



# Leather Processing Supervision Level IV

## Curriculum

**Based on December 2021, Version 4 Occupational  
Standards (OS)**

December, 2021  
Addis Ababa, Ethiopia

## Preface

The reformed TVET-System is an outcome-based system. It utilizes the needs of the labor market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The requirements from the world of work are analyzed and documented – taking into account international benchmarking – as occupational standards (OS).

In the reformed TVET-System, curricula and curriculum development play an important role with regard to quality driven comparable TVET-Delivery. The Curricula help to facilitate the training process in a way, that trainees acquire the set of occupational competences (skills, knowledge and attitude) required at the working place and defined in the occupational standards (OS).

This curriculum has been developed by a group of professional experts from different Regional TVET Bureaus, colleges, Industries, Institutes and universities based on the occupational standard for Leather Processing Level IV.

The curriculum development process has been actively supported and facilitated by **Ministry of Labor and Skills**.

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## TVET-Program Design

### 1.1. TVET-Program Title: Leather Processing Level IV

### 1.2. TVET-Program Description

The Program is designed to develop the necessary attitude, knowledge and skills of the learners to the standard required by the occupation. The contents of this program are in line with the occupational standard. Learners who successfully completed the Program will be qualified to work as a **Supervisor** with competencies elaborated in the respective OS. Graduates of the program will have the required qualification to work in the **Industry Sector** in the field of **Leather Processing**.

The prime objective of this training program is to equip the trainees with the identified competences specified in the OS. Graduates are therefore expected Manage Production Operations, Plan and Implement Production within a Work Area, Test raw materials and products, Design process and product development, perform machines set up for product change, perform production costing and implement and monitor environmentally sustainable work practices in accordance with the performance criteria described in the OS.

### 1.3. TVET-Program Learning Outcomes

The expected outputs of this program are the acquisition and implementation of the following units of competence: –

IND LEP4 01 1121 Manage Production Operations

IND LEP4 02 1121 Plan and Implement Production within a Work Area

IND LEP4 03 1121 Select and Test Raw Materials and Products

IND LEP4 04 1121 Design Process and Product Development

IND LEP4 05 1121 Perform Machine Set up for Product Change

IND LEP4 06 1121 Perform in Production Costing

IND LEP4 07 1121 Implement and monitor environmentally sustainable work practices

#### 1.4. Duration of the TVET-Program

The Program will have duration of 766 **hours** including the on-the-job practice or cooperative training time.

No	Unit competency	On school training		Cooperative Training	Total Hours	Remarks
		Theory	Practical			
1.	Manage Production Operations	24	60		84	
2.	Test Raw Materials and Products	27	60	6	93	
3.	Design Process and Product Development	27	65	6	98	
4.	Plan and Implement Production within a Work Area	33		3	36	
5.	Perform Machine Set up for Product Change	21	50	3	74	
6.	Perform Production Costing	21	42		63	
7.	Implement and monitor environmentally sustainable work practices	30	75		105	
<b>Total calculated</b>					<b>553 Hrs</b>	

#### 1.5. Qualification Level and Certification

Based on the descriptors elaborated on the Ethiopian National TVET Qualification Framework (NTQF) the qualification of this specific TVET Program is “**Level IV**”.

The trainee can exit after successfully completing the modules in one level and will be awarded the equivalent institutional certificate on the level completed. However, only institutional certificate of training accomplishment will be awarded.

## 1.6. Target Groups

Any citizen **with or without disability** who meets the entry requirements under items 1.7 and capable of participating in the learning activities is entitled to take part in the Program.

## 1.7 Entry Requirements

The prospective participants of this program are required to possess the requirements or directive of the **Ministry of Labor and Skills**.

## 1.8 Mode of Delivery

This TVET-Program is characterized as a formal Program on middle level technical skills. The mode of delivery is co-operative training. The time spent by the trainees in the real work place/ industry will give them enough exposure to the actual world of work and enable them to get hands-on experience.

The co-operative approach will be supported with school-based lecture-discussion, simulation and actual practice. These modalities will be utilized before the trainees are exposed to the industry environment.

Hence based on the nature of the occupation, location of the TVET institutions, and interest of the industry alternative mode of cooperative training such as apprenticeships, internship and traineeship will be employed. In addition, in the areas where industry is not sufficiently available the established production and service centers/learning factories in TVET institutions will be used as cooperative training places. The Training-Institution and identified companies have forged an agreement to co-operate with regard to the implementation of this program.

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### 1.9 TVET-Program Structure

Unit of Competence		Module Code & Title		Learning Outcomes	Duration (In Hours)
IND LEP4 01 1121	Manage Production Operations	IND LEP4 M01 1221	Managing Production Operations	<ul style="list-style-type: none"> <li>• Develop operational plan</li> <li>• Schedule work activities</li> <li>• Receive and Utilize Required Resources</li> <li>• Monitor and review operations</li> <li>• Performance Evaluation and Appraisal</li> </ul>	84
IND LEP4 02 1121	Test Raw Materials and Products	IND LEP4 M02 1221	Testing Raw Materials and Products	<ul style="list-style-type: none"> <li>• Identify test requirements for raw materials and products</li> <li>• Test raw materials and products</li> <li>• Report test results and maintain records</li> </ul>	93
IND LEP4 03 1121	Design Process and Product Development	IND LEP4 M03 1221	Designing Process and Product Development	<ul style="list-style-type: none"> <li>• Identify and confirm specifications</li> <li>• Identify Required Resources</li> <li>• Prepare process design and product development</li> <li>• Maintain records</li> </ul>	98
IND LEP4 04 1121	Plan and Implement Area/Team	IND LEP4 M04 1221	Planning and Implementing	<ul style="list-style-type: none"> <li>• Identify and Determine production requirements</li> </ul>	36

Unit of Competence		Module Code & Title		Learning Outcomes	Duration (In Hours)
	Production within a Work		Production within a Work Area	<ul style="list-style-type: none"> <li>• Prioritize and sequence production processes</li> <li>• Organize team and resources</li> <li>• Implement and monitor work-flow</li> <li>• Manage variations to production plan</li> <li>• Prepare operational reports and maintain records</li> </ul>	
IND LEP4 05 1121	Perform Machine Set-up for Product Change	IND LEP4 M05 1221	Performing Machine Set-up for Product Change	<ul style="list-style-type: none"> <li>• Adjust machine/s</li> <li>• Perform production</li> <li>• Re-adjust machine settings to meet requirements</li> <li>• Maintain records</li> </ul>	74
IND LEP4 06 1121	Perform Production Costing	IND LEP4 M06 1221	Performing Production Costing	<ul style="list-style-type: none"> <li>• Identify and determine the types of production costs</li> <li>• Develop and record details for cost calculation</li> <li>• Participate in total production cost</li> </ul>	63

Unit of Competence		Module Code & Title		Learning Outcomes	Duration (In Hours)
				estimation <ul style="list-style-type: none"> <li>• Report and maintain records</li> </ul>	
IND LEP4 07 1121	Implement and monitor environmentally sustainable work practices	IND LEP4 M07 1221	Implementing and monitoring environmentally sustainable work practices	<ul style="list-style-type: none"> <li>• Identify environmentally sensitive processes</li> <li>• Apply cleaner processing option</li> <li>• Monitor cleaner processing option</li> </ul>	105



### 1.10 Institutional Assessment

Two types of evaluation will be used in determining the extent to which learning outcomes are achieved. The specific learning outcomes are stated in the modules. In assessing them, verifiable and observable indicators and standards shall be used.

The **formative assessment** is incorporated in the learning modules and form part of the learning process. Formative evaluation provides the trainee with feedback regarding success or failure in attaining learning outcomes. It identifies the specific learning errors that need to be corrected, and provides reinforcement for successful performance as well. For the teacher, formative evaluation provides information for making instruction and remedial work more effective.

**Summative Evaluation** the other form of evaluation is given when all the modules in the program have been accomplished. It determines the extent to which competence have been achieved. And, the result of this assessment decision shall be expressed in the term ‘competent or not yet competent’.

Techniques or tools for obtaining information about trainees’ achievement include oral or written test, demonstration and on-site observation.

### 1.11 TVET Teachers Profile

The teachers conducting this particular TVET Program are **A Level** and have satisfactory practical experiences or equivalent qualifications.

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<b>LEARNING MODULE 01</b>	
<b>TVET-PROGRAMME: Leather Processing Level-IV</b>	
<b>MODULE TITLE : Managing Production Operations</b>	
<b>MODULE CODE : IND LEP4 M01 1221</b>	
<b>NOMINAL DURATION : 84 Hours</b>	
<b>MODULE DESCRIPTION :</b> This module covers attitudes, knowledge and skills required to understand and monitor overall leather processing operations to use the resources efficiently and effectively within each production unit.	
<b>LEARNING OUTCOMES</b> At the end of the module the learner will be able to:	
<p><b>LO1.</b> Develop operational plan</p> <p><b>LO2.</b> Schedule work activities</p> <p><b>LO3.</b> Receive and utilize required resources</p> <p><b>LO4.</b> Monitor and review operations</p> <p><b>LO5.</b> Undertake performance evaluation and appraisal</p>	
<b>MODULE CONTENTS:</b>	
<p><b>LO1. Develop operational plan</b></p> <p>1.1 Identifying resource requirements</p> <p>1.2 Developing operational production plan</p> <p>1.2.1 Work-load capacity</p> <p>1.2.2 Key performance indicator in production</p> <p>1.2.3 Contingency plan for operational production plan</p>	
<p><b>LO2. Schedule work activities</b></p> <p>2.1 Prioritizing tasks in operational production planning</p> <p>2.2 Components of production planning for activities</p> <p>2.2.1. Setting goals and targets of planned activities</p> <p>2.2.2. Resource allocation and time scheduling</p>	
<p><b>LO3. Receive and Utilize Required Resources</b></p> <p>3.1 Organization’s practices for resource and service receipt</p> <p>3.2 Implementing and assessing resource utilization efficiency &amp; effectiveness</p>	

**LO4. Monitor and review operations**

- 4.1 Monitoring production operation performance
  - 4.1.1 Evaluation of set targets
  - 4.1.2 Calculating and applying key performance indicators
  - 4.1.3 Estimation and interpretation of material consumption and associated cost
- 4.2 Identifying improvement areas and remedial solutions
- 4.3 Reviewing effectiveness of remedial actions
- 4.4 Ensuring continual improvement and compiling best practices

**LO5. Undertake performance Evaluation and Appraisal**

- 5.1 Documenting and communicating the review results
- 5.2 Appraisal and reporting of production operations performance result
- 5.3 Implementing feedback mechanism of the organization
- 5.4 Preparation and communication of recommendation

<b>LEARNING METHODS:</b>			
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)		
	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> <li>❖ Assign sign language interpreter</li> <li>❖ Arrange the class room seating to be conducive for eye to eye contact</li> <li>❖ Make sure the luminosity of the light of class room is kept</li> <li>❖ Introduce new and relevant vocabularies</li> <li>❖ Use short and clear sentences</li> <li>❖ Give emphasis on visual lecture and ensure the attention of the trainees</li> <li>❖ Avoid movement during lecture time</li> <li>❖ Present the lecture in video format</li> <li>❖ Summarize main points</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible to trainees</li> <li>❖ Speak loudly</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Present the lecture in video format</li> <li>❖ Ensure the attention of the trainees</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible for wheelchairs users.</li> <li>❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note</li> <li>❖ Provide Orientation on the physical feature of the work shop</li> </ul>

Demonstration	<ul style="list-style-type: none"> <li>❖ use Sign language interpreter</li> <li>❖ Use video recorded material</li> <li>❖ Ensure attention of the trainees</li> <li>❖ Provide structured training</li> <li>❖ Show clear and short method</li> <li>❖ Use gesture</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Illustrate in clear &amp; short method</li> <li>❖ Use Video recorded material</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment/ machines</li> <li>❖ Assign peer trainees to assist</li> <li>❖ Conduct close follow up</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>
Group discussion	<ul style="list-style-type: none"> <li>❖ Use sign language interpreters</li> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖ Inform the group members to speak loudly</li> </ul>	<ul style="list-style-type: none"> <li>❖ Introduce the trainees with their peers</li> </ul>
Exercise	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the</li> </ul>	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/</li> </ul>	<ul style="list-style-type: none"> <li>❖ Assign peer trainees</li> <li>❖ Use additional nominal hours if necessary</li> </ul>

	<p>process/practical training</p> <ul style="list-style-type: none"> <li>❖ Introduce new and relevant vocabularies</li> </ul>	<p>practical training</p>	
Individual assignment	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	
<b>ASSESSMENT METHODS:</b>			
Interview	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Ensure or confirm whether the proper communication was conducted with the trainee through the service of the sign language interpreter</li> <li>❖ Use short and clear questioning</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Speak loudly</li> <li>❖ Using sign language interpreter if necessary</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use written response as an option for the trainees having speech challenges</li> </ul>
Written test	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers</li> <li>❖ Avoid essay writing</li> </ul>	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use oral response as an option to give answer for trainees having severe upper limb impairment</li> </ul>

	❖ Time extension		❖ Time extension for trainees having severe upper limb impairment
Demonstration / Observation	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Provide activity-based/ practical assessment method</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Use loud voice</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Conduct close follow up</li> <li>❖ Time extension</li> <li>❖</li> </ul>

## Assessment criteria

### LO1. Develop operational plan

- Resource requirements are identified, analyzed and documented and an operational plan is developed based on the results from Consultation processes
- Availability of resource and workability of operational plan communicated as per work place procedures
- Key performance indicators are identified and communicated
- Contingency plans are developed, communicated and implemented at appropriate stages of operational plan, if necessary

### LO2. Schedule work activities

- Tasks/work activities to be completed are identified, prioritized and sequenced as per operational plan and availability of resources
- Tasks/work activities are broken down into achievable components with expected goal and target in accordance with set time frames
- Resources are allocated as per requirements of the activity
- Schedule of work activities is coordinated with personnel concerned

### LO3. Receive and Utilize Required Resources

- Resources and services are received in accordance with organization's practices for resource management
- Tasks in production operations are executed according to the set plan
- Efficient and effective utilization of resources are assessed and implemented

### LO4. Monitor and review operations

- Key performance indicators are applied to monitor the production plans and targets
- Input consumption and related production costs are analyzed and interpreted to provide financial information to determine the profit and productivity.
- Review is based on comprehensive consultation with appropriate personnel on outcomes of work plans and reliable feedback
- Work plans, strategies and implementation are reviewed based on accurate, relevant



and current information

- Areas for improvement are identified, solutions/remedial actions recommended, and prompt action is taken to rectify the situation
- Implementation of developed systems are monitored to ensure continual improvement of best practices

**LO5. Undertake Performance Evaluation and Appraisal**

- Results of review are documented and communicated with concerned parties for continual improvement
- Performance appraisal is conducted in accordance with organization rules and regulations
- Performance appraisal report is prepared and documented regularly as per organization requirements.
- Feedback mechanisms are implemented in line with organization policies
- Recommendations are prepared and presented to appropriate personnel/authorities

## Annex: Resource Requirements

IND LEP4 M01 1221- Managing Production Operations				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
<b>A.</b>	<b>Learning Materials</b>			
1	TTLM.	Prepared by the trainer	25	1:1
2	Reference			
2.1	The Tanning Engineering Notebooks	Assomac Edition 2002	5	1:5
2.2	Leather Technologists Pocket Book	SLTC 1999	5	1:5
2.3	Machine operating manuals	Manufacturers	1	1:25
<b>B.</b>	<b>Learning Facilities &amp; Infrastructure</b>			
1	Lecture room / work shop		1	1:25
2	Library		1	1:25
<b>C.</b>	<b>Consumable Materials</b>			
1	Copy paper	A4 size	5 rim	1:5
<b>D.</b>	<b>Tools and Equipments</b>			
1	White/black board		1	1:25
2	Marker/chalk		1pkt	1:25
3	Duster		2	2:25
4	LCD Projector		1	1:25
5	Laptop		1	1:25
6	Calculator		5	1:5
7	PPE ( overcoat, boot, glove)		25	1:1

<b>LEARNING MODULE 02</b>	
<b>TVET-PROGRAMME: Leather Processing Level-IV</b>	
<b>MODULE TITLE : Testing Raw Materials and Products</b>	
<b>MODULE CODE : IND LEP4 M02 1221</b>	
<b>NOMINAL DURATION : 93 Hours</b>	
<b>MODULE DESCRIPTION :</b> This module covers the knowledge, attitude and skills required for the selection and testing of raw materials and products associated with product development, production and/or quality assurance activities.	
<b>LEARNING OUTCOMES</b> At the end of the module the learner will be able to:	
<b>LO1. Identify test requirements for raw material and products</b>	
<b>LO2. Test raw materials and products</b>	
<b>LO3. Report test results and maintain records</b>	
<b>MODULE CONTENTS:</b>	
<b>LO1. Identify test requirements for raw materials and products</b>	
1.1 Requirements for the selection of raw materials and products	
1.2 Selecting of raw materials for designated use in leather production	
<b>LO2. Test raw materials and products</b>	
2.1 Identifying and selecting test methods and equipment	
2.2 Perform testing of raw materials and products for suitability	
<b>LO3. Report test results and maintain records</b>	
3.1 Organizing and analyzing test results	
3.2 Interpretation of test result data using sources of information	
3.3 Reporting and maintaining testing outcomes	

<b>LEARNING METHODS:</b>			
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)		
	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> <li>❖ Assign sign language interpreter</li> <li>❖ Arrange the class room seating to be conducive for eye to eye contact</li> <li>❖ Make sure the luminosity of the light of class room is kept</li> <li>❖ Introduce new and relevant vocabularies</li> <li>❖ Use short and clear sentences</li> <li>❖ Give emphasis on visual lecture and ensure the attention of the trainees</li> <li>❖ Avoid movement during lecture time</li> <li>❖ Present the lecture in video format</li> <li>❖ Summarize main points</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible to trainees</li> <li>❖ Speak loudly</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Present the lecture in video format</li> <li>❖ Ensure the attention of the trainees</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible for wheelchairs users.</li> <li>❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note</li> <li>❖ Provide Orientation on the physical feature of the work shop</li> </ul>

Demonstration	<ul style="list-style-type: none"> <li>❖ use Sign language interpreter</li> <li>❖ Use video recorded material</li> <li>❖ Ensure attention of the trainees</li> <li>❖ Provide structured training</li> <li>❖ Show clear and short method</li> <li>❖ Use gesture</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Illustrate in clear &amp; short method</li> <li>❖ Use Video recorded material</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment/ machines</li> <li>❖ Assign peer trainees to assist</li> <li>❖ Conduct close follow up</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>
Group discussion	<ul style="list-style-type: none"> <li>❖ Use sign language interpreters</li> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖ Inform the group members to speak loudly</li> </ul>	<ul style="list-style-type: none"> <li>❖ Introduce the trainees with their peers</li> </ul>
Exercise	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the</li> </ul>	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/</li> </ul>	<ul style="list-style-type: none"> <li>❖ Assign peer trainees</li> <li>❖ Use additional nominal hours if necessary</li> </ul>

	<p>process/practical training</p> <ul style="list-style-type: none"> <li>❖ Introduce new and relevant vocabularies</li> </ul>	<p>practical training</p>	
Individual assignment	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	
<b>ASSESSMENT METHODS:</b>			
Interview	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Ensure or confirm whether the proper communication was conducted with the trainee through the service of the sign language interpreter</li> <li>❖ Use short and clear questioning</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Speak loudly</li> <li>❖ Using sign language interpreter if necessary</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use written response as an option for the trainees having speech challenges</li> </ul>
Written test	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers</li> </ul>	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use oral response as an option to give answer for trainees having severe upper limb</li> </ul>

	<ul style="list-style-type: none"> <li>❖ Avoid essay writing</li> <li>❖ Time extension</li> </ul>		<p>impairment</p> <ul style="list-style-type: none"> <li>❖ Time extension for trainees having severe upper limb impairment</li> </ul>
Demonstration/ Observation	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Provide activity-based/ practical assessment method</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Use loud voice</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Conduct close follow up</li> <li>❖ Time extension</li> <li>❖</li> </ul>

## Assessment criteria

### LO1. Identify test requirements for raw materials and products

- Requirements for the selection of raw materials and products are clarified and confirmed in accordance with tannery procedures
- Raw materials appropriate for the designated use are selected based on the requirements and workplace context

### LO2. Test raw materials and products

- Required test method and relevant equipment are identified or selected
- Selected raw materials and products are tested for suitability in accordance with quality standards and workplace context

### LO3. Report test results and maintain records

- Sources of information for interpretation are used, where required
- Test results are organized and analyzed against required specifications and in accordance with tannery requirement
- Data is interpreted against requirements
- Outcomes are reported in accordance with tannery procedures
- Maintain records and related test reports



### Annex: Resource Requirements

IND LEP4 M02 1221 Testing Raw Materials and Products				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
<b>A. Learning Materials</b>				
1	TTLM.	Prepared by the trainer	25	1:1
2	Reference book			
2.1	Leather Technicians Hand book	J.H. Sharphouse, BSc. Revised edition 1983	5	1:5
2.2	Theory and Practice of Leather Manufacture	K.T. Sarkar. Revised Edition 2005	5	1:5
2.3	Possible Defects in leather production	Gerard John	5	1:5
2.4	Leather Technologists Pocket Book	SLTC 1999	5	1:5
2.5	Machine operating manuals	manufacturers	1	1:25
<b>B. Learning Facilities &amp; Infrastructure</b>				
1	Lecture room / work shop		1	1:25
2	Library		1	1:25
3	Testing laboratory			
4	Lap top		1	1:25
5	LCD projector		1	1:25
6	White/Black board		1	1:25
<b>C. Consumable Materials</b>				
1	Copy paper	A4 size	5 rim	1:5

D.	Tools and Equipments			
1	Personal protective equipment	Glove, eye google, face mask, apron, coat	25	1:1
2	Calculator			
3	Measuring Devices (weighing balance, cylinder, viscometer, Baume meter, pH meter/paper, length scale)	As required	1	1:25
4	Working table	As required	5	1:5

<b>LEARNING MODULE 03</b>	
<b>TVET-PROGRAMME: Leather Processing Supervision Level-IV</b>	
<b>MODULE TITLE : Designing Process and Product Development</b>	
<b>MODULE CODE : IND LEP4 M03 1221</b>	
<b>NOMINAL DURATION : 98 Hours</b>	
<b>MODULE DESCRIPTION :</b> This module covers the knowledge, attitude and skills required to design process recipes for developing different products in each stage of leather processing industry.	
<b>LEARNING OUTCOMES</b> At the end of the module the learner will be able to: <b>LO1.</b> Identify and confirm specifications <b>LO2.</b> Identify Required Resources <b>LO3.</b> Prepare process design and product development <b>LO4.</b> Maintain Records	
<b>MODULE CONTENTS:</b> <b>LO1. Identify and confirm specifications</b> 1.1 Identify and confirm product and process specification or requirements 1.2 Examine sample material or product <b>LO2. Identify Required Resources</b> 2.1 Identifying resources and information for process design and product development 2.2 Assessing input material for product development 2.3 Assessing technology options for process design and product development <b>LO3. Prepare process design and product development</b> 3.1 Performing process design and product development activities 3.2 Evaluating and approving developed product <b>LO4. Maintain Records</b> 4.1 Records in process design and product development 4.2 Documenting and Communicating process design and product development	

<b>LEARNING METHODS:</b>			
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)		
	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> <li>❖ Assign sign language interpreter</li> <li>❖ Arrange the class room seating to be conducive for eye to eye contact</li> <li>❖ Make sure the luminosity of the light of class room is kept</li> <li>❖ Introduce new and relevant vocabularies</li> <li>❖ Use short and clear sentences</li> <li>❖ Give emphasis on visual lecture and ensure the attention of the trainees</li> <li>❖ Avoid movement during lecture time</li> <li>❖ Present the lecture in video format</li> <li>❖ Summarize main points</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible to trainees</li> <li>❖ Speak loudly</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Present the lecture in video format</li> <li>❖ Ensure the attention of the trainees</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible for wheelchairs users.</li> <li>❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note</li> <li>❖ Provide Orientation on the physical feature of the work shop</li> </ul>

Demonstration	<ul style="list-style-type: none"> <li>❖ use Sign language interpreter</li> <li>❖ Use video recorded material</li> <li>❖ Ensure attention of the trainees</li> <li>❖ Provide structured training</li> <li>❖ Show clear and short method</li> <li>❖ Use gesture</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Illustrate in clear &amp; short method</li> <li>❖ Use Video recorded material</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment/ machines</li> <li>❖ Assign peer trainees to assist</li> <li>❖ Conduct close follow up</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>
Group discussion	<ul style="list-style-type: none"> <li>❖ Use sign language interpreters</li> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖ Inform the group members to speak loudly</li> </ul>	<ul style="list-style-type: none"> <li>❖ Introduce the trainees with their peers</li> </ul>
Exercise	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/practical training</li> </ul>	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/practical training</li> </ul>	<ul style="list-style-type: none"> <li>❖ Assign peer trainees</li> <li>❖ Use additional nominal hours if necessary</li> </ul>

	❖ Introduce new and relevant vocabularies		
Individual assignment	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	
<b>ASSESSMENT METHODS:</b>			
Interview	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter</li> <li>❖ Use short and clear questioning</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Speak loudly</li> <li>❖ Using sign language interpreter if necessary</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use written response as an option for the trainees having speech challenges</li> </ul>
Written test	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers</li> <li>❖ Avoid essay writing</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use oral response as an option to give answer for trainees having severe upper limb impairment</li> <li>❖ Time extension for trainees having severe upper limb impairment</li> </ul>

<p>Demonstration/ Observation</p>	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Provide activity-based/ practical assessment method</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Use loud voice</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Conduct close follow up</li> <li>❖ Time extension</li> <li>❖</li> </ul>
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**Assessment criteria**

**LO1. Identify and confirm specifications**

- Detail of requirements/specifications is documented
- Input material is examined to confirm the required specifications and properties

**LO2. Identify Required Resources**

- Required resources and information are identified, listed and obtained in relation to process design and product development
- Technological options are assessed in order to utilize the resources efficiently, effectively and eco-friendly

**LO3. Prepare process design and product development**

- Process design and product development activities are performed together with relevant personal
- Development results are communicated for further action
- Process design and product development records are maintained and documented, in accordance with workplace practices

**LO4. Maintain Records**

- Process design and product development records are maintained and documented, in accordance with workplace practices



### Annex: Resource Requirements

IND LEP4 M03 1221 Design Process and Product Development				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
<b>A.</b>	<b>Learning Materials</b>			
1	TTLM.	Prepared by the trainer	25	1:1
2	Reference book			
2.1	Leather Technicians Hand book	J.H. Sharphouse, BSc. Revised edition 1983	5	1:5
2.2	Theory and Practice of Leather Manufacture	K.T. Sarkar. Revised Edition 2005	5	1:5
2.3	The Tanning Engineering Notebooks	Assomac Edition 2002	5	1:5
2.4	Possible Defects in leather production	Gerard John	5	1:5
2.5	Chemistry and Technology of leather	O, Flaherty, 1978	5	1:5
2.6	Leather Technologists Pocket Book	SLTC 1999	5	1:5
2.7	Machine operating manuals	manufacturers		
<b>B.</b>	<b>Learning Facilities &amp; Infrastructure</b>			
1	Lecture room / work shop	Standard	1	1:25
2	Library	Standard	1	1:25
3	Model tannery	Standard	1	1:25
4	Testing laboratory	Standard	1	1:25
5	Lap top	Standard	1	1:25
6	LCD projector	Standard	1	1:25
7	White/Black board	Standard	1	1:25

<b>C. Consumable Materials</b>				
1	Raw material	Raw hide/skin/ wet blue/ crust/finished leather, Process Chemical/ lab reagents	As required	
2	Paper	A4/A3 size	5 rim	1:5
3	Marker/chalk	Standard	1pkt	1:25
4	Duster	Standard	2	2:25
<b>D. Tools and Equipments</b>				
1	Personal protective equipment	Glove, eye google, face mask, apron, coat	25	1:1
2	Measuring devices (weighing balance, Cylinder, pH meter/paper, viscometer, Baume meter, length scale)	As required	1	1:25

<b>LEARNING MODULE 04</b>	
<b>TVET-PROGRAMME: Leather Processing Level-IV</b>	
<b>MODULE TITLE : Planning and Implementing Production within a Work Area</b>	
<b>MODULE CODE : IND LEP4 M04 1221</b>	
<b>NOMINAL DURATION : 36 Hours</b>	
<b>MODULE DESCRIPTION :</b> This module covers the knowledge, attitude and skills required to plan and implement production within a specified work area in leather processing industry.	
<b>LEARNING OUTCOMES</b>	
At the end of the module the learner will be able to:	
<b>LO1.</b> Identify and Determine production requirements	
<b>LO2.</b> Prioritize production orders	
<b>LO3.</b> Organize team and resources	
<b>LO4.</b> Implement and monitor work-flow	
<b>LO5.</b> Manage variations to production plan	
<b>LO6.</b> Prepare operational reports and maintain records	
<b>MODULE CONTENTS:</b>	
<b>LO1. Identify and Determine production requirements</b>	
1.1 Identifying resource requirements for production order planning	
1.2 Assess requirements for production order planning	
1.2.1 Determining production tasks	
1.2.2 Determining material requirements	
<b>LO2. Prioritize production orders</b>	
2.1 prioritizing and sequencing tasks for production planning	
2.2 Production process planning and communication	
<b>LO3. Organize team and resources</b>	
3.1 Organizing resources for production processes	

- 3.1.1 Work team selection, organization and guidance
- 3.1.2 Facility, equipment, material and other resources for production process
- 3.2 Scheduling production processes according to workplace and OHS practices

**LO4. Implement and monitor work-flow**

- 4.1 Undertaking work-plan
- 4.2 Methods of directing works and monitoring processes workflow
- 4.3 Identifying and Troubleshooting bottleneck areas in the workflow

**LO5. Manage variations to production plan**

- 5.1 Identifying and dealing with inefficiencies during production plan implementation
- 5.2 Production plan variations and their systematic corrections
  - 5.2.1. Work re-allocation and coordination to meet production schedule and specification
  - 5.2.2. Re-defining and communicating team/individual responsibilities

**LO6. Prepare operational reports and maintain records**

- 6.1 Report preparation and documentation
  - 6.1.1 production performance report
  - 6.1.2 process variations record
  - 6.1.3 troubleshooting measures

<b>LEARNING METHODS:</b>			
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)		
	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> <li>❖ Assign sign language interpreter</li> <li>❖ Arrange the class room seating to be conducive for eye to eye contact</li> <li>❖ Make sure the luminosity of the light of class room is kept</li> <li>❖ Introduce new and relevant vocabularies</li> <li>❖ Use short and clear sentences</li> <li>❖ Give emphasis on visual lecture and ensure the attention of the trainees</li> <li>❖ Avoid movement during lecture time</li> <li>❖ Present the lecture in video format</li> <li>❖ Summarize main points</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible to trainees</li> <li>❖ Speak loudly</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Present the lecture in video format</li> <li>❖ Ensure the attention of the trainees</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible for wheelchairs users.</li> <li>❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note</li> <li>❖ Provide Orientation on the physical feature of the work shop</li> </ul>

Demonstration	<ul style="list-style-type: none"> <li>❖ use Sign language interpreter</li> <li>❖ Use video recorded material</li> <li>❖ Ensure attention of the trainees</li> <li>❖ Provide structured training</li> <li>❖ Show clear and short method</li> <li>❖ Use gesture</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Illustrate in clear &amp; short method</li> <li>❖ Use Video recorded material</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment/ machines</li> <li>❖ Assign peer trainees to assist</li> <li>❖ Conduct close follow up</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>
Group discussion	<ul style="list-style-type: none"> <li>❖ Use sign language interpreters</li> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖ Inform the group members to speak loudly</li> </ul>	<ul style="list-style-type: none"> <li>❖ Introduce the trainees with their peers</li> </ul>
Exercise	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/practical training</li> </ul>	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/practical training</li> </ul>	<ul style="list-style-type: none"> <li>❖ Assign peer trainees</li> <li>❖ Use additional nominal hours if necessary</li> </ul>

	❖ Introduce new and relevant vocabularies		
Individual assignment	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	
<b>ASSESSMENT METHODS:</b>			
Interview	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter</li> <li>❖ Use short and clear questioning</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Speak loudly</li> <li>❖ Using sign language interpreter if necessary</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use written response as an option for the trainees having speech challenges</li> </ul>
Written test	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers</li> <li>❖ Avoid essay writing</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use oral response as an option to give answer for trainees having severe upper limb impairment</li> <li>❖ Time extension for trainees having severe upper limb impairment</li> </ul>

<p>Demonstration/ Observation</p>	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Provide activity-based/ practical assessment method</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Use loud voice</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Conduct close follow up</li> <li>❖ Time extension</li> <li>❖</li> </ul>
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## Assessment criteria

### LO1. Identify and Determine production requirements

- Resources required for the production order are identified
- Estimated quantity and quality requirements are identified as per the actual production capacities
- Production processes and material requirements are determined

### LO2. Prioritize production orders

- Steps required for the process sequence are identified ensuring production orders
- Work is prioritized taking into account production demands, resource availability, customer requests and requirements, efficient use of resources
- Workplace plan is undertaken and communicated

### LO3. Organize team and resources

- Work team is selected, organized and guided in accordance with workplace practices
- Facility, equipment and material and resources required for the production process are identified and organized in accordance with the production schedule and OHS practices

### LO4. Implement and monitor work-flow

- Work flow is planned and monitored to ensure production schedule
- Methods are implemented to ensure that work is directed to each work area or location as required, and potential bottleneck areas are identified
- Troubleshooting occurs on a regular basis in response to breakdowns, absenteeism and other factors

### LO5. Manage variations to production plan

- Results of review are documented and communicated with concerned parties for continual improvement
- Inefficiencies are identified and dealt in accordance with workplace production

practices

- Systematic implementation of variations to the production plan are coordinated to ensure production schedule and specifications
- Work is re-allocated in accordance with production priorities, where required
- Team or individual responsibilities are defined and communicated

**LO6. Prepare operational reports and maintain records**

- Detailed report is prepared on production performance, process variations, troubleshooting measures
- Records are maintained, where necessary, in accordance with workplace procedures

### Annex: Resource Requirements

IND LEP4 M04 1221- Planning and Implementing Production within a Work Area				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
<b>A.</b>	<b>Learning Materials</b>			
1	TTLM.	Prepared by the trainer	25	1:1
2	Reference book			
2.1	The Tanning Engineering Notebooks	Assomac Edition 2002	5	1:5
2.2	Leather Technologists Pocket Book	SLTC 1999	5	1:5
2.3	Machine operating manuals	manufacturers		
<b>B.</b>	<b>Learning Facilities &amp; Infrastructure</b>			
1	Lecture room / work shop	Standard	1	1:25
2	Library	Standard	1	1:25
3	Model tannery	Standard	1	1:25
4	Lap top	Standard	1	1:25
5	LCD projector	Standard	1	1:25
6	White/Black board	Standard	1	1:25
<b>C.</b>	<b>Consumable Materials</b>			
1	Copy paper	A4 size	5 rim	1:5
2	Marker/chalk	Standard	1pkt	1:25
3	Duster	Standard	2	2:25
<b>D.</b>	<b>Tools and Equipment</b>			
1	PPE (overcoat, boot, glove)	Standard	25	1:1
2	Measuring devices (weighing balance, Cylinder, pH meter/paper, viscometer, Baume meter, length scale)	Standard	1	1:25

<b>LEARNING MODULE -05</b>	
<b>TVET-PROGRAMME: Leather Processing Level-IV</b>	
<b>MODULE TITLE : Performing Machines Set-up for Product Change</b>	
<b>MODULE CODE : IND LEP4 M05 1221</b>	
<b>NOMINAL DURATION : 74 Hours</b>	
<b>MODULE DESCRIPTION :</b> This module covers the attitudes, knowledge and skills required to set up machines for production changes in various leather processing operations	
<b>LEARNING OUTCOMES</b> At the end of the module the learner will be able to: <b>LO1 Adjust machine/s</b> <b>LO2 Perform production</b> <b>LO3 Re-adjust machine settings to meet requirements</b> <b>LO4 Maintain records</b>	
<b>MODULE CONTENTS:</b> <b>LO1. Adjust machine</b> 1.1 Interpreting product specifications for machine setting 1.2 Reviewing machine operations instructions and OHS practices  <b>LO2. Perform sample production</b> 2.1 Preparation of sample materials 2.2 Setting and operating of machine in new adjustment 2.3 Testing sample for new adjustment  <b>LO3. Re-adjust machine settings to meet requirements</b> 3.1 Interpreting results of sample produced for correct machine adjustment 3.2 Readjusting the machine to meet the new product requirement  <b>LO4 Maintain records</b> 4.1 Documentation and communication for new machine adjustment 4.2 Maintaining records	

<b>LEARNING METHODS:</b>			
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)		
	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> <li>❖ Assign sign language interpreter</li> <li>❖ Arrange the class room seating to be conducive for eye to eye contact</li> <li>❖ Make sure the luminosity of the light of class room is kept</li> <li>❖ Introduce new and relevant vocabularies</li> <li>❖ Use short and clear sentences</li> <li>❖ Give emphasis on visual lecture and ensure the attention of the trainees</li> <li>❖ Avoid movement during lecture time</li> <li>❖ Present the lecture in video format</li> <li>❖ Summarize main points</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible to trainees</li> <li>❖ Speak loudly</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Present the lecture in video format</li> <li>❖ Ensure the attention of the trainees</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible for wheelchairs users.</li> <li>❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note</li> <li>❖ Provide Orientation on the physical feature of the work shop</li> </ul>

Demonstration	<ul style="list-style-type: none"> <li>❖ use Sign language interpreter</li> <li>❖ Use video recorded material</li> <li>❖ Ensure attention of the trainees</li> <li>❖ Provide structured training</li> <li>❖ Show clear and short method</li> <li>❖ Use gesture</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Illustrate in clear &amp; short method</li> <li>❖ Use Video recorded material</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment/ machines</li> <li>❖ Assign peer trainees to assist</li> <li>❖ Conduct close follow up</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>
Group discussion	<ul style="list-style-type: none"> <li>❖ Use sign language interpreters</li> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖ Inform the group members to speak loudly</li> </ul>	<ul style="list-style-type: none"> <li>❖ Introduce the trainees with their peers</li> </ul>
Exercise	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/practical training</li> </ul>	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/practical training</li> </ul>	<ul style="list-style-type: none"> <li>❖ Assign peer trainees</li> <li>❖ Use additional nominal hours if necessary</li> </ul>

	❖ Introduce new and relevant vocabularies		
Individual assignment	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	
<b>ASSESSMENT METHODS:</b>			
Interview	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter</li> <li>❖ Use short and clear questioning</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Speak loudly</li> <li>❖ Using sign language interpreter if necessary</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use written response as an option for the trainees having speech challenges</li> </ul>
Written test	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers</li> <li>❖ Avoid essay writing</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use oral response as an option to give answer for trainees having severe upper limb impairment</li> <li>❖ Time extension for trainees having severe upper limb impairment</li> </ul>

<p>Demonstration/ Observation</p>	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Provide activity-based/ practical assessment method</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Use loud voice</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Conduct close follow up</li> <li>❖ Time extension</li> <li>❖</li> </ul>
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**Assessment criteria**

**LO1. Adjust machine/s**

- Product specifications are interpreted correctly in relation to machine setting requirements
- Machine is set in accordance with product specifications, machine manufacturer instructions and OHS practices

**LO2. Perform sample production**

- Material to be used for sampling is prepared
- Machine is operated in accordance with the new setting
- Sample is tested, or the test is organized, in accordance with workplace practices to ensure required standards of quality

**LO3. Re-adjust machine settings to meet requirements**

- Test results are interpreted to determine adjustment requirements
- Adjustment changes are assessed in accordance with product and machine specifications
- Appropriate production personnel are informed of the availability of the newly set up machine in accordance with the set requirement
- Records are maintained and reports prepared related to adjustment of machine settings, where necessary, in accordance with workplace practices

**LO4 Maintain records**

- Reports prepared related to adjustment of machine settings in accordance with workplace practices and
- Records are maintained

## Resource Requirements

IND LEP4 M05 1221 - Perform Machines Set up for Product Change				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
<b>A. Learning Materials</b>				
1	TTLM.	Prepared by the trainer	25	1:1
2	Reference book			
2.1	The Tanning Engineering Notebooks	Assomac Edition 2002	5	1:5
2.2	Possible Defects in leather production	Gerard John	5	1:5
2.3	Leather Technologists Pocket Book	SLTC 1999	5	1:5
2.4	Machine operating manuals	manufacturers	5	1:5
<b>B. Learning Facilities &amp; Infrastructure</b>				
1	Lecture room / work shop	Standard	1	1:25
2	Library	Standard	1	1:25
3	Model tannery	Standard	1	1:25
4	Testing laboratory	Standard	1	1:25
5	Lap top	Standard	1	1:25
6	LCD projector	Standard	1	1:25
7	White/Black board	Standard	1	1:25
<b>C. Consumable Materials</b>				
1	Raw material	Raw hide/skin/ wet blue/ crust/finished leather, Process	As required	

		Chemical/ lab reagents		
2	Copy paper	A4 size	5 rim	1:5
3	Marker/Chalk		1pkt	1:25
<b>D.</b>	<b>Tools and Equipments</b>			
1	Personal protective equipment	Glove, eye google, face mask, apron, coat	25	1:1
2	Measuring devices (weighing balance, Cylinder, pH meter/paper, viscometer, Baume meter, length scale)	As required	1	1:25

<b>LEARNING MODULE -06</b>	
<b>TVET-PROGRAMME: Leather Processing Level-IV</b>	
<b>MODULE TITLE : Performing Production Costing</b>	
<b>MODULE CODE : IND LEP4 M06 1221</b>	
<b>NOMINAL DURATION : 63 hours</b>	
<b>MODULE DESCRIPTION :</b> This module covers the knowledge, attitude and skills required to provide appropriate information to perform costing at various stages of leather processing operations.	
<b>LEARNING OUTCOMES</b> At the end of the module the learner will be able to: <b>LO1. Identify and determine the types of production costs</b> <b>LO2. Develop and record details for cost calculation</b> <b>LO3. Perform total production cost estimation</b> <b>LO4. Report and Maintain records</b>	
<b>MODULE CONTENTS:</b> <b>LO1. Identify and determine the types of production costs</b> 1.1 Types of production costs for unit process and operation 1.1.1 Direct production cost 1.1.2 Indirect production cost  <b>LO2. Develop and record details for cost calculation</b> 2.1 Elements of cost for production cost estimation 2.1.1 Quantify Material consumption and energy consumption in terms of monetary value 2.1.2 Labor utilization in terms of monetary value 2.2 Develop recording format  <b>LO3. Perform total production cost estimation</b> 3.1 Organize cost information's	

3.2 Estimating production cost of finished leather

**LO4 Report and Maintain records**

4.1 Reporting production/ product cost

4.2 Documentation and communication for total production of leather product

<b>LEARNING METHODS:</b>			
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)		
	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> <li>❖ Assign sign language interpreter</li> <li>❖ Arrange the class room seating to be conducive for eye to eye contact</li> <li>❖ Make sure the luminosity of the light of class room is kept</li> <li>❖ Introduce new and relevant vocabularies</li> <li>❖ Use short and clear sentences</li> <li>❖ Give emphasis on visual lecture and ensure the attention of the trainees</li> <li>❖ Avoid movement during lecture time</li> <li>❖ Present the lecture in video format</li> <li>❖ Summarize main points</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible to trainees</li> <li>❖ Speak loudly</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Present the lecture in video format</li> <li>❖ Ensure the attention of the trainees</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible for wheelchairs users.</li> <li>❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note</li> <li>❖ Provide Orientation on the physical feature of the work shop</li> </ul>

Demonstration	<ul style="list-style-type: none"> <li>❖ use Sign language interpreter</li> <li>❖ Use video recorded material</li> <li>❖ Ensure attention of the trainees</li> <li>❖ Provide structured training</li> <li>❖ Show clear and short method</li> <li>❖ Use gesture</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Illustrate in clear &amp; short method</li> <li>❖ Use Video recorded material</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment/ machines</li> <li>❖ Assign peer trainees to assist</li> <li>❖ Conduct close follow up</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>
Group discussion	<ul style="list-style-type: none"> <li>❖ Use sign language interpreters</li> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate the integration of trainees with group members</li> <li>❖ Conduct close follow up</li> <li>❖ Introduce the trainees with other group member</li> <li>❖ Inform the group members to speak loudly</li> </ul>	<ul style="list-style-type: none"> <li>❖ Introduce the trainees with their peers</li> </ul>
Exercise	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the</li> </ul>	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/</li> </ul>	<ul style="list-style-type: none"> <li>❖ Assign peer trainees</li> <li>❖ Use additional nominal hours if necessary</li> </ul>

	<p>process/practical training</p> <ul style="list-style-type: none"> <li>❖ Introduce new and relevant vocabularies</li> </ul>	<p>practical training</p>	
Individual assignment	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	
<b>ASSESSMENT METHODS:</b>			
Interview	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter</li> <li>❖ Use short and clear questioning</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Speak loudly</li> <li>❖ Using sign language interpreter if necessary</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use written response as an option for the trainees having speech challenges</li> </ul>
Written test	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers</li> <li>❖ Avoid essay writing</li> </ul>	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use oral response as an option to give answer for trainees having severe upper limb impairment</li> </ul>



	❖ Time extension		❖ Time extension for trainees having severe upper limb impairment
Demonstration / Observation	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Provide activity-based/ practical assessment method</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity-based assessment</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Use loud voice</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity-based assessment</li> <li>❖ Conduct close follow up</li> <li>❖ Time extension</li> <li>❖</li> </ul>

## Assessment criteria

### LO1. Identify and determine the types of production costs

- Direct production costs for unit processes and operations are identified and determined
- Indirect production costs are identified and determined as per the work place procedures

### LO2. Develop and record details for cost calculation

- Detailed consumption of raw materials, chemicals consumables and labour requirements are quantified and recorded
- Appropriate recording format is developed and maintained

### LO3. Perform total production cost estimation

- Aggregate all direct and indirect production costs for a specified product, where final cost is to be estimated
- Based on the available cost information total production/product cost is estimated.

### LO4 Report and Maintain records

- Estimated total production /product cost is reported to the respective finance/top management for final price determination
- All relevant records and reports prepared are maintained

### Annex: Resource Requirements

IND LEP4 M06 1221 - Perform Production Costing				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
<b>A. Learning Materials</b>				
1	TTLM.	Prepared by the trainer	25	1:1
2	Reference book			
2.1	Theory and Practice of Leather Manufacture	K.T. Sarkar. Revised Edition 2005	5	1:5
2.2	Leather Technologists Pocket Book	SLTC 1999	5	1:5
2.3	Machine operating manuals	manufacturers	5	1:5
2.4	The Tanning Engineering Notebooks	Assomac Edition 2002	5	1:5
<b>B. Learning Facilities &amp; Infrastructure</b>				
1	Lecture room / work shop	Standard	1	1:25
2	Library	Standard	1	1:25
3	Lap top	Standard	1	1:25
4	LCD projector	Standard	1	1:25
5	White/Black board	Standard	1	1:25
<b>C. Consumable Materials</b>				
1	Copy paper	A4 size	5 rim	1:5
2	Market/Chalk		1pkt	1:25
<b>D. Tools and Equipments</b>				
1	Calculator	Standard	5	1:5

<b>LEARNING MODULE 07</b>	
<b>TVET-PROGRAMME: Leather Processing Level-IV</b>	
<b>MODULE TITLE : Implementing and monitoring environmentally sustainable work practices</b>	
<b>MODULE CODE : IND LEP4 M07 1221</b>	
<b>NOMINAL DURATION : 105 Hours</b>	
<b>MODULE DESCRIPTION :</b> This module covers the competence required to apply knowledge and skill in using cleaner leather production options with particular emphasizes on the importance of constantly reviewing leather making technology and techniques in order to ensure that environmental impacts of the processes are made reduced or eliminated and efficient use of resources without compromising the quality of end product.	
<b>LEARNING OUTCOMES</b> At the end of the module the learner will be able to: <b>LO1. Identify environmentally sensitive processes</b> <b>LO2. Apply cleaner processing option</b> <b>LO3. Monitor cleaner processing option</b>	
<b>MODULE CONTENTS:</b> <b>LO1. Identify environmentally sensitive processes</b> 1.1 Environmentally sensitive leather processing operations 1.2 Cleaner leather processing options 1.2.1 Relevant information associated with new process options 1.2.2 Comparing cleaner processing options with existing ones  <b>LO2. Apply cleaner processing option</b> 2.1 Testing of new leather processing option 2.2 Customizing and implementing new leather processing options 2.2.1. Assessing features and functions of the new processing option 2.2.2. Implementing approved new leather processing option	

### **LO3. Monitor cleaner processing option**

3.1 Evaluating the suitability of implemented new processing option

3.1.1 Performance and workability of the new process option

3.1.2 Seeking feedback from interested party

3.1.3 Corrective or improvement actions

3.2 Records on cleaner processing option implementation

3.2.1 Documenting performance and improvement

3.2.2 Compiling best practices

<b>LEARNING METHODS:</b>			
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)		
	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> <li>❖ Assign sign language interpreter</li> <li>❖ Arrange the class room seating to be conducive for eye to eye contact</li> <li>❖ Make sure the luminosity of the light of class room is kept</li> <li>❖ Introduce new and relevant vocabularies</li> <li>❖ Use short and clear sentences</li> <li>❖ Give emphasis on visual lecture and ensure the attention of the trainees</li> <li>❖ Avoid movement during lecture time</li> <li>❖ Present the lecture in video format</li> <li>❖ Summarize main points</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible to trainees</li> <li>❖ Speak loudly</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Present the lecture in video format</li> <li>❖ Ensure the attention of the trainees</li> </ul>	<ul style="list-style-type: none"> <li>❖ Organize the class room seating arrangement to be accessible for wheelchairs users.</li> <li>❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note</li> <li>❖ Provide Orientation on the physical feature of the work shop</li> </ul>

Demonstration	<ul style="list-style-type: none"> <li>❖ use Sign language interpreter</li> <li>❖ Use video recorded material</li> <li>❖ Ensure attention of the trainees</li> <li>❖ Provide structured training</li> <li>❖ Show clear and short method</li> <li>❖ Use gesture</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Illustrate in clear &amp; short method</li> <li>❖ Use Video recorded material</li> <li>❖ Ensure the attention of the trainees</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment/ machines</li> <li>❖ Assign peer trainees to assist</li> <li>❖ Conduct close follow up</li> <li>❖ Provide tutorial support (if necessary)</li> </ul>
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Exercise	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the</li> </ul>	<ul style="list-style-type: none"> <li>❖ Conduct close follow up and guidance</li> <li>❖ Provide tutorial support if necessary</li> <li>❖ provide special attention in the process/</li> </ul>	<ul style="list-style-type: none"> <li>❖ Assign peer trainees</li> <li>❖ Use additional nominal hours if necessary</li> </ul>

	<p>process/practical training</p> <ul style="list-style-type: none"> <li>❖ Introduce new and relevant vocabularies</li> </ul>	<p>practical training</p>	
Individual assignment	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide briefing /orientation on the assignment</li> <li>❖ Provide visual recorded material</li> </ul>	
<b>ASSESSMENT METHODS:</b>			
Interview	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Ensure or confirm whether the proper communication was conducted with the trainee through the service of the sign language interpreter</li> <li>❖ Use short and clear questioning</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Speak loudly</li> <li>❖ Using sign language interpreter if necessary</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use written response as an option for the trainees having speech challenges</li> </ul>
Written test	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers</li> <li>❖ Avoid essay writing</li> </ul>	<ul style="list-style-type: none"> <li>❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Use oral response as an option to give answer for trainees having severe upper limb impairment</li> </ul>



	❖ Time extension		❖ Time extension for trainees having severe upper limb impairment
Demonstration / Observation	<ul style="list-style-type: none"> <li>❖ Use sign language interpreter</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Provide activity-based/ practical assessment method</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Brief on the instruction of the exam</li> <li>❖ Use loud voice</li> <li>❖ Time extension</li> </ul>	<ul style="list-style-type: none"> <li>❖ Provide activity based assessment</li> <li>❖ Conduct close follow up</li> <li>❖ Time extension</li> <li>❖</li> </ul>

**Assessment criteria**

**LO1. Identify environmentally sensitive processes**

- Identify and list environmentally sensitive operation requiring improved resource utilization and environmental protection.
- Identify possible new process option for cleaner leather production
- Relevant information and all necessary resources are identified and organized
- Situations are identified where existing knowledge can be used as the basis for customizing new process option and developing new skills, wherever appropriate

**LO2. Apply cleaner processing option**

- Testing of new process option is conducted according to relevant work practices
- Features and functions of new process option is used for solving organizational problems
- The new process option is customized and implemented

**LO3. Monitor cleaner processing option**

- The new process option is evaluated for performance, workability and against OHS practices.
- Environmental considerations are determined from new or upgraded technique.
- Feedback is sought from interested party, where appropriate
- Corrective or improvement actions are taken and reviewed, as appropriate
- Documentation associated with performances, best practices, corrective and/or improvement actions, etc. are registered and retained to ensure suitability of the processes, where applicable

**Annex: Resource Requirements**

<b>IND LPS4 M11 0321 -</b>				
<b>Implementing and monitoring environmentally sustainable work practices</b>				
<b>Item No.</b>	<b>Category/Item</b>	<b>Description/ Specifications</b>	<b>Quantity</b>	<b>Recommended Ratio (Item: Trainee)</b>
<b>A.</b>	<b>Learning Materials</b>			
1	TTLM.	Prepared by the trainer	25	1:1
2	Reference book			
2.1	Leather Technicians Hand book	J.H. Sharphouse, BSc. Revised edition 1983	5	1:5
2.2	Theory and Practice of Leather Manufacture	K.T. Sarkar. Revised Edition 2005	5	1:5
2.3	The Tanning Engineering Notebooks	Assomac Edition 2002	5	1:5
2.4	Possible Defects in leather production	Gerard John	5	1:5
2.5	Leather Technologists Pocket Book	SLTC 1999	5	1:5
2.6	Machine operating manuals	manufacturers		
<b>B.</b>	<b>Learning Facilities &amp; Infrastructure</b>			
1	Lecture room / work shop	Standard	1	1:25
2	Library	Standard	1	1:25
3	Model tannery	Standard	1	1:25
4	Testing laboratory	Standard	1	1:25
5	Lap top	Standard	1	1:25
6	LCD projector	Standard	1	1:25
7	White/Black board	Standard	1	1:25
<b>C.</b>	<b>Consumable Materials</b>			
1	Raw material	Raw hide/skin/ wet blue/ crust/finished leather, Process	As required	

		Chemical/ lab reagents		
2	Copy paper	A4 size	5 rim	1:5
3	Marker/chalk	Standard	1pkt	1:25
4	Duster	Standard	2	2:25
<b>D.</b>	<b>Tools and Equipment</b>			
1	PPE (overcoat, boot, glove)		1	1:25
2	Measuring devices (weighing balance, Cylinder, pH meter/paper, viscometer, Baume meter, length scale)	Standard	1	1:25

## Acknowledgement

The **Ministry of Labor and Skills** wishes to thank and appreciate experts who donated their effort and time to develop this outcome-based curriculum for the TVET program Leather Processing Level IV. We also thank all regional TVET curriculum experts for their active facilitation on the development of this curriculum.

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### Experts Involved on the Development of this Curriculum

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