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UNIVERSITY OF MUMBAI



Syllabus

for

SEMESTER V and VI

Program: B.Sc.

Course: Home Science

BRANCH III: TEXTILE AND FASHION TECHNOLOGY

(Credit Based Semester and Grading System
with effect from the Academic Year 2013–2014)

T. Y. B. Sc. (HOME SCIENCE)

BRANCH III: TEXTILE AND FASHION TECHNOLOGY

SEMESTER V

Course Code	Title	Internal Assessment Marks	Semester End Examination	Total marks	Periods/week	Credits
USHSIII501	Part A: Dyeing and Printing	40	60	100	3	3
	Part B: Historic Textiles and Costumes	40	60	100	3	
USHSIII502	Part A: Textile Testing and Quality Control	40	60	100	3	3
	Part B: Marketing and Merchandising	40	60	100	3	
USHSIII503	Fabric Structure and Construction	40	60	100	3	3
USHSIIP501	Dyeing and Printing	—	50	50	3	2
USHSIIP502	Fabric Structure and Construction	—	50	50	3	2
USHSIIP503	Fashion Illustration and Pattern Drafting	—	50	50	4	2
USHSIIP504	Garment Construction and Draping	—	50	50	4	2
USHSIIP505	Part A: Design Concepts and Computer Aided Designing	—	50	50	3	3
	Part B: Fieldwork/seminar/project	—	50	50	2	
				800	34	20

Course Code	Title	Periods/week	Marks	Credits
USHSIII501	Part A: Dyeing and Printing	3	100	1
	Part B: Historic Textiles and Costumes	3	100	2

Part A: Dyeing and Printing

Objectives

- To create awareness of the different techniques used for coloration of textiles.
- To gain knowledge of Chemistry of dyestuff, their application, processes machines for different fabrics and their fastness properties.
- To make students aware of recent developments in dyeing with emphasis on ecological concerns.

Course Content	Periods
Unit I Colour and light relationship and dye constituent Dyes and pigments: classification of dyes and pigments based on application and chemical structures Colour Index Evaluation of fastness properties of dyed textile material	15
Unit II Dyeing: Mechanism of various dyeing processes, application of dyes on various fibres/fabrics, fastness properties and toxicity factors of following dyes: Synthetic Dyes: (Direct, Azoic, Basic, Vat, Solubilised vat dyes, Sulphur, Acid, Mordant, Reactive and Disperse) Natural Dyes: (Classification, their application and ecological concern)	15
Unit III Garment dyeing Ecological aspects of dyeing (Banned dyes and banned chemicals for dyeing, eco-friendly chemicals, auxiliaries and etc.) Effluent treatment Recent Development in dyeing – nanotechnology etc.	15

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Part B: Historic Textiles and Costumes

Objectives

- To acquaint the students with the rich heritage of textiles of the world.
- To acquaint the students with the care and preservation of textiles.

Course Content		Periods
Unit I	Care and preservation of textiles Textiles of the ancient world Mediterranean Central and Northern Europe Western Europe : Italian, Spanish and French	15
Unit II	The Near and Middle East: Sassanian textiles; early Islamic textiles, Byzantine silks, Central Asian textiles The Far East : China and Japan	15
Unit III	Textiles of America: Colonial North America, Native North America and Latin American English and American textiles: Basic cloth, Revolution Exuberance and Renaissance	15

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Course Code	Title	Periods/week	Marks	Credits
USHSIII502	Part A: Textile Testing and Quality Control	3	100	2
	Part B: Marketing and Merchandizing	3	100	1

Part A: Textile Testing and Quality Control

Objectives

- To make the students aware of the importance of textile testing and quality control.
- To impart knowledge of the physical and mechanical properties of textiles.
- To demonstrate the techniques and principles of testing physical and mechanical properties of textiles.

Course Content		Periods
Unit I	Introduction to testing Purpose of testing Standards and specifications Institutes of testing Quality control and quality marks in India and abroad Eco-testing, Eco-marks and Eco-certification	15
Unit II	Fibre dimensions and quality Fibre length and measurement for cotton and wool Fibre fineness measurement and fibre maturity testing for cotton and wool Moisture relations and testing: Calculations for percentage regain and moisture content, factors affecting regain, measurement of atmospheric conditions (types of hygrometers), effect of regain on fibre properties	15
Unit III	Yarn dimensions Yarn count and yarn number – direct and indirect system of yarn numbering Twist and twist measurement Crimp and yarn crimp measurement Yarn evenness and hairiness Yarn numbering problems	15

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- Angappan P. and Gopalkrishnan R., (2002), *Textile testing*, Mumbai: S. S. M. Institute of Technology.
- Booth J. E., (1996), *Principles of textile testing: An introduction to physical methods of testing textile fibres, yarns and fabrics* (6th Ed.). London: NewnesButterworths.
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Part B: Marketing and Merchandizing

Objectives

- To help students acquire knowledge and understanding of the basic principles involved in the field of marketing, and market research.
- To help students understand consumer behaviour.

Course Content		Periods
Unit I	Introduction and meaning, nature, role, type and scope of market and merchandising and its importance in the modern economy Changing profile of market Marketing: 4 P's Product: Product life cycle, standardization and grading, Packaging, Branding and Advertising Pricing: Policy and economic concepts in pricing, pricing objectives and strategies, Physical Distribution: Different types of distribution channel and their importance Promotion: Meaning, objective, process of communication, promotion strategies, social aspect of promotion	15
Unit II	4 C's: Cost, Consumer, Convenience and Communication Market Research: Market segmentation, scope of market research, steps in the research process, types of market research	15

Unit III	Consumer psychology and behaviour: Consumer decisions in the market process, factors affecting consumer's decision in purchasing, consumer aids for right choice brands, trademarks, quality marks, buying guides with respect to textiles, consumer service	15
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- Sengupta, S. (1990) *Brand positioning strategies for competitive advantage*. Tata McGraw
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Course Code	Title	Periods/week	Marks	Credits
USHSIII503	Fabric Structure and Construction	3	100	3

Objectives

- To help students learn various fabric construction techniques with reference to consumer and technical textiles.
- To help students to understand the creation of basic and complex weaves including other methods of creating visual effects.
- To familiarize students with the various knitted, non-woven and knotted fabrics.

Course Content		Periods
Unit I	Fabrics made from Fibres, Yarns and Non-Fibrous materials – Properties and Uses Weaving – Introduction, Loom – Parts, Mechanism and Types, Types of Drafts	15
Unit II	Elementary weaves – plain, twill and satin – its derivatives, properties and uses	15
Unit III	Complex weaves huck-a-back, honeycomb, mock leno, bed ford cord, welt and pique, extra warp and weft, colour and weave effects, their properties and use. Recent advances in weaving	15

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- Ajgaonkar. D.B. (1998) *Knitting technology*, Mumbai: Mumbai Universal publishing corporation
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Course Code	Title	Periods/week	Marks	Credits
USHSIIP501	Dyeing and Printing	3	50	2

Objectives

- To introduce students to different techniques of coloration of textiles.
- To make students aware of creative methods in dyeing.
- To introduce students to dye identification.

Course Content		Periods
Unit I	Preparatory treatments – desizing, scouring and bleaching of samples Dyeing of fabric samples using machineries (jigger, padding mangle, launderometer and etc.) Preparation of natural dye shade card Identification of dye on cellulosic and protein samples	15
Unit II	Tie-dye techniques and create 6 samples using various fibre content (cotton, nylon, silk, jute, wool and blended) with suitable dye	15
Unit III	Creation of batik 4 samples using various fibre content (cotton, silk, jute and blend) using suitable dye	15

*Journal / Portfolio

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- Giles, C .H. and others. (1974). *Laboratory course in dyeing*. (3rdEd.). England: Society of Dyers and Colourist.
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Course Code	Title	Periods/week	Marks	Credits
USHSIIP502	Fabric Structure and Construction	3	50	2

Fabric Structure and Construction

Objectives

- To source and identify different woven samples for analysis and testing.
- To construct fabrics through technique of weaving.
- To orient students to few fabric testing techniques.

Course Content:		Periods
Unit I	Yarn And Fabric Testing: Calculation of the Weight of Warp and Weft of the Fabric, Fabric Thickness, Fabric Count. Yarn Count and Yarn Twist.	15
Unit II	Sourcing And Identification Of Different Woven Samples Analysis of Woven Samples for Design, Draft And Peg Plan and Other Particulars (5 Samples Under Each Type Of Weave)	15
Unit III	Practical Warping and Weaving of Samples on Table Looms with Straight and Transposed Drafts	15

*Journal / Portfolio

Course Code	Title	Periods/week	Marks	Credits
USHSIIP502	Fashion Illustration and Pattern Drafting	4	50	2

Objectives

- To teach students how to read elaborate styles and patterns.
- To equip students with the techniques of advanced pattern designing through flat pattern construction.

Course content		Periods
Unit I	Basic Blocks: Adults bodice block, torso and dartless sloper, lower block and sleeve block (Revision) using anthropometric measurements.	15
Unit II	Dart displacements and concealment techniques. Fundamentals: Collars: Rever, Reversible, Shawl, Danton and Sports	15
Unit III	Fundamentals: Sleeves: Bell, Leg-o-mutton, Butterfly, Cap Necklines: Raised, Polo and Cowl.	15
Unit IV	Garments: Katoricholi Tops: Kurta/Shirt (male/ female)	15

*Journal / Portfolio with technical drawings

Course Code	Title	Periods/week	Marks	Credits
USHSIIP502	Garment Construction and Draping	4	50	2

Objectives

- To acquaint students with the techniques and skills of garment construction through flat pattern.
- To make students competent to stitch garments with elaborate patterns.

Course Content		Periods
Unit I	Fundamentals: Plackets – Continuous Kurta placket Collars - Sports, Shawl, Reversible, Rever, Shirt	15

Unit II	Fundamentals: Necklines – Raised, Cowl, Polo Zip-Fly open, Zip without seam	15
Unit III	Garments Upper wear Katoricholi	15
Unit IV	Garments Upper wear Shirt/Kurta with concealment	15

*Journal / Portfolio with technical drawings

Course Code	Title	Periods/week	Marks	Credits
USHSIIP501	Part A: Design Concepts and Computer Aided Designing	3	50	2
	Part B: Fieldwork/seminar/project	2	50	1

Part A: Design Concepts and Computer Aided Designing

Objective

- To teach manual techniques of embroidery.

Course Content		Periods
Unit I	Indian embroidery of different states done on samples: Kasuti Kantha Chamba	15
Unit II	Indian embroidery of different states done on samples: Kashida Zardozi Chikankari	15
Unit III	Indian embroidery of different states done on samples: Gujarat and Rajasthan Manipuri Phulkari	15

*Journal / Portfolio

Part B: Fieldwork

Fieldwork involves students planning, preparing, organizing and conducting sessions/workshops in selected set-ups in order to extend textile related skills to underprivileged and other sections of society.

T. Y. B. Sc. (HOME SCIENCE)

BRANCH III: TEXTILE AND FASHION TECHNOLOGY

SEMESTER VI

Course Code	Title	Internal Assessment Marks	Semester End Examination	Total marks	Periods/week	Credits
USHSIII601	Part A: Dyeing and Printing	40	60	100	3	3
	Part B: Historic Textiles and Costumes	40	60	100	3	
USHSIII602	Part A: Textile Testing and Quality Control	40	60	100	3	3
	Part B: Marketing and Merchandising	40	60	100	3	
USHSIII603	Fabric Structure and Construction	40	60	100	3	3
USHSIIP601	Dyeing and Printing	—	50	50	3	2
USHSIIP602	Fabric Structure and Construction	—	50	50	3	2
USHSIIP603	Fashion Illustration and Pattern Drafting	—	50	50	4	2
USHSIIP604	Garment Construction and Draping	—	50	50	4	2
USHSIIP605	Part A: Design Concepts and Computer Aided Designing	—	50	50	3	3
	Part B: Fieldwork/seminar/project	—	50	50	2	
				800	34	20

Course Code	Title	Periods/week	Marks	Credits
USHSIII601	Part A: Dyeing and Printing	3	100	1
	Part B: Historic Textiles and Costumes	3	100	2

Part A: Dyeing and Printing

Objectives

- To create awareness of the different techniques used for printing of textiles.
- To gain knowledge of Chemistry of printing, their application, processes machines for different fabrics and their fastness properties.
- To make students aware of recent developments in printing with emphasis on ecological concerns.

Course Content		Periods
Unit I	Printing: Introduction to printing Novel methods of printing: Digital, flexography, inkjet, blotch, water mark, roller, foam, bubble, air brush, electrostatic, photo printing, marble, warp printing, differential and etc.	15
Unit II	Specialty printing: Rubber, khadi and etc. Evaluation of fastness properties of printed textile material Printing Auxiliaries	15
Unit III	Garment Finishing Ecological aspects of printing process (Banned chemicals for printing, eco-friendly chemicals, auxiliaries and etc.), Effluent treatment. Recent developments in printing	15

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Part B: Historic Textiles and Costumes

Objectives

- To acquaint the students with the rich heritage of costumes of the world.
- To acquaint the students with the costumes of different centuries.

Course Content		Periods
Unit I	Costumes of The ancient world : Egypt, Assyria, Etruscans, Rome Middle ages 11 th Century to 15 th Century	15
Unit II	Costumes of 16 th – 20 th Century	15
Unit III	Costumes of Europe from Byzantium to the 1800's Traditional costumes of the 1800's 19 th Century antique civilizations	15

References

- Boucher F. (1987) *2000 years of fashion: The history of costume and personal Adornment*, New York: Harry and Abrams Inc. publishers.
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Course Code	Title	Periods/week	Marks	Credits
USHSIII602	Part A: Textile Testing and Quality Control	3	100	2
	Part B: Marketing and Merchandizing	3	100	1

Part A: Textile Testing and Quality Control

Objectives

- To make the students aware of the importance of textile and garment testing and quality control.
- To impart knowledge of the physical and mechanical properties of textiles and garments.
- To demonstrate the techniques and principles of testing physical and mechanical properties of textiles and garments.

Course Content		Periods
Unit I	Fabric dimensions and properties (woven, knitted and non – woven) Length, width, fabric count, weight and thickness Air and water permeability Shrinkage Wrinkle resistance and crease recovery Abrasion resistance and pilling resistance, fabricstiffness, drapability, flammability	15

Unit II	Tensile strength Definitions of stress, strain, initial modulus, elasticity, yield point Tensile strength measurement of fibre, fibre bundle, yarn, skein and fabric. Tensile strength testing instruments with their working principles of measurements – CRT, CRL and CRE Tear strength and bursting strength measurement	15
Unit III	Garment testing: seam slippage, seam strength and puckering Advances in textile testing and quality control	15

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Part B: Marketing and Merchandizing

Objectives

- To help students acquire knowledge and understanding of the organization sector and merchandising.
- To help students understand entrepreneurship skills.

Course Content		Periods
Unit I	Merchandising: definitions, structure of merchandising functions, roles and responsibilities, skills and merchandising as a career Planning and Control Quality Assurance E-Merchandising.	15
Unit II	Organization of the textile industry: Public and private sectors, handlooms, cooperatives, multinational companies. Supply Chain Management	15
Unit III	Entrepreneurship: skills, advantages, disadvantages.	15

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Course Code	Title	Periods/week	Marks	Credits
USHSIII603	Fabric Structure and Construction	3	100	3

Objectives

- To help students learn various fabric construction techniques with reference to consumer and technical textiles.
- To help students to understand the creation of basic and complex weaves including other methods of creating visual effects.
- To familiarize students with the various knitted, non-woven and knotted fabrics.

Course Content		Periods
Unit I	Knits – single, double, rachel, and their variations, properties and uses.	15
Unit II	Non – wovens and multi components, types, properties and uses including felts	15
Unit III	Other methods of fabric formation – knotting, tufting and multi components Narrow width fabrics – labels, laces and etc. Advances in fabric construction	15

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Course Code	Title	Periods/week	Marks	Credits
USHSIIP601	Dyeing and Printing	3	50	2

Objectives

- To introduce students to different techniques of printing of textiles.
- To make students aware of creative methods in printing.
- To source and analyze different types of printed fabrics.

Course Content		Periods
Unit I	Printing of different fabric composition using block with various styles (khadi – white and golden, discharge – white and colour and blotch) Making of screen and printing on different fabric composition	15
Unit II	Printing on fabric using various techniques marble, air brush and etc	15
Unit III	Analysis of printed fabrics	15

*Journal / Portfolio

Course Code	Title	Periods/week	Marks	Credits
USHSIIP602	Fabric Structure and Construction	3	100	2

Objectives

- To source and identify different knitted samples for analysis and testing.
- To construct fabrics through techniques such as knitting, crochet, macramé and tufting.

Course Content		Periods
Unit I	Sourcing and Identification of different knitted samples (Minimum five under each Category)	15
Unit II	Constructing Fabrics Using: Knitting (Manual – 5 Samples and/or Machine) Tufting (Cut and Uncut Combined 1 Sample)	15
Unit III	Constructing Fabrics Using: Crochet (5 Samples) Macramé (Various Knots)	15

*Journal / Portfolio

Course Code	Title	Periods/week	Marks	Credits
USHSIIP603	Fashion Illustration and Pattern Drafting	4	100	2

Objectives

- To teach students how to read elaborate styles and patterns.
- To equip students with the techniques of advanced pattern designing through flat pattern construction.

Course content		Periods
Unit I	Skirt / culottes,; trousers (male / female)	15
Unit II	Legwear: salwar, churidar, parallel / pajamas	15
Unit III	Sleeves: Raglan, Drop-shoulder, Magyar sleeves	15
Unit IV	Theme garment for party wear	15

*Journal / Portfolio with technical drawings

Course Code	Title	Periods/week	Marks	Credits
USHSIIP604	Garment Construction and Draping	4	100	2

Objectives

- To acquaint students with the techniques and skills of garment construction through flat pattern.
- To acquaint students with the techniques and skills of draping.
- To make students competent to stitch garments with elaborate patterns.

Course Content		Periods
Unit I	Fundamentals: Pockets – Velt, Bound Zips – Fly open, zip without seam	15
Unit II	Leg wear – Skirt / Culottes/ Churidar/ Salwar/Trouser	15
Unit III	Theme garment	15
Unit IV	Draping: Basic upper block and Basic lower block	15

*Journal / Portfolio with technical drawings

Course Code	Title	Periods / Week	Marks	Credits
USHSIIP605	Part A: Design Concepts and Computer Aided Designing	3	50	2
	Part B: Field work	2	50	1

Part A: Design Concepts and Computer Aided Designing

Objectives

- To develop skills in manual techniques and computer for basic designing of weaves, prints and illustration

Course Content		Periods
Unit I	Illustration Sketching of Croqui – mechanical, fleshed out (3 poses), mood board and designing of any one garment Rendering (5 fabrics)	15
Unit II	Textile Designing Basics of repeatlayouts for textile designs namely block, brick, ogee, diamond, drop, mirror and their variations (6-9) Designing of 5 – 6 layouts based on various repeats and themes, colour way and colour separation of one layout	15
Unit III	Demonstration in computer aided designing for weave structures and prints with different repeats and colour combination	15

*Journal / Portfolio

Part B: Fieldwork

Fieldwork involves students planning, preparing, organizing and conducting sessions/workshops in selected set-ups in order to extend textile related skills to underprivileged and other sections of society.

Scheme of Examination

The performance of the learners shall be evaluated into two parts. The learner's performance shall be assessed by Internal Assessment with 40% marks in the first part by conducting the Semester End Examinations with 60% marks in the second part. The allocation of marks for the Internal Assessment and Semester End Examinations are as shown below:-

Internal assessment for Theory 40 %

Sr. No.	Evaluation type	Marks
1	One class test/ case study / online examination to be conducted in the given semester	20
2	One assignment based on curriculum to be assessed by the teacher concerned	10
3	Active participation in routine class instructional deliveries	05
4	Overall conduct as a responsible learner, communication and leadership qualities in organizing related academic activities	05

Semester End Theory Examination of 60 marks (three unit courses)

Duration: These examinations shall be of two and half hours duration.

Theory question paper pattern:

- There shall be four questions each of 15 marks. On each unit there will be one question and fourth question will be based on entire syllabus.
- All questions shall be compulsory with internal choice within the questions. Each question will be of 30 marks with options.
- Questions may be sub divided into sub questions as a, b, c, d and e, etc and the allocation of marks depends on the weightage of the topic.

Semester End Practical Examination of 50 marks (three/four unit courses) No Internal Assessment

Duration: These examinations shall be of three hours.

Sr. No.	Evaluation type	Marks
1	Laboratory work: Semester End Examination	40
2	Journal	05
3	Viva	05

Standard of Passing is as per the ordinances set by the University of Mumbai for the Credit Based Semester and Grading System for the undergraduate courses.