

# FINISHED LEATHER MAKER

## COMPETENCY BASED CURRICULUM

(Duration: 2 Yrs.)

## APPRENTICESHIP TRAINING SCHEME (ATS)

NSQF LEVEL- 4



## SECTOR – APPAREL



GOVERNMENT OF INDIA  
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP  
DIRECTORATE GENERAL OF TRAINING



Directorate General of Training



**Skill India**  
कौशल भारत - कुशल भारत

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(Revised in 2018)

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Developed By

Ministry of Skill Development and Entrepreneurship

Directorate General of Training

**CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE**

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The DGT sincerely expresses appreciation for the contribution of the Industry, State Directorate, Trade Experts and all others who contributed in revising the curriculum. Special acknowledgement to the following industries/organizations who have contributed valuable inputs in revising the curricula through their expert members:

Special acknowledgement is extended by DGT to the following expert members who had contributed immensely in this curriculum.

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**1.1 Apprenticeship Training Scheme under Apprentice Act 1961**

The Apprentices Act, 1961 was enacted with the objective of regulating the programme of training of apprentices in the industry by utilizing the facilities available therein for imparting on-the-job training. The Act makes it obligatory for employers in specified industries to engage apprentices in designated trades to impart Apprenticeship Training on the job in industry to school leavers and person having National Trade Certificate(ITI pass-outs) issued by National Council for Vocational Training (NCVT) to develop skilled manpower for the industry. There are four categories of apprentices namely; **trade apprentice, graduate, technician and technician (vocational) apprentices.**

Qualifications and period of apprenticeship training of **trade apprentices** vary from trade to trade. The apprenticeship training for trade apprentices consists of basic training followed by practical training. At the end of the training, the apprentices are required to appear in a trade test conducted by NCVT and those successful in the trade tests are awarded the National Apprenticeship Certificate.

The period of apprenticeship training for graduate (engineers), technician (diploma holders and technician (vocational) apprentices is one year. Certificates are awarded on completion of training by the Department of Education, Ministry of Human Resource Development.

**1.2 Changes in Industrial Scenario**

Recently we have seen huge changes in the Indian industry. The Indian Industry registered an impressive growth during the last decade and half. The number of industries in India have increased manifold in the last fifteen years especially in services and manufacturing sectors. It has been realized that India would become a prosperous and a modern state by raising skill levels, including by engaging a larger proportion of apprentices, will be critical to success; as will stronger collaboration between industry and the trainees to ensure the supply of skilled workforce and drive development through employment. Various initiatives to build up an adequate infrastructure for rapid industrialization and improve the industrial scenario in India have been taken.

### **1.3 Reformation**

The Apprentices Act, 1961 has been amended and brought into effect from 22<sup>nd</sup> December, 2014 to make it more responsive to industry and youth. Key amendments are as given below:

- Prescription of number of apprentices to be engaged at establishment level instead of trade-wise.
- Establishment can also engage apprentices in optional trades which are not designated, with the discretion of entry level qualification and syllabus.
- Scope has been extended also to non-engineering occupations.
- Establishments have been permitted to outsource basic training in an institute of their choice.
- The burden of compliance on industry has been reduced significantly.



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**2.1 GENERAL**

Directorate General of Training (DGT) under Ministry of Skill Development & Entrepreneurship offers range of vocational training courses catering to the need of different sectors of economy/ Labour market. The vocational training programmes are delivered under aegis of National Council of Vocational Training (NCVT). Craftsman Training Scheme (CTS) and Apprenticeship Training Scheme (ATS) are two pioneer programmes of NCVT for propagating vocational training.

Finished Leather Maker trade under ATS is one of the most popular courses delivered nationwide through Electricity Boards. The course is of two years (02 Blocks) duration. It mainly consists of Domain area and Core area. In the Domain area Trade Theory & Practical impart professional - skills and knowledge, while Core area - Workshop Calculation and science, Engineering Drawing and Employability Skills imparts requisite core skills & knowledge and life skills. After passing out the training programme, the trainee is being awarded National Apprenticeship Certificate (NAC) by NCVT having worldwide recognition.

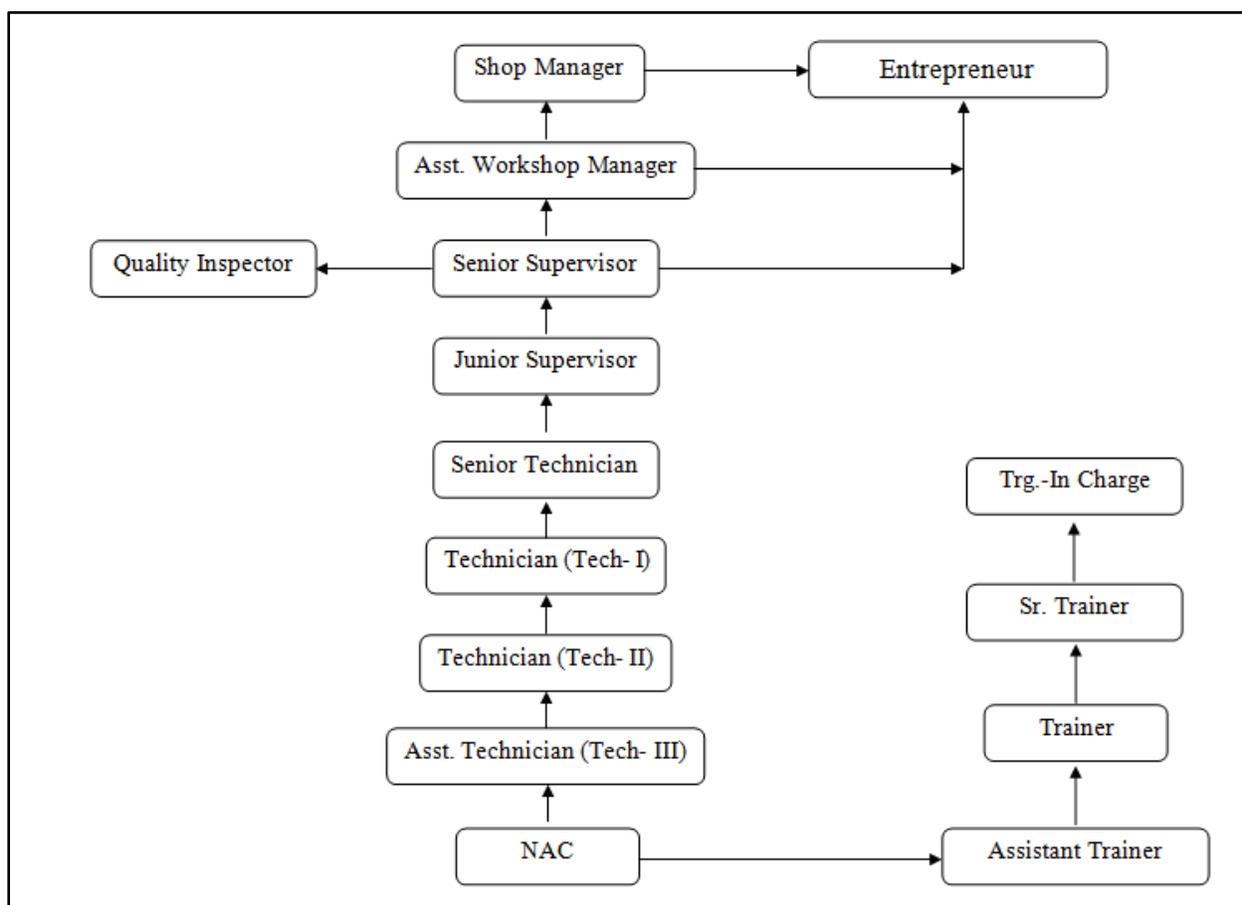
**Broadly candidates need to demonstrate that they are able to:**

- Read & interpret technical parameters/document, plan and organize work processes, identify necessary materials and tools;
- Perform task with due consideration to safety rules, accident prevention regulations and environmental protection stipulations;
- Apply professional skill, knowledge, core skills & employability skills while performing jobs and solve problem during execution.
- Document the technical parameters related to the task undertaken.

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### 2.2 CAREER PROGRESSION PATHWAYS:

- Indicative pathways for vertical mobility.



### 2.3 COURSE STRUCTURE:

Table below depicts the distribution of training hours across various course elements during a period of two years (*Basic Training and On-Job Training*): -

**Total training duration details: -**

Time (in months)	1-3	4-12	13-15	16-24
Basic Training	Block- I	-----	Block - II	-----
Practical Training (On - job training)	----	Block - I	-----	Block - II

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### A. Basic Training

For 02 yrs. Course (Engg) :-(**Total 06 months:** 03 months in 1<sup>st</sup>yr. + 03 months in 2<sup>nd</sup> yr.)

For 01 yr. course (Engg) :-(**Total 03 months:** 03 months in 1<sup>st</sup>yr.)

S No.	Course Element	Total Notional Training Hours	
		For 02 Yrs. course	For 01 Yr. course
1.	Professional Skill (Trade Practical)	550	275
2.	Professional Knowledge (Trade Theory)	240	120
3.	Workshop Calculation & Science	40	20
4.	Engineering Drawing	60	30
5.	Employability Skills	110	55
	<b>Total (Including internal assessment)</b>	<b>1000</b>	<b>500</b>

### B. On-Job Training:-

For 02 yrs. Course (Engg) :-(**Total 18 months:** 09 months in 1<sup>st</sup>yr. + 09 months in 2<sup>nd</sup> yr.)

Notional Training Hours for On-Job Training: 3120 Hrs.

For 01 yr. course (Engg) :-( **Total 12 months**)

Notional Training Hours for On-Job Training: 2080 Hrs.

### C. Total training hours:-

Duration	Basic Training	On-Job Training	Total
<b>For 02 yrs. course</b> (Engg)	1000 hrs.	3120 hrs.	4120 hrs.
<b>For 01 yr. course</b> (Engg)	500 hrs.	2080 hrs.	2580 hrs.

## 2.4 ASSESSMENT & CERTIFICATION:

The trainee will be tested for his skill, knowledge and attitude during the period of course and at the end of the training programme as notified by Govt of India from time to time. The Employability skills will be tested in first two semesters only.

a) The **Internal assessment** during the period of training will be done by **Formative assessment method** by testing for assessment criteria listed against learning outcomes. The training

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institute have to maintain individual *trainee portfolio* as detailed in assessment guideline (section-2.4.2). The marks of internal assessment will be as per the template (Annexure – II).

b) The final assessment will be in the form of summative assessment method. The All India Trade Test for awarding NAC will be conducted by NCVT on completion of course as per guideline of Govt of India. The pattern and marking structure is being notified by govt of India from time to time. **The learning outcome and assessment criteria will be basis for setting question papers for final assessment. The examiner during final examination will also check individual trainee's profile as detailed in assessment guideline (section-2.4.2) before giving marks for practical examination.**

### **2.4.1 PASS REGULATION**

The minimum pass percent for Practical is 60% & minimum pass percent for Theory subjects 40%. The candidate pass in each subject conducted under all India trade test.

### **2.4.2 ASSESSMENT GUIDELINE**

Appropriate arrangements should be made to ensure that there will be no artificial barriers to assessment. The nature of special needs should be taken into account while undertaking assessment. Due consideration should be given while assessing for team work, avoidance/reduction of scrap/wastage and disposal of scarp/wastage as per procedure, behavioral attitude, sensitivity to environment and regularity in training. The sensitivity towards OSHE and self-learning attitude are to be considered while assessing competency.

Assessment will be evidence based comprising the following:

- Job carried out in labs/workshop
- Record book/ daily diary
- Answer sheet of assessment
- Viva-voce
- Progress chart
- Attendance and punctuality
- Assignment
- Project work

Evidences of internal assessments are to be preserved until forthcoming semester examination for audit and verification by examination body. The following marking pattern to be adopted while assessing:

<b>Performance Level</b>	<b>Evidence</b>
(a) Weightage in the range of 60 -75% to be allotted during assessment	

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<p>For performance in this grade, the candidate with occasional guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of an acceptable standard of craftsmanship.</p>	<ul style="list-style-type: none"><li>• Demonstration of good skill in the use of hand tools, machine tools and workshop equipment</li><li>• Below 70% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards.</li><li>• A fairly good level of neatness and consistency in the finish</li><li>• Occasional support in completing the project/job.</li></ul>
<p>(b) Weightage in the range of above 75% - 90% to be allotted during assessment</p>	
<p>For this grade, the candidate, with little guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of a reasonable standard of craftsmanship.</p>	<ul style="list-style-type: none"><li>• Good skill levels in the use of hand tools, machine tools and workshop equipment</li><li>• 70-80% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards.</li><li>• A good level of neatness and consistency in the finish</li><li>• Little support in completing the project/job</li></ul>
<p>(c) Weightage in the range of above 90% to be allotted during assessment</p>	
<p>For performance in this grade, the candidate, with minimal or no support in organization and execution and with due regard for safety procedures and practices, has produced work which demonstrates attainment of a high standard of craftsmanship.</p>	<ul style="list-style-type: none"><li>• High skill levels in the use of hand tools, machine tools and workshop equipment</li><li>• Above 80% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards.</li><li>• A high level of neatness and consistency in the finish.</li><li>• Minimal or no support in completing the project.</li></ul>

**Brief description of Job roles:**

Line Pitman, Leather; Lime Yard Jobber; Paddle Man Leather prepares lime solution in pits, tanks or vats and treats hides and skins by thoroughly soaking them in lime solution to soften hair for dehairing. Fills pit or tank with required quantity of water; prepares lime solution by mixing specified quantity of lime powder with water; pours lime solution in pit or tank containing water and stirs with stick for proper mixing of solution with water; collects salted skins and cleans them with water to remove salt and other foreign matter; dumps cleaned skins in lime tank to soak thoroughly (completely immersed in lime solution for a specified time); changes positions of skins or hides periodically in tank to ensure that all skins and hides are properly soaked in all parts; transfers periodically lime soaked skins from tank to tank containing different strengths of lime liquor to complete cycle of proper treatment of skin for further processing, removes lime treated stock from tank and stalks them separately, empties and cleans tank. May de-hair skin or hide. May tan leather.

Leather Currier treats tanned leather with fats and oils, softens it by flexing, rolls it under pressure for converting into finished form. Scrapes hide with tool to expel moisture and scum left from tanning; applies grease, oil, soap or other compounds to hide by hand or machine; softens hide by stroking it with knife blade, flexing it over rigid blade or by rolling it under pressure in machine; rubs hair side of hide against itself to bring out grain; removes rough spots and blemishes from hides by hand scraping or by machine; polishes hide by hand or machine. May also dye and stain leather. May operate staking, buffing and glazing machine.

**Reference NCO 2015:**

- i) 7535.0300 - Lime Pitman, Leather,
- ii) 7535.1300 - Leather, Currier

**4. NSQF LEVEL COMPLIANCE**

NSQF level for Finished Leather Maker trade under ATS: **Level 4**

As per notification issued by Govt. of India dated- 27.12.2013 on National Skill Qualification Framework total 10 (Ten) Levels are defined.

Each level of the NSQF is associated with a set of descriptors made up of five outcome statements, which describe in general terms, the minimum knowledge, skills and attributes that a learner needs to acquire in order to be certified for that level.

Each level of the NSQF is described by a statement of learning outcomes in five domains, known as level descriptors. These five domains are:

- a. Process
- b. professional knowledge,
- c. professional skill,
- d. core skill and
- e. Responsibility.



The Broad Learning outcome of Finished Leather Maker under ATS mostly matches with the Level descriptor at Level- 4.

The NSQF level-4 descriptor is given below:

Level	Process Required	Professional Knowledge	Professional Skill	Core Skill	Responsibility
Level 4	Work in familiar, predictable, routine, situation of clear choice.	Factual knowledge of field of knowledge or study	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts	Language to Communicate written or oral, with required clarity, skill to basic Arithmetic and algebraic principles, basic understanding of social political and natural environment.	Responsibility for own work and learning.

**5. GENERAL INFORMATION**

<b>Name of the Trade</b>	<b>Finished Leather Maker</b>
<b>NCO-2015</b>	7535.0300, 7535.1300
<b>NSQF Level</b>	Level – 4
<b>Duration of Apprenticeship Training</b> (Basic Training + On-Job Training)	Two years (02 Blocks each of one year duration).
<b>Duration of Basic Training</b>	a) Block –I : 3 months b) Block – II : 3 months <b>Total duration of Basic Training: 6 months</b>
<b>Duration of On-Job Training</b>	a) Block–I: 9 months b) Block–II : 9 months <b>Total duration of Practical Training: 18 months</b>
<b>Entry Qualification</b>	Pass in 8th class examination under 10+2+3 system or 2 classes Below Matriculation Examination or equivalent.
<b>Selection of Apprentices</b>	The apprentices will be selected as per Apprenticeship Act amended time to time.
<b>Instructors Qualification for Basic Training</b>	As per ITI instructors qualifications as amended time to time for the specific trade.
<b>Infrastructure for Basic Training</b>	As per related trade of ITI
<b>Examination</b>	The internal examination/ assessment will be held on completion of each block. Final examination for all subjects will be held at the end of course and same will be conducted by NCVT.
<b>Rebate to Ex-ITI Trainees</b>	01 year
<b>CTS trades eligible for FINISHED LEATHER MAKER Apprenticeship</b>	Finished Leather Maker

**Note:**

- Industry may impart training as per above time schedule for different block, however this is not fixed. The industry may adjust the duration of training considering the fact that all the components under the syllabus must be covered. However the flexibility should be given keeping in view that no safety aspects is compromised.
- For imparting Basic Training the industry to tie-up with ITIs having such specific trade and affiliated to NCVT.

**6.1 GENERIC LEARNING OUTCOME**

The following are minimum broad Common Occupational Skills/ Generic Learning Outcome after completion of the Finished Leather Maker course of 02 years duration under ATS.

**Block I & II:-**

1. Recognize & comply safe working practices, environment regulation and housekeeping.
2. Understand and explain different mathematical calculation & science in the field of study including basic electrical and apply in day to day work. *[Different mathematical calculation & science - Basic Mathematics, Material Science, Mass, Weight and Density, Mensuration, Elasticity, Heat & Temperature, Basic Electricity etc.]*
3. Interpret specifications, different engineering drawing and apply for different application in the field of work. *[Different engineering drawing- Free hand sketching of anatomical structure of different hides and skins, Drawing sketches of tannery machines, Freehand drawing of hand tools and accessories used in tanning operations etc.]*
4. Select and ascertain measuring instrument and measure dimension of components and record data.
5. Explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.
6. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
7. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
8. Plan and organize the work related to the occupation.

**6.2 SPECIFIC LEARNING OUTCOME**

**Block – I**

1. Care and maintenance of hand tools & machines used in tannery
2. Selection and grading of raw materials
3. Preparation of season and application of season by brushe /drying, trimming and rolling.
4. Practice in soaking, liming, de- liming of hides and skins. Further practice in unhairing, fleshing, & scudding machines.
5. Practice in bating, pickling, de-pickling, de-greasing and other per-tanning operations.

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6. Vegetable tanning of different leathers- sole leather, Kattai leather, E.I. leather, belting leather and other industrial leathers.
7. Preparation of season for Kattai & Bunwar leathers, application of season by brush/spray, glazing and hot plating of above.
8. Practice in chrome tanning of various types of leather and preparation of chrome liquors.
9. Practice in assortment of wet-blue leathers and E. I. Leathers for the process of different types of finishing.
10. Practice in performing the following operations on various machines:- viz., Sammying, Splitting, Shaving, Setting, Drying, Staking, Buffing, Spraying, Glazing, Embossing, Measuring.

### **B. BLOCK – II**

11. Operate sophisticated machines available in the Tannery
12. Practice in assortment of crust leathers for finishing
13. Finishing of different types of leathers like: Upper leathers, rattan uppers, glazed kid-garment leathers suede leathers, nappa leathers, diaphragm leathers, lining leathers, assiline- semi- aniline leathers and types of leathers.
14. Preparation of seasons for glaze finish/resin finish.
15. Demonstration of vacuum drying and paste drying (wherever facilities are available)
16. Practice in ageing and saw dusting of leather. Demonstration of staking with the help of machine. Practice in straining or toggling of leather. Practice in trimming and curst sorting
17. Application of season by brush, ordinary spray or auto-spray practice in drying, glazing, & ironing/hot plating or embossing measuring leather by hand and machines.

**Note:** Learning outcomes are reflection of total competencies of a trainee and assessment will be carried out as per assessment criteria.

## 7. LEARNING OUTCOME WITH ASSESSMENT CRITERIA

GENERIC LEARNING OUTCOME	
LEARNING OUTCOMES	ASSESSMENT CRITERIA
1. Recognize & comply safe working practices, environment regulation and housekeeping.	1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements.
	1.2 Recognize and report all unsafe situations according to site policy.
	1.3 Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.
	1.4 Identify, handle and store / dispose off dangerous/unsalvageable goods and substances according to site policy and procedures following safety regulations and requirements.
	1.5 Identify and observe site policies and procedures in regard to illness or accident.
	1.6 Identify safety alarms accurately.
	1.7 Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.
	1.8 Identify and observe site evacuation procedures according to site policy.
	1.9 Identify Personal Protective Equipment (PPE) and use the same as per related working environment.
	1.10 Identify basic first aid and use them under different circumstances.
	1.11 Identify different fire extinguisher and use the same as per requirement.
	1.12 Identify environmental pollution & contribute to avoidance of same.
	1.13 Take opportunities to use energy and materials in an environmentally friendly manner
	1.14 Avoid waste and dispose waste as per procedure
	1.15 Recognize different components of 5S and apply the same in the working environment.
2. Understand, explain different mathematical calculation & science in the field of study including basic electrical and	2.1 Explain concept of basic science related to the field such as Material science, Mass, weight, density, speed, velocity, heat & temperature, force, motion, pressure, heat treatment, centre of gravity, friction.
	2.2 Measure dimensions as per drawing

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<p>apply in day to day work. [Different mathematical calculation &amp; science - Basic Mathematics, Material Science, Mass, Weight and Density, Mensuration, Elasticity, Heat &amp; Temperature, Basic Electricity etc.]</p>	2.3 Use scale/ tapes to measure for fitting to specification.
	2.4 Comply given tolerance.
	2.5 Prepare list of appropriate materials by interpreting detail drawings and determine quantities of such materials.
	2.6 Ensure dimensional accuracy of assembly by using different instruments/gauges.
	2.7 Explain basic electricity, insulation & earthing.
<p>3. Interpret specifications, different engineering drawing and apply for different application in the field of work. [Different engineering drawing- Free hand sketching of anatomical structure of different hides and skins, Drawing sketches of tannery machines, Freehand drawing of hand tools and accessories used in tanning operations etc.]</p>	3. 1. Read & interpret the information on drawings and apply in executing practical work.
	3. 2. Read & analyse the specification to ascertain the material requirement, tools, and machining /assembly /maintenance parameters.
	3. 3. Encounter drawings with missing/unspecified key information and make own calculations to fill in missing dimension/parameters to carry out the work.
<p>4. Select and ascertain measuring instrument and measure dimension of components and record data.</p>	4.1 Select appropriate measuring instruments as per tool list.
	4.2 Ascertain the functionality & correctness of the instrument.
	4.3 Measure dimension of the components & record data to analyse the with given drawing/measurement.
<p>5. Explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity &amp; quality.</p>	5.1 Explain the concept of productivity and quality tools and apply during execution of job.
	5.2 Understand the basic concept of labour welfare legislation and adhere to responsibilities and remain sensitive towards such laws.
	5.3 Knows benefits guaranteed under various acts
<p>6. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available</p>	6.1 Explain the concept of energy conservation, global warming, pollution and utilize the available recourses optimally & remain sensitive to avoid environment pollution.

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resources.	6.2 Dispose waste following standard procedure.
7. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	7. 1. Explain personnel finance and entrepreneurship.
	7. 2. Explain role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.
	7. 3. Prepare Project report to become an entrepreneur for submission to financial institutions.
8. Plan and organize the work related to the occupation.	8. 1. Use documents, drawings and recognize hazards in the work site.
	8. 2. Plan workplace/ assembly location with due consideration to operational stipulation
	8. 3. Communicate effectively with others and plan project tasks
	8. 4. Assign roles and responsibilities of the co-trainees for execution of the task effectively and monitor the same.
<b>SPECIFIC OUTCOME</b>	
<b><u>Block-I &amp; II (Section:10 in the competency based curriculum)</u></b>	
<p><i>Assessment Criteria i.e. the standard of performance, for each specific learning outcome mentioned under <b>block – I</b> (section: 10) must ensure that the trainee works in familiar surroundings where nature of job is routine type, situation of clear choice &amp; predictable. Assessment criteria should broadly cover the aspect of <b>Planning</b> (Identify, ascertain, etc.); <b>Execution</b> (apply factual knowledge of field of knowledge, recall and demonstrate practical skill during performing the work in routine and repetitive in narrow range of application, using appropriate rule and tool, complying basic arithmetic and algebraic principles and language to communicate in written or oral with required clarity; <b>Checking/ Testing</b> to ensure functionality during the assessment of each outcome. The assessments parameters must also ascertain that the candidate is responsible for his/her own work and learning.</i></p>	

**BASIC TRAINING (Block – I)**

**Duration: (03) Three Months**

<b>Week No.</b>	<b>Professional Skills (Trade Practical)</b>	<b>Professional Knowledge (Trade Theory)</b>
1	Practice in soaking in pits/Vats/Drums for different types of lather for vegetable tanning.	Importance of safety – safety precautions- elementary first aid – treatment for electric shock, burns etc., accidents do not happen, they are caused. Importance of the trade in the development of industrial economy. During this period the apprentices should be taken round to various sections to acquaint them with the safety precautions to be observed.
2-3	Practice in limiting in pits/vats/Drums for different types of leathers of vegetable tanning.	Identification of different types of skins and hides Grading of different types of skins and hides
4-5	Practice in Unhairing, fleshing, scudding by hand.	Elementary knowledge of anatomical structure of hides and skins of buffallow, cow, goat and sheep
6-7	Practice in de-lining in pits/vats/drum for different types of leathers for vegetable tanning.	l laying methods –their merits and demerits, various types of curing, their advantages and disadvantages Use of antiseptics, salt stains, germicides
8	Practice in vegetable tanning (E.I. Tanning) of leathers.	Soaking methods, use of preservatives, wetting agents, methods of Liming, selection of de-lining agents, methods of de- lining. Necessity of bating, factors of bating, necessity of pickling, de- pickling and degreasing
9	Practice in oiling, setting, hooking and drying of leathers.	General working principles of fleshing machine, scudding machine, maintenance of machines and probable repairs
10	Practice in trimming of leathers.	Vegetable tanning materials, classification of vegetable tannings, tans, and non-tans, basic controls of vegetable tanning such as pH barkometer reading, salt concentration & temperature. Leaching and manufacture of liquid, solid and spray dried extracts

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11-12	Practice in staking and buffing of leathers. Demonstration of setting and rolling operations for heavy leather wherever facilities are available.	Preparation of chrome liquors, elementary knowledge of basicity and masking of chrome liquor
13	<b>Internal Assessment/Examination 03days</b>	

**Note:** - *More emphasis to be given on video/real-life pictures during theoretical classes. Some real-life pictures/videos of related industry operations may be shown to the trainees to give a feel of Industry and their future assignment.*



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**BASIC TRAINING (Block – II)**

**Duration: (03) Three Months**

<b>Week No.</b>	<b>Professional Skills (Trade Practical)</b>	<b>Professional Knowledge (Trade Theory)</b>
1-2	Practice in soaking in pits/vats/drums for different types of leather for chrome tanning.	Principles involved in the assortment of wet and blue hides and skins, general principles, theoretical knowledge of sammying splitting & shaving machine with drawings & sketches (free- hand). Their working and general maintenance, their probable repairs
3-4	Practice in liming in pits/vats/ drums for different types of leather for chrome tanning.	Principles involved in the neutralization. Chemicals used for neutralization, Dyes. Their general classification dying of vegetable & chrome tanned leathers. Chrome retan leathers. Semi-chrome leathers and others types of leathers General principles of setting- drying – different types of drying such as nailing, toggling, paste drying, vacuum drying. Saw dusting, staking, straining and buffing
5	Practice fleshing, and scudding by hand.	Assorting crust leathers for various types of finishing leather finishing materials, casein, gelatine, shellac, linseed, gum, acrylic resins , nitrocellulose lacquer, vinyl, resin, blood, egg-yoke etc
6-8	Practice in de- lining in pits/vats/drum for different types of leathers for chrome tanning.	Basic elements of formulation of leather finishes Aqueous leather finish. Protein finish, resin finish. Non-aqueous leather finishes- nitrocellulose lacquer finish, poly urethane finish, vinyl finishes etc
9-10	Practice in chrome tanning of leathers.	Finishing of upper leathers , retan leathers, garment, leathers, glazed kid leathers, aniline and semi aniline leathers-patent leathers and other types of leathers
11-12	Practice in sammying by drying.	Gardening and assortment of Finished Leather Types of tools and equipment used and basic knowledge of the process
13	<b>Internal Assessment 03 days</b>	

**Note:** - More emphasis to be given on video/real-life pictures during theoretical classes. Some real-life pictures/videos of related industry operations may be shown to the trainees to give a feel of Industry and their future assignment.

9.1 WORKSHOP CALCULATION SCIENCE & ENGINEERING DRAWING

Block – I		
Sl. No.	Workshop Calculation and Science (Duration: - 20 hrs.)	Engineering Drawing (Duration: - 30 hrs.)
1.	<b>Unit:</b> Systems of unit- FPS, CGS, MKS/SI unit, unit of length, Mass and time, Conversion of units	Free hand sketching of anatomical structure of different hides and skins
2.	<b>Basic Mathematics</b> - BODMAS rule Fraction-Addition, Subtraction, multiplication and Division-Problem solving, Decimal-Addition. Simple calculation using Scientific Calculator.	Drawing sketches of tannery machines
3.	Conversion of Fraction to Decimal and vice-versa.	Freehand drawing of hand tools and accessories used in tanning operations e. g. Fleshing knives, scudding knives, unhairing knives, Slickers, tanning drums, fat liquoring drums
4.	<b>Percentage:</b> Introduction, Simple calculation. Changing percentage to fraction and decimal & vice-versa.	
5.	<b>Material Science :</b> Definition, properties (physical & mechanical) and uses of Metal, Non-metal, Alloy & Insulator. Types of ferrous and Non-ferrous metals. Difference between Ferrous and Non-Ferrous metals.	

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Block – II		
Sl. No.	Workshop Calculation and Science (Duration: - 20 hrs.)	Engineering Drawing (Duration: - 30 hrs.)
1.	<p><b>Mass, Weight and Density:</b> Mass, Unit of Mass, Weight, difference between mass and weight.</p> <p>Density, unit of density. Relation between mass, weight &amp; density.</p> <p>Simple problems related to mass, weight, and density.</p>	Revision of work done during the previous year
2.	<p><b>Mensuration :</b></p> <p>Area and perimeter of square, rectangle, parallelogram, triangle, circle, semi circle, Volume of solids – cube, cuboid, cylinder and Sphere.</p> <p>Surface area of solids –</p>	Drawing sketches of tanning machines
3.	<p><b>Elasticity:</b></p> <p>Elastic &amp; Plastic material. Stress &amp; strain and their units. Young's modulus.</p> <p>Ultimate stress and breaking stress.</p>	Free-hand drawing of unhairing, scudding and fleshing machines and their various parts
4.	<p><b>Heat &amp; Temperature:</b></p> <p>Heat and temperature, their units, difference between heat and temperature, boiling point, melting point, Scale of temperature, relation between different scale of temperature.</p> <p>Thermometer, pyrometer.</p> <p>Transmission of heat, conduction, convection, radiation.</p>	
5.	<p><b>Basic Electricity:</b></p> <p>Introduction and use of Electricity.</p> <p>AC, DC &amp; their comparisons.</p> <p>Current, Voltage, Resistance &amp; their units.</p> <p>Power, Energy &amp; their units.</p> <p>Insulator and conductors &amp; their uses.</p>	

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### 9.2 EMPLOYABILITY SKILLS

(DURATION: - 110 HRS.)

<b>Block – I</b> (Duration – 55 hrs.)	
<b>1. English Literacy</b> Duration : 20 Hrs. <span style="float: right;">Marks : 09</span>	
<b>Pronunciation</b>	Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)
<b>Functional Grammar</b>	Transformation of sentences, Voice change, Change of tense, Spellings.
<b>Reading</b>	Reading and understanding simple sentences about self, work and environment
<b>Writing</b>	Construction of simple sentences Writing simple English
<b>Speaking / Spoken English</b>	Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.
<b>2. I.T. Literacy</b> Duration : 20 Hrs. <span style="float: right;">Marks : 09</span>	
<b>Basics of Computer</b>	Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.
<b>Computer Operating System</b>	Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.
<b>Word processing and Worksheet</b>	Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion & creation of Tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets.
<b>Computer Networking</b>	Basic of computer Networks (using real life examples), Definitions of

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<b>and Internet</b>	Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks), Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication. Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.
<b>3. Communication Skills</b>	
Duration : 15 Hrs. <span style="float: right;">Marks : 07</span>	
<b>Introduction to Communication Skills</b>	Communication and its importance Principles of Effective communication Types of communication - verbal, non verbal, written, email, talking on phone. Non verbal communication -characteristics, components-Para-language Body language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.
<b>Listening Skills</b>	Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening. Triple- A Listening - Attitude, Attention & Adjustment. Active Listening Skills.
<b>Motivational Training</b>	Characteristics Essential to Achieving Success. The Power of Positive Attitude. Self awareness Importance of Commitment Ethics and Values Ways to Motivate Oneself Personal Goal setting and Employability Planning.
<b>Facing Interviews</b>	Manners, Etiquettes, Dress code for an interview Do's & Don'ts for an interview.
<b>Behavioral Skills</b>	Problem Solving Confidence Building Attitude
<b>Block – II</b> <b>Duration – 55 hrs.</b>	
<b>4. Entrepreneurship Skills</b>	
Duration : 15 Hrs. <span style="float: right;">Marks : 06</span>	
<b>Concept of Entrepreneurship</b>	Entrepreneur - Entrepreneurship - Enterprises:-Conceptual issue Entrepreneurship vs. management, Entrepreneurial motivation. Performance & Record, Role & Function of entrepreneurs in relation

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	to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.
<b>Project Preparation &amp; Marketing analysis</b>	Qualities of a good Entrepreneur, SWOT and Risk Analysis. Concept & application of PLC, Sales & distribution Management. Different Between Small Scale & Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.
<b>Institutions Support</b>	Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.
<b>Investment Procurement</b>	Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure - Loan procurement - Banking Processes.
<b>5. Productivity</b>	
Duration: 10 Hrs. <span style="float: right;">Marks : 05</span>	
<b>Benefits</b>	Personal / Workman - Incentive, Production linked Bonus, Improvement in living standard.
<b>Affecting Factors</b>	Skills, Working Aids, Automation, Environment, Motivation - How improves or slows down.
<b>Comparison with developed countries</b>	Comparative productivity in developed countries (viz. Germany, Japan and Australia) in selected industries e.g. Manufacturing, Steel, Mining, Construction etc. Living standards of those countries, wages.
<b>Personal Finance Management</b>	Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.
<b>6. Occupational Safety, Health and Environment Education</b>	
Duration : 15 Hrs. <span style="float: right;">Marks : 06</span>	
<b>Safety &amp; Health</b>	Introduction to Occupational Safety and Health importance of safety and health at workplace.
<b>Occupational Hazards</b>	Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.
<b>Accident &amp; safety</b>	Basic principles for protective equipment. Accident Prevention techniques - control of accidents and safety measures.
<b>First Aid</b>	Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person.

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<b>Basic Provisions</b>	Idea of basic provision legislation of India. safety, health, welfare under legislative of India.
<b>Ecosystem</b>	Introduction to Environment. Relationship between Society and Environment, Ecosystem and Factors causing imbalance.
<b>Pollution</b>	Pollution and pollutants including liquid, gaseous, solid and hazardous waste.
<b>Energy Conservation</b>	Conservation of Energy, re-use and recycle.
<b>Global warming</b>	Global warming, climate change and Ozone layer depletion.
<b>Ground Water</b>	Hydrological cycle, ground and surface water, Conservation and Harvesting of water.
<b>Environment</b>	Right attitude towards environment, Maintenance of in -house environment.
<b>7. Labour Welfare Legislation</b>	
Duration : 05 Hrs. <span style="float: right;">Marks : 03</span>	
<b>Welfare Acts</b>	Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.
<b>8. Quality Tools</b>	
Duration : 10 Hrs. <span style="float: right;">Marks : 05</span>	
<b>Quality Consciousness</b>	Meaning of quality, Quality characteristic.
<b>Quality Circles</b>	Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.
<b>Quality Management System</b>	Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.
<b>House Keeping</b>	Purpose of House-keeping, Practice of good Housekeeping.
<b>Quality Tools</b>	Basic quality tools with a few examples.

## 10. DETAILS OF COMPETENCIES (ON-JOB TRAINING)

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### BROAD LEARNING TO BE COVERED IN INDUSTRY FOR FINISHED LEATHER MAKER TRADE:

The **competencies/ specific outcomes** on completion of On-Job Training are detailed below: -

#### Block – I

1. Care and maintenance of hand tools & machines used in tannery
2. Selection and grading of raw materials
3. Preparation of season and application of season by brushes /drying, trimming and rolling.
4. Practice in soaking, liming, de- liming of hides and skins. Further practice in unhairing, fleshing, & scudding machines.
5. Practice in bating, pickling, de-pickling, de-greasing and other per-tanning operations.
6. Vegetable tanning of different leathers- sole leather, Kattai leather, E.I. leather, belting leather and other industrial leathers.
7. Preparation of season for Kattai & Bunwar leathers, application of season by brush/spray, glazing and hot plating of above.
8. Practice in chrome tanning of various types of leather and preparation of chrome liquors.
9. Practice in assortment of wet-blue leathers and E. I. Leathers for the process of different types of finishing.
10. Practice in performing the following operations on various machines:- viz., Sammying, Splitting, Shaving, Setting, Drying, Staking, Buffing, Spraying, Glazing, Embossing, Measuring.

#### B. BLOCK – II

11. Operate sophisticated machines available in the Tannery
12. Practice in assortment of crust leathers for finishing
13. Finishing of different types of leathers like: Upper leathers, rattan uppers, glazed kid-garment leathers suede leathers, nappa leathers, diaphragm leathers, lining leathers, assiline- semi- aniline leathers and types of leathers.
14. Preparation of seasons for glaze finish/resin finish.
15. Demonstration of vacuum drying and paste drying (wherever facilities are available)

## ***Finished Leather Maker***

16. Practice in ageing and saw dusting of leather. Demonstration of staking with the help of machine. Practice in straining or toggling of leather. Practice in trimming and curst sorting
17. Application of season by brush, ordinary spray or auto-spray practice in drying, glazing, & ironing/hot plating or embossing measuring leather by hand and machines.

**Note:**

1. Industry must ensure that above mentioned competencies are achieved by the trainees during their on job training.
2. In addition to above competencies/ outcomes industry may impart additional training relevant to the specific industry.



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**INFRASTRUCTURE FOR PROFESSIONAL SKILL & PROFESSIONAL KNOWLEDGE**

<b>FINISHED LEATHER MAKER</b>			
<b>LIST OF TOOLS AND EQUIPMENT for Basic Training (For 20 Apprentices)</b>			
<b>S No.</b>	<b>Name of the Tools and Equipment</b>	<b>Specification</b>	<b>Quantity</b>
<b>A. TRAINEES TOOL KIT</b>			
1.	Polypropylene board	40 x 40 x 10 cm	21 nos.
2.	Wooden block	30 x 10 x 10 cm	21 nos.
3.	Wooden clamp	standard size	21 nos.
4.	Set square		21 nos.
5.	Compass		21 nos.
6.	Divider	20 mm	21 nos.
7.	Scissor	150 mm	21 nos.
8.	Scissor	300 mm	21 nos.
9.	Scissors for cutting zig - zig	200 mm	21 nos.
10.	Sniper	6"	21 nos.
11.	Hammer Big		21 nos.
12.	Hammer Small		21 nos.
13.	Ladies magnetic hammer	10 cm.	21 nos.
14.	Mallet		21 nos.
15.	Pincers	10 cm	21 nos.
16.	Iron creaser doubles		21 nos.
17.	Wooden creaser single		21 nos.
18.	Wooden creaser doubles		21 nos.
19.	Rampis		21 nos.
20.	Curved rampis		21 nos.
21.	Blunt awls		21 nos.
22.	Stitch marking awls		21 nos.
23.	Scriber		21 nos.
24.	Punches	1, 3, 4	21 nos.
<b>B. SHOP TOOLS &amp; EQUIPMENT</b>			
25.	Punch set	no. 1 to 10	05 nos.
26.	Revolving punches		02 set
27.	Punch (for punching holes in metal sheet / strip)	2 mm	05 nos.

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28.	File flat rough	90 mm	05nos.
29.	Stitching comb - assorted	1, 2 and 3 mm	05nos.
30.	Cutting pliers	150 mm	05nos.
31.	Set of screw drivers		02 set
32.	Philips screw driver set		02 set
33.	Eye let setter with die		05nos.
34.	Measuring tape (Cotton / plastic)	2 meter long	05nos.
35.	Gultarashrampi		05 nos.
36.	Half moon shape rampi		05 nos.
37.	Awls		1 nos.
38.	Steel clamp rule	300 mm	05 nos.
39.	Steel clamp rule	600 mm	05 nos.
40.	Pincers	25 cm	01 nos.
41.	Strap cutter		05 nos.
42.	Clicking Knives		05 nos.
43.	Designer Knives		05 nos.
44.	Sniper	2" - 3"	05 nos.
45.	Beading hammer (folding hammer)		05 nos.
46.	Magnetic Hammer	25 cm.	01 nos.
47.	Divider with scale	20 cm.	05 nos.
48.	Leather thickness measuring Gauge (Micro)		04nos.
49.	Bench vice	-0 100 mm	04nos.
50.	Flat chisel	20 mm nose width	04nos.
51.	Horns biyongi		04nos.
52.	Heel iron Electric		02 no.
53.	French curve set		02 set
54.	Modelling tool set (Tracer & modeler bewal && tool, porker maker)		02 set
55.	Glue container and glue brushes		10 nos. each
56.	Press (Iron)		02 no.
57.	Maintenance tool		02 set
<b>C. LIST OF GENERAL MACHINERY</b>			
58.	Card board cutting machine capacity	900 mm (Power Operated)	01 no.
59.	Sewing machine tradle operated Flat bed (Single needle capacity) Power operated		05nos.
60.	Sewing machine power operated heavy duty		01 no.

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61.	Splitting machine upper		01 no.
62.	Stamping die machine		01 no.
63.	Stamping machine table type		01 no.
64.	Cylinder bed sewing machine		01 no.
65.	Post bed sewing machine		01 no.
66.	Zig - Zag stitching machine		01 no.
67.	Skiving machine		01 no.
68.	Strap cutting machine		01 no.
69.	Edge folding machine		01 no.
70.	Roller		01 no.
71.	Splitting machine bottom		01 no.
72.	Hand eye letting machine		01 no.
73.	Bottom setting machine		01 no.
74.	Inter lock machine		01 no.
75.	Edge colouring machine		01 no.
76.	Clicking machine		01 no.
<b>D. SHOP FLOOR FURNITURE AND MATERIALS</b>			
77.	Stools wooden high	450 mm	17nos.
78.	Working desk		17nos.
79.	Working benches		05nos.
80.	Almirahs		02 nos.
81.	Show case		01 no.
82.	Instructors desk and chair		01 set
<b>Note:</b> All the tools and equipment are to be procured as per BIS specification.			

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## **Finished Leather Maker**

### INFRASTRUCTURE FOR WORKSHOP CALCULATION & SCIENCE AND ENGINEERING DRAWING

#### **TRADE: FINISHED LEATHER MAKER**

#### LIST OF TOOLS& EQUIPMENTS FOR -20APPRENTICES

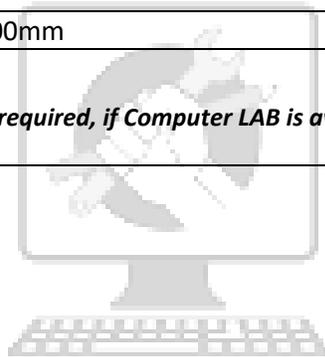
1) **Space Norms** : 45 Sq. m.(For Engineering Drawing)

#### **2) Infrastructure:**

<b>A : TRAINEES TOOL KIT:-</b>			
<b>Sl. No.</b>	<b>Name of the items</b>	<b>Specification</b>	<b>Quantity</b>
1.	Draughtsman drawing instrument box		20+1 set
2.	Set square celluloid 45° (250 X 1.5 mm)		20+1 set
3.	Set square celluloid 30°-60° (250 X 1.5 mm)		20+1 set
4.	Mini drafter		20+1 set
5.	Drawing board (700mm x500 mm) IS: 1444		20+1 set
<b>B : Furniture Required</b>			
<b>Sl. No.</b>	<b>Name of the items</b>	<b>Specification</b>	<b>Quantity</b>
1	Drawing Board		20
2	Models : Solid & cut section		as required
3	Drawing Table for trainees		as required
4	Stool for trainees		as required
5	Cupboard (big)		01
6	White Board (size: 8ft. x 4ft.)		01
7	Trainer's Table		01
8	Trainer's Chair		01

<b>TOOLS &amp; EQUIPMENTS FOR EMPLOYABILITY SKILLS</b>		
<b>Sl. No.</b>	<b>Name of the Equipment</b>	<b>Quantity</b>
1.	Computer (PC) with latest configurations and Internet connection with standard operating system and standard word processor and worksheet software	10 Nos.
2.	UPS - 500VA	10 Nos.
3.	Scanner cum Printer	1 No.
4.	Computer Tables	10 Nos.
5.	Computer Chairs	20 Nos.
6.	LCD Projector	1 No.
7.	White Board 1200mm x 900mm	1 No.

*Note: - Above Tools & Equipments not required, if Computer LAB is available in the institute.*



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FORMAT FOR INTERNAL ASSESSMENT

Name & Address of the Assessor :				Year of Enrollment :										
Name & Address of ITI (Govt./Pvt.) :				Date of Assessment :										
Name & Address of the Industry :				Assessment location: Industry / ITI										
Trade Name :			Semester:	Duration of the Trade/course:										
Learning Outcome:														
Sl. No	Maximum Marks (Total 100 Marks)		15	5	10	5	10	10	5	10	15	15	Total internal assessment Marks	Result (Y/N)
	Candidate Name	Father's/Mother's Name	Safety consciousness	Workplace hygiene	Attendance/ Punctuality	Ability to follow Manuals/ Written instructions	Application of Knowledge	Skills to handle tools & equipment	Economical use of materials	Speed in doing work	Quality in workmanship	VIVA		
1														
2														