

# Leather Technology (Footwear)

## 4.1 FOOTWEAR TECHNOLOGY – III

**L T P**  
**4 - 6**

### RATIONALE

The knowledge and practice of Footwear Manufacturing involves general process of closing the upper like skiving, Edge treatment, Reinforcement of upper and lining components, perforation, Gimping, Trimming of lining and cleaning are important topics for these diploma students. Diploma students are suppose to be equipped with perfect sequence of operations so that they may handle responsibilities successfully in the world of work.

### DETAILED CONTENTS THEORY

- 1 Tools and equipments used for closing the upper (4 hrs)
- 2 Introduction of upper components of Derby, Casual, Sandal, Monk and Brogue shoes. (8 hrs)
- 3 Sequence of operations of upper closing of Derby, Casual, Sandal, and Monk and Brogue shoes. (10 hrs)
4. Upper Closing (30 hrs)  
Preparation.
  - 4.1 Introduction of preparation
  - 4.2 Checking of clicked components
  - 4.3 Identification marking.
    - a. Crayon marking.
    - b. Notch marking.
    - c. Match marking.
    - d. Colour marking.
    - e. Lining stamping
    - f. Coloured tapes
    - g. Embossing
  - 4.4 Stitch markings.
    - a. Hand markers
    - b. Block marking
    - c. Prick marker
    - d. Notch marks
  - 4.5 Press punching.
  - 4.6 Perforating.
  - 4.7 Skiving
    - a) Meaning and necessity of skiving.
    - b) Types of skiving
      - i) Raw edge

- ii) Lapped skive (Underlay Skive)
  - iii) Folded skive
  - iv) Lasting skives.
  - v) Corner skive
- 4.8 Reinforcements - Types and materials.
- 4.9 Edge treatments
  - a) Folding
  - b) Binding
  - c) Slip beading
  - d) Flat binding
  - e) Bagged edge.
  - f) Gimping
- 4.10 Fitting up
  - a) Flat fitting
  - b) Block fitting
  - c) Held together
- 4.11 Attaching the lining.
- 4.12 Stitching (Seams) of components.
  - a) Plain closed seam
  - b) Open stitched seam
  - c) Lapped seam
  - d) Welted seam
  - e) Butted seam (Zigzag)
  - f) Moccasin sea
- 4.13 Eyeleting
  - a) Surface eyeleting
  - b) Invisible eyeleting
  - c) Blind eyeleting
  - d) Double eyeleting
- 4.14 Trimming of lining
- 4.15 Backing
- 4.16 Cleaning of upper.
- 4.17 Edge colouring
- 5 Introduction and importance of conveyor. (8 hrs)
- 6 Inspection/pairing and passing the complete shoe uppers. (4 hrs)

## **PRACTICALS**

1. Introduction of upper making tools and machines
2. Introduction in preparation of upper components of Derby, Casual, Sandals, Monk and brogue shoes.
3. Practice of checking the clicked upper components.
4. Practice of different types of skiving
5. Practice of edge treatments.
6. Practice of stitching.
7. Practice of assembling the upper components.

8. Preparation of complete upper of Derby, Casual, Sandal, Monk and Brogue shoes.
9. Practice of inspecting, pairing and passing the shoe upper.
10. Visit to footwear industry, exhibitions show rooms, fairs etc.

### **INSTRUCTINAL STRATEGY**

The students should be taken to leather footwear and leather goods manufacturing units and export houses to demonstrate various operations. Maximum emphasis should be laid in developing practical skills among the students. Experts from industries may be invited from time to time to deliver expert lectures.

### **SUGGESTED DISTRIBUTION OF MARKS**

<b>Topic No.</b>	<b>Time Allotted (Hrs)</b>	<b>Marks Allotted (%)</b>
1	04	08
2	08	12
3	10	15
4	30	45
5	08	12
6	04	08
<b>Total</b>	<b>64</b>	<b>100</b>

## 4.2 DESIGNING AND PATTERN CUTTING OF FOOTWEAR – II

L T P  
2 - 6

### RATIONALE

Diploma holders in Footwear and Leather Goods Technology are required to attain the knowledge of weight bearing points, Function of human feet, development of foot, specifications/object of last, pitch & spring in the last, joints of foot, ligaments, muscles, skin, nerves, veins, arteries. Students should be able to prepare standard patterns of Derby, Casual, Sandals, monk, pump shoes and Tumbler moccasin. Pattern grading and accurate fitting are important components for diploma holders in Leather Technology (Footwear).

### DETAILED CONTENTS THEORY

1. Necessity and importance of the foot anatomy for shoe maker. (2 hrs)
2. Weight bearing points of the human foot and their influence on the general health of the person. (2 hrs)
3. Development of the human foot from Infancy to maturity. (2 hrs)
4. Types of last and their specifications. (2 hrs)
5. Objects of last employing for shoe manufacturing. (4 hrs)
6. Spring and Pitch in the last and their utility. (4 hrs)
7. Introduction and importance of skin, Nerves, Veins and Arteries. (4 hrs)
8. Introduction of different joints, ligaments and muscles of the foot. (2 hrs)
9. Preparation of standard Patterns of Derby, Casual, Sandals, Monk, Pump shoes & Tumbler moccasin. (6 hrs)
10. Introduction and importance of pattern grading. (4 hrs)

### PRACTICALS

1. Foot measurements.
2. Last measurements and marking
3. Introduction of different parts of the last.
4. Preparation of forms, mean forms and Standard Patterns of Derby, Casual, Sandal, Monk, Pump shoes and Tumbler moccasin.
6. Preparation of section patterns of uppers of above mentioned footwear.
7. Preparation of lining patterns of above mentioned footwear.
8. Preparation of Toe- puff, stiffener, insole and sole patterns.
9. Visit to footwear factories, trade fairs and shoe Last manufacturing Units.

## INSTRUCTIONAL STRATEGY

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### SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	02	08
2	02	08
3	02	08
4	02	08
5	04	10
6	04	08
7	04	10
8	02	12
9	06	20
10	04	08
<b>Total</b>	<b>32</b>	<b>100</b>

### 4.3 SPORTS GOODS MANUFACTURE

L T P  
3 - 4

#### RATIONALE

The knowledge and skill about some special type of leather based sports goods manufacturing such as Volleyball, Basketball, Hockey Ball, Cricket Ball etc. should also be provided to Diploma Holder to make them more suitable to the Industry.

#### DETAILED CONTENTS

#### THEORY

1. Introduction about Leather based sports goods Industry. (4 hrs)
2. International demand for various types of Leather based sports goods. (2 hrs)
3. Material. (8 hrs)
  - 3.1 Introduction, Characteristics and specifications of Leather used in sports goods.
    - a) Football. Leather
    - b) Volleyball. Leather
    - c) Basketball Leather
    - d) Baseball Leather
    - e) Hockey Ball. Leather
    - f) Cricket ball. Leather
    - g) Rugby ball. Leather.
  - 3.2 Introduction, Characteristics and availability of other materials used in Leather based Sports Goods manufacturing.
    - a) Cork
    - b) Thread
    - c) Wool
    - d) Rubber
    - e) Fabric
    - f) Rexine/Synthetic
4. Tools, Equipments and Machinery (8 hrs)
  - 4.1 Introduction and usage of sports goods tools.
  - 4.2 Introduction and usage of machinery and equipments for manufacturing of leather based sports goods manufacturing such as:-
    - a) Clicking press.
    - b) Prepunch dies.
    - c) Splitting machine.
    - d) Specifying machine.
    - e) Stamping and spray finishing equipments.
    - f) Air compressor etc.
    - g) Rounding machinery
    - h) Moulding press etc.

5. Introduction and usage of other fixtures and their characteristic. (2 hrs)
6. Sequence of operation of various type of leather based Sports Goods Manufacturing as Football, Volleyball, Basket ball Baseball, Hockey ball, Cricket ball, Rugby ball etc. (4 hrs)
7. Designing and pattern cutting of various types of leather based sports goods. (4 hrs)
8. Dimensions and specifications of leather based sports goods as Football, Volleyball, Basketball, Base ball, Cricket ball, Sports shoe, Rugby ball etc. (4 hrs)
9. Costing and quality control of leather based sports goods. (4 hrs)
10. Finishing material and finishing process of leather based sports goods. (4 hrs)
11. Inspection, Passing and Packing of finished products. (4hrs)

### LIST OF PRACTICALS

1. Exercise in pattern cutting of leather based sports goods.
2. Exercise of different type of stitches used for manufacturing of leather based sports goods.
3. Exercise of cutting different components of leather based sports goods as Football, Volleyball, Basket, Baseball, Cricket ball, Rugby ball etc.
4. Sequence of operations involved in the manufacturing of Football, Volleyball, Basket Ball, Baseball, Cricket ball, Rugby ball etc.
5. Visit to leather based sports goods fairs, Industries, Showrooms, and Exhibitions etc.

### INSTRUCTIONAL STRATEGY

The students should be taken to leather footwear and leather goods manufacturing units and export houses to demonstrate various operations. Maximum emphasis should be laid in developing practical skills among the students. Experts from industries may be invited from time to time to deliver expert lectures.

### SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	04	08
2	02	04
3	08	18
4	08	18
5	02	04
6	04	08
7	04	08
8	04	08
9	04	08
10	04	08
11	04	08
<b>Total</b>	<b>48</b>	<b>100</b>



#### 4.4 CAD IN FOOTWEAR TECHNOLOGY-II

L T P  
- - 8

##### **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 of the subject is to expose students to the requirements of the footwear industry by complementing their knowledge, skills, ability, and creativity in the field of CAD and its applications in the industry. A lot of flexibility is available by the use of different software's in footwear and leather goods industry

##### ***DETAILED CONTENTS*** ***PRACTICAL EXERCISES*** **(Software: Use of Corel Draw and Photoshop)**

1. Create a composition of geometrical shapes in 8" x 8" block
2. Design a traditional and a contemporary footwear/apparel design
3. Draw 3 profiles of a foot (front, back and side view)
4. Design a nursery print
5. Design an executive footwear along with accessories
6. Pick up footwear/leather apparel worn by a fashion model. Scan his/her figure and redesign the texture and the color combination of the footwear/ leather apparel.
7. Design a logo and create a brochure for your own label
8. Knowledge and operation of CAD package for pattern making, digitizing, grading and marker making.

The software can be any one from the following:

- a) Lectra
- b) Tuka The. Inc. U.S.A
- c) Gerber Garment Technology (GGT)
- d) Any other pattern making package available in markets (latest version)

- Note:
- a) Reference from Indian and Foreign Libraries are required
  - b) Visits to designer workshops and fashion studios in footwear and leather apparel industries in India/Abroad
  - c) Visits to fashion shows and exhibitions, fairs etc
  - d) Attend seminars regarding export promotion, industry strategies etc
  - e) Latest information through media and Internet
  - f) Personal interaction with the working in footwear, apparel and leather fashion accessories.

## **INSTRUCTIONAL STRATEGY**

The students should be taken to leather footwear and leather goods manufacturing units and export houses to demonstrate various operations. Maximum emphasis should be laid in developing practical skills among the students. Experts from industries may be invited from time to time to deliver expert lectures.