

4.1 TEXTILE TESTING

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RATIONALE

The students should know various tests conducted in a garment industry to check and meet buyers specifications.

DETAILED CONTENTS

PRACTICAL EXERCISES

1. Light fastness test
2. Color fastness to wash test
3. Rubbing fastness (crocking test)
4. Shade matching (use of light box)
5. Strength test
6. Pilling test
7. Puckering test
8. Bowing and skewness test
9. Draping test
10. Button strength test
11. Zipper functional test
12. GSM

INSTRUCTIONAL STRATEGY

The students should be encouraged to workout these tests on their own and they should be aware of various inferences of these tests that have impact on garment quality.

RECOMMENDED BOOKS

1. Principles of Textile Testing by J.E. Booth
2. Apparel quality Control by P.V. Mehta

4.2 PATTERN MAKING AND GRADING

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RATIONALE

The students are supposed to perform the jobs of pattern maker when engaged in garment manufacturing industry. After going through this subject, students will be able to manipulate different darts and increase or decrease any pattern proportions

DETAILED CONTENTS

PRACTICAL EXERCISES

1. Dart manipulation by:

- Slash and spread method
 - Pivot method
- Two patterns each

2. Dart manipulation into:

- Single dart series
 - Two dart series
 - Multiple dart series
 - Single lines – princess and empire
 - Yokes
- Two patterns each

3. Control of fullness through

- Pleats
 - Darts
 - Gathers
 - Tucks
 - Additional fullness
- Two patterns each

4. Developing patterns for garments

- Boy's shorts
 - Jump suits
 - Skirts and tops
 - One piece dress
- One pattern each

5. Introduction to:

- Track grading
- Nest grading
- Grading basic bodice block and
- skirt block

Two patterns each

RECOMMENDED BOOKS

1. Pattern Making for Fashion Design by Helen Joseph Armstrong, Vikas Publishing House Pvt. Ltd. Delhi
2. The ABC's of Grading by Murray Sacher, New Age Publisher, Delhi
3. Basic Pattern Skills for Fashion Design by Bernard Zamkoff, McGraw Hill Book Co. Inc. New York
4. Designing Apparel through the Flat Pattern by Ernestine Kopp, Beatrice Zelin Publisher, New York

4.3 GARMENT CONSTRUCTION -IV

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RATIONALE

The diploma holders are supposed to fabricate the garments, so it is very essential that they should be able to fabricate various garments as per the layouts and specifications. Hence this subject has been included in the curriculum in order to develop such competencies.

DETAILED CONTENTS

PRACTICAL EXERCISES

Construction of:

1. Jump suit
2. Boys shorts
3. Circular skirt
4. T-shirt (in Knits)

Note: The above have to be carried out keeping in view the operation breakdown..

RECOMMENDED BOOKS

1. Pattern Making for Fashion design by Amstrong, Vikas Publishing House Pvt. Ltd. Delhi
2. Clothing Construction by Doongaji, Raj Parkashan, Delhi.
3. System of Cutting by Zarapkar, Navneet Publications
4. Clothing Construction by Evelyn A Mansfield, Hougutan Miffin Co., Boston
5. Creative Sewing by Allynie Bane; McGraw Hill Book Co., Inc., New York
6. How You Look and Dress by Byrta Carson; McGraw Hill Book Co., Inc., New York

4.4 APPAREL PRODUCTION MANAGEMENT

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RATIONALE

Diploma holders in garment technology are required to assist for controlling production and quality of the garments on the shop floor. They are also required to supervise erection, installation and maintenance of equipment including material handling and undertake work-study for better utilization of resources. They are also required to lead a team of workers and motivate them towards realization of organizational objectives.

DETAILED CONTENTS

PART A: PRODUCTION MANAGEMENT

1. Introduction to Basic Production Terms (06 hrs)
Production, productivity, work in process, time study, motion study, work study, ergonomics
2. Pre-Production Planning (16 hrs)
 - Types of production processes, job, batch and mass production
 - Raw material planning and allocation
 - Process planning and process sheet
 - Methods of production control
3. Types of Production System (12 hrs)
 - Make through garment system
 - Batch system
 - Assembly line system
 - Progressive bundle system
 - UPS/Conveyer belt system
 - Production systems – Their advantages and disadvantages
4. Plant Layout and Material Handling (16 hrs)
 - Concept of plant layout
 - Types of layout (process, product and combination type) and their characteristics
 - Factors affecting plant layout
 - Methods of plant layout
 - Workstation design: Factors considered in designing a work station

5. Material Handling (14 hrs)
- Introduction and functions of material handling
 - Material handling equipment – their selection
 - Safety requirements while using material handling equipment

RECOMMENDED BOOKS

1. Managing Quality by SK Bhardwaj and PV Mehta; New Age Publisher, Delhi
2. Productivity by Rajesh Bheda, CBS Publishers, New Delhi
3. ISO 9000 –Textile Committee Manual

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	06	8
2	16	30
3	12	16
4	16	26
5	14	20
Total	64	100

4.5 CAD IN GARMENT TECHNOLOGY - II

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RATIONALE

The term CAD has found its way into all major disciplines that have got anything to do with designing or drafting techniques. The objective is to expose professionals and to meet the needs of the users by complementing their knowledge, skills and creativity in the field of garment technology and their application in the industry.

DETAILED CONTENTS

PRACTICAL EXERCISES

(Software: Use of Corel Draw and Adobe Photoshop)

1. Application of tools of Corel Draw and Adobe Photoshop in garment design
2. Draw 3 profiles of female flesh figures (front, back and side view)
3. Design an executive wear along with accessories
4. Drape a saree with masking effect
5. Pick up a costume worn by a famous fashion model. Scan his/her figure and redesign the texture and the color combination of the dress.
6. Design a mood/story board according to the selected theme (both paper and computer assignment)
7. Logo and Labels designing
8. Create a brochure for your own label

Note: Visit to Design Studio in export houses and industry to understand the making and use of Mood boards etc.

RECOMMENDED BOOKS

1. Literature from the supplier of each software can be consulted
2. Corel Draw 12 – BPB Publication (latest version)
3. Adobe Photoshop 5.5 - BPB Publication (latest version)

4.6 FINISHING AND PACKAGING

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RATIONALE

The final presentation of finished product matters a lot in garment trade and hence knowledge and skill regarding this subject is essential for the students of garment technology, so that they are able to perform finishing, pressing and folding, packing and sealing processes effectively

DETAILED CONTENTS

Sr.No	Theory	Practical Exercises
1.	Stain removal methods - Chemical and natural methods (6 hrs)	Exercises on removal of stains such as oils, colour, chemicals, blood, tea, coffee stains etc.
2.	Denim washing – Types and equipment used (10 hrs)	Sample collection of denim washes
3.	Introduction to fusing - Methods, machines used, types of fusing material (6 hrs)	Practice on fusing
4.	Labels – Types (main, wash care, size), representation of symbols used in labels (6 hrs)	Collection of different types of Labels
5.	Pressing - Purpose, types of pressing (conventional/vacuum) (12 hrs)	Exercises on these processes
6.	Packaging and folding (8 hrs)	Exercises on these processes

ASSIGNMENT FOR THE STUDENTS

Prepare a practical file on stain removal

INSTRUCTIONAL STRATEGY

The teachers are supposed to take the students for industrial visit for showing the processes of finishing, pressing and folding, packaging and sealing, so that the students are able to appreciate the importance of such activities in the trade of garments' manufacturing

RECOMMENDED BOOKS

1. Household textiles and laundry work by Durga Deolkar, Oxford & IBH Publishing Co. Delhi
2. Textile fibres and their use by Hess, Oxford & IBH Publishing Co. Delhi
3. Care Labels – NITTRA publications by Mehta and Bhardwaj, New Age Publishers, Delhi
4. Volume production and Quality Control (vol.I) by AJ Chitter
5. Handbook of Clothing Manufacture by Jacob Solinger
6. The Technology of Clothing Manufacture, Harrold Carr & B. Latham
7. Managing Quality of Apparel Products by P.V. Mehta.

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	06	13
2	10	27
3	06	10
4	06	10
5	12	20
6	08	20
Total	48	100

ENTREPRENEURIAL AWARENESS CAMP

The employment opportunities for diploma holders especially in public sector are dwindling. The diploma holders need to explore the possibilities of becoming entrepreneurs. For this, they must be acquainted with entrepreneurship development, scope of setting up small-scale industry, existing business opportunities, financial support available and various aspects of managing business. In this context, an entrepreneurial awareness camp is suggested. During the camp, experts from various organizations such as banks, financial corporations, service institutes etc. may be invited to deliver expert lectures. Successful entrepreneurs may also be invited to interact with the students. Students may be encouraged to read papers or give seminar during the camp on Entrepreneurship Development related topics.

The camp is to be organized at a stretch for two to three days during fourth semester. Lectures will be delivered on the following broad topics. There will be no examination for this subject

1. Who is an entrepreneur?
2. Need for entrepreneurship, entrepreneurial career and self employment
3. Scenario of development of small scale industries in India
4. Entrepreneurial history in India, Indian values and entrepreneurship
5. Assistance from District Industries Centres, Commercial Banks, State Financial Corporations, Small industries Service Institutes, Research and Development Laboratories and other Financial and Development Corporations
6. Considerations for product selection
7. Opportunities for business, service and industrial ventures
8. Learning from Indian experiences in entrepreneurship (Interaction with successful entrepreneurs)
9. Legal aspects of small business
10. Managerial aspects of small business

INDUSTRIAL TRAINING OF STUDENTS

(During summer vacation after IV Semester)

It is needless to emphasize further the importance of Industrial Training of students during their 3 years of studies at Polytechnics. It is industrial training, which provides an opportunity to students to experience the environment and culture of industrial production units and commercial activities undertaken in field organizations. It prepares student for their future role as diploma engineers in the world of work and enables them to integrate theory with practice. Polytechnics have been arranging industrial training of students of various durations to meet the above objectives.

This document includes guided and supervised industrial training of a minimum of one month duration to be organised during the semester break starting after second year i.e. after IV Semester examinations. The concerned HODs along with other teachers will guide and help students in arranging appropriate training places relevant to their specific branch. It is suggested that a training schedule may be drawn for each student before starting of the training in consultation with the training providers. Students should also be briefed in advance about the organizational setup, product range, manufacturing process, important machines and materials used in the training organization.

Equally important with the guidance is supervision of students training in the industry/organization by the teachers. A minimum of one visit by the concerned teacher is recommended. Students should be encouraged to write daily report in their diary to enable them to write final report and its presentation later on.

An internal assessment of 50 and external assessment of 50 marks have been provided in the study and evaluation scheme of V Semester. Evaluation of professional industrial training report through viva-voce/presentation aims at assessing students understanding of materials, industrial process, practices in industry/field organization and their ability to engage in activities related to problem solving in industrial setup as well as understanding of application of knowledge and skills learnt in real life situations. The formative and summative evaluation may comprise of weightage to performance in testing, general behaviour, quality of report and presentation during viva-voce examination. It is recommended that such evaluations may be carried out by a team comprising of concerned HOD, teachers and representative from industry. The components of evaluation will include the following:

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| a) | Punctuality and regularity | 40% |
| b) | Initiative in learning new things | 40% |
| c) | Relationship with workers | 20% |