategy</p> <p>iv. Standards and specifications.</p> <p>v. Quality determinants (raw materials, pattern and fit, construction)</p> <p>vi. Quality and sampling procedures</p> <p>vii. Statistical Process Control (SPC)</p> <p>viii. Merchandise Checking procedures: Quantity checking and quality controllers, Marking merchandise, Loss prevention: Shoplifting, Deterrents and controls, Electronic Article Surveillance (EAS)</p>	
UNIT IV	<p>Merchandising perspectives on pricing Income statements, Pricing and costing, Pricing Strategies, Pricing variables, Pricing relationships and strategic pricing, Components of pricing strategies, Costing principles and strategies, Types of costing</p>	15

References

Boyd, H. W. (1995) *Marketing management: Strategic approach with a global orientation*. Chicago: Irwin / Richard Irwin.

Davar, R. S. (1982) *Modern marketing management*. Bombay: Progressive.

Diamond, E. (2006) *Fashion retailing: A multi-channel approach*, New Jersey: Pearson/Prentice Hall.

Donnellan, J. (1999) *Merchandising buying and management*, New York: Fairchild Publications.

Ed. Hines, T. and Bruce, M. (2001) *Fashion marketing*. Oxford: Butterworth Heinemann.

Jackson, T. & Shaw, D. (2001) *Mastering fashion buying and merchandising management*, New York: Palgrave.

Jarnow, J., Guereira, M. & Judelle, B. (1987). *Inside the fashion business*. (4th Ed.). New York: MacMillan.

Kale, N. G. (1995). *International marketing*. Mumbai: Vipul Prakashan.

Kale, N. G. (1998). *Fundamentals of marketing and finance*. Mumbai: Manisha Prakashan.

Kotler, P. (1998) *Marketing management: analysis, planning, implementation and control*. (9th Ed.). New Delhi: Prentice Hall.

Vaz, M. (1996) *Export marketing*. Mumbai: Manisha Prakashan.

Course Code	Title	Lectures/week	Marks	Credits
PSHSIII103	Fibre Science	4	100	4

FIBRE SCIENCE

No. of Credits: 4

Objectives

1. To study the morphology, chemical constitution and manufacturing processes of natural and manmade fibers.
2. To study physical and chemical properties and end uses of cellulosic fibres.
3. To introduce students to the different concepts essential in understanding the building up of the macromolecule.
4. To understand the effects of polymerization on the various properties of fibres.

Course Content		Lectures
UNIT I	Classification of fibers and definitions Polymerization and fiber structure a) Classification of polymers b) Addition and condensation polymerization c) Graft and block polymerization d) Determination of molecular weight e) Molecular weight of polymers f) Degree of polymerization g) Number average and weight average molecular weight h) Methods of determining molecular weight	15
UNIT II	Cellulose fibers a) Chemistry of cellulose: Chemical composition and constitution b) Reactivity of different hydroxyl groups, Hydrolysis and oxidation of cellulose, estimation of the extent of degradation	15
UNIT III	Natural Cellulosic fibres Morphology, fine structure, properties, and varieties of cellulosic fibers including Indian varieties. a) Cotton b) Jute c) Flax	15
UNIT IV	Regenerated cellulosic fibers a) Raw materials, manufacturing process, physical and chemical properties of regenerated fibers.(viscose rayon, cuprammonium rayon, polynosic fibers, high tenacity viscose, modal and lyocell) b) Chemically modified cellulose (primary and secondary acetate rayon)	15

References

- Carter, E. M. (1971). *Essentials of Fiber Chemistry* New York: Marcel Dekker.
- Chakraverty, R. R. (1972). *A glimpse on the chemical technology of textile fibres.*New Delhi: The Canton Press.
- Chapman, C. B. (1972). *Fibres.* London: Butterworths and company.
- Cook, J. G. (1984). *Handbook of textile fiber.* (5th Ed.) U.K: Duram Mellow.
- Corbman, P. B. (1985). *Textiles: Fiber to fabric.* (6th Ed.) McGraw Hill Book.
- Grayson, M. (1984). *Encyclopedia of textile, fiber and nonmoving fabrics.* New York: John Wiley & Sons.
- Gulrajani, M. L. (1985). *Man-made textiles in developing countries.* India: The Textile Association.
- Hess, K. Paddock. () *Textile fibres and their use.* (6th Ed). New Delhi: Oxford & IBH.
- Hollen, N. & Saddler, J. (1988) *Textiles.* (6th Ed.) .New York: Macmillan.
- Howard, L. N. (1986). *Textiles: fibres, dyers, finishes and processes.* New Jersey: Noyes.
- Hollen, N. & Saddler, J. (1988). *Textiles* (6th Ed.) New York: Macmillan.
- Kornreich, E. (1966). *Introduction to fibres and fabrics.* London Heywood books.
- Kothari, V. K. (2000). *Textile fibres: Development and innovation.* Vol. II. New Delhi: I.A.F.L. Publication.
- Lewin, M., & Pearce, M. E. (1998). *A handbook of fiber chemistry.* New York: Marcel Dekker.
- Marjory, L. J. (1976). *Essentials of textiles.* New York.
- Marjory, L. J. (1977). *Introductory textile science.* (3rd Ed.). New York.
- Mishra, S. P. (2000). *A textbook of fiber science and technology.* New Delhi: New Age.

Moncrieff, R. W. (1975). *Mamade Fibers*. London: Newnes Butterworth.

Morton, W. E. & Hearle, W. S. (1975). *Physical properties of textile fibres*. London: The Textile Institute.

Murthy, H. V. (1987). *Introduction to textile fibres*. Bombay: The Textile Association of India.

Porczynski, C. Z. & Carroll. (1961). *Manual of man-made fibres*. Bombay: The new book.

Sadov, F., Korchanging, M. & Matelsky A. (1973). *Chemical technology of fibrous materials*. Moscow: MIR Publications.

Shenai, V. A. (1977). *Textile fibres*. Vol. I Mumbai: Sevak.

Steven, B. W. (1975). *Fiber science*. New Jersey: Prentice Hall.

Tammanna, N. S. (1973). *Handbook of silk technology*. New Delhi: Wiley Eastern.

Tortora, G. P. (1992). *Understanding textiles*. (4th Ed.) New York: Macmillan.

Wynne, A. (1997). *Textiles-The Motivate Series*, London: Macmillan Education Ltd.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII101	Practicum in Research Methods	3	50	2

PRACTICUM IN RESEARCH METHODS

No. of Credits: 2

Objectives

To provide students with opportunities for hands-on exercises with regard to many steps of the research process, such that they have met the prerequisites for research work.

Course Content	Periods
UNIT I Preliminary steps in the research process: using multiple search strategies (Part I) a) Identifying broad areas of research in one's specialization (identifying leading scholarly journals, reading the tables of contents, articles in which areas are solicited in each such journal, scanning dissertation topics, identifying focus areas with regard to dissertation topics, changes in dissertation topics over the years, interviewing academicians/researchers/ practitioners, Net search)	15
UNIT II Preliminary steps in the research process: using multiple search strategies (Part II) a) Visits to research centers in Mumbai (relevant to one's specialization) b) Identifying priority areas of research in one's specialization c) Identifying areas of personal interest (selecting any one dissertation, summarizing this dissertation, justifying the selection of this dissertation; selecting any one research article from a reputed scholarly journal, summarizing this research, justifying the selection of this research article; interviewing one local expert; communicating with one national or international expert in one's area of interest using e-mail)	15
UNIT III Preliminary steps in the research process: the review of literature and statement of purpose a) studying the review of literature in various dissertations and research articles and identifying key features of the content of literature reviews b) studying the manner in which the purpose is stated in dissertations and research articles c) developing skills in paraphrasing (i.e., rewriting ideas in own words) and avoiding plagiarism (due acknowledgement to original source) d) developing skills in formulating research objectives, questions and hypotheses e) developing skills in writing and orally communicating a literature review and statement of research purpose	15

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII102	Physical and Chemical Textile Testing	4	50	2

PHYSICAL AND CHEMICAL TEXTILE TESTING

No. of Credits: 2

Objectives

- To impart knowledge of the physical and chemical properties of textiles.
- To teach the techniques of testing properties of textile materials for their properties

Course Content		Periods
UNIT I	Physical Testing of fibres and yarns a) Fiber testing: Fiber length b) Yarns and their characteristics: Yarn twist, yarn count, yarn crimp	15
UNIT II	Physical testing of fabrics Fabrics and their characteristics: fabric weight, fabric count, water permeability	15
UNIT III	Physical testing of fabrics durability (pilling and abrasion), crease recovery, tear/tensile (CRT) strength, bursting strength	15
UNIT IV	Pretreatment and dyeing a) Scouring and bleaching of gray fabric. b) Dyeing of fabric with direct, reactive (hot and cold), azoic, vat, acid and basic dyes using padding mangle, jigger dyeing machine as per their application and suitability	15

References

- Angappan, P. & Gopalkrishnan R. (1993). *Textile Testing*. S.S.M. Institute of Technology.
- Booth (1974). *Principles of Textile Testing: An Introduction to Physical Methods of Testing Textile fibers, yarn and Fabrics* London: Newnes Butterworth.
- Collier B.J. (1999) *Textile Testing and Analysis*. New Jersey: Prentice Hall.
- Handbook of Textile Testing*, Bureau of Indian Standards. (1990). Testing and Grading of Textile Fibers. Part 1 New Delhi: Bureau of Indian Standards
- Handbook of Textile Testing, Bureau of Indian Standards*. (1991). Testing and Grading of Textile Fibers. Part 111 New Delhi: Bureau of Indian Standards
- Handbook of Textile Testing*, Bureau of Indian Standards. (1989). Identification and Testing of dyestuff and Colour Fastness on Textile Materials. Part IV New Delhi: Bureau of Indian Standards
- Shenai, V.A. (1980). *Evaluation of Textile Chemicals* Bombay Sevak Publication.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII103	Pattern Making and Grading	3	50	2

PATTERN MAKING AND GRADING

No. of Credits: 2

Objectives

1. To acquaint students to advance techniques of designing and pattern making for different styles of clothing for women.
2. To adapt constructed blocks to the given patterns and grading according to different sizes.

Course Content		Periods
UNIT I	Basic Block Construction (a) Adult's Basic Block (b) Adults Basic Sleeve (c) Torso block Displacements of darts Concealments of darts	15
UNIT II	Drafting of yokes, gathers and pleats for upper and lower garments	15
UNIT III	Drafting of collars (Shirt, Reversible, Shawl, Danton, Chinese)	15

References

- Aldrich, W. (1996). *Fabric Form and flat pattern cutting*. Oxford: Blackwell Science.
- Armstrong, H. J. (1986). *Pattern making for fashion designing*. New York: Harper and Row
- Braddock, S. F. (1998). *Techno-textiles: revolutionary fabrics for fashion and design*. London: Thames and Hudson
- Bray, N. (1970). *Dress fitting: The basic principles of cut and fit*. (5th Ed.) London: Crosby Lockwood and sons
- Bray, N. (1970). *Dress pattern designing: the basic principles of cut and fit*. (5th Ed.) London: Crosby Lockwood and sons
- Bray, N. (1995). *More dress pattern designing*. (4th Ed.). Great Britain: Blackwell Science.
- Cooklin, G. (1995). *More patterns and grading for women's outside*. Great Britain: Blackwell Science
- Cooklin, G. (1992). *Pattern grading for women's clothes: the technology of sizing*. Oxford: S.P. Professional Books.
- Goulbourn, M. (1971). *Introducing pattern cutting: Grading and modeling*. London: B. T. Batsford.
- Jan, M. (1967). *Coordinated pattern fit*. Burgess Publishing
- Littman, C. (1977). *Pattern making design: Skirts and pants*. New York: Delmar
- Toledo, R. (1996). *Style dictionary*. New York Abbeville Press.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII104	Fashion Illustration	3	75	3

FASHION ILLUSTRATION

No. of credits: 3

Objectives

- To enhance the creative skills of drawing, sketching and rendering colours for designing garments and accessories based on themes.
- To enhance the creative skills of drawing, sketching and rendering colours for designing accessories based on themes.

Course Content		Periods
UNIT I	Drawings: a) Normal figure, fashion figure b) Face drawing, nose figure drawing (3), leg figure (3), hand figure (3), hairstyles (3) c) Accessories (footwear, bags, jewellery headgears).	15
UNIT II	Basic Croquis and Poses (10)	15
UNIT III	Postures Rendering techniques and media and material like lead pencil, color pencil and crayon, stippling, water and poster colors, mixed medium, prints, fabric	15

- The above ensembles to include designs in sleeves, collars, necklines, bodices, bifurcated wear, outer wear
- Portfolio & Journal

References

- Kybalova, L. (1968). *Pictorial encyclopedia of fashion*. London: Hamlyn.
- Mackrell, A. (1997). *An illustrated history of fashion and 500 years of fashion illustration*. (1st Ed.). London: B.T. Batsford.
- McKelvey, K. (1996) *Fashion source book*. Oxford: Blackwell Science
- McKelvey, K. (1996) *Illustrating fashion*. Oxford: Blackwell Science.
- Neady, F. (1958) *Fashion drawing*. New York: Rotman.
- Ogawa, Y. (1990). *Colour in fashion: a guide to coordinating fashion colours*. Bombay: India Books.
- Peacock, J. (1993). *20th century fashion : the complete source book*. London: Thames and Hudson.
- Peacock, J. (1997). *20th century fashion: the source books – the 1930's*. London: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 20's*. New York: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 30's*. New York: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 50's*. New York: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 70's*. New York: Thames and Hudson.
- Singer (1993). *Creating fashion accessories*. U.S.A.: C.Y. de'Cosse.
- Tate, S.L. (1987). *The complete book of fashion illustration*. New York: Harper & Row.
- Toledo, R. (1996). *Style dictionary*. New York: Abbeville.
- Turnpenny, J.M. (1983). *Fashion design and illustration II- knitwear and jersey*. London: Century Hutchison
- Turnpenny, J.M. (1986). *Fashion design and illustration I- basic guidelines*. London: Century Hutchison.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII105	APPAREL DESIGN AND PRODUCTION WOVENS	3	75	3

APPAREL DESIGN AND PRODUCTION - WOVENS

No. of Credits: 3

Objectives

1. To familiarize students with various techniques of apparel making.
2. To acquaint students with the skill of handling different materials and patterns.

Course Content	Periods
UNIT I Choli	15
UNIT II Kurta/Angarakha and Chudidar	15
UNIT III Designer salwar	15

- Construction of the above garments using plackets (Kurta/double shirt placket/continuous Kurta), collars (Reversible/Chinese/ Shawl and Danton, yokes (T-/ U-/Straight) and gussets (simple/ sleeve/ strip), pockets (side seam pocket/velvet pocket/ bound pocket/ front pant pocket) zips (with seam/ invisible zip/ zip with fly).
- Identification, analysis and selection of different types of fabrics for particular end-uses.
- Layout of drafts on fabric and its cutting
- Finishing and Packaging
- Portfolio Presentation

References

- Armstrong, H. (1986). *Pattern making for fashion designing*. New York: Harper Collins
- Armstrong, H. (1987). *Pattern making for fashion design*. New York: Harper & Row
- Bane, A. (1972). *Flat pattern design*. New York: McGraw Hill
- Bradley, G. (1954). *Costume design*. (3rd Ed.). Searton International Textbook
- Bray, N. (1978). *Dress fitting*. (2nd Ed.). London: Granada
- Bray, N. (1978). *More dress pattern designing*. (4th Ed.). London: Granada
- Bray, N. (1978). *Dress pattern designing*. (4th Ed.). London: Granada
- Carr, H. and Latham, B. (1994). *The Technology of clothing manufacture*. (2nd Ed.). Oxford: Blackwell Science
- Cooklin, G. (1991). *Introduction to clothing manufacture*. Oxford: Blackwell Science.
- Dunn, L., Bailey. A. & Draper. W. (1970). *Steps in clothing skills*. Peoria, Illinois: Chas A. Bennett
- Giolle. D. A. & Berke. B. (1979). *Figure types and size ranges*. New York: Fairchild.
- Goulbourn, M. (1971). *Introducing pattern cutting, grading and modeling*. London: B.T. Batsford.
- Graff. J. L. (1976). *Concepts in clothing*. New York: McGraw Hill.
- Minott. J. (1978). *Fitting commercial patterns*. Minneapolis: Minnesota Burgess.
- Muke, A. (1980) *A French touch -1*. Pittsburgh: Hermann Printing & Litho
- Stanley. H. (1977). *Modeling and flat cutting for fashion*. London: Hutchison

SEMESTER II

Course Code	Title	Credits	Periods	Marks
PSHSIII201	Research Methods and Statistics	4	4	100
PSHSIII202	Global Marketing and Merchandising	4	4	100
PSHSIII203	Fiber Science	4	4	100
PSHSPIII201	Practicum in Research Methods	2	3	50
PSHSPIII202	Physical and Chemical Textile Testing	2	4	50
PSHSPIII203	Pattern Drafting	2	3	50
PSHSPIII204	Fashion Illustration	3	3	75
PSHSPIII205	Apparel Design & Production - Woven	3	3	75
	Total:	24	28	600

Course Code	Title	Lectures/week	Marks	Credits
PSHSIII201	Research Methods and Statistics	4	100	4

RESEARCH METHODS AND STATISTICS

No. of Credits: 4

Objectives

1. To help students develop the skills needed in conducting a research in their specialisation.
2. To promote academic, research and professional ethics in students.
3. To introduce students to principles of good scientific writing.
4. To enable in students the skills in selecting, computing, interpreting and reporting statistics.

Course Content	Lectures
UNIT I 1 A. Sampling techniques in quantitative research (a) Sampling methods in current use/examples from current research (b) Issues with regard to sampling techniques I B. Research designs in quantitative research Distinguishing between the following research designs; and, selecting research designs that are congruent with one's research purpose. (a) Longitudinal versus cross-sectional (b) Experimental versus quasi-experimental versus correlational (c) Exploratory versus descriptive versus explanatory	15
UNIT II 2 A. Qualitative research methods (a) Ideology/worldview of the qualitative researcher (b) Research designs in qualitative research (c) Sampling techniques in qualitative research (d) Data collection methods in qualitative research (e) Data analytic strategies in qualitative research (f) Reporting of results in qualitative research 2B. Scientific writing (a) Distinguishing scientific writing from popular and literary writing styles (b) Characteristics/principles of scientific writing (c) Examples of good scientific writing (d) Writing a research proposal (d) Reporting statistical findings in text 2 C. Ethics (a) In academia (b) In research in general (c) In research with human subjects (d) In research with animal subjects	15
UNIT III 3 A. Other concepts needed for the use of advanced/inferential statistics (a) Types of distribution Frequency distribution Normal distribution Probability distribution Sampling distribution (b) Type I and type II errors (c) Central limit theorem (d) Point estimation vs. interval estimation (e) Standard error (and confidence intervals) (f) Parametric and nonparametric methods 3 B. Using an advanced statistical method (steps in using an advanced statistical method)	15

UNIT IV	<p>4 A. To study statistics that allows us to contrast phenomena</p> <ul style="list-style-type: none"> (a) Univariate chi-square test (b) Bivariate chi-square test (c) t- or z- test for contrasting two independent groups (d) Paired t-test (e) ANOVA <p>4 B. To study statistics that allows us to examine relationships between variables</p> <ul style="list-style-type: none"> (a) Bivariate chi-square test (b) Product-moment correlation coefficient <p>4 C. Ethics in the use of statistics (e.g., the importance of test assumptions, the number of statistical tests in a research and levels of significance)</p>	15
----------------	--	-----------

References

- Bhattacharyya, G.K. & Johnson, R. A. (1977). *Statistical Concepts and Methods*. NY: John Wiley.
- Dwiwedi, R. S. (1997). *Research Methods in Behavioral Sciences*. Delhi: Macmillan India.
- Gravetter, F. J. & Waillnau, L. B. (2000). *Statistics for the Behavioral Sciences*. Belmont, CA: Wadsworth/Thomson Learning.
- Kerlinger, F. N. & Lee, H. B. (2000). *Foundations of Behavioral Research*. Orlando, Florida: Harcourt.
- Leong, F.T.L., & Austin, J. T. (Eds.) (1996). *The Psychology Research Handbook*. New Delhi: Sage.

Course Code	Title	Lectures/week	Marks	Credits
PSHSIII202	Global Marketing, Merchandising and Entrepreneurship	4	100	4

GLOBAL MARKETING, MERCHANDISING AND ENTREPRENEURSHIP

No. of Credits: 4

Objectives

1. To equip students with the knowledge of the fashion world.
2. To provide knowledge of international trade.
3. To impart knowledge of marketing and merchandising.
4. To enhance entrepreneur skills.

Course Content		Lectures
UNIT I	<p>Merchandise planning, buying and control.</p> <ol style="list-style-type: none"> i. Merchandise distribution ii. Service quality, servicing customers in on-site and offsite ventures iii. Personal Selling: Characteristics of sales associate, Sales presentation <p>Advertising and promotion</p> <ol style="list-style-type: none"> i. Classifications of Fashion advertisements ii. Media iii. Promotional programs and Publicity iv. Off-site retailing: E-tailing Advantages v. Process (creating a web-site Design development and web-site specifications) vi. Classification of E-tailers vii. Catalogs 	15
UNIT II	<p>Market Research</p> <ol style="list-style-type: none"> i. Basic, Applied (consumer, product, market analysis) ii. Consumer research: Demographics and psychographics iii. Product research: preferred product design and characteristics iv. Market analysis: long range and short range forecasting <p>Fashion research</p> <ol style="list-style-type: none"> i. Fashion trend research ii. Color research iii. Fabric and trim research iv. Line plan & styling direction. v. Nature of retailing research and the research process <p>Data Collection</p> <ol style="list-style-type: none"> i. Methods for data collection ii. Focus groups, Mall intercepts consumer panels, mail & telephone surveys, point of sale data, corporate sales records, Web sites. iii. Industry information sources: Trade shows, trade publications <p>Fashion Retailing</p> <ol style="list-style-type: none"> i. Definition of retailing terms ii. Types of retailing and multichannel fashion retailing iii. Understanding fashion consumers and their buying behavior. iv. Consumer behavior and assessment theories v. Concept of decision making Self concept theory vi. Consumer analysis vii. Customer Response (CRS) viii. In-store shopping behavior: Situational factors, Shopper's intentions, stock situations (in-stock, stock-out, customer service), purchase decisions (current sales, potential sales, lost sales) 	15
UNIT III	<p>Supply chain management in fashion and textiles</p> <ol style="list-style-type: none"> i. Concepts and principles of SCM: short interval scheduling (SIS), inventory carrying costs, supply chain for soft goods. What are supply chains, definitions ii. Information and technology in supply chain management: SCM 	15

	<p>enabling technologies: EDI, EPOS, item coding, EFT, activity based costing, etc. The applications of the information and technology for the SCM in the fashion industry.</p> <p>iii. Marketing sourcing and logistics decisions decisions</p> <p>iv. Pricing considerations: Competition, merchandise characteristics,</p> <p>v. International sourcing process: Research, Initial orders, L/C documents, follow-up, final quality inspection, Shipping documentation</p>	
UNIT IV	<p>Visual Merchandising</p> <p>i. Environments of Visual presentations: Windows and interiors</p> <p>ii. Designing and fixturing for retail environment</p> <p>iii. Designing the interiors space</p> <p>iv. Trends in retail environment design</p> <p>Entrepreneurship</p> <p>i. Definition, Entrepreneurial skills</p> <p>ii. Realities, profiles of leading retail entrepreneurs</p> <p>iii. Starting your own business</p> <p>iv. Planning capital and environment influences.</p> <p>Ecology, ethics and green issues</p> <p>i. Business ethics and social responsibility,</p> <p>ii. Ethics in retailing</p>	15

References

- Boyd, H. W. (1995) *Marketing management: Strategic approach with a global orientation*. Chicago: Irwin / Richard Irwin.
- Davar, R. S. (1982) *Modern marketing management*. Bombay: Progressive.
- Diamond, E. (2006) *Fashion retailing: A multi-channel approach*, New Jersey: Pearson/Prentice Hall.
- Donnellan, J. (1999) *Merchandising buying and management*, New York: Fairchild Publications.
- Ed. Hines, T. and Bruce, M. (2001) *Fashion marketing*. Oxford: Butterworth Heinemann.
- Jackson, T. & Shaw, D. (2001) *Mastering fashion buying and merchandising management*, New York: Palgrave.
- Jarnow, J., Guereira, M. & Judelle, B. (1987). *Inside the fashion business*. (4th Ed.). New York: MacMillan.
- Kale, N. G. (1995). *International marketing*. Mumbai: Vipul Prakashan.
- Kale, N. G. (1998). *Fundamentals of marketing and finance*. Mumbai: Manisha Prakashan.
- Kotler, P. (1998) *Marketing management: analysis, planning, implementation and control*. (9th Ed.). New Delhi: Prentice Hall.
- Vaz, M. (1996) *Export marketing*. Mumbai: Manisha Prakashan.

Course Code	Title	Lectures/week	Marks	Credits
PSHSIII203	Fibre Science	4	100	4

FIBRE SCIENCE

No. of Credits: 4

Objectives

- To study the morphology, chemical constitution and manufacturing processes of natural and manmade fibers.
- To study physical and chemical properties and end uses of proteinic and synthetic fibers.
- To acquaint students with recent developments in the field of fibers.

Course Content		Lectures
UNIT I	Proteinic fibers a) Chemistry of proteins- chemical composition and constitution of proteins, functional groups, properties conferred by the nature of substituent b) Morphology and histology of wool and silk, types of bonds present in wool (including Indian varieties) and silk, Indian variety of wool and silk, properties	15
UNIT II	Synthetic fibres Synthesis of raw material, Manufacturing process, properties, uses and modification of various synthetic fibers a) Nylon 6, nylon 66 b) Polyester c) Acrylic	15
UNIT III	Other synthetic fibres a) Modacrylic b) PVC, PVA, Elastomeric carbon, glass Blends currently used based on synthetic and natural fibers.	15
UNIT IV	Ecological concerns in manufacturing and processing of natural and manmade fibers Recent developments in natural, regenerated and synthetic fibers	15

References

- Carter, E. M. (1971). *Essentials of fiber chemistry* New York: Marcel Dekker.
- Chakravorty, R. R. (1972). *A glimpse on the chemical technology of textile fibres*. New Delhi: The Canton Press.
- Chapman, C. B. (1972). *Fibres*. London: Butterworths and company.
- Cook, J. G. (1984). *Handbook of textile fiber* .(5th Ed.) U.K: Duram Mellow.
- Corbman, P. B. (1985). *Textiles: Fiber to fabric*. (6th Ed.) McGraw Hill Book.
- Grayson, M. (1984). *Encyclopedia of textile, fiber and nonmoving fabrics*. New York: John Wiley & Sons.
- Gulrajani, M. L. (1985). *Man-made textiles in developing countries*. India: The Textile Association.
- Hess, K. Paddock. () *Textile fibres and their use*. (6th Ed). New Delhi: Oxford & IBH.
- Hollen, N. & Saddler, J. (1988) *Textiles*. (6th Ed.) .New York: Macmillan.
- Howard, L. N. (1986). *Textiles: fibres, dyers, finishes and processes*. New Jersey: Noyes.
- Hollen, N. & Saddler, J. (1988). *Textiles* (6th Ed.) New York: Macmillan.
- Kornreich, E. (1966). *Introduction to fibres and fabrics*. London Heywood books.
- Kothari, V. K. (2000). *Textile fibres: Development and innovation*. Vol. II. New Delhi: I.A.F.L. Publication.
- Lewin, M., & Pearce, M. E. (1998). *A handbook of fiber chemistry*. New York: Marcel Dekker.
- Marjory, L. J. (1976). *Essentials of textiles*. New York.
- Marjory, L. J. (1977). *Introductory textile science* .(3rd Ed.). New York.
- Mishra, S. P. (2000). *A textbook of fiber science and technology*. New Delhi: New Age.
- Moncrieff, R. W. (1975). *Mamade Fibers*. London: Newnes Butterworth.
- Morton, W. E. & Hearle, W. S. (1975). *Physical properties of textile fibres*. London: The Textile Institute.
- Murthy, H. V. (1987). *Introduction to textile fibres*. Bombay: The Textile Association of India.
- Porczynski, C. Z. & Carroll. (1961). *Manual of man-made fibres*. Bombay: The new book.
- Sadov, F., Korchanging, M. & Matelsky A. (1973). *Chemical technology of fibrous materials*. Moscow: MIR Publications.
- Shenai, V. A. (1977). *Textile fibres*. Vol. I Mumbai: Sevak.
- Steven, B. W. (1975). *Fiber science*. New Jersey: Prentice Hall.
- Tammanna, N. S. (1973). *Handbook of silk technology*. New Delhi: Wiley Eastern.
- Tortora, G. P. (1992). *Understanding textiles*. (4th Ed.) New York: Macmillan.
- Wynne, A. (1997). *Textiles-The Motivate Series*, London: Macmillan Education Ltd.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII201	Practicum in Research Methods	3	50	2

PRACTICUM IN RESEARCH METHODS

No. of Credits: 2

Objectives

To provide students with opportunities for hands-on exercises with regard to many steps of the research process, such that they have met the prerequisites for research work

Course Content		Periods
UNIT I	Middle steps in the research process: the methods, examining and evaluating the methods used to accomplish a stated research aim using examples from various dissertations and research articles both in writing and orally, in particular, the: a) research designs (e.g., qualitative, quantitative) b) sampling techniques, sample sizes, and sample characteristics c) data collection/measurement d) plan of analysis	15
UNIT II	Latter steps in the research process: results a) examining key features of the results section of dissertations and research articles b) using analyzed data to write the results (making tables, making figures, scientific protocol in communicating statistical findings in text, qualitative research and thick description)	15
UNIT III	Latter steps in the research process: discussion, and references a) examining key features of the discussion section of dissertations and research articles (corroboration, explanation, implications, and recommendations) b) using various findings sections and writing the discussion of the findings c) Reviewing, summarizing, and evaluating the complete research article in writing (maintaining a research journal) and orally (developing professional skills in presentation of a research)	15

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII202	Physical and Chemical Textile Testing	4	50	2

PHYSICAL AND CHEMICAL TEXTILE TESTING

No. of Credits: 2

Objectives

1. To impart knowledge of the physical and chemical properties of textiles.
2. To teach the techniques of testing properties of textile materials.

Course Content		Periods
UNIT I	Dyes and their properties Testing of dyed samples/solution (colorimeter, spectrophotometer) and color fastness evaluation (crocking, washing, light, perspiration)	15
UNIT II	Dyes and their properties Dye identification on cellulosic and proteinic fabric, fastness properties to bleaches and heat pressing	15
UNIT III	Chemical testing: Qualitative and quantitative analysis of blends	15
UNIT IV	Titration Single and double titration (acid-base) Percentage hardness of water Percent availability of chlorine in bleach solution Other oxidation based methods	15

Journal with experiments and samples.

References

- Angappan, P. & Gopalkrishnan R. (1993). *Textile Testing*. S.S.M. Institute of Technology.
- Booth (1974). *Principles of Textile Testing: An Introduction to Physical Methods of Testing Textile fibers, yarn and Fabrics* London: Newnes Butterworth.
- Collier B.J. (1999) *Textile Testing and Analysis*. New Jersey: Prentice Hall.
- Handbook of Textile Testing*, Bureau of Indian Standards. (1990). Testing and Grading of Textile Fibers. Part 1 New Delhi: Bureau of Indian Standards
- Handbook of Textile Testing, Bureau of Indian Standards*. (1991). Testing and Grading of Textile Fibers. Part 111 New Delhi: Bureau of Indian Standards
- Handbook of Textile Testing*, Bureau of Indian Standards. (1989). Identification and Testing of dyestuff and Colour Fastness on Textile Materials. Part 1V New Delhi: Bureau of Indian Standards
- Shenai, V.A. (1980). *Evaluation of Textile Chemicals* Bombay Sevak Publication.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII203	Pattern Making and Grading	3	50	2

PATTERN MAKING AND GRADING

No. of Credits: 2

Objectives

1. To acquaint students to advance techniques of designing and pattern making for different styles of clothing for women.
2. To adapt constructed blocks to the given patterns and grading according to different sizes.

Course Content		Periods
UNIT I	Drafting of sleeves (Dolman, Raglan, Kimono, Magyar)	15
UNIT II	Drafting and adapting patterns (along with draft instructions and markings) using anthropometric measurements and grading of upper block	15
UNIT III	Drafting and adapting patterns (along with draft instructions and markings) using anthropometric measurements and grading of lower block	15

References

- Aldrich, W. (1996). *Fabric Form and flat pattern cutting*. Oxford: Blackwell Science.
- Armstrong, H. J. (1986). *Pattern making for fashion designing*. New York: Harper and Row
- Braddock, S. F. (1998). *Techno-textiles: revolutionary fabrics for fashion and design*. London: Thames and Hudson
- Bray, N. (1970). *Dress fitting: The basic principles of cut and fit*. (5th Ed.) London: Crosby Lockwood and sons
- Bray, N. (1970). *Dress pattern designing: the basic principles of cut and fit*. (5th Ed.) London: Crosby Lockwood and sons
- Bray, N. (1995). *More dress pattern designing*. (4th Ed.). Great Britain: Blackwell Science.
- Cooklin, G. (1995). *More patterns and grading for women's outsize*. Great Britain: Blackwell Science
- Cooklin, G. (1992). *Pattern grading for women's clothes: the technology of sizing*. Oxford: S.P. Professional Books.
- Goulbourn, M. (1971). *Introducing pattern cutting: Grading and modeling*. London: B. T. Batsford.
- Jan, M. (1967). *Coordinated pattern fit*. Burgess Publishing
- Littman, C. (1977). *Pattern making design: Skirts and pants*. New York: Delmar
- Toledo, R. (1996). *Style dictionary*. New York Abbeville Press.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII204	Fashion Illustration	3	75	3

FASHION ILLUSTRATION

No. of credits: 3

Objectives

1. To enhance the creative skills of drawing, sketching and rendering colours for designing garments and accessories based on themes.
2. To enhance the creative skills of drawing, sketching and rendering colours for designing accessories based on themes.

Course Content	Periods
UNIT I Postures dressing up the croquis as per the following ensemble (minimum 3 per line): casual wear, formal wear, fusion wear, winter wear, sports wear, night wear, maternity wear, beach wear, lingerie, jackets, western and Indian Partywear	15
UNIT II Flats working sketches (Technical drawings) with specification sheets.	15
UNIT III Demonstrations in computer applications for fashion illustration.	15

References

- Kybalova, L. (1968). *Pictorial encyclopedia of fashion*. London: Hamlyn.
- Mackrell, A. (1997). *An illustrated history of fashion and 500 years of fashion illustration*. (1st Ed.). London: B.T. Batsford.
- McKelvey, K. (1996) *Fashion source book*. Oxford: Blackwell Science
- McKelvey, K. (1996) *Illustrating fashion*. Oxford: Blackwell Science.
- Neady, F. (1958) *Fashion drawing*. New York: Rotman.
- Ogawa. Y. (1990). *Colour in fashion: a guide to coordinating fashion colours*. Bombay: India Books.
- Peacock, J. (1993). *20th century fashion : the complete source book*. London: Thames and Hudson.
- Peacock, J. (1997). *20th century fashion: the source books – the 1930's*. London: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 20's*. New York: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 30's*. New York: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 50's*. New York: Thames and Hudson.
- Peacock, J. (1997). *Fashion source books – the 70's*. New York: Thames and Hudson.
- Singer (1993). *Creating fashion accessories*. U.S.A.: C.Y. de' Cosse.
- Tate, S.L. (1987). *The complete book of fashion illustration*. New York: Harper & Row.
- Toledo, R. (1996). *Style dictionary*. New York: Abbeville.
- Turnpenny, J.M. (1983). *Fashion design and illustration II- knitwear and jersey*. London: Century Hutchison
- Turnpenny, J.M. (1986). *Fashion design and illustration I- basic guidelines*. London: Century Hutchison.

Course Code	Title	Periods/week	Marks	Credits
PSHSPIII205	Apparel Design and Production Wovens	3	75	3

APPAREL DESIGN AND PRODUCTION - WOVENS

No. of Credits: 3

Objectives

1. To familiarize students with special techniques of apparel making.
2. To acquaint students with the art of handling different materials and patterns.

Course Content		Periods
UNIT I	Bathrobe	15
UNIT II	Leg-wear (Skirts/trousers/culottes)	15
UNIT III	Partywear/Western Outfit	15

- Construction of the above garments using plackets, collars, yokes and gussets pockets and zips
- Identification, analysis and selection of different types of fabrics for particular end-uses.
- Layout of drafts on fabric and its cutting
- Finishing and Packaging
- Portfolio Presentation

References

- Armstrong, H. (1986). *Pattern making for fashion designing*. New York: Harper Collins
- Armstrong, H. (1987). *Pattern making for fashion design*. New York: Harper & Row
- Bane, A. (1972). *Flat pattern design*. New York: McGraw Hill
- Bradley, G. (1954). *Costume design*. (3rd Ed.). Searton International Textbook
- Bray, N. (1978). *Dress fitting*. (2nd Ed.). London: Granada
- Bray, N. (1978). *More dress pattern designing*. (4th Ed.). London: Granada
- Bray, N. (1978). *Dress pattern designing*. (4th Ed.). London: Granada
- Carr, H. and Latham, B. (1994). *The Technology of clothing manufacture*. (2nd Ed.). Oxford: Blackwell Science
- Cooklin, G. (1991). *Introduction to clothing manufacture*. Oxford: Blackwell Science.
- Dunn, L., Bailey, A. & Draper, W. (1970). *Steps in clothing skills*. Peoria, Illinois: Chas A. Bennett
- Giolle, D. A. & Berke, B. (1979). *Figure types and size ranges*. New York: Fairchild.
- Goulbourn, M. (1971). *Introducing pattern cutting, grading and modeling*. London: B.T. Batsford.
- Graff, J. L. (1976). *Concepts in clothing*. New York: McGraw Hill.
- Minott, J. (1978). *Fitting commercial patterns*. Minneapolis: Minnesota Burgess.
- Muke, A. (1980) *A French touch - I*. Pittsburgh: Hermann Printing & Litho
- Stanley, H. (1977). *Modeling and flat cutting for fashion*. London: Hutchison