

6.1 KNITTED DESIGN

L T P
3 - 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

1. Comparison between knitted and woven fabrics, warp and weft knitting- Types of knitting needles, their knitting cycle, advantages and disadvantages of each. (12 hrs)
2. Weft Knitting -Types of stitches: Knit, tuck, float, lay their representation, effects, methods of formation and their end uses. Preparation of knit tuck and float stitches. (08 hrs)
3. Weft knit structures: Plain, Rib, Interlock and Purl, their characteristics, representation, derivatives, end uses and knitting cycles. Passage of yarn through Flat Bed and Circular Weft Knitting Machines. Design of plain, rib, interlock and purl knits. (12 hrs)
4. Fabric defect in weft knitting cover factor/tightness factor, Robbing back (06 hrs)
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 design of warp knitting (10 hrs)

LIST OF PRACTIALS

1. To study different types of knitting needle
2. To study passage of yarn through flat bed machine
3. To study passage of yarn through circular weft machine
4. Identification of fabric defects of weft knitted fabrics
5. To study knitting cycle of latch needle
6. To study lapping movement of warp knits with CAD

INSTRUCTIONAL STRATEGY

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

RECOMMENDED BOOKS

1. Knitting technologies by D.B. Ajgaonkar
2. Knitting technology by David J. Spencer
3. Textile Mathematics Vol III by J.E. Booth

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	12	26
2	08	16
3	12	26
4	06	12
5	10	20
Total	48	100

6.2 BASICS OF GARMENT CONSTRUCTION

L T P
3 - 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

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. (12 hrs)
2. Sewing: The properties of seams, darts seam types, sewing machine needles types, sewing problems basic sewing machine. (8 hrs)
3. The use of components and trimmings: Lables and motifs, linings, interlinking, waddings. (8 hrs)
4. Pressing: The principle of pressing, pressing equipment and methods. (8 hrs)
5. Inspection systems and care labeling of apparel and textiles/Ecolabels American care labeling (CLS), International care labeling system, British care labeling systems, Japanese care labeling system. (12 hrs)

LIST OF PRACTICALS

1. To study tools and equipments used in clothing/garment constructions.
2. To demonstrate the sewing machine, functions and working of various parts.
3. To use different sewing equipments used in the Garment design.
4. To demonstrate various sewing aids used in garment design lab.
5. To make simple stitches on cloth like circular, straight lines etc.
6. To make different types of pleats and gather.
7. To study and prepare different necklines.
8. Appliances required for pressing and finishing and pressing of textiles and finishes (mill visits only)

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-Fibres and Fabrics by Bernard Polytechnic Corbman, M/s McGraw Hill, International Edition
3. Garment Design by Armstrong.
4. The Technology of clothing manufacture by Harold carr & Barbara Latham.
5. Fashion Production Terms by Debbie Ann Gioello & Berke.

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	12	26
2	08	16
3	08	16
4	08	16
5	12	26
Total	48	100

6.3 TEXTILE FINISHING

L	T	P
3	-	-

RATIONALE

A diploma holder in textile design must have necessary knowledge and procedures used for finishing. For this, he should be acquainted with different types of processing of finishing machines used for finishing. In addition, relevant skills also need to be developed in him about the operation of these machines.

DETAILED CONTENT

Theory

1. Introduction, objects of finishing and its importance. (2 hrs)
2. Classification of various types of finishes (2 hrs)
3. Study of finishes with respect to the purpose, fabrics and reagents used. (2 hrs)
4. Routine Finishes (4 hrs)
 - Heat setting
 - Desizing
 - Scouing
 - Bleaching
 - Mercerization
5. Calendering and its applications (2 hrs)
6. Textural finishes, their types and techniques (2 hrs)
7. Special Finishes (16 hrs)
 - Special calendering
 - Water proof and water repellent finishes
 - Flame retardant and flame proof finishes
 - Soil & stain release finishes
 - Moth proofing , rot proofing, mildew proofing
 - Crease/wrinkle resistant finishes
8. Stabilization finishes & its applications (10 hrs)
 - Relaxation shrinkage/compressive shrinkage
 - Fulling and crabbing
 - Chlorination
 - Resin treatments
 - Stentering
 - Wet & Dry Decating

9. Effluents and its treatments (6 hrs)
10. Latest developments in finishing (2 hrs)

INSTRUCTIONAL STRATEGY

The students should be taken to textile industry to show them various processes of finishing and its machinery so that they can know the various finishing processes being used by textile industry.

RECOMMENDED BOOKS

1. Technology of Finishing by VA Shenai
2. Textile Finishing by JT Marsh, BI Publications, New Delhi
3. Effluents by ATIRA
4. Technology of Bleaching by VA Shenai
5. Textile Fibres and Their use by Katharine Paddock HESS Oxford & IBJ Publishing Co. Pvt. Ltd., New Delhi, Bombay, Kolkata
6. Textile Fiber to Fabric by Bernard P. Corbman, McGraw Hill International Editions

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	02	04
2	02	04
3	02	04
4	04	08
5	02	04
6	02	04
7	16	34
8	10	22
9	06	12
10	02	04
Total	48	100

6.4 BASICS OF MANAGEMENT

L T P
3 - -

RATIONALE

The diploma holders are generally expected to take up middle level managerial positions, their exposure to basic management principles is very essential. Topics like Structure of Organization, Leadership, Motivation, Ethics and Values, Customer Relationship Management (CRM), Legal Aspects of Business, Total Quality Management (TQM), Intellectual Property Rights (IPR) etc. have been included in the subject to provide elementary knowledge about these management areas.

DETAILED CONTENTS

1. Principles of Management (06 hrs)
 - 1.1 Introduction, definition and importance of management
 - 1.2 Functions of Management
Planning, Organizing, Staffing, Coordinating, Directing, Motivating and Controlling
 - 1.3 Concept and Structure of an organization
Types of industrial organization
 - a) Line organization
 - b) Functional organization
 - c) Line and Functional organization
 - 1.4 Hierarchical Management Structure
Top, middle and lower level management
 - 1.5 Departmentalization
Introduction and its advantages

2. Work Culture (06 hrs)
 - 2.1 Introduction and importance of Healthy Work Culture in organization
 - 2.2 Components of Culture
 - 2.3 Importance of attitude, values and behaviour
Behavioural Science – Individual and group behaviour
Professional ethics – Concept and need of Professional Ethics

3. Leadership and Motivation (06 hrs)
 - 3.1 Leadership
 - a) Definition and Need of Leadership
 - b) Qualities of a good leader
 - c) Manager vs. leader

 - 3.2 Motivation
 - a) Definition and characteristics of motivation
 - b) Factors affecting motivation

- c) Maslow's Need Hierarchy Theory of Motivation
- 3.3 Job Satisfaction
- 4. Legal Aspects of Business: Introduction and need (06 hrs)
 - 4.1 Labour Welfare Schemes
 - a) Wage payment - Definition and types
 - b) Incentives - Definition, need and types
 - 4.2 Factory Act 1948
 - 4.3 Minimum Wages Act 1948
- 5. Management Scope in different Areas (12 hrs)
 - 5.1 Human Resource Development
 - a) Introduction and objective
 - b) Manpower Planning, recruitment and selection
 - c) Performance appraisal methods
 - 5.2 Material and Store Management
 - a) Introduction, functions and objectives of material management
 - b) Purchasing: definition and procedure
 - c) Just in time (JIT)
 - 5.3 Marketing and Sales
 - a) Introduction, importance and its functions
 - b) Difference between marketing and selling
 - c) Advertisement- print media and electronic media
 - d) Market-Survey and Sales promotion.
 - 5.4 Financial Management – Introduction
 - a) Concept of NPV, IRR, Cost-benefit analysis
 - b) Elementary knowledge of Income Tax, Sale Tax, Excise duty, Custom duty, Provident Fund
 - 5.5 Maintenance Management
 - a) Concept
 - b) Preventive Maintenance
- 6. Miscellaneous topics (12 hrs)
 - 6.1 Customer Relationship Management (CRM)
 - a) Definition and Need
 - b) Types of CRM
 - c) Customer satisfaction
 - 6.2 Total Quality Management (TQM)
 - a) Inspection and Quality Control

- b) Concept of Quality Assurance
- c) TQM

6.3 Intellectual Property Rights (IPR)

- a) Introduction, definition and its importance
- b) Infringements related to patents, copyright, trade mark

INSTRUCTIONAL STRATEGY

It is observed that the diploma holders generally take up middle level managerial positions, therefore, their exposure to basic management principles is very essential. Accordingly students may be given conceptual understanding of different functions related to management. Some of the topics may be taught using question answer, assignment or seminar method. The teacher will discuss success stories and case studies with students, which in turn, will develop appropriate managerial qualities in the students. In addition, expert lectures may also be arranged from within the institutions or from management organizations. Appropriate extracted reading material and handouts may be provided.

RECOMMENDED BOOKS

1. Principles of Management by Philip Kotler TEE Publication
2. Principles and Practice of Management by Shyamal Bannerjee: Oxford and IBM Publishing Co, New Delhi.
3. Financial Management by MY Khan and PK Jain, Tata McGraw Hill Publishing Co., 7, West Patel Nagar , New Delhi.
4. Modern Management Techniques by SL Goel: Deep and Deep Publications Pvt Limited , Rajouri Garden, New Delhi.
5. Management by James AF Stoner, R Edward Freeman and Daniel R Gilbert Jr. : Prentice Hall of India Pvt Ltd, New Delhi.
6. Essentials of Management by H Koontz, C O' Daniel , McGraw Hill Book Company, New Delhi.
7. Marketing Management by Philip Kotler, Prentice Hall of India, New Delhi
8. Total Quality Management by DD Sharma, Sultan Chand and Sons, New Delhi.
9. Intellectual Property Rights and the Law by Dr. GB Reddy.
10. Service Quality Standards, Sales & Marketing Department, Maruti Udyog Ltd.
11. Customer Relationship Management: A step-by-step approach, Mohamed & Sagadevan Oscar Publication, Delhi
12. Customer Relation Management, Sugandhi RK, Oscar Publication, Delhi.

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (hrs)	Marks Allotted (%)
1	06	15
2	06	10
3	06	15
4	06	10
5	12	25
6	12	25
Total	48	100

6.5 EMPLOYABILITY SKILLS – II

L	T	P
-	-	2

RATIONALE

The present day world requires professionals who are not only well qualified and competent but also possess good communication skills. Our diploma students not only need to possess subject related knowledge but also soft skills to get good jobs or to rise steadily at their work place. The objective of this subject to prepare students for employability in job market and survive in cut throat competition among professionals.

DETAILED CONTENTS

1. Oral Practice
 - i) Mock interview (05 hrs)
 - ii) Preparing for meeting (05 hrs)
 - iii) Group discussion (05 hrs)
 - iv) Seminar presentation (05 hrs)
 - v) Making a presentation (12 hrs)
 - a) Elements of good presentation
 - b) Structure and tools of presentation
 - c) Paper reading
 - d) Power point presentation

6.6 MAJOR PROJECT WORK

L T P
- - 13

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

A suggestive criteria for assessing student performance by the external (personnel from industry) and internal (teacher) examiner is given in table below:

Sr. No.	Performance criteria	Max.** marks	Rating Scale				
			Excellent	Very good	Good	Fair	Poor
1.	Selection of project assignment	10	10	8	6	4	2
2.	Planning and execution of considerations	10	10	8	6	4	2

3.	Quality of performance	20	20	16	12	8	4
4.	Providing solution of the problems or production of final product	20	20	16	12	8	4
5.	Sense of responsibility	10	10	8	6	4	2
6.	Self expression/ communication skills	5	5	4	3	2	1
7.	Interpersonal skills/human relations	5	5	4	3	2	1
8.	Report writing skills	10	10	8	6	4	2
9.	Viva voce	10	10	8	6	4	2
Total marks		100	100	80	60	40	20

The overall grading of the practical training shall be made as per following table

	Range of maximum marks	Overall grade
i)	More than 80	Excellent
ii)	79 \diamond 65	Very good
iii)	64 \diamond 50	Good
iv)	49 \diamond 40	Fair
v)	Less than 40	Poor

In order to qualify for the diploma, students must get “Overall Good grade” failing which the students may be given one more chance of undergoing 8 -10 weeks of project oriented professional training in the same industry and re-evaluated before being disqualified and declared “not eligible to receive diploma”. It is also important to note that the students must get more than six “goods” or above “good” grade in different performance criteria items in order to get “Overall Good” grade.

Important Notes

1. This criteria must be followed by the internal and external examiner and they should see the daily, weekly and monthly reports while awarding marks as per the above criteria.
2. The criteria for evaluation of the students have been worked out for 100 maximum marks. The internal and external examiners will evaluate students separately and give marks as per the study and evaluation scheme of examination.
3. The external examiner, preferably, a person from industry/organization, who has been associated with the project-oriented professional training of the students, should evaluate the students performance as per the above criteria.
4. It is also proposed that two students or two projects which are rated best be given merit certificate at the time of annual day of the institute. It would be better if specific nearby industries are approached for instituting such awards.

The teachers are free to evolve another criteria of assessment, depending upon the type of project work.

It is proposed that the institute may organize an annual exhibition of the project work done by the students and invite leading Industrial organisations in such an exhibition. It is also proposed that two students or two projects which are rated best be given merit certificate at the time of annual day of the institute. It would be better if specific industries are approached for instituting such awards.

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 Mahabhart 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
- viii) Preparation of above designs on any software related to textile and producing sample swatches.