UNIVERSITY OF MUMBAI

No.UG/ICC/2016-17/122 MUMBAI- 400 032 3^{ed} November 2016

The Principal, College of Home Science, Nirmala Niketan, 49, New Marine Line, **MUMBAI- 400 020.**

Madam,

I am to invited your attention to the Syllabi relating to the Bachelor of Science (Home Science) degree program <u>vide</u> this office Circular No. UG/146 of 2009, dated 8th May, 2016 and to inform you that the recommendation made by the Ad-hoc Board of Studies in Home Science at its meeting held on 30th May, 2016 has been accepted by the Academic Council at its meeting held on 24th June, 2016 <u>vide</u> item No.4.60 and that in accordance therewith, the revised syllabus as per the Choice Based Credit System for T.Y. B.Sc. Home Science (Branch III : Textile & Fashion Technology (Sem.V&VI), which is available on the University's web site (www.mu.ac.in) and that the same has been brought into force with effect from the academic year 2016-17.

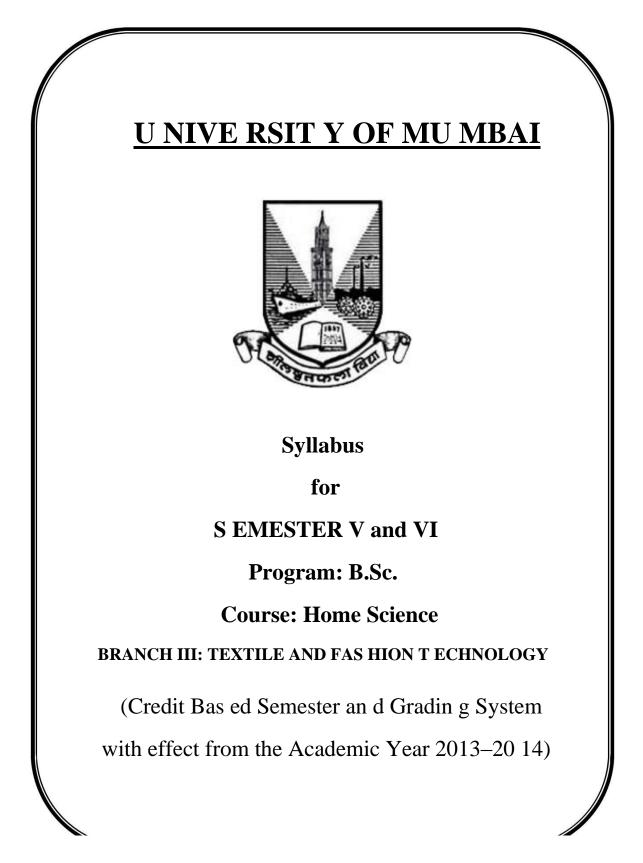
Yours faithfully,

(Dr.M.A.Khan) REGISTRAR

A.C/4.60/24/06/2016

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AC 24/6/16 Item no. 4.60



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
USHSIIIP501	Dyeing and Printing		50	50	3	2
USHSIIIP502	Fabric Structure and Construction		50	50	3	2
USHSIIIP503	Fashion Illustration and Pattern Drafting		50	50	4	2
USHSIIIP504	Garment Construction and Draping		50	50	4	2
USHSIIIP505	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
	Part A: Dyeing and Printing	3	100	1
USHSIII501	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	15
	Dyes and pigments: classification of dyes and pigments based on application	
	and chemical structures	
	Colour Index	
	Evaluation of fastness properties of dyed textile material	
Unit II	Dyeing: Mechanism of various dyeing processes, application of dyes on	15
	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)	
Unit III	Garment dyeing	15
	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.	

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Gulrajani, M. L. and Gupta, S. (1990) *Wool dyeing and printing*. New Delhi: Department of Textile Technology IIT.

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

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Boucher F. (1987) 2000 years of fashion: The history of costume and personalAdornment, New York: Harry and Abrams Inc. publishers.

Dar, S. N. (1969) Costumes of India and Pakistan, D. B. Taraporewala Sons and Co, Bombay

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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 Co	ntent	Periods
Unit I	Introduction to testing	15
	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	
Unit II	Fibre dimensions and quality	15
	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	
UnitIII	Yarn dimensions	15
	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	

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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 C	ontent	Periods
Unit I	Introduction and meaning, nature, role, type and scope of market and merchandising	15
	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	
Unit II	4 C's: Cost, Consumer, Convenience and Communication	15
	Market Research: Market segmentation, scope of market research, steps in the	
	research process, types of market research	

Unit III	Consumer psychology and behaviour: Consumer decisions in the market process,	15
	factors affecting consumer's decision in purchasing, consumer aids for right choice	
	brands, trademarks, quality marks, buying guides with respect to textiles, consumer	
	service	

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McGraw Singh (1989). Marketing and consumer behaviour. India: Deep and Deep.

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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	15
	Weaving – Introduction, Loom – Parts, Mechanism and Types, Types of Drafts	
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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Course Code	Title	Periods/week	Marks	Credits
USHSIIIP501	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 C	ontent	Periods
Unit I	Preparatory treatments – desizing, scouring and bleaching of samples	15
	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	
Unit II	Tie-dye techniques and create 6 samples using various fibre content (cotton, nylon, silk,	15
	jute, wool and blended) with suitable dye	
Unit III	Creation of batik 4 samples using various fibre content (cotton, silk, jute and blend)	15
	using suitable dye	

*Journal / Portfolio

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Shenai, V. A. (1985). *Technology of printing: technology of textile processing*. Vol. IV., Mumbai:Sevak Publication.

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Course Code	Title	Periods/week	Marks	Credits
USHSIIIP502	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 Co	ntent:	Periods
Unit I	Yarn And Fabric Testing:	15
	Calculation of the Weight of Warp and Weft of the Fabric, Fabric Thickness, Fabric	
	Count.	
	Yarn Count and Yarn Twist.	
Unit II	Sourcing And Identification Of Different Woven Samples	15
	Analysis of Woven Samples for Design, Draft And Peg Plan and Other Particulars (5	
	Samples Under Each Type Of Weave)	
Unit III	Practical Warping and Weaving of Samples on Table Looms with Straight and	15
	Transposed Drafts	

*Journal / Portfolio

Course Code	Title	Periods/week	Marks	Credits
USHSIIIP502	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 co	ontent	Periods
Unit I	Basic Blocks: Adults bodice block, torso and dartlesssloper, lower block and sleeve	15
	block (Revision) using anthropometric measurements.	
Unit II	Dart displacements and concealment techniques.	15
	Fundamentals: Collars: Rever, Reversible, Shawl, Danton and Sports	
Unit III	Fundamentals:	15
	Sleeves: Bell, Leg-o-mutton, Butterfly, Cap	
	Necklines: Raised, Polo and Cowl.	
Unit IV	Garments:	15
	Katoricholi	
	Tops: Kurta/Shirt (male/ female)	

*Journal / Portfolio with technical drawings

Course Code	Title	Periods/week	Marks	Credits
USHSIIIP502	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:	15
	Plackets – Continuous Kurta placket	
	Collars - Sports, Shawl, Reversible, Rever, Shirt	

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

*Journal / Portfolio with technical drawings

Course Code	Title	Periods/week	Marks	Credits
	Part A: Design Concepts and Computer Aided Designing	3	50	2
USHSIIIP501	Part B: Fieldwork/seminar/project	2	50	1

Part A: Design Concepts and Computer Aided Designing

Objective

• To teach manual techniques of embroidery.

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

*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
USHSIIIP601	Dyeing and Printing		50	50	3	2
USHSIIIP602	Fabric Structure and Construction		50	50	3	2
USHSIIIP603	Fashion Illustration and Pattern Drafting		50	50	4	2
USHSIIIP604	Garment Construction and Draping		50	50	4	2
USHSIIIP605	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
	Part A: Dyeing and Printing	3	100	1
USHSIII601	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 Co	ntent	Periods
Unit I	Printing:Introduction to printing	15
	Novel methods of printing: Digital, flexography, inkjet, blotch, water mark, roller,	
	foam, bubble, air brush, electrostatic, photo printing, marble, warp printing, differential	
	and etc.	
Unit II	Specialty printing: Rubber, khadi and etc.	15
	Evaluation of fastness properties of printed textile material	
	Printing Auxiliaries	
Unit III	Garment Finishing	15
	Ecological aspects of printing process (Banned chemicals for printing, eco-friendly	
	chemicals, auxiliaries and etc.), Effluent treatment.	
	Recent developments in printing	

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Cegarra, J. P. and Valladperas, J. (1992). The dyeing of textile manual, the scientific bases and the techniques of application. Italy: NecovaOflito.

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Koshy, T. D. (2001). Silk production and export management. New Delhi: A.P.H Publishing Corporation.

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.

To acquaint the students with the costumes of unreferit centuries.		
Course C	Course Content	
Unit I	Costumes of	15
	The ancient world : Egypt, Assyria, Etruscans, Rome	
	Middle ages 11 th Century to 15 th Century	
Unit II	Costumes of $16^{m} - 20^{m}$ Century	15
Unit III	Costumes of	15
	Europe from Byzantium to the 1800's	
	Traditional costumes of the 1800's	
	19 th Century antique civilizations	

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Boucher F. (1987) 2000 years of fashion: The history of costume and personal Adornment, New York: Harry and Abrams Inc. publishers.

Dar, S. N. (1969) Costumes of India and Pakistan, D. B. Taraporewala Sons and Co, Bombay

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Course Code	Title	Periods/week	Marks	Credits
LIGHEILIZ02	Part A: Textile Testing and Quality Control	3	100	2
USHSIII602	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)	15
	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	

Unit II	Tensile strength	15
	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	
Unit III	Garment testing: seam slippage, seam strength and puckering	15
	Advances in textile testing and quality control	

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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 entrepreneurships skills.

Course C	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.	15
	Advances in fabric construction	

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Course Code	Title	Periods/week	Marks	Credits
USHSIIIP601	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 C	ontent	Periods
Unit I	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	
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
USHSIIIP602	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 Co	Course Content	
Unit I	Sourcing and Identification of different knitted samples (Minimum five under each	15
	Category)	
Unit II	Constructing Fabrics Using:	15
	Knitting (Manual – 5 Samples and/or Machine)	
	Tufting (Cut and Uncut Combined 1 Sample)	
Unit III	Constructing Fabrics Using:	15
	Crochet (5 Samples)	
	Macramé (Various Knots)	

*Journal / Portfolio

Course Code	Title	Periods/week	Marks	Credits
USHSIIIP603	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
USHSIIIP604	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:	15
	Pockets – Velt, Bound	
	Zips – Fly open, zip without seam	
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	Marks	Credits
		Week		
	Part A: Design Concepts and Computer Aided Designing	3	50	2
USHSIIIP605	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 C	Course Content	
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 teacherconcerned	10
3	Active participation in routine class instructional deliveries	05
4	Overall conduct as a responsible learner, communication andleadership 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. Eachquestion 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.