

LF-108 Basics of Leather Manufacture Lab

Department of Technical Education

State Board of Technical Education & Training (TS)

Course Title:	Basics of Leather Manufacture Lab	Course Code :	LF-108
Semester:	I year	Course Group :	Practical
Teaching Scheme in Periods(L:T:P):	30:0:120	Credits :	2
Methodology :	Lecture Practical	Total Contact Periods :	150Periods
CIE :	60 Marks	SEE :	40 Marks

Pre requisites:

This course requires the basic knowledge of sequence of operations in Leather Making

Course Outcomes

Upon completion of the course, the student shall be able to

CO1 :	Inspect the Hides& Skins for Grading based on Defects present on them
CO2 :	Perform the Soaking, Liming, Unhairing, reliming, fleshing operation with the given Hide and skin
CO3 :	Perform the Deliming , Bating, scudding, degreasing and Pickling operation with the given pelts

CO-POMatrix (GPAC 4.0)

	Engineering Knowledge	Problem Analysis	Design/Development of Solutions	Conduct investigations	Modern tool usage	The Engineer & Society	Ethics & sustainability	Individual & Teamwork	communication	Project Management & Finance	Lifelong Learning	Linked PO
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO 7	PO8	PO9	PO10	PO11	
CO1		2		3				3	2			2,4,8,9
CO2				3	3		1	3	2			4,5,7,8,9
CO3		2		3	3		1	3	2			2,4,5,7,8,9

Course Contents

Unit No	Unit Name	Hours/Periods
1	Assortment and study of defects in hides and skins	25
2	Beam House operations like Soaking, Liming, Unhairing, Re-liming, fleshing operation with the given Hide and skin	25
3	Pre tanning operations like De-liming , Bating, scudding, degreasing and Pickling operation with the given pelts	25
4	Tanning method like Chrome tanning and vegetable tanning.	25

5	Post tanning operations like Re-chroming, Neutralisation, Re-tanning, dyeing and fatliuoring	25
6	Machine operations like samming, spltting, shaving, setting, toggling and finishing methods	25
Total		150

Course content:

Unit I:

- 1.0 Identify the different defects on hides.
- 1.1 Identify the defects of skins.
- 1.2 Observe the Grain Pattern and identify the type of Hide
- 1.3 Observe the Grain Pattern and identify the type of skin
- 1.4 Select the skins for different types of leather based on size, substance, and defects.
- 1.5 Select the hides for different types of leather based on weight, substance and defects.
- 1.6 Assortment of raw hides and skins based on size and weight

Unit II:

- 2.0 Soak the skins by pit, paddle and drum methods.
- 2.1 Soak the hides by pits, paddle and drum methods.
- 2.2 Preparation of the lime paste and the lime liquor in pit.
- 2.3 Lime the wool sheepskins by paste liming.
- 2.4 Lime the goatskins in paddle, pit and drum for different types of leathers.
- 2.5 Lime the hides in pit and paddle for chrome tanning and vegetable tanning.

- 2.6 Perform the Unhairing manually using Knife
- 2.7 Perform the Fleshing manually using Fleshing Knife
- 2.8 Flesh the pelt by machine

Unit III:

- 3.1 De-lime the hides for vegetable tanning
- 3.2 De-lime the hides for chrome Tanning
- 3.3 De-lime the skins for vegetable tanning
- 3.4 De-lime the skins for chrome Tanning
- 3.5 Scud the Pelts on the wooden beam
- 3.6 Perform the bating using drum.
- 3.7 Perform the Pickling process in Drum for vegetable Tanning.
- 3.8 Perform the Pickling process in Drum for Chrome Tanning
- 3.9 Prepare a flow chart for the beam house operations.
- 3.10 List out the checkpoints for the completion of each operation.
- 3.11 Identify the range and colour change of different pH indicators

Unit IV:

Chrome Tanning:

- 4.0 Prepare the chrome liquor.
- 4.1 Chrome tan the pickled stock.
- 4.2 Basify the chrome.
- 4.3 Check completion of chrome tanning by Boil Test.
- 4.4 Determine the Shrinkage Temperature for hydrothermal stability.

Vegetable Tanning:

- 4.5 Prepare Vegetable Tan Liquor by Leaching Method.
- 4.6 Prepare the pelt for vegetable tanning.
- 4.7 Vegetable tan the skins.
- 4.8 Make Sole Leather by Vegetable tanning.
- 4.9 Beam the vegetable tan leather.

Unit V:

Post Tanning Operations:

- 5.1 Do acid wash for wet blue
- 5.2 Do re-chroming for wet blue
- 5.3 Neutralise the chrome-tanned leather.

- 5.4 Retan the leather using vegetable tan and chrome tanning material.
- 5.5 Dye the leather.
- 5.6 Fat liquor the leather
- 5.7 Do fixing the dye and fat liquor.

Unit VI:

- 6.1 Sam and set the leathers for splitting and shaving.
- 6.2 Split the sides to reduce thickness and get different layer.
- 6.3 Shave the leather to reduce thickness.
- 6.4 Do slickering to the leather
- 6.5 Dry the leathers by hook & by nailing
- 6.6 Condition the leather by saw dust and by spraying
- 6.7 Stake the leather by hand
- 6.8 Toggle the leather
- 6.9 Trim the leather without much wastage.
- 6.10 buff the leather
- 6.11 Prepare the season for resin finish.
- 6.12 do padding
- 6.13pray the season
- 6.14Glazing the protein finish leather.
- 6.15Plate the resin finish leather.
- 6.16Roll the vegetable tanned sole leather.
- 6.17 Measure the leather area.

BASICS OF LEATHERS MANUFACTURE LAB		
Name of the Experiment	Competencies	Key Competencies
Identify the different defects on hides.	• To locate and identify the various defects	❖ Familiar The shape size of defects ❖ The types of defects

	• When these defects occurred • List of defects in hides	❖ Study the causes of defects its occurrence ❖ Familiar with defects on hides.
Identify the different defects on skins	• To locate and identify the various defects • Mention When these defects occurred • List of defects in skins	❖ Familiar The shape size of defects ❖ The types of defects ❖ Study the causes of defects its occurrence ❖ Familiar with defects on hides.
Identify the different grain pattern on hides and skins	• To identify the grain pattern of cow hides • To identify the grain pattern of buff hides • To identify the grain pattern of goat skins • To identify the grain pattern of sheep skins	❖ Study the arrangement of hair pores ❖ Observe the density of hair pores ❖ The types of hair pores in skins ❖ Study the nature of surface between hair pores ❖ Familiar with grain pattern on hides and skins ❖
Soaking of hides and skins	• To perform the soaking for the green hides • To perform the soaking for the green skins • To perform the soaking for the wet salted hides • To perform the soaking for the wet salted skins	❖ Study the preparation of soak liquor in pit ❖ The types of equipments used for soaking ❖ Chemicals used for soaking ❖ Duration of soaking for diff types of leather

Liming of hides and skins	• To perform the liming for the soaked hides • To perform the liming for the soaked skins • To perform the paste liming for the soaked skins	❖ Study the preparation of lime liquor in pit ❖ The types of equipments used for liming ❖ Chemicals used for liming ❖ Duration of liming for diff types of leather ❖ Completion of liming ❖ Able to explain changes happening during liming
Unhairing	• To perform the unhairing for limed hides • To perform the unhairing for limed skins	❖ Study the method of unhairing by hand using knife ❖ Observe the unhairing machine ❖ Observe the changes that take place during unhairing
Fleshing	• To perform the Fleshing for limed hides • To do Fleshing for limed skins	❖ Study the method of un Fleshing by hand using knife ❖ Observe the Fleshing machine ❖ Observe the changes that take place during Fleshing
Deliming	• To perform the deliming for the limed pelt • To perform the Deliming for the limed pelt	❖ Study the preparation of de lime liquor in drum ❖ The types of drums used for liming ❖ Chemicals used for De liming ❖ Duration of De liming for diff types of leather ❖ Test for completion of liming ❖ Ph changes observed during Deliming
Bating	• To perform the Bating for the De limed pelt	❖ Study the preparation of bate liquor in drum ❖ Chemicals used for bating ❖ Duration of bating for diff types of leather ❖ Test for completion of bating

		❖ Factors affecting bating operation
Scudding	• To perform the scudding for bated pelts	❖ Study the method of scudding by hand using knife ❖ Observe the scudding machine ❖ Observe the changes that take place during scudding
Pickling	• To perform the pickling for the pelt	❖ Study the preparation of pickle liquor in drum ❖ Chemicals used for pickling ❖ Duration of pickling for diff types of leather ❖ Test for completion of pickling ❖ Ph changes observed during pickling
Depickling	• To perform the De- pickling for the pelt	❖ Study the preparation of de-pickle liquor in drum ❖ Chemicals used for de-pickling ❖ Duration of de-pickling ❖ Test for completion of De pickling ❖ Ph changes observed during De-pickling

Name of the Experiment	Competencies	Key Competencies
Chrome tanning.	To Perform chrome tanning for the given pelt	❖ Study the preparation of chrome liquor ❖ Chemicals used for chrome tanning ❖ Duration of chrome tanning for diff types of leather ❖ Test for completion of chrome ❖ Ph changes observed during chrome tanning
Vegetable tanning	To Perform vegetable tanning for the given pelt	❖ Study the preparation of veg tan liquor ❖ Leaching method of tan liquor preparation ❖ Duration of vegetable tanning for diff types of leather ❖ Test for completion of vegetable tanning ❖ Ph changes observed during vegetable
Samming	- To Perform samming for the chrome tanned leather - To Perform samming for the vegetable tanned leather	❖ The condition of the sammed leather ❖ The moisture content of the sammed leather ❖ various conditioning methods
Setting	- To Perform setting for the chrome tanned leather - To Perform setting for the vegetable tanned leather	❖ The condition of the setted leather ❖ The grain condition of the setted leather ❖ various setting proceedures

State Board of Technical Education and Training, Telangana
Semester End Examination Model Question paper
DLF I year

Course Code: LF-108

Duration: 2 hours

Course Name: Basics of Leather Manufacture Lab

Max. Marks: 40 Marks

Instructions to the Candidate:

(i) Answer any One of the following Questions.

1. Perform the assorting of the given goat/Sheep skins based on size and describe about it?
2. Observe the grain pattern of the given Leather and Explain about it?
3. Perform the assortment of the given Buff Hides based on weight and explain about them?
4. Do the liming processes in pit for the given Hides and Skins
5. Perform the unhairing operation by the Hand for the given Limed pelts
6. Perform the Fleshing operation by the Hand for the given Limed pelts

7. Perform the deliming operation for the given pelt in Drum and record the results
8. Perform the Bating operation for the given pelt in Drum and record the results
9. Perform the Pickling operation for the given pelt in Drum and record the results
10. Perform the Scudding operation for the given pelt and record the results

11. Perform the sammying for the given wet blue sides?
12. Perform the shaving for the given wet blue sides?
13. Do re chroming for the given wet blue stock?
14. Perform retanning for the given Leathers?
15. Do Neutralisation for the given wetblue to make Grain Garment Leather?
16. Perform the dyeing process f to produce brown shade for the given crust leather?
17. Do the Glaze finish for the given goat dyed crust?
18. Do the Resin finish for the given upper dyed crust?
19. Do Glazing for the given Finished Leather?
20. Perform the assortment for the given finished Leathers?
