6.1 KNITTED DESIGN

L T P
4 - 4

RATIONALE

The aim of this subject is to impart knowledge and skills to the students regarding various types of knits and their use in the textile design as they may have to work in knitting industry and import and export houses as well.

DETAILED CONTENTS

Sr. No.	Theory	Practical Exercises
1.	Comparison between knitted and woven fabrics, warp and weft knitting. Types of knitting needles, their knitting cycle, advantages and disadvantages of each. (18 hrs.)	- Demonstration of different needles and their cycles - Yarn parameters for hosiery yarn
2.	Weft Knitting Types of stitches: Knit, tuck, float, lay their representation, effects, methods of formation and their end uses. (6 hrs.)	Preparation of knit tuck and float stitches.
3.	Weft knit structures: Plain, Rib, Interlock and Purl, their characteristics, representation, derivatives, end uses and knitting cycles. (18 hrs.)	Passage of yarn through Flat Bed and Circular Weft Knitting Machines
4.	Fabric defect in weft knitting cover factor/tightness factor, Robbing back, calculations pertaining to production . Method of production of hose, half–hose (8 hrs.)	- Identification of fabric defects on the machine knitted designs - Study knitting cycles of latch models on the machines
5.	Warp Knitting: Introduction to under lap and over lap, closed lap and open lap. Brief description of Tricot and Raschel machines and fabrics lapping movement of warp knitting (14 hrs)	- Study rapping movement of warp knits - Preparation of warp knit samples

INSTRUCTIONAL STRATEGY

Student may be asked to do the work on weft knitting machines and construct the lapping movement of warp knits.

RECOMMENDED BOOKS

1. Knitting technologies by D.B. Ajgaokar

2. Knitting technology by Mark Spancer

3. Textile Mathematics Vol III by J.E. Booth

6.2 CAD FOR TEXTILE DESIGN - III

L	T	P
-	-	4

RATIONALE

The term CAD has found its way into all major discipline that have got anything to do with designing or drafting techniques. The major objective of this course is to expose the students to different softwares available in the field of textile design industry so that they are able to use those softwares in the design and construction of various textiles.

DETAILED CONTENTS

Related Theory for Practical Exercises

1. Understanding graphic representation, file conversion, drawing simple geometric and other related design, capturing a design using CCD/Scanner and modifying them

2. Use of computer to design, fabric construction including the use of computer to match colour line for woven and printed designs

3. Use of CAD in various end uses viz. dress material, upholstery, furnishing, label, embroidery, knitting

PRACTICAL EXERCISES

Software packages like Textronics/Texstylers/Wonderweave/Scotweave Design systems may be adopted for following exercises (Any one may be chosen or any other latest software):

(i) Preparation of Knitted Fabric Construction and Design

- Selection of a fabric
- Use of CAD for creating fabric structure
- Selection of colour scheme
- Selection of yarn count, twist and its direction and type of yarn

(ii) Preparation of Printing and Dyeing on Fabric

- Selection of design either by selecting printed fabric or by generating figures based on ideas
- Selection of colour scheme
- Finalizing the design on computer screen/paper

iii) Preparation of label design using any of the software

RECOMMENDED BOOKS

1. CAD in clothing and textiles by W.Aldrich

2. A magazine on Computer in the world of textiles

6.3 TESTING AND QUALITY CONTROL - II

L	T	P
4	-	4

RATIONALE

Diploma holders in textile design are responsible for testing and quality control of yarn and fabric at the shop floor. Thus in this subject, student will be made fully aware of different quality standards and their maintenance during manufacturing processes for the total quality concept.

DETAILED CONTENTS

Sr. No.	Theory	Practical.
1.	Common fabric defects, their analysis and remedial measures (3 hrs)	Identification of Fabric faults.
2.	Definition of Crimp and take-up. Measurement of crimp by Crimpmeter. Crimp, take-up and fabric properties (8 hrs)	Crimp measurement of warp & weft of fabric with help of crimpmeter
3.	Fabric thickness and its measurement. Measurement of fabric weight. (3 hrs)	Measurement of fabric thickness by thickness tester.
4.	Introduction of fabric stiffness, handle and drape. Measurement of fabric stiffness. Drapemeter and its working. (8 hrs)	Measurement of fabric weight. (i) Measure of stiffness of fabric. (ii) Use of drapemeter
5.	Crease recovery and its measurement. (3 hrs)	Measurement of crease recover, recovery angle of fabric. (warp and weft direction
6.	Pilling of fabric. Its measurement. (3 hrs)	
7.	Testing of fabric strength. (Tensile, tearing and bursting strength . (6 hrs)	Measurement of tensile, bursting and tearing strength tests with the help of Tensile Strength Tester, Bursting Strength Tester and Tearing Strength Tester.
8.	Moisture relations & testing. Definition of Moisture Regain . Moisture Content; Absolute Humidity & Relative	Measure of moisture content of yearn & fabric by electronic moisture meter and drying oven.

	Humidity. Relation between Regain and Humidity. Standard Laboratory Conditions Measurement of Moisture Regain by Drying Ovens and Electronic Moisture Meter. (8 hrs)	
9.	Fabrics shrinkage and its measurement. (3 hrs)	Use of Laundro meter for measurement of shrinkage.
10.	Water Absorbency properties of various fabrics. (4 hrs)	
11.	Flammability, factors effecting flammability of fabrics. Measurement of flammability (8 hrs)	Flammability testing with the help of Flammability Tester
12.	Concepts of serviceability, wear and abrasion., their measurement and interpretation of results. (7 hrs)	Testing with wear and abrasion tester.

INSTRUCTIONAL STRATEGY

Students must be taken to textile industries/Mills for practice and study of inspection and quality control operations

RECOMMENDED BOOKS

1. Textile Testing by JE Booth

2. Textile Testing by Grover and Hamley

3. Textile Testing by Angapan

4. Textile Testing by John H.Skinkle; DB Taraporewala and Sons, Bombay

6.4 GARMENT DESIGN

L	T	P
2	-	4

RATIONALE

The students of textile design should have knowledge and skills in cutting, sewing pressing etc. so that they are able to appreciate design components in textile.

DETAILED CONTENTS

Sr. No.	Theory	Practical Exercises
1.	Cutting: The planning, drawing, drafting, pattern making and reproduction of the marker, the spreading of the fabric to form a lay, the cutting of the fabric. (8 hrs.)	To study tools and equipments used in clothing/garment constructions.
2.	Sewing: The properties of seams, darts seam types, sewing machine needles types, sewing problems basic sewing machine. (8 hrs.)	Demonstration of machines parts of sewing machine, Threading & working defects remedies and oiling. Types of stitches
3.	The use of components and triminings: Lables and motifs, linings, interlinking, waddings. (4 hrs.)	Practice of making of different types of openings, button holes fastners, taking & hemming types of collars neck-lines, stitching of different cloths.
4.	Pressing: The principle of pressing, pressing equipment and methods. (4 hrs.)	Appliances required for pressing and finishing and pressing of textiles and finishes (mill visits only)
5.	Quality control: Principles of quality control, Total Quality control, just in time. Inspection systems and care labeling of apparel and textiles/Eco-labels American care labeling (CLS), International care labeling system, British care labeling systems, Japanese care labeling system. (8 hrs.)	

INSTRUCTIONAL STRATEGY

The students may be asked to perform various operation viz. drawing pattern making, cutting etc. in order to prepare different seams necklines, collars etc. on sewing machine.

RECOMMENDED BOOKS

1. Garment Finishing and Care Labelling by SS Satsangi, M/s Usha Publications, Delhi.
2. Textiles-Fibers and Fabrics by Bernard Polytechnic Corbman, M/s McGraw Hill, International Edition
3. Garment Design by Armstrong

6.5 MAJOR PROJECT WORK

L	T	P
-	-	10

The purpose of introducing the projects are to enable the student to apply the knowledge, skills and attitudes acquired during the entire course of the solution of real life problems. Each student will be assigned a specific problem. The student will have to go through the entire problem solving right from conception of design upto the execution of design. It is expected that students will be sent to various textile industry for about 6 - 8 weeks at a stretch and they will be asked to take live problems from the field as project work

Identification of textile industry and project activities which can be taken by the students for project work should begin well in advance (say in the beginning of third year). Students should also be asked to identify suitable textile industry and project activities which can be taken by them. One teacher is expected to guide, supervise and evaluate the project work of 5 – 7 students

The assessment of project work shall be based on:

i) Definition of the problem
ii) Explain the approach towards solution of the problem
iii) Developing and sketches – developing alternatives
iv) Colour scheme – developing alternatives
v) Final design – developing alternatives
vi) Fabric selection/yarn selection
vii) Quality of print/weave
viii) Procedure adopted by the student in originality of the design concepts
ix) Initiative and participation of student

A viva voce examination shall be conducted at the end of the project for assessing the work of the student. The examination committee for this purpose shall consist of a professional designer, teacher who has guided the project. The project work should be properly displayed by the student

Suggested Problems for Project Work

These problems may be reproduced on graph paper and later on, in the production of fabric by weaving or printing.

i) Floral pattern in stylized and naturalistic form
ii) Indian mythology depicting a Mahabharta scene
iii) Batik and tie and dye technique in geometrical on abstract design
iv) Paisley motifs within decorative form of floral pattern increase with blackout line work
v) Sea animals (fishes), sea breeds and sea shells
vi) Tantric art
vii) Floral pattern flowers heads, buds, leaves and stems in line work of art