



Curriculum in Leather Technology in the Sudan

REVISED LEVEL I, II & III PROGRAMMES FOR KARARI VOCATIONAL TRAINING CENTRE

Developed by the Ministry of Human Development & Labour
and COMESA - Leather and Leather Products Institute

September 2014

TVET-System

Curriculum Level-I, II & III

**(BASIC FOOTWEAR AND LEATHER GOODS
PRODUCTION OPERATIONS)**

**Based on
Occupational Standard (OS)**

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).

Curriculum development play an important role with regard to quality driven TVET-Delivery. Curricula help to facilitate the learning 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 revised by a group of experts from COMESA/LLPI and **the region** based on the occupational standard for footwear and leather goods. It has the character of a model curriculum and is an example on how to transform the occupational requirements as defined in the respective occupational standard into an adequate curriculum.

The curriculum revision process has been actively supported and facilitated by the Ministry of Human Development and Labour – Khartoum State in line with its commitment to facilitate the development of vocational trainings, as part of the efforts of the State in curbing poverty and securing livelihood.

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TVET-System

Curriculum Level-I

(BASIC FOOTWEAR AND LEATHER GOODS PRODUCTION OPERATIONS)

**Based on
Occupational Standard (OS)**

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1. TVET-Program Title: Basic Footwear and Leather Goods Production Operations

1.1. TVET-Program Description

The Program is designed to develop the necessary knowledge, skills and attitude 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 **Cutting operator in footwear and leather goods Industry** with competencies elaborated in the respective OS. Graduates of the program will have the required qualification to work in the **footwear and leather goods** sector in the field of **Cutting and Prefabrication**.

The prime objective of this training program is to equip the learners with the identified competences specified in the OS. Graduates are therefore expected to **have knowledge of the product, the materials used in footwear and leather goods, using of hand tools, cutting leather by hand, cutting leather by machine, perform the pre-fabrication operations, apply quality standards, work with others, receive and respond to workplace communication, demonstrate work value and develop understanding of entrepreneurship** in accordance with the performance criteria described in the OS.

1.2. Duration of the TVET-Program

The Program will have duration of **584 hours** excluding the on-the-job practice or cooperative training time but including Civic Education et al.

1.3. Qualification Level and Certification

Based on the descriptors elaborated on the National TVET Qualification Framework (NTQF) the qualification of this specific TVET Program is "**Level I**".

The learner can exit after successfully completing the Modules in level I and will be awarded the equivalent institutional certificate on the level completed. The learner can also exit after completing any one learning module. However, only certificate of attainment or attendance (this is institutional discretion) will be awarded.

Target Groups

Any citizen 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.

1.4. Entry Requirements

The prospective participants of this program are required to possess the requirements or directive of the _____.

1.5. 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 TVET-institution and identified companies have forged an agreement to co-operate with regard to implementation of this program. The time

spent by the trainees in the 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 lecture-discussion, simulation and actual practice. These modalities will be utilized before the trainees are exposed to the industry environment.

1.6. TVET-Program Structure

Table 1: List of Modules of Level I Training

No.	Topics	Module Code	*Credit hours	Lecture Hours	Practical hours	Total hours
1	Use hand tools and equipment	KLC-TE 101	2	16	32	48
2	Operate leather and leather goods making machine	KLC-OM 102	3	25	45	70
3	Skive and Split Leather, folding, applying adhesives,	KLC-SS 103	2	10	40	50
4	Performing Basic stitching operations	KLC-SO 104	3	25	45	70
5	Perform minor maintenance	KLC-PM 105	2	10	40	50
6	Introduction to hides and skins production	KLC-HP 106	3	32	32	64
7	Understanding Basics of leather manufacturing processes	KLC-LM 107	4	32	64	96
8	Apply quality standards	KLC-QS 108	2	16	32	48
9	Demonstrate work values, Work with others, Receive and respond to work place communication	KLC-WV 109	2	20	24	44
10	Applying Basic ergonomics	KLC-BE 110	1	10	12	24
11	Respond to emergencies	KLC-RE 111	1	10	12	24
	Total		25	206	378	584

*: 1 Cr.hrs = 16 lecture hours or 32 to 48 practical hours

1.7. Learning Modules

Learning Module 1

Module title	Use hand tools and equipment
Module code	KLC-TE 101
Credit /total hours/ ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module covers the knowledge, attitudes and skills required to identify, to use and to proper handling of tools and equipment
Learning outcomes	After the module is completed, the trainees would be able to: <ul style="list-style-type: none"> • Planning and preparing for work • Selecting and using appropriate hand tools • Cleaning up

Content	<p>Work Work instruction, plan and specification: Safety for work, Material utilization</p> <p>Hand tools and equipment: Types of hand tools and equipment (For leather goods material cutting, For leather goods assembling and stitching, For leather goods pattern making and design), Handling of tools and equipment, Quality requirement for hand tools and equipment</p> <p>Clean work area: Clean and check hand tools and equipment, Store tools and equipment</p>
Teaching strategy	<ul style="list-style-type: none"> ○ Lectures ○ Demonstration and simulation ○ On the job training ○ Individual and group work ○ Practical exercise
Assessment criteria	<ul style="list-style-type: none"> ● Individual project (----%) ● Group project and presentation (--%) ● Written test (-----%) ● Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> ● Continuous assessment(test, group work, etc) ● Quiz ● Assignments ● Mid-exam ● Project work ● Final-exam
Role of instructors and students	<ul style="list-style-type: none"> ● Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments ● Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> ● Lecture materials ● Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts ● Journals ● Reference books ● Text books
Module requirements	<ul style="list-style-type: none"> ● Should attend all class and practical/field sessions ● Should get pass mark in all written exams ● Pass mark in reports of assignments ● Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> ● ----- ● ----- ● -----

Module title	Operate leather and leather goods making machine
Module code	KLC-OM 102
Credit /total hours/ ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module is designed to equip trainees with leather goods production machines operation and minor maintenance performance. It contains both the theoretical part and practical activities the trainee should pass through to acquire the basic competence (skill, knowledge and attitude) in accomplishing organizational activities relating to its coverage.
Learning outcomes	After the module is completed, the trainees would be able to: <ul style="list-style-type: none"> • Plan work and prepare work area according to defined procedures/methods and standards • Select thread and needles according to design and material specification. • Set up machine according to the manufacturers manual and safety procedures • Operate machines according to standard, industry practice and OH & S requirements • Perform minor maintenances using manufacturer's maintenance manual.
Content	<p>Plan work and prepare work area</p> <p>1.1. Maintenance planning</p> <p style="padding-left: 20px;">1.1.1 Maintenance scheduling.</p> <p style="padding-left: 20px;">1.1.2 Material requirement</p> <p style="padding-left: 20px;">1.1.3 Capacity planning</p> <p style="padding-left: 40px;">1.1.3.1 Workforce capacity</p> <p style="padding-left: 40px;">1.1.3.2 Organizing work</p> <p>1.2. Maintaining safety rules and regulations</p> <p>1.3. Maintaining cleanliness of workstation</p> <p>1.4. Maintaining safe working environment</p> <p>2. Classification of stitching machine</p> <p>2.1 According to their shape</p> <p style="padding-left: 20px;">2.1.1 Flat bed</p> <p style="padding-left: 20px;">2.1.2 Post bed (column)</p> <p style="padding-left: 20px;">2.1.3 Cylinder bed (arm type)</p> <p>2.2 According to the stitch formation</p> <p style="padding-left: 20px;">2.2.1 Lock stitch</p> <p style="padding-left: 20px;">2.2.2 Chain stitch</p> <p style="padding-left: 20px;">2.2.3 Zigzag stitch</p> <p>2.3 According to the number of needles</p> <p style="padding-left: 20px;">2.3.1 Single needle</p> <p style="padding-left: 20px;">2.3.2`Twin needle</p> <p style="padding-left: 20px;">2.3.3 Special purpose stitching machines could have more</p> <p>2.4 According to their speed</p> <p style="padding-left: 20px;">2.4.1 High</p> <p style="padding-left: 20px;">2.4.2 Medium</p> <p style="padding-left: 20px;">2.4.3 Low</p> <p>3. Main parts of stitching machine</p>

	<p>3.1 Throat plate</p> <p>3.2 Feed dog</p> <p> 3.2.1 drop feed</p> <p> 3.2.2 compound feed</p> <p> 3.2.3 unison feed</p> <p> 3.2.4 differential feed</p> <p>3.3 Foot-presser</p> <p>3.4 Needle and thread</p> <p>4. Needle and thread selection</p> <p> 4.1 Thread material</p> <p> 4.1.1 Sew ability</p> <p> 4.1.2 Durability</p> <p> 4.1.3 Thread types</p> <p> 4.1.4 Thread size</p> <p> 4.1.5 Tensile strength and colour</p> <p> 4.4 Sewing needle</p> <p> 4.2.1 Types of needle</p> <p> 4.2.2 Size of needle</p> <p> 4.2.3 Part of a needle</p> <p> 4.5 Class of stitches</p> <p> 4.6 Types of seams</p> <p> 4.6.1 Superimposed seam</p> <p> 4.6.2 Lapped</p> <p> 4.6.3 Bound</p> <p> 4.6.4 Decorative</p> <p> 4.6.5 Flat</p> <p> 4.7 Types of materials to be sewn</p> <p>5. Machine set up</p> <p> 5.1 Threading sewing machine</p> <p> 5.2 Tension adjustment</p> <p> 5.2.1 Bobbin tension</p> <p> 5.2.2 Needle thread tension</p> <p> 5.3 Needle fixing</p> <p> 5.4 Winding/rewinding bobbin</p> <p> 5.5 Oiling and lubrication</p> <p> 5.6 Adjusting foot-press pressure</p> <p> 5.7 Foot pedal adjustment</p> <p>6. Machine operation</p> <p> 6.1 Seat adjustment</p> <p> 6.2 Align work piece to machine</p> <p> 6.3 Feed work piece to machine</p> <p> 6.4 Machine performance monitoring</p> <p> 6.4.1 Rectify minor machine fault</p> <p> 6.4.2 Check machine operation</p> <p> 6.4.3 Clean up and minor shutdown maintenance</p> <p>7. Informal inspection, labeling and documentation</p>
Teaching strategy	<ul style="list-style-type: none"> • Lecture • Group discussion • Role playing • Visiting firms • Demonstration

	<ul style="list-style-type: none"> • Practical exercise.
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%) • Etc....
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration • Etc....
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examination</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • •

Learning Module 3

Module title	Skive and Split Leather, folding, applying adhesives,
Module code	KLC-SS 103
Credit /total hours/ ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module is designed to equip trainees with skill and knowledge of preparation of work piece, setting up of and adjustment of skiving and skiving machine, performing of machine operation/skiving or splitting of components or pieces/, identifying poor machine performance and dispatch of skived spited components .It contains both the theoretical part and practical activities the trainee should pas through to acquire the basic competence (skill, knowledge and attitude) in accomplishing organizational activities relating to its coverage.
Learning outcomes	At the end of the module the learner will be able to: <ul style="list-style-type: none"> • Prepare tools, machine/ equipment

	<ul style="list-style-type: none"> • Check machine and tools for irregularities • Conduct sample run • Readjust machine settings • Split the components • Stamp and Mark the components • Skive the components • Fold the components
Content	<p>1. Preparing work pieces work bundle assessment Laying work pieces</p> <p>2. Work place oh &s implementation Safety procedure Prevention of accident Risk elimination Safety legislation</p> <p>3. Setting skiving machine Ergonomically Method selection 3.2.1 Raw edge skive 3.2.2 Overlap skive 3.2.3 Groove skive 3.2.4 Taper skive Machine operation Inspection Minor maintenance Dispatch work pieces</p> <p>4. Setting splitting machine 4.1 Ergonomically 4.5 Machine operation 4.6 Minor maintenance</p> <p>5. Component checking and dispatching 5.1 Inspection of components 5.2 Codification 5.3 Component bundling</p>
Teaching strategy	<ul style="list-style-type: none"> • Learner-centered • Flexible • On and off job training • Internship • Group/ individual based practice/exercise • Holistic projects
Assessment criteria	Assessment of the module should be based on the evaluation of the

	attainment of the learning outcomes with the reference to the performance criteria indicated in the respective EOS for the occupation.
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment(test, group work, etc) • Quiz • Assignments • Mid-exam • Project work • Final-exam
Role of instructors and students	<p>Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self-study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ol style="list-style-type: none"> 1. FDDI , the skill of skiving : for footwear and leather products 2.B.venkatappaiah , introduction to the modern footwear technology 3. FDDI, the skill sole splitting 4. David Tracy ,Introduction to leather goods manufacturing

Learning Module 4

Module title	Performing Basic stitching operations
Module code	KLC-SO 104
Credit /total hours/ ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module aims at the development of skills, attitudes and knowledge required to operate and monitor flat bed, post bed, zig-zag, cylinder bed, and strobble stitching machine using defined procedures / methods.
Learning outcomes	<p>At the end of the module the learner will be able to:</p> <ul style="list-style-type: none"> • Set up sewing machine

	<ul style="list-style-type: none"> • Perform sewing operations • Check machine performance • Check stitched components • Dispatch completed work • Perform folding operations
Content	<ol style="list-style-type: none"> 1. Introduction to stitching operation. <ol style="list-style-type: none"> 1.1 Safety rules and regulation 1.2 Main Parts of stitching machine 1.3 Adjustment of machine 2. Type of stitching machine <ol style="list-style-type: none"> 2.1 According to head type 2.2 According to head position 2.3 According to speed 2.4 According to stitch formation 2.5 According to duty 2.6 According to needle number 3. Types of seams <ol style="list-style-type: none"> 3.1 Closed seam 3.2 Open seam 3.3 Zig zag seam 3.4 Lapped seam 3.5 Weltd seam 3.5 Moccasin seam 3.6 Decorative seam 4.Thread <ol style="list-style-type: none"> 4.1.Types of threads 4.2 Size of thread 4.3 Tension of thread 4.4 selecting the correct thread type based on needle type and the material 5. Needles <ol style="list-style-type: none"> 5.1 Parts of Needle 5.2 Needle system 5.3 Needle Point 5.4 Needle size 6.Top line edge treatments

	<p>6.1. Folding</p> <p>6.2 French bound edge</p> <p>6.4 Bagged top line</p> <p>6.5 Collars</p> <p>6.6 Ghillie top lines</p> <p>7. Incesion exercise</p> <p>8. Sequence of operation</p> <p>8.1 Court shoe</p> <p>8.2 Sandal</p> <p>8.3 Derby</p> <p>8.4 Oxford</p> <p>8.5 Boots</p> <p>8.6 Pantafola</p> <p>8.7 Moccasin</p> <p>9. Subsidiary Stitching operation</p> <p>9.1 Boxing</p> <ul style="list-style-type: none"> • 9.2 Barring
Teaching strategy	<ul style="list-style-type: none"> ○ Lectures ○ Demonstration and simulation ○ On the job training ○ Individual and group work ○ Practical exercise
Assessment criteria	
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment(test, group work, etc) • Quiz • Assignments • Mid-exam • Project work • Final-exam
Role of instructors and students	<p>Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books

	(modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams (modify/change as appropriate)
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 5

Module title	Perform minor maintenance
Module code	KLC-SO 105
Credit /total hours/ ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module is designed to equip trainees with leather goods production machines operation and minor maintenance performance. It contains both the theoretical part and practical activities the trainee should pass through to acquire the basic competence (skill, knowledge and attitude) in accomplishing organizational activities relating to its coverage
Learning outcomes	At the end of the module the learner will be able to: <ul style="list-style-type: none"> • Carry out and complete basic routine maintenance using manufacturer's maintenance manual.
Content	<p>Basic routine maintenance</p> <p>Tools and supplies required to carry out basic routine maintenance</p> <ol style="list-style-type: none"> 1.1. Routine pre-operational checks of machine and equipments 1.2. Identify faulty and unsafe machines 1.3. Identify OHS hazards <p>Carry out basic routine maintenance</p> <p>Protective equipments as per OHS requirements</p> <p>Basic servicing of machineries</p> <ul style="list-style-type: none"> • Greasing • Lubrication • Cleaning <p>Routine adjustment and repairs</p> <p>Conduct maintenance as per the OHS requirements</p> <p>Complete basic routine maintenance</p> <p>Clean tools and work area</p> <p>Waste disposal from maintenance</p> <p>Report preparation</p>
Teaching strategy	<ul style="list-style-type: none"> ○ Lectures ○ Demonstration and simulation ○ On the job training ○ Individual and group work <p>Practical exercise</p>
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%)

	<ul style="list-style-type: none"> • Group project and presentation (--%) • Written Exam (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment(test, group work, etc) • Quiz • Assignments • Mid-exam • Project work • Final-exam
Role of instructors and students	<p>Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	3 weeks
Reading materials	<ul style="list-style-type: none"> ○ FDDI the skill of operating cylinder arm slipper binder sewing machine ○ FDDI the skill of operating single needle under trimmer machine ○ FDDI the skill of edge prêt rimming ○ Lad bury, Ann make the most of sewing machine ○ Tandy Leather Co. sewing with leather ○ FDDI the skill of operating twin needle flat bed machine for footwear and leather products ○ FDDI the skill of corder flat bed sewing machine ○ AFPA stitching machine and related sciences reference book

Learning Module 6

Module title	Introduction to hides and skins production
Module code	KLC-HP 106
Credit /total hours/ ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	The module introduces students the major sources of the raw hides and

	skins, preservation, storage and transport of hides and skins, defects of hides and skins and grading methods. Theoretical and practical methods and major facilities are also introduced and discussed
Learning outcomes	At the end of the module the learner will be able to: <ul style="list-style-type: none"> • Describe major sources of hides and skins • Understand the importance of hides and skins • Understand hides and skins handling methods and their effect on hides and skins quality • Describe major defects of hides and skins and • Determine hides and skins grades
Content	<ol style="list-style-type: none"> 1. Types of hides and skins 2. Source of Hides/Skins 3. Importance of hides and skins nationally and globally 4. Preparation of Hides/Skins 5. Hides and skins grades 6. Utilization of hides and skins resources 7. Defects of hides and skins <ol style="list-style-type: none"> 7.1. Pre-slaughter defects 7.2. Peri-slaughter defects 7.3. Post-slaughter defects 8. Improving hides and skins quality <ol style="list-style-type: none"> 8.1. At farm level 8.2. Abattoirs 8.3. During storage and transport
Teaching strategy	<ul style="list-style-type: none"> • Lectures • Demonstration and simulation • On the job training • Individual and group work • Practical exercise
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (----%) • Practical work (-----%) • Etc....
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment(test, group work, etc) • Quiz • Assignments • Mid-exam • Practical exam
Role of instructors and students	<p>Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts

	<ul style="list-style-type: none"> • Journals • Reference books • Text books
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in overall average that encompass written and practical exams and assignments
Module calendar	3 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 7

Module title	Understanding Basics of leather manufacturing processes
Module code	KLC-LM 107
Credit /total hours/ ECTS	4 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module aims at imparting knowledge, attitudes and skills necessary to the understanding of basic leather technology. This unit also includes basic understanding of types of tanning, crust and finishing processes.
Learning outcomes	<p>At the end of the module the learner will be able to:</p> <ul style="list-style-type: none"> • Describe leather processing • Describe basic structure of the skin • Describe basic tanning processes • Explain basic crusting process • Explain basic finishing operation and storage
Content	<p>Describe leather processing</p> <p>Types and characteristics of leather</p> <ul style="list-style-type: none"> • Upper leather <ul style="list-style-type: none"> ○ Full grain leather ○ Corrected grain leather ○ Resin finished leather ○ Suede leather ○ Split suede ○ Nubuck leather ○ Burnish leather ○ Glazed leather ○ Oily leather ○ Patent leather ○ Crimped leather ○ Dry milled leather ○ Din leather • Lining leather <ul style="list-style-type: none"> ○ Drum dyed leather ○ Pigmented leather ○ Pigmented split

	<ul style="list-style-type: none"> ○ Split ● Sole & insole leather (vegetable tanned) <ul style="list-style-type: none"> ○ Leather classification ○ Processing requirement of leather ○ Leather processing procedures and techniques ● Chrome tanning ● Vegetable tanning ● Alum tanning ● Oil tanning ● Formaldehyde tanning ● Zirconium tanning ● Iron tanning ● Combination tanning <p>Describe basic structure of skin</p> <p>Structure of skin</p> <ul style="list-style-type: none"> ● Anatomical structure of skin ● Chemical structure of skin <p>Difference between hide, side and skin Effect of tanning process on skin Method of preservation of raw skin</p> <ul style="list-style-type: none"> ● Wet salting ● Dry salting ● Drying <p>Describe basic tanning process</p> <p>Basic tanning requirements</p> <ul style="list-style-type: none"> ● Chrome Tanning chemicals ● Vegetable tanning <p>Purpose of tanning Different stages of tanning for different types of tanning process</p> <ul style="list-style-type: none"> ● Chrome tanning ● Vegetable tanning <p>Basic crusting process</p> <p>Different methods of making crust Procedure of preparing leather for crusting process Basic operations for crusting</p> <p>Basic finishing operations and storage</p> <p>Difference between full grain and corrected grain leather Methods of finishing of leather</p> <ul style="list-style-type: none"> ● Full grain leather ● Corrected grain leather
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	<ul style="list-style-type: none"> • Burnish leather • Nubuck leather • Crimped leather <p>Different types of finished leather Quality requirement for finished leather</p> <ul style="list-style-type: none"> • Inspection <p>Method of leather storage</p> <ul style="list-style-type: none"> • As per grade • As per size of skin <p>Method of bundling Measuring of leather</p>
Teaching strategy	<ul style="list-style-type: none"> ○ Lectures ○ Demonstration and simulation ○ On the job training ○ Individual and group work <p>Practical exercise</p>
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%) • Etc....
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment(test, group work, etc) • Quiz • Assignments • Mid-exam • Project work • Final-exam
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations (modify or change as appropriate)
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams (modify/change as appropriate)
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • -----

	<ul style="list-style-type: none"> • ----- • ----- • Etc.. <p>(give reference materials list that could be source of additional information for the trainees regarding the particular module)</p>
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Learning Module 8

Module title	Apply quality standards
Module code	KLC-QS 108
Credit /total hours/ ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This unit covers the skills and knowledge required in applying quality standards in footwear production operations
Learning outcomes	At the end of the module the learner will be able to:
Content	<p>I. Assess quality of received articles</p> <p>1.1 Received materials or articles are checked against workplace standards and specifications</p> <p>1.2 Materials or articles are measured using the appropriate measuring instruments in accordance with workplace procedures</p> <p>1.3 Causes of any identified faults are identified and corrective actions are taken in accordance with workplace procedures</p> <p>II. Assess own work</p> <p>2.1 Completed work is checked against workplace standards relevant to the operations being undertaken</p> <p>2.2 An understanding is demonstrated on how the work activities and completed work relate to the next production process and to the final appearance of the product</p> <p>2.3 Faulty pieces or final products are identified and isolated in accordance with company policies and procedures</p> <p>2.4 Faults and any identified causes are recorded and reported in accordance with workplace procedures.</p> <p>III. Record information</p> <p>3.1 Basic information on the quality performance is recorded in accordance with workplace procedures</p> <p>3.2 Records of work quality are maintained according to the requirements of the company</p> <p>IV. Study causes of quality deviations</p> <p>4.1 Causes of deviations from final outputs are investigated and reported in accordance with workplace procedures</p> <p>4.2 Suitable preventive action is recommended based on workplace quality standards and identified causes of deviation from specified quality standards of materials or final output</p> <p>V. Complete documentation</p>

	<p>5.1 Information on quality and other indicators of production performance is recorded.</p> <p>5.2 All production processes and outcomes are recorded.</p>
Teaching strategy	<ul style="list-style-type: none"> ○ Lectures ○ Demonstration and simulation ○ On the job training ○ Individual and group work ○ Practical exercise
Assessment criteria	<ul style="list-style-type: none"> ● Individual project (----%) ● Group project and presentation (--%) ● Written test (-----%) ● Practical work (-----%) ● Etc....
Assessment strategy	<ul style="list-style-type: none"> ● Continuous assessment(test, group work, etc) ● Quiz ● Assignments ● Mid-exam ● Project work ● Final-exam
Role of instructors and students	<p>Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations (modify or change as appropriate)</p>
Teaching support and inputs	<ul style="list-style-type: none"> ● Lecture materials ● Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts ● Journals ● Reference books ● Text books
Module requirements	<ul style="list-style-type: none"> ● Should attend all class and practical/field sessions ● Should get pass mark in all written exams ● Pass mark in reports of assignments ● Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> ● ----- ● ----- ● -----

Learning Module 9

Module title	Demonstrate work values, Work with others, Receive and respond to work place communication
Module code	KLC-WV 109
Credit /total hours/ ECTS	2 Cr.hrs
Module type	Compulsory

Pre-requisite module	None
Description of module	This module covers the skills, knowledge and attitudes to gather, interpret and convey information in response to workplace requirements, understand role and responsibility as a member of a team, demonstrate proper work values to develop and monitor the implementation of the operational plan and to provide efficient and effective workplace practices within the organization's productivity and profitability plans.
Learning outcomes	<p>At the end of the module the learner will be able to:</p> <ul style="list-style-type: none"> • Obtaining and convey work place information • Participating in work place meetings and discussion s • Completing relevant work related documents • Describing team role and scope • Identifying own role and responsibility within team • Working as a team member
Content	<ol style="list-style-type: none"> 1. Information <ol style="list-style-type: none"> 1.1. What is information 1.2. Gathering information 1.3. Interpret and convey information 1.4. Medium for information transfer 1.5. Storage of information <ol style="list-style-type: none"> 1.5.1. Manual filling system 1.5.2. Computer filling system 2. Meeting and discussion <ol style="list-style-type: none"> 2.1. Purpose of meeting and discussion 2.2. Work place interaction 2.3. Outcome of meeting and discussion 3. Line of communication 4. Concept of team <ol style="list-style-type: none"> 4.1. what is team 4.2. role and objectives of team 4.3. team structure 4.4. team parameter 4.5. responsibility of team 4.6. activities of team 5. Role in team <ol style="list-style-type: none"> 5.1. role and responsibility of individual 5.2. role and responsibility of the other

	<p>5.3. Relationship of team</p> <p>5.3.1. relationship within team</p> <p>5.3.2. relationship with external in team</p> <p>6. Work in team member</p> <p>6.1. communication process</p> <p>6.2. development of team work plan</p> <p>6.3. workplace language</p>
Teaching strategy	<ul style="list-style-type: none"> ○ Lectures ○ Demonstration and simulation ○ On the job training ○ Individual and group work ○ Practical exercise
Assessment criteria	<ul style="list-style-type: none"> ● Individual project (----%) ● Group project and presentation (--%) ● Written test (-----%) ● Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> ● Continuous assessment(test, group work, etc) ● Quiz ● Assignments ● Mid-exam ● Project work ● Final-exam
Role of instructors and students	<p>Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations</p>
Teaching support and inputs	<ul style="list-style-type: none"> ● Lecture materials ● Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts ● Journals ● Reference books ● Text books
Module requirements	<ul style="list-style-type: none"> ● Should attend all class and practical/field sessions ● Should get pass mark in all written exams ● Pass mark in reports of assignments ● Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> ● ----- ● ----- ● -----

Learning Module 10

Module title	Applying Basic Ergonomics
Module code	KLC-BE 110
Credit /total hours/ ECTS	1 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module aims at providing knowledge, attitudes and skills required to perform basic ergonomics principles
Learning outcomes	<p>At the end of the module the learner will be able to:</p> <ul style="list-style-type: none"> • Understand basics of human factors engineering • Evaluate a work place design and • Use the application of ergonomics in clicking & stitching departments
Content	<p>1. Basics of human factors engineering</p> <p>1.1. Causes of stress in work area</p> <ul style="list-style-type: none"> • Psychological • Physical • Biological <p>1.2. Causes of fatigue in work area</p> <ul style="list-style-type: none"> • Posture • Body mechanics <p>2. Work place design</p> <p>2.1 Identify the requirements for work place</p> <ul style="list-style-type: none"> • Lighting • Placement of machine and equipments • Furniture and fixtures • OHS requirements <p>2.2 Reach concept</p> <ul style="list-style-type: none"> • Setting up of work area • Placement of tools • Transportation of material <p>3. Application of ergonomics in clicking, stitching</p> <p>3.1 Clicking department</p> <ul style="list-style-type: none"> • Identify work activities that can cause injury • Lighting • Operators height with respect to machine • Accessibility to the tools, dies and work transportation device <p>3.2 Stitching department</p> <ul style="list-style-type: none"> • Identify work activities that can cause injury • Work place illumination

	<ul style="list-style-type: none"> • Sitting postures • Operators position with respect to the work stations. • Accessibility to the tools, patterns and work transportation device.
Teaching strategy	<ul style="list-style-type: none"> ○ Lectures ○ Demonstration and simulation ○ On the job training ○ Individual and group work ○ Practical exercise
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 11

Module title	Respond to emergencies
Module code	KLC-RE 111
Credit /total hours/ ECTS	1 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module covers the skills, knowledge and attitude required in responding to emergency and applying critical care protocols and implement hazard prevention and control in the workplace.
Learning outcomes	After the module is completed, the trainees would be able to: <ul style="list-style-type: none"> • Involve in the preparation of emergency and critical care protocols • Prepare for emergency response • Evaluate the emergency • Implement hazard prevention and control on the work place
Content	1. Emergency <ol style="list-style-type: none"> 1.1. what is emergency 1.2. How emergency is happen? 1.3. Types of emergency 1.4. Occupational health and safety 1.5. Animal product and hygiene inspection policy

	<p>2. Protocol for safe work practice</p> <p>2.1. Risk identification and minimization</p> <p>2.2. Handling, use and storage of chemical</p> <p>3. Emergency response</p> <p>3.1. Equipment and environment for emergency</p> <p>3.2. Team building activities</p> <p>4. Evaluate emergency</p> <p>4.1. Assess emergency situation</p> <p>4.2. Develop emergency situation</p> <p>4.3. Evaluate potential hazards</p> <p>5. Hazard prevention</p> <p>5.1. Equipment for prevention and control</p> <p>5.2. Safety procedure for prevention</p>
Teaching strategy	<ul style="list-style-type: none"> • Lecture • Group discussion • Role playing • Visiting firms • Demonstration • Practical exercise.
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<p>Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	1 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

TVET-System

Curriculum (Level-II)

(Footwear and Leather Goods Production)

Based on
Occupational Standard (OS)

2. TVET-Program Title: Footwear and Leather Goods Production

2.1. TVET-Program Description

The Program is designed to develop the necessary knowledge, skills and attitude 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 _____ with competencies elaborated in the respective OS. Graduates of the program will have the required qualification to work in the **Footwear and Leather Goods** sector in the field of **Footwear and Leather Goods Production**.

The prime objective of this training program is to equip the learners with the identified competences specified in the OS. Graduates are therefore expected to **do leather grading, estimate upper material and other leather goods requirement, understand tanning process, perform minor machine maintenance, prepare insole and leather /rubber outsole, perform machine lasting, perform shoe and leather goods finishing, prepare efficient work place layout communicate effectively and will know how to work in a team** in accordance with the performance criteria described in the OS.

2.2. Duration of the TVET-Program

The Program will have duration of **930 hours** including the on-the-job practice or cooperative training time.

2.3. Qualification Level and Certification

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

The learner can exit after successfully completing the Modules in Level II and will be awarded the equivalent institutional certificate on the level completed. The learner can also exit after completing any one learning module. However, only certificate of attainment or attendance (this is institutional discretion) will be awarded.

2.4 Target Groups

Any citizen who completes Level I program and capable of participating in the learning activities is entitled to take part in the Program.

2.4. Entry Requirements

The prospective participants of this program are required to possess the requirements or directive of the _____.

2.5. 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 TVET-institution and identified companies have forged an agreement to co-operate with regard to implementation of this program. The time spent by the trainees in the 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 lecture-discussion, simulation and actual practice. These modalities will be utilized before the trainees are exposed to the industry environment.

2.6. TVET-Program Structure

Table 2: List of Modules of Level II Training

S/N	Level II Module Title	Module Code	*Credit hours	Lecture Hours	Practical Hours	Total Hours
1	Working in team environment, (Participating in Work place communication)	KLC-WT 201	2	20	24	44
2	Developing business practice	KLC-BP 202	2	20	24	44
3	Leather grading,	KLC-LG 203	2	10	44	54
4	Entrepreneurship and communication skill	KLC-EC 204	2	20	24	44
5	Simple mathematics and calculations	KLC-MC 205	2	15	34	49
6	Estimating material requirement (Read and Interpret Pattern)	KLC-MR 206	3	23	50	73
7	Lay-up, Mark and Cut Leather and Lining Materials.; Cut Reinforcement Materials;	KLC-CM 207	2	10	44	54
8	Punch Eyelet and Rivet	KLC-ER 208	1	5	22	27
9	Perform Heel Attaching Operations; Performing Bottom component operations, Performing Closing of upper; Perform Toe-Puff and Stiffener Activation (F)	KLC-SM 209	3	20	56	76
10	Foot & last Description; Performing Basic lasting operations (F)	KLC-FL 210	3	20	56	76
11	Sew Leather goods Components (G)	KLC-LG 211	3	20	56	76
12	Assemble and Finish Leather goods (G)	KLC-LG 212	3	20	56	76
13	Performing finishing operations	KLC-FO 213	3	20	56	76
14	Restore Leather Products.	KLC-RL 214	1	5	22	27
15	Industrial attachment	KLC-IA 215	3	5	129	134
	Total		35	233	697	930

*: 1 Cr.hrs = 16 lecture hours or 32 to 48 practical hours

2.7. Learning Modules

The learning module information for this TVET programme is contained in the following template Compilation

Learning Module 1

Module title	Work in team environment(Participating in Work place communication)
Module code	KLC-WT 201
Credit/total hours/ECTS	2 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This module covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team. The module aims to provide the learners to provide the knowledge, attitudes and skills required to develop and monitor the implementation of the operational plan and to provide efficient and effective workplace practices within the organization's productivity and profitability plans.
Learning outcomes	After the module is completed, the trainees would be able to <ol style="list-style-type: none"> 1. Act and function as a team member 2. Display knowledge, attitudes and skills in effective discharge of duties
Content	<ol style="list-style-type: none"> 1. Describe team role and scope <ol style="list-style-type: none"> 1.1 The role and objective of the team is identified from available sources of information 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources 2. Identify own role and responsibility within team <ol style="list-style-type: none"> 2.1 Individual role and responsibilities within the team environment are identified 2.2 Roles and responsibility of other team members are identified and recognized 2.3 Reporting relationships within team and external to team are identified Concept of organizing work activities 3. Work as a team member <ol style="list-style-type: none"> 3.1 Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives 3.2 Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and workplace context 3.3 Observed protocols in reporting using standard operating procedures 3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members 4. Obtain and convey workplace information <ol style="list-style-type: none"> 4.1. Specific and relevant information is accessed from appropriate sources 4.2. Effective questioning , active listening and speaking skills are used to gather and convey information 4.3. Appropriate medium is used to transfer information

	<p>and ideas</p> <p>4.4. Appropriate non- verbal communication is used</p> <p>4.5. Appropriate lines of communication with supervisors and colleagues are identified and followed</p> <p>4.6. Defined workplace procedures for the location and storage of information are used</p> <p>4.7. Personal interaction is carried out clearly and concisely</p> <p>5. Participate in workplace meetings and discussions</p> <p>5.1. Team meetings are attended on time</p> <p>5.2. Own opinions are clearly expressed and those of others are listened to without interruption</p> <p>5.3. Meeting inputs are consistent with the meeting purpose and established protocols</p> <p>5.4. Workplace interactions are conducted in a courteous manner</p> <p>5.5. Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to</p> <p>5.6. Meeting outcomes are interpreted and implemented</p> <p>6. Complete relevant work related documents</p> <p>6.1. Range of forms relating to conditions of employment are completed accurately and legibly</p> <p>6.2. Workplace data is recorded on standard workplace forms and documents</p> <p>6.3. Basic mathematical processes are used for routine calculations</p> <p>6.4. Errors in recording information on forms/ documents are identified and properly acted upon</p> <p>7. Reporting requirements to supervisor are completed according to organizational guidelines</p>
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct

students	lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments <ul style="list-style-type: none"> • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 2

Module title	Developing business practice
Module code	KLC-BP 202
Credit/total hours/ECTS	2 Cr.hrs
Module Type	Compulsory
Pre-requisite module	none
Description of module	This module aims to provide trainees the knowledge, attitude and skill to establish a business operation from a planned concept
Learning outcomes	After the module is completed, the trainees would be able to <ul style="list-style-type: none"> • identify business opportunity • identify personal business skills • plan for establishment of business operation • implement establishment plan • review implementation process
Content	LO1 Identify business opportunity <ol style="list-style-type: none"> 1.1 Identification of business opportunities 1.2 Feasibility study of business viability 1.3 Market research on product or service 1.4 Impact of emerging or changing technology on business 1.5 Business opportunity assessment 1.6 Business planning LO2 Identify personal business skills <ol style="list-style-type: none"> 2.1 Determination of financial and business skills

	<p>2.2 Identification and assessment of business risks</p> <p>LO3 Plan for establishment of business operation</p> <p>3.1 Determining business structure and operations</p> <p>3.2 Developing guide and operation Procedures</p> <p>3.3 Securing finance for business operation</p> <p>3.4 Legal and regulatory requirements for business</p> <p>3.5 Human and physical resources requirement</p> <p>3.6 Developing Recruitment strategies</p> <p>LO4 Implement business plan</p> <p>4.1 Implementing marketing business</p> <p>4.2 Allocating proper physical and human resources</p> <p>4.3 Establishment of operational unit for business operation</p> <p>4.4 Monitoring and evaluation of business operation</p> <p>4.5 Legal documents record keeping</p> <p>4.6 Rules and regulation of contractual procurement</p> <p>4.7 Business leasing and/or ownership</p> <p>LO5 Review implementation process</p> <p>5.1 Review business implementation process</p> <p>5.2 Maintenance and improvements of business operation</p> <p>5.3 Implementing improvements</p> <p>5.4 Record keeping and documentation</p>
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all average that encompass written exams,

	reports of assignments and practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 3

Module title	Leather grading
Module code	KLC-LG 203
Credit/total hours/ECTS	2 Cr.hrs
Module Type	Compulsory
Pre-requisite module	none
Description of module	This module aims at development of knowledge & skills related to the estimation of the grade of the leather based upon the defects, purchase cost variance.
Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <ul style="list-style-type: none"> • Describe principles and concepts of grading of leather • Determine the defects of the leather • Determine and perform measurement of area of the defect • Perform quality check on the leather • Assess the grade of the leather • Determine the financial implication on the procurement of leather.
Content	<p>MODULE CONTENTS:</p> <p>LO1. Describe principle and concept of leather grading</p> <p>1.1. The principles and concept of leather grading is described</p> <ul style="list-style-type: none"> • Objective of grading • Percentage of defects • Units of measurements • Conversions of units of measurements <p>1.2. The methods of leather grading are explained</p> <ul style="list-style-type: none"> • Selected grade • Table run • Grading with respect to design • Grading without respect to design <p>1.3. The objective of leather grading</p> <p>LO2. Determine the defects of leather</p> <p>2.1 Types of defects on leather</p> <p>2.2 Identifications of the defects on the leather</p> <ul style="list-style-type: none"> • Looseness • Thickness

- Pipeness
- Scratch marks
- Scar marks
- Brand marks
- Flay cuts
- Cracking
- Bleeding
- Tearing
- Grain cracking
- Warble hole
- Tick mark
- Growth marks
- Vein marks

2.3 Effects of defects on footwear

LO3. Determine and perform the measurement of the defected area of leather

3.1 Method of determination of the defected area by grid method

3.2 Method of measuring by fist method

3.3 The method of measuring leather

- Leather measuring machine
- Grid method

3.4 Measurement of defected area of leather by grid

LO4. Perform quality check on leather

4.1 Physical tests (non laboratory tests) on leather

- Random test
 - 4.1.1 Selection of samples
 - 4.1.2 Substance/thickness
 - 4.1.3 Finish appearance
 - 4.1.4 Feel
 - 4.1.5 Adhesion of finish
 - 4.1.6 Wet and dry rub
 - 4.1.7 Strength
 - 4.1.8 Fading
 - 4.1.9 Water repellency
 - 4.1.10 Chemical resistance
- Leather defects
 - 4.1.1 Scratches
 - 4.1.2 Brand marks
 - 4.1.3 Growth marks
 - 4.1.4 Warble and tick marks
 - 4.1.5 Grain cracking
 - 4.1.6 Loose leather

	<p>4.1.7 Stain marks on flesh for un lined shoes</p> <p>4.2 Methods of physical testing</p> <p>4.3 Method of sample selection</p> <p>LO5. Assess the grade of leather</p> <p>5.1 Average grade of leather grade</p> <p>5.2 Evaluation of leather for cutting and its suitability for footwear manufacturing</p> <p>5.3 Storage and bundling of leather</p> <p>LO6. Financial implications on procurement of leather</p> <p>6.1 Reassessment of the received consignment</p> <p>6.2 Purchase cost variance of the received consignment</p>
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written examination • Oral Questioning & Viva • Practical examination
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all average that encompass written exams, reports of assignments and practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • FDDI Sayam Siddha Manual on Leather grading • ----- • -----

Learning Module 4

Module title	Entrepreneurship and communication skill
Module code	KLC-EC 204
Credit/total hours/ECTS	2 Cr.hrs
Module Type	Compulsory
Pre-requisite module	none
Description of module	This module aims to provide trainees the skills, knowledge and attitude required to understand the principles, functions, strategies and methods of entrepreneurship, and to effectively participate in workplace communications.
Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <ul style="list-style-type: none"> • Describe and explain the principles, concept and scope of entrepreneurship • Discuss how to become entrepreneur • Discuss how to organize an enterprise • Discuss how to operate an enterprise • Develop one's own business plan • Obtain and provide information in response to workplace requirements • Participate in workplace meetings and discussions • Complete relevant work related documents
Content	<p>LO1Describe and explain the principles, concept and scope of entrepreneurship</p> <ol style="list-style-type: none"> 1.1 Concepts and terminologies of entrepreneurship 1.2 Types and classification of entrepreneurship 1.3 Roles of entrepreneurship <p>LO2Discuss how to become entrepreneur</p> <ol style="list-style-type: none"> 2.1 Concepts of self-employment and motivation 2.2 Advantages and disadvantages of self-employment 2.3 Characteristics and traits of entrepreneurship 2.4 Method of Identifying successful entrepreneurship <p>LO3Discuss how to organize an enterprise</p> <ol style="list-style-type: none"> 3.1 Principles of Ranking Entrepreneurship 3.2 Business Opportunities 3.3 Techniques of Generating Business Ideas 3.4 Procedures of Market Assessment 3.5 Factors Considered In Selecting Business Location 3.6 Types of Business Ownership 3.7 Determination Of Initial Capital For Launching Business 3.8 Sources of Capital <p>LO4Discuss how to operate an enterprise</p> <ol style="list-style-type: none"> 4.1 Advantages and disadvantages of entrepreneur alternatives 4.2 Procedures of hiring and managing people 4.3 Time management 4.4 Sales management 4.5 Factors and steps to be considered in selecting suppliers 4.6 Effects and Characteristics of new technologies on business 4.7 Types of cost management

	<p>4.8 Factors affecting enterprise cost</p> <p>4.9 Financial record keeping</p> <p>4.10 Self-management and negotiation skills</p> <p>4.11 Business Risk management</p> <p>LO5 Develop one's own business plan</p> <p>5.1 Preparing simple business plan</p> <p>5.2 Application of structure and format on business plan</p> <p>5.3 Assessment and analysis of business plan</p> <p>5.4 Feasibility study of business</p> <p>5.5 Business problem identification</p> <p>5.6 Techniques and procedures of searching for information</p> <p>LO1 Obtain and provide information in response to workplace requirements</p> <p>1.1 Obtaining and interpreting information</p> <p>1.2 How to check Sources and Document of information</p> <p>1.3 Planning and organizing activities</p> <p>1.4 Concise personal interaction</p> <p>LO2 Participate in workplace meetings and discussions</p> <p>1.1 Concepts of meeting</p> <p>1.2 Meeting inputs and following protocols</p> <p>1.3 Appropriate conduction of interactions</p> <p>1.4 Interpreting meeting outcomes</p> <p>LO3 Complete relevant work related documents</p> <p>3.1 Utilization of employment work related documents</p> <p>3.2 Data recording and keeping</p> <p>3.3 Basic mathematical concepts</p> <p>3.4 Identifying and rectifying errors</p> <p>Method of Reporting</p>
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written examination • Oral Questioning & Viva • Practical examination
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and	<ul style="list-style-type: none"> • Lecture materials

inputs	<ul style="list-style-type: none"> • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all average that encompass written exams, reports of assignments and practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • -----

Learning Module 5

Module title	Simple mathematics and calculations
Module code	KLC-MC 205
Credit/total hours/ECTS	2 Cr. hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This unit covers the skills and knowledge to perform simple measurements of length between two points, calculation of area in basic shapes
Learning outcomes	After the module is completed, the trainees would be able to <ul style="list-style-type: none"> • Measure using ruler or tape measure • Calculate area, volume
Content	<ol style="list-style-type: none"> 2. Introduction to use of a ruler and a tape measure 3. Area of simple shapes 4. Use of pi, 22/7 in calculations of area and volume of shapes
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts

	<ul style="list-style-type: none"> • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 6

Module title	Estimating material requirement (Read and Interpret Pattern)
Module code	KLC-MR 206
Credit/total hours/ECTS	3 Cr. hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This unit covers the skills and knowledge to develop knowledge & skills related to the estimation of the material consumption for footwear and leather goods, read and interpret pattern in order to perform the work as per the drawings..
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ul style="list-style-type: none"> • Describe principles and concepts of material estimation • Obtain and convey footwear specifications • Determine and perform parallelogram area of the pattern • Determine second wastage • Determine material estimation for one pair • Assess Design requirement • Identify types of patterns • Apply reference • Read and interpret pattern specifications
Content	<p>LO1. Describe principle and concept of material estimation</p> <p>1.1. The principles and concept of leather grading is described</p> <ul style="list-style-type: none"> • Objective of material estimation • Units of measurements • Conversions of units of measurements <p>1.2. The different methods of material estimation are RSM method</p> <ul style="list-style-type: none"> • Tracing method <ul style="list-style-type: none"> 1.2.1. With defects 1.2.2. Without defects • Pattern area method

LO2. Obtain and convey footwear and leather goods specification

2.1 Check patterns

- Article
- Size
- Damage
- Material

2.2 Number of components

LO3. Determine and perform parallelogram area of pattern (RSM)

3.1 Fundamental of parallelogram

- Area of parallelogram

3.2 Zero degree method of construction of parallelogram

3.3 Ninety degree method of construction of parallelogram

3.4 Selection of method of construction of parallelogram

- Zero degree
- Ninety degree

3.5 Determination of the area of parallelogram

LO4. Determine the second wastage

4.1 Size of leather

4.2 Relationship between pattern size and leather size

4.3 Estimation of second wastage with types of

- Skin size
- Skin type
 - 4.1.1 Cow hide
 - 4.1.2 Cow side
 - 4.1.3 Nubuck
 - 4.1.4 Sheep
 - 4.1.5 Goat

4.4 Estimation of the third wastage with

- Grade A Leather
- Grade B Leather
- Grade C Leather
- Grade D Leather
- Grade E Leather
- Grade F Leather
- Grade G Leather

LO5. Material estimation for one pair

5.1 Average grade of leather

5.2 Total material consumption for one pair

LO6. Synthetic material estimation

6.1 Difference between leather and synthetic material

- Leather

	<ul style="list-style-type: none"> • Fabrics • Insole materials • Toe-puff and counter stiffener materials • Poly vinyl chloride (PVC) • Poly urethane (PU) <p>6.2 Tracing for synthetic material</p> <p>6.3 Calculation of consumption for synthetic materials</p> <p>LO7. Fashion forecasting understanding</p> <ul style="list-style-type: none"> • Principles • Trends • Fashion tips • Design requirements • Fashion needs • Fashion cycle • Fashion reports • Forecasting <p>1.2 Last identification as per</p> <ul style="list-style-type: none"> • Customer requirements • Fashion trends • Market needs <p>1.3 Development of Specific requirement of design</p> <ul style="list-style-type: none"> • Design characteristics • Specific needs • All specifications by customer • Special materials & accessories required • Soles & heels <ul style="list-style-type: none"> • patterns • Types of patterns • Pattern references • Pattern specifications • Reading and interpreting pattern references • Pattern interpretation techniques
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and

	<p>assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments</p> <ul style="list-style-type: none"> • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	3 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 7

Module title	Footwear and Leather goods material cutting
Module code	KLC-CM 207
Credit/total hours/ECTS	2 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	<p>This module is designed to equip trainees with skill and knowledge of setting up of work station, assessing leather for their color, grain, texture and any defects and faults, cutting leather by hand and by machine, laying- up linings, marking linings, positioning marked linings, cutting lining, selecting of reinforcing material, cutting reinforcement material and checking finished products according to enterprises regulation .It contains both the theoretical part and practical activities the trainee should pass through to acquire the basic competence (skill, knowledge and attitude) in accomplishing organizational activities relating to its coverage.</p>
Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <ul style="list-style-type: none"> • Set up workstation in accordance with specification and work place procedures. • Prepare cutting equipment and or patterns in accordance with specified work. • Assess leather according to their grain, colour and thickness • Cut leather by hand using knives and patterns. • Operate cutting machine according to relevant safety regulations. • Cut leather using cutting machine.

	<ul style="list-style-type: none"> • Lay-up linings according to the procedure. • Draft lay marker according to cutting order • Position marked lay according to job specifications. • Select reinforcement material according to their types • Cut lining and reinforcement materials • Check finished product against job specification
Content	<ol style="list-style-type: none"> 1. Setting up work station <ol style="list-style-type: none"> 1.1 Cutting machine and equipment selection <ol style="list-style-type: none"> 1.1.1 Knives 1.1.2 Machines 1.1.3 Cutting die 1.1.4 Cutting board 1.2 Material preparation 1.3 Ergonomics of work room 2. Work place oh & s implementation <ol style="list-style-type: none"> 2.1. Safety procedure 2.2. Prevention of accident 2.3. Risk elimination 2.4. Safety legislation 3. Assessing materials <ol style="list-style-type: none"> 3.1. Leather <ol style="list-style-type: none"> 3.1.1. Grain 3.1.2. Colour 3.1.3. Thickness 3.2. Lining materials 3.3. Reinforcement materials 4. Material utilization <ol style="list-style-type: none"> 4.1. Importance of cutting 4.2. Cutting analysis 4.3. Quality concept 4.4. Material economy 4.5. Waste causes 4.6. Pattern lay out 4.7 Allowance calculation <ol style="list-style-type: none"> 4.7.1 Area measurement 3.7.2 Net material allowance 3.7.3 Gross material allowance 5. Material Cutting <ol style="list-style-type: none"> 5.1 Hand cutting <ol style="list-style-type: none"> 5.1.1. Paper sheet 5.1.2. Synthetic 5.1.3. Leather 5.1.4. Fabrics 5.2. Machines cutting <ol style="list-style-type: none"> 5.2.1. Operate machine <ol style="list-style-type: none"> 5.2.1.1 Strap cutting machine 5.2.1.2 Guillotine machine 5.2.1.3 hydraulic press machine (die clicking

	<p>machine)</p> <p>5.2.2. Cutting die 5.2.3. Strike plate regulation 5.2.4. Machine maintenance</p> <p>5.3. Handling of knives and machines 5.3.1. Cutting of lines 5.3.2. Cutting patterns 5.3.3. Cutting of contours 5.3.4. Setting press</p> <p>6. Component checking and dispatching 6.1 Inspection of components 6.2 Codification 6.3 Component bundling 6.4 Maintaining records</p>
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ol style="list-style-type: none"> 1 .FDDI ,the art of cutting corrected grain leather 2. Kaiiyar, B,S the art of grading corrected grain side leather

Learning Module 8

Module title	Punch Eyelet and Rivet
Module code	KLC-ER 208
Credit/total hours/ECTS	1 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This unit covers the skills and knowledge to eyelet and rivet components by using an eyeleting and riveting machine or manually.
Learning outcomes	After the module is completed, the trainees would be able to <ul style="list-style-type: none"> • Eyelet/rivet the components • Prepare machine
Content	<ul style="list-style-type: none"> • Introduction to punch eyelet and Rivet operation • Safety rules and regulation • Types of eyelet and rivet • Types of machine • Machine adjustment • Punching the eyelet and rivet on the component • Quality checking
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ol style="list-style-type: none"> 1 Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments 2 Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams

Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 9

Module title	*Perform Heel Attaching Operations; Performing Bottom component operations, Performing Closing of upper; Perform Toe-Puff and Stiffener Activation (F)
Module code	KLC-SM 209
Credit/total hours/ECTS	3 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This unit covers the skills and knowledge to split, stamp, mark, skive and fold leather components by using a splitting machine. This unit covers heel attaching, activate toe puff and stiffeners by using toe puff press and back part molding machine, bottom component preparations
Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <p>Skiving and folding</p> <ul style="list-style-type: none"> • Prepare tools, machine/ equipment • Check machine and tools for irregularities • Conduct sample run • Re-adjust machine settings • Split the components • Stamp and Mark the components • Skive the components • Fold the components <p>Heel attachment</p> <ul style="list-style-type: none"> • Prepare work pieces • Attach heel to sole by adhesive • Press sole • De-last shoe • Fix heel to sole <p>Toe puff stiffener activation</p> <ul style="list-style-type: none"> • Set machine • Insert /Activate stiffener • Insert /Activate toe-puff
Content	<ol style="list-style-type: none"> 1. Introduction to preparation for closing operation 2. Preparation Machines <ol style="list-style-type: none"> 2.1 Splitting machine 2.2 Skiving Machine 2.3 Stamping Machine 2.4 Folding machine 3. Identification marking <ol style="list-style-type: none"> 3.1 Crayon marking 3.2 Notch marking 3.2 Match marking 3.3 Color Marking

	<ul style="list-style-type: none"> 3.4 Lining stamping 3.5 Colored tapes 4. Stitch marking <ul style="list-style-type: none"> 4.1 Hand marking 4.2 Block marking 4.3 Prick marker 4.5 Notch marks 5. Safety rules and regulation 6. Press punching <ul style="list-style-type: none"> 6.1 Gimping 6.2 Perforating 7. Splitting <ul style="list-style-type: none"> 7.1 Splitting operation 7.1 Matrix Splitting 8. Skiving <ul style="list-style-type: none"> 8.1 Raw edge skiving 8.2 Lapped Skiving 8.3 Folded skiving 8.4 Lasting Skiving 8.5 Corner Skiving 8.6 Matrix Skiving 9. Quality checking 10. Edge treatment <ul style="list-style-type: none"> 10.1 Inking raw edge 10.2 Burnishing 11. Quality checking 12. Heel attachment <ul style="list-style-type: none"> 1. Introduction to heel <ul style="list-style-type: none"> 1.1 Anatomy of heel 1.2 Types of heel 2. Heel attachment <ul style="list-style-type: none"> 2.1 Heel to sole attachment 3. Press sole <ul style="list-style-type: none"> 3.1 Shoe de-last 3.2 Shape retention 5. Quality control Toe puff stiffener activation <ul style="list-style-type: none"> 1. Introduction to toe-puff and stiffener Activation operation. 2. Machine adjustment 3. material Check up 4. Attachment of component <ul style="list-style-type: none"> 4.1 toe-puff 4.2 stiffener 5. Quality checking Bottom Preparation <ul style="list-style-type: none"> 1. Introduction to bottom components and equipments <ul style="list-style-type: none"> 1.1. insole 1.2. Stiffener 1.3. Toe puff
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	<p>1.4. Shank 1.5. Still Shank 1.6. Cutting Knives 1.7. cutting machines</p> <p>2. bottom component preparation</p> <p>2.1 material cutting</p> <p>2.1.1 Insole cutting 2.1.2 Shank cutting 2.1.3 Toe puff cutting 2.1.4 Stiffener cutting</p> <p>2.2 attaching the materials</p> <p>2.2.1. Shank positioning and riveting shank steel 2.2.2. Adhesive application and attaching 2.2.3. Insole molding 2.2.4. insole beveling 2.2.5. toe puff and stiffener skiving</p> <p>3 Quality control up on the bottom component</p> <p>4 Introduction to out sole production</p> <p>4.1 Out sole materials and equipments</p> <p>4.1.1. PVC (Poly vinyl chloride) 4.1.2. TPR 4.1.3. PU (Polyurethane) 4.1.4. Solid Rubber 4.1.5. Leather 4.1.6. Microcellular Rubber 4.1.7. Plantation Crepe 4.1.8. Resin Rubber 4.1.9. E.V.A. (Ethylene Vinyl Acetate) 4.1.10 Moulds 4.1.11 Sole Injection machine 4.1.12 Vulcanising machine</p> <p>4.2 Molded Construction 4.3 Injection Molding Machine Setting 4.4 Standard Qualities of Soling Materials</p> <p>5. safety rules and regulation</p>
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions

	<p>and conduct and evaluate examinations and assignments</p> <ul style="list-style-type: none"> • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

*: Module only for footwear stream students

Learning Module 10

Module title	*Foot & last Description; Performing Basic lasting operations (F)
Module code	KLC-FL 210
Credit/total hours/ECTS	3 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	The module aims to provide the learners to provide knowledge, skills and attitude required in performing toe lasting, seat and side lasting of a flat lasted construction shoe and perform shoe lasting by hand.
Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <p>Machine last</p> <ul style="list-style-type: none"> • Set up / prepare machines • Conduct sample run • Re-adjust machine setting to meet requirements • Attach insole to the last • Perform toe lasting • Carry out seat and side lasting • Report work of team or section <p>Hand last</p> <ul style="list-style-type: none"> • Immerse toe puff and stiffeners into toluene solution • Insert toe puff and stiffeners to upper • Attach insole and upper to form • Hand last the shoe • String last as required • Dispatch completed work
Content	Introduction to lasting

	<ul style="list-style-type: none"> 1.1. lasting materials 1.2 .lasting tools and equipment <ul style="list-style-type: none"> 1.2.1. knife 1.2.2. Ruler 1.2.3. measuring tape 1.2.4 pincer 1.3 Safety rules and regulation 2.Flow chart for Methods of construction 2.1cement construction <ul style="list-style-type: none"> 2.1.1.Introduction 2.1.2.Lastig operation 2.1.3.Attaching operation 2.2.Moulded Construction <ul style="list-style-type: none"> 2.2.1.Introduction 2.2.2.Lastig For molded construction 2.2.3.Direct Vulcanizing 2.2.4.Injuction molding 2.3.Veldtshoen construction <ul style="list-style-type: none"> 2.3.1.Introduction 2.3.2.Lastig operation 2.3.3.Attaching operations 2.3.4.Finishing operations 2.4.Machine Welled construction <ul style="list-style-type: none"> 2.4.1.Introduction 2.4.2.Insole preparation 2.4.3.Cment Lasting 2.5.Slip Lasting construction <ul style="list-style-type: none"> 2.5.1.Introduction 2.5.2.Slip Lasted fore part type 2.5.3.Fully slip lasted type 2.6.String lasted construction <ul style="list-style-type: none"> 2.6.1.Introduction 2.6.2.Lastig 2.7.Mocasin Construction 2.8.Machine lasting <ul style="list-style-type: none"> 2.8.1.tools and machineries 2.8.2.Machine lasting procedures <ul style="list-style-type: none"> 2.8.2.1.Insole tacking 2.8.2.2.Buck part molding 2.8.2.3.Toe lasting 2.8.2.4.Side\seat lasting 2.8.2.5.Heat setting 2.8.2.6.Upper & out sole roughing 2.8.2.7.Adehesive applying 2.8.2.8.Cemenet reaction 2.8.2.9.Sole attaching& pressing 2.8.2.10.Di-lastin Hand lasting VI. Introduction to hand lasting <ul style="list-style-type: none"> 2. Hand lasting tools <ul style="list-style-type: none"> 2.1 Knives
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	2.2 Pincer 2.3 Remover 2.4 Nails or tacks 3. Hand lasting procedures 3.1 Insole attaching 3.2 Stiffener and Toe puff solution 3.3 Toe puff insertion 3.4 Stiffener insertion 3.5 Conditioning of Uppers 3.6 Toe Lasting 3.7 Side/Seat Lasting 3.8 heel part lasting 4. quality checking and stored or dispatched
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

*: Module only for footwear stream students

Learning Module 11

Module title	* Sewing leather goods (G)
Module code	KLC-LG 211
Credit/total hours/ECTS	3 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This module is designed to equip trainees with sew leather goods and quality inspection. It contains both the theoretical part and practical activities the trainee should pass through to acquire the basic competence (skill, knowledge and attitude) in accomplishing organizational activities relating to its coverage.
Learning outcomes	After the module is completed, the trainees would be able to <ul style="list-style-type: none"> • Various types of leathers used for garment and goods manufacture • Prepare work-piece and workstation in accordance with work place procedures and specification • Carry out bench work activities according to design specification .
Content	<p>Leather goods may include handbags and accessories, wallets, purses, belts, saddles and saddlery components and products, clothing, headwear and millinery, textile product components</p> <ul style="list-style-type: none"> • Prepare work-piece and workstation in accordance with work place procedures and specification • Carry out bench work activities according to design specification • sew leather goods in accordance with workplace procedures and pattern specification. • Perform manual decorative by hand in accordance with design specification and styles • Maintain document in accordance with enterprise procedures. <p>Workstation and work piece preparation</p> <ul style="list-style-type: none"> • Maintaining safety rules and regulations • Maintaining cleanliness of workstation • Maintaining safe working environment • Bundling pieces • Assessing quality of work-piece <p>Identify materials used in leather sewing</p> <ul style="list-style-type: none"> • Materials used in leather goods sewing • Types and sources of materials • Characteristics of materials • Generic and trade names for materials <p>Determine performance of materials used for leather goods sewing</p> <ul style="list-style-type: none"> • Physical properties of materials • Performance characteristics of materials <p>Sew leather goods</p> <ul style="list-style-type: none"> • Joining parts, panels and pieces • Sew pieces to the whole goods • Conduct online quality inspection • Perform decorative hand stitching

	<ul style="list-style-type: none"> • Binding and piping leather goods components <p>Different method of construction</p> <ul style="list-style-type: none"> • Cut edge/Raw edge construction. • Folded edge construction. • Butted edge construction • Stitch and turn edge/piping edge construction. • Mixed edge construction. • Thong edge construction. • Moulded edge construction • Binding edge construction <p>Completing sewn goods</p> <ul style="list-style-type: none"> • Fixing accessories • Tagging and labelling • Thread trimming • Cleaning • Edge trimming • Creasing <p>Carrying out final inspection</p> <ul style="list-style-type: none"> • Inspecting finished goods for quality • Performance characteristics:stretch, abrasion, wearability, absorbency, durability, elasticity, heat sensitivity, shrink resistance, strength • Rework defective article
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions

	<ul style="list-style-type: none"> • Should get pass mark in all average that encompass written exams, reports of assignments and practical exams
Module calendar	2 weeks
Reading materials	David Tracy, The skill of leather goods manufacturing The complete hand book of leather crafting by Jane E. Garnes 1986. The leather working handbook by Valerie Michael 2002

*: Module for only leather goods stream students

Learning Module 12

Module title	* Assemble and Finish Leather goods (G)
Module code	KLC-LG 212
Credit/total hours/ECTS	3 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	<p>This module contains both the theoretical part and practical activities the trainee should pass through to acquire the basic competence (skill, knowledge and attitude) in assemble and Finish Leather goods to its coverage.</p> <p>The students will acquire knowledge of various types and parts of leather garments, Classification of various types of leather goods, Various types of leathers used for garment and goods manufacture, Grading and assorting of leathers</p>
Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <ul style="list-style-type: none"> • Have knowledge <ul style="list-style-type: none"> - Knowledge of various types and parts of leather garments - Classification of various types of leather goods - Various types of leathers used for garment and goods manufacture - Grading and assorting of leathers - Wastage calculation in leather - Quality control aspects for (1) leather goods and (2) leather garments • Prepare work-piece and workstation in accordance with work place procedures and specification • Carry out bench work activities according to design specification • Assemble and sew leather goods in accordance with workplace procedures and pattern specification. • Perform manual decorative by hand in accordance with design specification and styles • Conduct quality check as per design specification. • Complete finished goods and carry out final inspection according to enterprise standard. • Maintain document in accordance with enterprise procedures.
Content	<ul style="list-style-type: none"> • Types and parts of leather garments, • Classification of various types of leather goods, • Various types of leathers used for garment and goods manufacture,

	<ul style="list-style-type: none"> • Grading and assorting of leathers • Prepare work-piece and workstation in accordance with work place procedures and specification • Carry out bench work activities according to design specification • Assemble leather goods in accordance with workplace procedures and pattern specification. • Conduct quality check as per design specification. • Complete finished goods and carry out final inspection according to enterprise standard. • Maintain document in accordance with enterprise procedures. <p>workstation and work piece preparation</p> <ul style="list-style-type: none"> • Maintaining safety rules and regulations • Maintaining cleanliness of workstation • Maintaining safe working environment • Bundling pieces • Assessing quality of work-piece <p>Carry out bench work activities</p> <ul style="list-style-type: none"> • Folding and turning operations • Applying adhesive • Hammering, punching <p>Assemble leather goods</p> <ul style="list-style-type: none"> • Joining parts, panels and pieces • Sew pieces to the whole goods • Conduct online quality inspection • Perform decorative hand stitching • Binding and piping leather goods components <p>Carrying out final inspection Inspecting finished goods for quality Performance characteristics: stretch, abrasion, wearability, absorbency, durability, elasticity, heat sensitivity, shrink resistance, strength</p> <p>Common faults, problems and surface defects of materials</p> <ul style="list-style-type: none"> • Common faults , problems and surface defects of materials • Possible causes for common faults, problems and surface defects • Workplace quality practices relating to faults, problems and surface defects • Rework defective article
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments

	<ul style="list-style-type: none"> • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all average that encompass written exams, reports of assignments and practical exams
Module calendar	2 weeks
Reading materials	David Tracy, The skill of leather goods manufacturing The complete hand book of leather crafting by Jane E. Garnes 1986. The leather working handbook by Valerie Michael 2002

Learning Module 13

Module title	Performing finishing operations
Module code	KLC-FO 213
Credit/total hours/ECTS	3 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This unit covers knowledge, skills and attitudes in performing the polishing operation.
Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <ul style="list-style-type: none"> • Prepare work pieces • Apply first coating • Perform cotton brushing • Apply final coating • Perform final polishing and brushing • Attach sock lining into the shoe • Clean the shoes
Content	<p>Introduction to Finishing operation</p> <p>2. Finishing tools, equipment and machines</p> <p>2.1 Spray cabinet</p> <p>2.2 Brushing machine</p> <p>2.3 Combined finishing machine</p> <p>2.4 Spray gun</p> <p>3. Finishing operation</p> <p>3.1 Material are prepared</p> <p>3.2 Chemicals application</p> <p>3.3 Filler application</p>

	3.4 Brushing 3.5 Polishing 3.6 Damage recording 3.7 Final brushing and polishing 3.8 Sock lining insertion 3.9 Cleaning, Quality checking and Labeling
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 14

Module title	Restore Leather Products
Module code	KLC-RL 214
Credit/total hours/ECTS	3 Cr.hrs
Module Type	Compulsory
Pre-requisite module	None
Description of module	This unit covers knowledge, skills and attitudes in performing the restoring operation.

Learning outcomes	<p>After the module is completed, the trainees would be able to</p> <ul style="list-style-type: none"> • Determine requirements • Prepare leather product/good • Undertake restoration / repair
Content	<ul style="list-style-type: none"> • Restoration <ul style="list-style-type: none"> ○ What is restoration ○ Requirement for restoration ○ Type of restoration ○ Cost for restoration • Prepare product for restoration <ul style="list-style-type: none"> ○ Identify product for restore ○ Characteristics of the product ○ Safety rule for product • Packing system <ul style="list-style-type: none"> ○ Objective of packing ○ Types of packing ○ Process of packing • Repair restoration <ul style="list-style-type: none"> ○ Appropriate tools and equipments ○ Process and material • Documentation
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry • Assignments • Group discussions • Practical sessions
Assessment criteria	<ul style="list-style-type: none"> • Written test (----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and field sessions, actively participate in class and field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in overall average that encompass written exams, reports of assignments and in practical exams

Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 15

Module title	Industrial Attachment I
Module code	KLC-IA 215
Credit /total hours/ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	Practical exposure of students to activities in leather industry is mandatory for students to develop skills in processing hides and skins and manufacturing footwear and other leather goods.
Learning outcomes	<p>After the module is completed, the trainees would be able to further strengthen their skills and knowhow in one or more of the following activities:</p> <ul style="list-style-type: none"> • Preservation of hides and skins • Identification of defects in hides and skins • Grading and classification of hides and skins and leather • Tanning operations • Footwear and other leather goods manufacturing
Content	This module covers skills development in hides and skins production, processing to leather; quality determination and grading of hides and skins and leather, Defects in hides and skin, footwear and other leather goods manufacturing
Teaching strategy	The teaching methodology could involve close supervision of students during their industry attachment, demonstrations and hands-on training
Assessment criteria	<ul style="list-style-type: none"> • Regular attendance during the whole industrial attachment period: 40% • Recording of activities performed during the attachment period: 40% • presentation/group or individual: 20%
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • attendance • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should closely supervise and give guidance to students for self study and assignments, motivate students to actively participate in leather processing activities of industries of their assignment. <p>Students should attend actively participate in leather processing and all manufacturing activities of industries of their assignment</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Internet • Journals • Reference books • Text books

Module requirements	Should attend all practical/field sessions Should get pass mark in final grade that encompass reports of assignments, and final report of the Industry attachment
Module calendar	2 months
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

TVET-System

Curriculum (Level-III)

**(Footwear and Leather Goods
Production)**

**Based on
Occupational Standard (OS)**

3. TVET-Program Title: Footwear Production

3.1. TVET-Program Description

The Program is designed to develop the necessary knowledge, skills and attitude 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 **operators in lasting departments** with basic knowledge of design with competencies elaborated in the respective OS. Graduates of the program will have the required qualification to work in the **Footwear** sector in the field of **Footwear Production**.

The prime objective of this training program is to equip the learners with the identified competences specified in the OS. Graduates are therefore expected to **design footwear, cut pattern, make product specification, estimate job requirement, know about polymers used in footwear and moulding of footwear component, perform mechanized lasting, and will have knowledge about work study and will have knowledge about work management and have knowledge about business practices** in accordance with the performance criteria described in the OS.

3.2. Of the TVET-Program

The Program will have duration of **901 hours** including the on-the-job practice or cooperative training time..

3.3. 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 III**”.

The learner can exit after successfully completing the Module level III and will be awarded the equivalent institutional certificate on the level completed. The learner can also exit after completing any one learning module. However, only certificate of attainment or attendance (this is institutional discretion) will be awarded.

3.4. Target Groups

Any citizen 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.

3.5. Entry Requirements

The prospective participants of this program are required to possess the requirements or directive of the Ministry of Education.

3.6. 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 TVET-institution and identified companies have forged an agreement to co-operate with regard to implementation of this program. The time spent by the trainees in the 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 lecture-discussion, simulation and actual practice. These modalities will be utilized before the trainees are exposed to the industry environment.

3.7. TVET-Program Structure

Table 3: List of Modules of Level I Training

No.	Modules	Module Codes	*Cr. Hours	Lecture hours	practical hours	Total hours
1	Develop understanding about designs & styles	KLC-DS301	3	20	56	76
2	Perform manual pattern making, grading & engineering	KLC-PG 302	3	20	56	76
3	Prepare Specifications	KLC-PS 303	2	15	34	49
4	Prepare Job Estimation and product costing	KLC-EC 304	3	32	32	64
5	Develop basic understanding about Polymers used in footwear	KLC-PF 305	2	15	34	49
6	Prepare molding operations	KLC-MO 306	2	10	44	54
7	Perform mechanized Lasting	KLC-ML 307	2	10	44	54
8	Develop understanding about work study	KLC-WS 308	2	20	24	44
9	Apply Quality Control	KLC-QC 309	2	20	24	44
10	Lead Small Teams (develop individual teams , team work , leadership styles, manage and maintain SME business operations), Workplace Communication and Monitor Work Activities	KLC-LT 310	2	20	24	44
11	Perform CAD/CAM	KLC-PC 311	3	20	56	76
12	Improve Business Practice (Entrepreneurship, basics of Procurement)	KLC-BP 312	2	20	24	44
13	Introductory Mathematics and its application	KLC-IM 313	1	10	12	22
14	Introduction to product development	KLC-PD 314	1	10	12	22
15	Waste management and Environmental Conservancy	KLC-WE 315	2	15	34	49
16	Industrial attachment I	KLC-IA 316	3	5	129	134
	Total			262	639	901

*: 1 Credit hour = 16 lecture hours or 32 to 48 practical hours

3.8. Learning Modules

The learning module information for this TVET programme is contained in the following template Compilation.

Learning Module 1

Module title	Develop understanding about designs & styles
Module code	KLC-DS301
Credit /total hours/ECTS	3Cr.hrs
Module type	Compulsory
Pre-requisite module	none
Description of module	This unit covers the knowledge about the understanding of design & styles of the footwear.
Learning outcomes	After the module is completed, the trainees would be able to: <ol style="list-style-type: none"> 1. Develop understanding about the design 2. Perform sketching of the design 3. Make mean form. 4. Make the standard for model 5. Prepare working patterns 6. Check working patterns. 7. Perform record keeping
Content	<p><u>understanding about the design</u></p> <ul style="list-style-type: none"> • Basic elements & principles of design Elements (Line, Shape, Color, Texture, Space), Principles (Rhythm, Proportion, Emphasis, Balance, Unity) • Types of footwear construction: Stuck-on/flat lasting/cement lasting, Moccasin, Stitch down constructions (Veldt Sochen, San Crispino, Directly stitched to sole), California, Good Year welted, Sewn in Socks (Strobel), String lasting • Footwear Components & their utility: Last, Soles, Heels, Insole, Shank & shank board, Misc items like laces, EVA sheets etc • Footwear Materials: Leather upper and lining (Cow, Goat, Sheep), Textiles & synthetic, Soles, Other materials (Insole board, Shank board, Toe-puff and counter stiffener, Threads, Adhesives, Inter-lining, Foam, EVA Sheets, Latex rubber, • Styles & types of footwear: Styles (Classic, Casuals, Sportive, Mix), • Types (Oxford, Derby, Slip-on, Sandals, Court Shoes, Boots) <p>Perform sketching of the design</p> <ul style="list-style-type: none"> • Identification of design & style feature: Design (derby, oxford, slip on, Sandals, Court Shoe, Boots), Style (feature, characteristics) • Identification of type of construction: Construction (stuck on, moccasins, stitch down) • Sketch of last: View finalization (Front, Side, Top), Dimensional, Toe Shape • Pointed, Oval, Square, chisel, Round), Heel height & type (Low, Medium, High, Block, Pencil, Wedge, Platform), Development of Styling lines (Design type, Design Features)

- Proportion of sketched components: Toe cap, Quarters, Vamp, Counter
- Color combination & Textures: Color wheel, Color theory, Leather texture, Fashion requirement
- Last identification as per developed sketch: Fashion, Customer recommendations

Make mean form

- Last masking: Masking tape types, Steps before masking, Steps of Masking, Methodology, Precautions for wrinkles, Wrinkle distribution
- Development of Inside & Outside form of last: Separation of inner & outer (Centre line, Back centre line, Tread line (Ball Joint), Vamp point, Back height point), Flattening of outside forme (Guidelines & method of peeling off, Process & direction of flattening, Precautions), Flattening of inside forme (Guidelines & process, Matching of centre lines with outer form, Matching of vamp & back height points), Wrinkles distribution in flattening, Final cutting of inner & outer forms
- Mean form development: Average of Inner & outer forms, In/out margin at feather line, Principle lines, Specifications to be written, Final cutting of mean form, Different method for different construction

Make the standard for model

- Upper standard development: Steps for upper standard making (Tracing mean form, Lasting margin, Back curve adjustments, Style lines formation, Specifications, Stitch details, Slot markings & opening, All technical details & measurements)
- Lining Standard development: Steps for lining standard making (Tracing upper standard, Deductions in area, Style line formation, Specifications, Stitch details)
- Slot markings & opening
- All technical details & measurements
- Toe puff & Stiffener standard development: Marking of toe puff on lining standard, Marking of counter stiffener on lining standard, Standard specification as per design, Different toe puff & stiffeners for different purpose, All technical specifications
- Bottom profile standard development: Steps for bottom profile standard (Feather line, Shank board line, Shank marking, Golden line, Flexing line & angle)
- All technical specifications & measurements
- Logo marking for socks patterns

Prepare working patterns

- Upper patterns development: Upper working patterns (Toe cap, vamp, quarters, counter, Other patterns as per design, Process & method of developing patterns, Rotation & springs), Different margins & markings on patterns (Folding, seam, underlay, Decorative stitch marking, Cording stitch marking, Underlay slots, Center notches, Chamfers & rounding offs, Specifications to be written on patterns)
- Lining patterns development: Lining working patterns (Heel grip, vamp, quarters, Other pattern as per upper design, Process & method

	<p>of developing patterns, Rotation & springs), Different margins & markings on patterns (Trimming, underlay, seam, Underlay slots & center notches, Attachment markings, Chamfers & rounding offs), Specifications to be written on patterns</p> <ul style="list-style-type: none"> • Toe puff & counter stiffener patterns development: Method of pattern development, Rounding off the corners, Center & size notches, Specifications • Bottom components development: Insole (Insole pattern making, Shank board pattern, Shank placement markings, All technical measurements), Insocks patterns development (Full socks with or without inside arch, Half socks with or without inside arch, Perforation in socks, Process & method for sock patterns, Logo placement, Heel pad under socks, All technical measurements) <p>Check working patterns.</p> <ul style="list-style-type: none"> • Checking of proper fitting of patterns in stitching operations. Upper development in sample room: Fitting of developed upper patterns, Fitting of developed lining patterns, Matching & proper alignment of upper & lining, Final upper checking • Checking of proper fitting of patterns in lasting operations. ample shoe development in lasting section: Toe puff & counter stiffener checking, Proper fitting check of insole, Lasting of upper, Checking of lasting margin, Checking of any wrinkles, Centering of shoe & back part alignment, Final check of lasted pullover. • Conformity of final prototype with customer demand & specifications: Prototype check as per customer specification, Final conformity by customer <p>Perform record keeping</p> <ul style="list-style-type: none"> • Customer requests & requirements are recorded: Order form filled by customer is recorded, Order no. is placed on Last, sole or any other material provided by customer, Special request & requirements are recorded in order form, Any other request added later on also entered in order form • Standards & working patterns are coded for identification of shoe prototype: Article number is provided on paper patterns & prototype, All other specification also provided on patterns & standards (Last number, Size & fitting, Signature of designer with date, Company name • Standards & working patterns are filed / documented for future references: Envelop making for a complete design set, Proper system for filing of envelop, Place of envelop is documented / written on racks
Teaching strategy	The teaching methodology involves Lectures and Practical demonstration
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams

	<ul style="list-style-type: none"> • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • The pattern cutters handbook by Michael H Sharp • Manual of shoe designing by Md. Sadiq • fashion magazines, • catalogues

Learning Module 2

Module title	Perform manual pattern making, grading & engineering
Module code	KLC-PG 302
Credit /total hours/ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	none
Description of module	The aim of this module is to develop the skills and knowledge to make pattern of a shoe by manual method including pattern engineering. This unit also covers skill & knowledge to carry out manual & mechanized grading.
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ol style="list-style-type: none"> 1. Assess Design requirement 2. Adjust required features 3. Extract pieces of pattern 4. Grade extracted pieces of pattern 5. Make base pattern and fix on the grading machine 6. Adjust the grading machine 7. Grade the patterns 8. Nest and calculate consumption of the model. 9. Perform pattern engineering
Content	<p>Assess Design requirement</p> <ul style="list-style-type: none"> • Fashion forecasting understanding: Principles, Trends, Fashion tips, Design requirements, Fashion needs, Fashion cycle, Fashion reports, Forecasting • Last identification as per: Customer requirements, Fashion trends, Market needs

- Development of Specific requirement of design: Design characteristics, Specific needs, All specifications by customer, Special materials & accessories required, Soles & heels

Adjust required features

- Last masking done: Outside masking, Inner masking, Bottom masking, Center lines & principle lines
- Prepare mean form: Outer base, Inner base, Average of outer & inner, Mean form with all principle lines, Bottom base
- Style lines smoothed & finalized as per design specification: Design features, Style lines development, Changes as per specifications, Working patterns estimation
- Addition of allowances as per design specifications: Design type & construction, Addition of allowances as per design type, Back curve adjustments, Finalized upper & bottom standards
- Perforations & other features applied: Decorative punches, Brogue punching, Different types of accessories, Gimping, Other design features

Extract pieces of pattern

- Upper patterns extracted from standard: Vamp, Toe cap, Quarters, Counter, Special pieces, Slots & markings, Margins to be add on patterns
- Lining patterns extracted from standard: Vamp, Quarter, Heel grip, Slots & markings, Margins to be add on patterns
- Bottom components extracted from standard: Insole, Shank & shank board, Shank placement, Toe puff, Counter stiffener, Technical specifications, Margins to be add on patterns
- Master patterns finalization: Final patterns with margins, Net patterns, Cutting patterns

Grade extracted pieces of pattern

- Size basis grading systems explained, Manual, Pantograph, CAD-CAM, Sizes & fitting relevance
- Manual grading system is explained & performed: Principles & requirements, Methodology, Formulas, Restriction tool, Radial tool, Grading lines & points, Precautions
- Graded patterns are checked by alignment: Check points, Radial points, Length increments, Width increments, Sizes & fittings, Pattern alignments, Grade essentials

Make base pattern and fix on the grading machine

- Machine (pantograph) grading is explained: Principle & requirements, Function of machines, Parts of machine, Methodology, Precautions, Systems, Sizes & relevance's
- Cardboard insertion into machine as per design standard
- Patterns are attached on thick card board: All patterns' requirement on thick board, Attachment on thick board, Need
- Cutting of patterns on thick cardboard: Cutting by hand, Cutting by

shearing machine, Thick board cutting by pattern shearing machine

- Marking slots & perforations cut out as per base patterns: Slots opening, Perforations, Other design features to be cut
- Card board patterns' attachment on the machine according to length & width of the table of the machine: Fixing of patterns, Table top of machine, Length, Width, Pattern layout on table, Precautions as per length & width

Adjust the grading machine

- Dimension of standard in length & width is measured and adjust machine accordingly: How to measure design standard, Highest back point, Highest toe point, Ball points, Vamp point & grade reference point, All technical grading points
- Length adjustment of grading machine is set as per last sizes: Machine adjustments, Length increments in different size systems, Grading rules, Machine settings in length scales, Relevance last sizes
- Width adjustment of grading machine is set as per last sizes: Machine adjustments, Width increments in different size systems, Grading rules, Machine settings in width scales, Relevance last sizes

Grade the patterns

- Grading of upper patterns either by hand or machine as per base standard: Upper patterns-toe cap, vamp, quarters, counters, Grading by machine pantograph, Grading by hand, Base standard relevance
- Grading of lining patterns either by hand or machine as per base standard: Lining patterns- vamp, quarters, heel grip, Grading by machine pantograph, Grading by hand, Base standard relevance
- Grading of bottom patterns either by hand or machine as per base standard: Bottom patterns- insole, socks, toe puff, counter stiffener, Grading by machine pantograph, Grading by hand, Base standard relevance

Nest and calculate consumption of the model

- Graded patterns are nested to have minimum wastage: Pattern nesting, Hide tracing on brown sheet, Interlocking of patterns on brown sheet, Different trials of tracing to have minimum wastage
- Material consumption of the patterns is calculated: Cutting norms by different methods (RSM method, Tracing, Graphical, SLM), Material consumption with minimum wastage
- Allowance for wastage of material is calculated: Calculation for allowance, Formulas, Wastage calculation (1st wastage, 2nd wastage, 3rd wastage), Percentages for allowances

Perform pattern engineering

- Patterns are verified:
 - Verification of patterns
 - All technical checks as per specification

	<ul style="list-style-type: none"> • All check points as per costing & fittings • Nesting & production problems evaluated as per design requirements <ul style="list-style-type: none"> • Nesting problems • Production problems <ul style="list-style-type: none"> • Cutting • Fitting • Closing • Lasting • Checkpoints • Wastage of material • Design requirements & problems • Patterns are modified as per specification & requirements • Pattern engineering <ul style="list-style-type: none"> • Changes in patterns without hampering design • Fillets & chamfers • Centre notches & markings • Margins modifications as per technical requirements • Overall checking of patterns to reduce costing norms • Reduce production problems • Reduce interlocking problems • Design requirements & specifications • Trial production is carried out & benefits determined <ul style="list-style-type: none"> • Trial production (pilot run) after pattern engineering • Assessment report after trial production • Fitting tests • Merits & demerits calculation • Benefits in terms of <ul style="list-style-type: none"> • Production & making • Costing norms • Material wastage • Final conformity by all departments • Final conformity by customer
Teaching strategy	The teaching methodology could involve class room teaching, field trips, assignments (self study), group discussions, practical sessions (indicate the ones as appropriate for the particular module)
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%) • Etc.... (indicate as appropriate for your particular module)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance

	<ul style="list-style-type: none"> • Written exams • Reports of assignments • Practical demonstration • Etc.... <p>(indicate as appropriate)</p>
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations</p> <p>(modify or change as appropriate)</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>
Module requirements	<p>Should attend all class and practical/field sessions</p> <p>Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams</p>
Module calendar	weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • ----- • Etc..

Learning Module 3

Module title	Prepare Specifications
Module code	KLC-PS 303
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	none
Description of module	(Give the content description of the module)
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ol style="list-style-type: none"> 1. Identify Specification standard 2. Identify Material requirements 3. Finalize specification sheet
Content	<p>Identify Specification standard</p> <ul style="list-style-type: none"> • Definition and purpose: Elements of specification, Open and Closed specification <ul style="list-style-type: none"> • Identification of design • Sequence of operation • Sizing system • Closing operation detail • Work method (in house production, full or partial outsourcing, Work transportation).

	<ul style="list-style-type: none"> • Third party performance criteria • Tools requirement • Bottoming process • Product performance • Product Tolerance <p>Specification format</p> <ul style="list-style-type: none"> • Table of content • Product detail, (assembly, subassembly level) • Writing style (Short direct sentence, clear reference, jargons and abbreviations, definition of terminology etc) • Evaluation of specification <p>Identify Material requirements</p> <ul style="list-style-type: none"> • Identification of material <ul style="list-style-type: none"> • Source of Material (Leather, type, nonleather, textile, etc) • Dimensional detail • Color detail • Finishing requirement • Material performance standard • Detail of consumable (including environmental requirement) • Performance tolerance • Material requirement (BOM) • Identification of alternative material <p>Finalize specification sheet</p> <ul style="list-style-type: none"> • control procedure • Determination of generating and accepting authority • Critical examination
Teaching strategy	<ul style="list-style-type: none"> • Lectures • Demonstration • Practical/ Case study
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Written examination • Oral Questioning & Viva • Assignment
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops,

	<p>photocopier and photocopy papers, flip charts</p> <ul style="list-style-type: none"> • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>
Module requirements	<p>Should attend all class and practical/field sessions</p> <p>Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams</p>
Module calendar	----- weeks
Reading materials	<p>Practical approach to quality control by R.H.Caplen, Practical approach to quality control by R.H.Caplen</p> <p>Applying quality standard (By IFA Abidi)</p>

Learning Module 4

Module title	Prepare Job Estimation and product costing
Module code	KLC-EC 304
Credit /total hours/ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module aims at development of competence required to estimate materials, labour and time requirements and how to establish costs for a basic production project.
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ol style="list-style-type: none"> 1. Gather Information 2. Estimate material and duration 3 Calculate costs 4 Document details.
Content	<p>Gather Information</p> <ul style="list-style-type: none"> • Production programme: Quantity, Delivery date, Bill of material • Equipment Data, Accessories and tools, Speed of operations, Equipment data card, Tool life • Material: Stock in hand, Quality of material, Time required • Quality standard: Quality specification, Tolerance, Finishing required, Rework cost sheet • Sequence of operation: Path of material, Flow chart, Alternative path • Operation time: Work transportation system, Set up time and standard time • Scheduling: Definition, Inputs of scheduling, Production schedule, Delivery schedule, Maintenance schedule Gantt Chart • Progress of work: Physical count, Production report, Job card, Route sheet, Display board <p>Estimate materials and duration</p> <ul style="list-style-type: none"> • Material requirement: Purpose, Bill of material, Shortage note, Material requisition, Purchase indent, Goods receipt note, Material control card, ABC analysis Estimation of material procurement <ul style="list-style-type: none"> • Make or buy decision

	<ul style="list-style-type: none"> • Factors influencing make or buy decision • Material credit note • Material scrap note • Cost analysis <ul style="list-style-type: none"> Cost of Labour <ul style="list-style-type: none"> ○ Direct labour ○ Fixed labour ○ Indirect labour <p>Calculate Cost</p> <ul style="list-style-type: none"> • Raw material • Labour • Tooling • Overheads • Recoupment • Outside operation cost • Purchase cost • Capacity cost <p>Document detail</p> <ul style="list-style-type: none"> • Cost sheet • Labour • Material • Tooling • Overheads • Power • Purchase/Procurement • Transportation
Teaching strategy	<ul style="list-style-type: none"> • Lectures • Demonstration • Practical
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Written examination • Oral Questioning & Viva • Practical examination
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals

	<ul style="list-style-type: none"> • Reference books • Text books
Module requirements	Should attend all class and practical/field sessions Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	3 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • ----- • Etc..

Learning Module 5

Module title	Develop basic understanding about Polymers used in Footwear
Module code	KLC-PF 305
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	none
Description of module	This module aims to provide the learners with the knowledge, skills and right attitudes required to prepare, operate and monitor production machine using defined procedures/methods
Learning outcomes	After the module is completed, the trainees would be able to: <ol style="list-style-type: none"> 1. Explain Basics of Polymer materials 2. Basics of Polymer Processes 3. Identify Basics of Polymer Compounding 4. Identify and perform Basic of Compression molding and DVP molding 5. Identify and perform Basics of Injection molding and direct injection molding 6. Explain Basics of Reaction Injection molding (RIM) 7. Identify and perform Basics of testing and Characterization of Polymeric materials
Content	<p>Introduction to the Module Basics of Polymer materials</p> <ul style="list-style-type: none"> • Basics of Polymers <ul style="list-style-type: none"> ○ Basic Definitions <ul style="list-style-type: none"> • Introduction • Definitions • Define Macromolecules • Difference from other materials ○ Basic Chemistry of Polymers <ul style="list-style-type: none"> • Introduction • Miscellaneous Polymerization reactions • Polymerization Techniques ○ Terms related to Polymeric materials. • Classification of polymeric materials. <ul style="list-style-type: none"> ○ Various types of polymers <ul style="list-style-type: none"> • Natural and synthetic • Organic and inorganic • Thermoplastic and thermosetting

- Elastomer, Fibers and Plastics
 - Applications and significance of various types of polymers
- Basic Characteristics and Properties of polymeric materials.
 - Basic Terminology
 - Monomer
 - Polymers
 - Copolymer
 - Composites
 - Blends
 - Elastomers
 - Plastics etc
 - Molecular weight and size
 - Glass Transition Temperature
 - Crystallinity in Polymers

Basics of Polymer Processes

Basics of various polymer processes.

- Various types of Polymer Processes.
 - Introduction
 - Discuss various processing techniques used in polymer processing
 - Overview of the various stages of processing techniques
 - Discuss main polymer processes in footwear industry
- Process identification and its applications

Characteristics of the each process on the polymeric material.

- Introduction
- Discuss basic terms in compression molding and DVP molding
- Discuss basic terms in injection molding and DIP molding
- Discuss basic terms in RIM technology

Safety measures

- Safety Requirements and Measures Application

Basics of Polymer Compounding

Identification and importance of the various ingredients/ chemicals/ polymers

- Identification of the various Raw materials.
- Material handling and safety measures of various Polymers and chemicals.
- Importance of various chemicals in Compounding.

Preparation of the Polymer formulation

- Accessibility of various properties as per requirement and standards.
- Selection of raw Materials as per requirement.
- Selection of compounding chemicals as per the Polymeric material.
- Identification of various properties of the Polymer compound.

Mixing of the various ingredients.

	<ul style="list-style-type: none"> • Mixing Process: Types of machines and proper uses. • Set up and compound preparation. • Process safety measurement. <p>Importance of the mixing cycle for attaining the various properties of the final product</p> <p>Basics of Compression molding and DVP molding</p> <p>Introduction to compression molding and direct vulcanization (DVP) process</p> <ul style="list-style-type: none"> • Introduction to Compression moulding technique • Advantages and disadvantages of Compression moulding over other processing techniques • Introduction of Direct vulcanization Process • Advantages and disadvantages of Direct vulcanization Process • Overview of the various stages of compression molding technique and DVP molding technique. • Describe the machines involved in the compression molding and DVP molding <p>Sequence of operation and standard operating procedure of the process.</p> <ul style="list-style-type: none"> • Parts and Operation of the machine • Set-up and Sequence of operation of the machines • Routine Checking of the machine • Discuss basic maintenance tips of the machine <p>Quality parameters of the final product</p> <ul style="list-style-type: none"> • Discuss various testing methods for evaluation of product <p>Safety parameters of the machines</p> <ul style="list-style-type: none"> • Discuss basic trouble shooting of the machine • Discuss the safety measures during processing <p>Basics of Injection molding and direct injection molding (DIP)</p> <p>Introduction to Injection molding and direct injection molding (DIP) process</p> <ul style="list-style-type: none"> • Introduction to Injection molding technique • Advantages and disadvantages of Injection molding over other processing techniques • Introduction of Direct Injection molding Process • Advantages and disadvantages of Direct Injection molding Process • Various types of injection moulding processes. • Describe the machines involved in injection molding technique and DIP molding <p>Sequence of operation and standard operating procedure of the process.</p> <ul style="list-style-type: none"> • Parts and Operation of the machine • Set-up and Sequence of operation of the machines • Routine Checking of the machine <p>Quality parameters of the final product</p> <ul style="list-style-type: none"> • Discuss various testing methods for evaluation of product <p>Safety parameters of the machines</p> <ul style="list-style-type: none"> • Discuss basic trouble shooting of the machine • Discuss the safety measures during processing <p>Basics of Reaction Injection molding (RIM)</p> <p>Introduction to Reaction Injection molding (RIM) process</p>
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	<ul style="list-style-type: none"> • Introduction to Reaction Injection molding (RIM) technique • Advantages and disadvantages of Reaction Injection molding (RIM) over other processing techniques • Various types of Reaction Injection molding (RIM) processes • Describe the machines involved in Reaction injection molding <p>Sequence of operation and standard operating procedure of the process.</p> <ul style="list-style-type: none"> • Parts and Operation of the machine • Set-up and Sequence of operation of the machines • Routine Checking of the machine <p>Quality parameters of the final product</p> <ul style="list-style-type: none"> • Discuss various testing methods for evaluation of product <p>Safety parameters of the machines</p> <ul style="list-style-type: none"> • Discuss basic trouble shooting of the machine • Discuss the safety measures during processing <p>Basics of testing and Characterization of Polymeric materials</p> <p>Introduction of testing of polymeric materials</p> <ul style="list-style-type: none"> • Introduction • Overview of the various tests during and after the product manufacturing • Discuss main tests for quality footwear production <p>Various types of test (Physical and Chemical) to be discussed</p> <ul style="list-style-type: none"> • Introduction to physical and Chemical testing of the product • Discuss basic physical and Chemical test involved in footwear industry • Discuss the importance of the physical and chemical testing <p>Knowledge of testing within the process and of final product</p> <p>Analysis of the various testing results</p>
Teaching strategy	<ul style="list-style-type: none"> • Lecture-discussion • Demonstration
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Written Test / Oral Questioning • Demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>

Module requirements	Should attend all class and practical/field sessions Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • ----- • Etc.. <p>(give reference materials list that could be source of additional information for the trainees regarding the particular module)</p>

Learning Module 6

Module title	Prepare molding operations
Module code	KLC-MO 306
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory/not compulsory
Pre-requisite module	None
Description of module	This module aims to provide the learners with the knowledge, skills and right attitudes required to prepare, operate and monitor production machine using defined procedures/methods.
Learning outcomes	After the module is completed, the trainees would be able to: <ol style="list-style-type: none"> 1. Identify materials and equipment 2. Set machine 3. Perform molding operation
Content	<p>Introduction to the Module</p> <p>Identify materials and equipment</p> <ul style="list-style-type: none"> • Physical properties of molding Materials. <ul style="list-style-type: none"> • Polymeric molding materials • Types of materials • Properties of the materials • Uses of the materials • Nature of the materials • Machines identification & arrangement for specified products. <ul style="list-style-type: none"> • Basic polymer processing Techniques • Compression molding • Injection molding • Reaction Injection molding • Extrusion • Machines requirement for different processes • Sole mould, Mould size, and type <ul style="list-style-type: none"> • Types of moulds • Size of the moulds • Handling of molds • Handling and care requirements for materials <ul style="list-style-type: none"> • Handling of various Polymers and their additives • Care taken according to MSDS norms • Overview about the polymer properties • Identification of Common problems and faults of materials. • Identification of OHS practices relevant to materials uses.

	<ul style="list-style-type: none"> • Storage and maintenance of the Materials as per the suppliers specification. • Routine maintenance. • Injection moulding Machines <ul style="list-style-type: none"> • Types, Specifications and Uses • Parts and Operation • Set-up and Assembly • Accessories and Devices • Routine Checking <p>Set machine Discuss how to Clean the machine Discuss to set the temperature and pressure Discuss how to start production Discuss quality control parameters <ul style="list-style-type: none"> • Discuss the safety parameters Machine is checked for temperature and pressure. The injectors are cleaned. Moulds fitting to the machines. <ul style="list-style-type: none"> ○ Discuss sequence to set the mould for production ○ Discuss how to fit the mold in the machine The pre operation checks are performed. The soling material is poured as per the compounding requirement. The production test is performed.</p> <p>Perform molding operation Setting of the Machines and adjustment to meet product requirements <ul style="list-style-type: none"> • Checking and setting of the machine as per material requirement • Checking of the mold as per size and shape. • Checking of the material as per quality standards Preparation of Mould materials and checking for production. <ul style="list-style-type: none"> • Set the machine for temperature and pressure as per material technical data sheet. • Setting of the mold temperature as per requirement. • Preheat the material if required. Sole injection machine operation. <ul style="list-style-type: none"> • Perform trial run under the standard required parameter/conditions.. • Check the product and adjust the parameters accordingly if required • Start production and test the product for quality standards Checking of Molded sole against quality standards. Non-conforming materials are reported. Waste is sorted.</p>
Teaching strategy	<ul style="list-style-type: none"> • Lecture-discussion • Demonstration
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%)

	<ul style="list-style-type: none"> • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Written Test / Oral Questioning • Demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	<p>Should attend all class and practical/field sessions</p> <p>Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams</p>
Module calendar	----- weeks
Reading materials	Any basic books on Compression moulding, Injection moulding and Reaction moulding

Learning Module 7

Module title	Perform mechanized Lasting
Module code	KLC-ML 307
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module aims at the development of skills and knowledge required to perform basic machine lasting operation
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ol style="list-style-type: none"> 1. Set up/prepare machines 2. Conduct sample run 3. Readjust m/c setting to meet requirements 4. Attach insole to the last 5. Perform Toe Lasting 6. Carry out Seat and Side Lasting 7. Report work of team or section 8. Remove tacks from the bottom of Lasted upper 9. Mark and Inspect quality of upper 10. Perform Roughing and Scouring
Content	<p>Set up/Prepare Machines</p> <p>Materials used for lasting operations: Lasts, uppers, Insoles, Soles, Toe-puff (Thermoplastic), Counter stiffeners (Thermoplastic), M/c Nails and tacks, Adhesives (Hot Melt, Water Based and Solvent Based), Solvent, Hardener)</p> <p>Machines and tools for Mechanized Lasting</p> <ul style="list-style-type: none"> • Tools/Moulds/M/c Accessories

(Pincers, Lasting jack, Tack puller, Scissors, Ear muff, Safety glass, Mask, Moulds for Counter moulding, Teflon Toe Band for Toe lasting, Wiper plate for toe lasting, Applicators for toe lasting, Toe pad, Pincers for toe lasting, Heel Band for Heel seat and side lasting m/c, Sole press pad and shoe rest cushion, Cement container, Cementing brush

Machines

(Toe Puff Attaching M/c, Counter moulding m/c, Insole Tacking m/c, Toe Mulling m/c, Toe and forepart Lasting M/c, Heel Mulling M/c, Heel Seat and Side Lasting M/c, Heat Setting m/c, Wrinkle Chasing m/c, Crowning machine, Pounding machine, Roughing and scouring machine, Marking m/c, Heat re-activation, Sole press, Chiller, Delasting machine

M/c Set up parameters

- Moulds and accessories
- Temperature
- Dwell Time
- Pressure

Conduct Sample run

Inspection of material and machine: Upper, Last, Sole, Insole, Inspection of moulds and accessories, Steam generation, Measure required Temperature, Regulate pressure, Dry run of machines with last, Check running time, Stretch vamp, inspect for any grain crack/wrinkles/ torn lasting margin/impression on toe

Readjust Machine setting to meet requirements

Re adjust machines in case of the following symptom: Grain crack, Wrinkle on feather line, Delaminating of components, Splitting Toe puff, Damaged insole, Discoloration of finish, Impression of m/c parts

Upper preparation: Toe-puff attachment, Counter stiffener attachment, Lining pasting, Stitch vamp all around lasting margin, Lace up upper where necessary

OHS practices relevant to different materials & process

Attach Insole to the last

Different Methods of insole attachment: Attachment with tacks, Attachment with staples, Attachment with hot melt adhesive, Unifast system

Purpose of Insole attaching: Insole as foundation, Application of insocks, Application of half insole

Inspection of insole: Check moulding, Check size

Attachment of insole

- Use of correct nail
- Nail / Tack position

	<p style="text-align: center;">○ No of nail/tacks</p> <p>OHS practices relevant to different materials & process</p> <p>Perform Toe Lasting</p> <p>Toe conditioning process: Purpose of conditioning, Importance of steam, Material related parameters</p> <p>Toe lasting process: Types of machine, Parts and its function, Set machine as per last, Optimization of consumables, Positioning upper on last, Inspection of lasted upper</p> <p>OHS practices relevant to consumables & process</p> <p>Carry out Seat and side lasting</p> <p>Heel conditioning process: Purpose of conditioning, Importance of steam, Material related parameters</p> <p>Heel and side lasting process: Types of machine, Parts and its function, Steps of Heel and side lasting, Set, machine as per last, Optimization of consumables, Positioning of back height/Back seam/quarter height, Positioning Toe lasted upper on Heel and side lasting machine, Inspection of lasted upper</p> <p>Heat setting</p> <p style="padding-left: 40px;">Perform pre heat setting test (Dome plastimeter)</p> <p style="padding-left: 40px;">Check and set machine (time , temperature, moisture)</p> <p>Perform Heel crowning and pounding operation if necessary</p> <p style="padding-left: 40px;">OHS practices relevant to consumables & process</p> <p>Report work of team or section</p> <p>Record output: Hourly output, Daily output, Analysis of output and corrective measure</p> <p>Record qualitative Deviation: Compare output with approved sample, Record deviation of quality of each pair, Compile report of qualitative deviation on daily basis, Analysis of reoccurrence of qualitative deviation and corrective measure</p> <p>Remove tacks from Bottom of lasted upper</p> <p>Importance of operation</p> <p>Process of removal of insole tacks and loose lasting tacks</p> <p>Corrective measure</p> <p>Safety measures</p> <p>Mark and inspect quality of lasted upper</p> <p>Inspection of lasted upper</p> <p>Know marking machine</p> <p>Consideration of sole profile</p>
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Removal of material gathering
Positioning of lasted upper and sole on machine
Marking Lasted upper

Perform Roughing and Scouring

Scouring process: Purpose of operation, Selection of Scouring wheel (for upper and sole), Fitting of scouring belt, Optimization of use of scouring belt, Scouring operation of upper and sole, Inspection of lasted margin

Roughing Process: Purpose of operation, treatment of synthetic shoe upper, Types of rouging brush, Sharpening of roughing brush, Roughing operation, Inspection of lasting margin

OHS practices relevant to the process

Perform Bottom cementing and attachment of filler

Selection of cementing brush
Cement container
Work place preparation
Use of hardener
Perform cementing
Optimization of consumables
Types Selection and application of bottom filler
Visual inspection of performed work

Perform sole attaching and sole cementing

Sole preparation according to sole material: Identification of sole, Preparation of workplace, Optimization of consumables, Use of correct brush, Identification of primers, Preparation of primers, Perform priming/wiping, Visual inspection of performed task, Perform sole cementing as per material, Visual inspection of performed task

OHS practices relevant to consumables & process

Perform Sole attaching and pressing: Parts and function of sole reactivator and sole press, Machine adjustments (Heat reactivator and sole press), Check performance of sole press (carbon paper test/ change pads), Drying of adhesive, Perform reactivation and sole spotting (Toe side and heel), Perform sole pressing operation, Check sole alignment/ attachment, Green strength, Fault analysis, OHS practices

Perform Chilling operation

Significance of chilling
Parts and function of chiller
Set time
Set temperature
Perform chilling of shoe

	<p>Grouping of designs after chilling Problems in chilling operation</p> <p>Perform edge cleaning operation Purpose Manual edge cleaning Mechanized cleaning Cleaning tool Quality check OHS practices</p> <p>Delasting and inspection of shoe Manual delasting Mechanized delasting Setting delasting machine Visual inspection of shoe as per quality standard Report output Prepare qualitative deviation of delasted shoe Compile report Preventive measures</p>
Teaching strategy	<ul style="list-style-type: none"> • Written examination • Oral Questioning & Viva • Practical examination
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments

	<ul style="list-style-type: none"> • Pass mark in practical exams (modify/change as appropriate)
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • ----- • Etc.. <p>(give reference materials list that could be source of additional information for the trainees regarding the particular module)</p>

Learning Module 8

Module title	Develop understanding about work study
Module code	KLC-WS 308
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This unit covers the knowledge, skills, and attitudes to understand work study.
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ol style="list-style-type: none"> 1. Develop understanding about relationship between Productivity, Work Study and Human Factor 2. Develop Understanding about Method Study 3. Determination of Work Measurement 4. Conduct time study for the job
Content	<p>LO1. Develop understanding about relationship between Productivity, Work Study and Human Factor.</p> <ol style="list-style-type: none"> 1.1 Relation between basic need and quality of life and work study <ul style="list-style-type: none"> ○ Concepts of productivity ○ Resources of productivity 1.2 Definition and purpose of work study <ul style="list-style-type: none"> • Total time of a job • Work content • Reduction of ineffective time 1.3 Human factor in the application of work study <ul style="list-style-type: none"> • Work study in relation to Management, supervisors, worker 1.4 Impact of external factor on work study and productivity <ul style="list-style-type: none"> • Safety, housekeeping, lighting, noise and vibration, material handling <p>LO2. Develop Understanding about Method Study</p> <ol style="list-style-type: none"> 2.1 Purpose of method study 2.2 Approach to method study 2.3 Selection of job 2.3 Limiting the scope of method study 2.4 Procedures or steps required for a method study, develop questioning technique 2.5 Classification of movement, procedure for analyzing man movement. 2.6 Procedure for evaluation of installation, development and

	<p>movement</p> <p>LO3 Determination of Work Measurement</p> <p>3.1 Work Measurement definition, purpose, use and basic procedure 3.2 Determination of sample size 3.3 Random observation, Group sampling, estimating 3.4 Work study equipments</p> <p>LO4 Conduct Time Study for the job</p> <p>4.1 Equipment for time study (stop watch, study board, time study form) 4.2 Job selection (reasons for work study), approach to the worker, steps of time study. 4.3 Rating of workers, factors affecting rating, comparison of observed rate With standard. 4.4 Determination of standard performance/time</p>
Teaching strategy	<ul style="list-style-type: none"> • Lectures • Demonstration • Practical/ Case study
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%) • Etc.... <p>(indicate as appropriate for your particular module)</p>
Assessment strategy	<ul style="list-style-type: none"> • Written examination • Oral Questioning & Viva Assignment
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations <p>(modify or change as appropriate)</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>
Module requirements	<p>Should attend all class and practical/field sessions</p> <p>Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams</p>
Module calendar	----- weeks

Reading materials	<ul style="list-style-type: none"> • ----- • ----- • ----- • Etc..
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Learning Module 9

Module title	Apply Quality Control
Module code	KLC-QC 309
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory/not compulsory
Pre-requisite module	If any-----
Description of module	This module aims at development of knowledge, attitudes & skills required in applying quality control in Footwear
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ol style="list-style-type: none"> 1. Monitor Quality of Output and Performance 2. Asses Quality of Outputs/ Products 3 Assess quality of Performance delivered 4 Determining cause of quality deviations 5 Ensure Quality Improvement 6 Complete Documentation
Content	<p>Monitor Quality of Output and Performance Basics of Quality: Definition, Elements, Competence, Soft elements</p> <p>Inspection: Work Area Inspection, Inspection of Incoming material, Process monitoring</p> <p>Non conformity: Input (Raw material and components at the Store level), process parameters, Specification of consumables, Product specification, Record of deviation (Preparation of checklist)</p> <p>Corrective action: Control Input, Control process parameters, Retraining, Rework cost sheet</p> <p>Report non conformity: Improper Raw material, Improper identification, Legal non conformity of material, In process control</p> <p>.Asses Quality of Outputs/ Products Sample production of new design of shoe Confirmation of sample shoe Pilot production of new design Product reengineering Inspection of incoming goods through departments Record distribution of frequency of defects in process Analysis of distribution of defects Corrective action against the root cause Record replacement and repairs</p> <p>Assess quality of Performance delivered</p>

	<p>Pre production checks Identification of Key operation Determine quality standard of the product Identification and deployment of workforce Monitoring performance</p> <p>Determining cause of quality deviations Deviations: Specification, Substandard material, Mechanical fault, Skill related deviation</p> <p>Prepare checklist: Test report of raw material and key components, Quality Checklist for components (Upper and lining leather), Quality checklist for other components (Insole, sole, toe puff, stiffener), Quality checklist of consumables (Thread, adhesives, Monitor performance of m/c (air pressure, temperature, time, speed)</p> <p>Ensure Quality Improvement Benchmarking of process Production Process redesign Customer feedback</p> <p>Complete Documentation Record Documents of quality and performance Maintain record Record outcomes</p>
Teaching strategy	<ul style="list-style-type: none"> • Lectures • Demonstration • Practical
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Written examination • Oral Questioning & Viva • Practical examination
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	Should attend all class and practical/field sessions

	Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 10

Module title	Workplace Communication and Monitoring Work Activities
Module code	KLC-CM 310
Credit /total hours/ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	none
Description of module	This module aims to provide trainees the knowledge, attitude and skill to lead small teams, have good communication at the workplace, and monitor activities .
Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ul style="list-style-type: none"> • Lead a small team • Communicate information about workplace processes • Lead workplace discussion • Identify and communicate issues arising in the workplace • Monitor activities
Content	<p>Provide team leadership Work requirements identification and presentation to team members: Client profile, Assignment instructions Communicating reasons for instructions and requirements to team members Recognizing and discussing team members' queries and concerns: roster/shift details</p> <p>Assign responsibilities Allocation of Duties and responsibilities Allocating duties having regard to individual preference, domestic and personal considerations.</p> <p>Set performance expectations for team members Establishing performance expectations based on client needs Performance expectations based on individual team members duties and area of responsibility Discussing Performance expectations</p> <p>Supervised team performance Monitoring of performance: Formal process, Informal process, Feedback for team members, Formal process, Informal process Performance issues Informing team members of any changes in the priority allocated to assignments or tasks Team operations monitoring Follow-up communication Documentation</p>

	<p>Communicate information about workplace processes Appropriate communication method selection: Non-verbal gestures, Verbal, Face to face Speaking to groups, Using telephone, Using internet, Multiple operations involving several topics areas communication Using questions to gain extra information Correct sources of information are identified Information selection and organization Verbal and written reporting Communication skills maintaining in all situations</p> <p>Lead workplace discussion Seeing response to workplace issues Providing response to workplace issues Making Constructive contributions to workplace Goals/objectives and action plan undertaken in the workplace</p> <p>Monitor and improve workplace operations The enterprise as an organization, its core business, goals and objectives Enterprise quality assurance, procedures and systems Relationship of work operations to enterprise goals Common quality problems and issues in the workplace</p> <p>Planning and organizing workflow Work requirements and workflow Work schedule and work prioritization Competence of technical staff versus work assignment Workload versus technical staff Staff complement analysis Report writing and presentation</p> <p>Maintain workplace records Workplace documentation system Documentation officer/staff Data bank establishment Workplace records updating and filing system</p> <p>Solve problems and make decisions Methods of problem identification Problem solving and decision making processes Management tools application Participatory approach to problem solving Methods of analyzing effectiveness of solutions</p>
Teaching strategy	<ul style="list-style-type: none"> • Lecture-discussion • Group working
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Oral questioning / written tests • Demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions

	and conduct and evaluate examinations and assignments Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books (modify/change as appropriate for the particular module)
Module requirements	Should attend all class and practical/field sessions Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 11

Module title	Perform CAD/CAM
Module code	KLC-PC 111
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	none
Description of module	This module is designed to equip trainees with skills and knowledge to prepare work piece, perform digitizing, carry out pattern modification, and/or design from scratch, perform lay planning, plotting/cutting and dispatch completed work. It contains both the theoretical part and practical activities the trainee should pass through to acquire the basic competence (skill, knowledge and attitude) in accomplishing organizational activities relating to its coverage
Learning outcomes	After the module is completed, the trainees would be able to: <ul style="list-style-type: none"> • Start the CAD system and the CAD program. • Prepare patterns for digitizing. • Perform digitizing according to work requirement • Lay planning according to required specification • Calculate the material consumption of the pattern. • Cut the patterns by using a CAM machine.
Content	Introduction to leather goods CAD/ CAM Application of CAD/CAM in the leather goods manufacturing. CAD/CAM system components System requirements Getting started with the CAD/ CAM system. Work piece preparation Piece identification Style identification Pattern inspection

	<p>Work ticket specification</p> <p>Pattern digitizing Pattern laying Digitizing Data storing</p> <p>Design and modification Style modification Pattern engineering Piece extraction Pattern labeling: Grain lines, Notches, Identifying marks, Pattern information</p> <p>Nesting Interlocking Pattern alignment confirmation</p> <p>Cutting and dispatching CAM machine operation Cutting components Inspection Bundling and stacking Documentation</p>
Teaching strategy	<ul style="list-style-type: none"> • Lecture • Group discussion • Role playing • Visiting firms • Demonstration • Practical exercise
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment(test, group work, etc) • Quiz • Assignments • Mid-exam • Project work • Final-exam
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals

	<ul style="list-style-type: none"> • Reference books • Text books
Module requirements	Should attend all class and practical/field sessions Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 12

Module title	Improve Business Practice
Module code	KLC-BP 312
Credit /total hours/ECTS	3 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This module aims to provide the trainees the skills, knowledge and attitudes required in promote, improve and to grow in business operations
Learning outcomes	After the module is completed, the trainees would be able to: <ul style="list-style-type: none"> • Diagnose the business • Benchmark the business • Develop plans to improve business performance • Develop marketing and promotional plans • Develop business growth plans • Implement and monitor plans
Content	<p>Diagnose the business Determining and acquiring data required for diagnosis: Organization capability, Level of client service which can be provided, Internal policies, procedures and practices, Level of commercial activity, Break even data, Technological impacts Determining competitive advantage of the business from the data: Services/products, Fees, Location, Timeframe Undertaking SWOT analysis of the data</p> <p>Benchmark the business Identification of Sources of relevant benchmarking data selection of Key indicators for benchmarking in consultation with key stakeholders: Salary cost and staffing, Personnel productivity (particularly of principals), Profitability, Fee structure, Client base, Size staff/principal, Overhead/overhead control Comparing Like indicators of own practice with benchmark indicators Identification Areas for improvement</p> <p>Develop plans to improve business performance Developing a consolidated list of required improvements Determining cost-benefit ratios for required improvements Determining work flow changes resulting from proposed improvements Ranking proposed improvements according to agreed criteria Developing an action plan to implement the top ranked improvements</p>

	<p>Checking organizational structures to ensure they are suitable: Legal structure (partnership, limited liability company, etc.), Organizational structure/hierarchy, Reward schemes</p> <p>Develop marketing and promotional plans</p> <p>Reviewing The practice vision statement Developing/reviewing Practice objectives Identifying/refining Target markets Market research data obtaining: Data about existing clients, Data about possible new clients, Trade associations/journals, Yellow pages small business surveys, Chamber of commerce, Secondary market research, Primary market research Competitor analysis obtaining: Competitor offerings, Competitor promotion strategies and activities, Competitor profile in the market place Market position developing/reviewing: Product, Product mix, Features/benefits, New/changed products, Cost components, Communication, Promotional strategies Practice brand developing: Practice image, Phone answering protocol, Slogans, Templates for communication/invoicing, Writing style, AIDA (attention, interest, desire, action) Identification of Benefits of practice/practice products/services: Features as perceived by the client, Benefits as perceived by the client Promotion tools selection/development: Seminars, Advertising, Press releases, Brochures, Websites, Telemarketing/cold calling</p> <p>Develop business growth plans</p> <p>Developing plans to increase yield per existing client Developing plans to add new clients Ranking proposed plans according to agreed criteria Developing an action plan to implement the top ranked plans is Reviewing work practices to ensure they support growth plans</p> <p>Implement and monitor plans</p> <p>Implementation plan is developed in consultation with all relevant stakeholders Indicators of success of the plan are agreed Implementation is monitored against agreed indicators Implementation is adjusted as required</p>
Teaching strategy	<ul style="list-style-type: none"> • Lecture-discussion <p>Group work / Individual assignment</p>
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)
Assessment strategy	<ul style="list-style-type: none"> • Written tests Oral question/practical Demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed

	reports of assignments and attend all examinations (modify or change as appropriate)
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	Should attend all class and practical/field sessions Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	----- weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Learning Module 13

Module title	Introductory Mathematics and its application
Module code	KLC-IM 313
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	None
Description of module	This course is designed to prepare students for the Diploma level mathematics. Topics will include: real-number concepts, selected geometry concepts, linear equations and inequalities in one variable, graphing linear equations in two variables, problem solving involving linear equations, rational equations,
Learning outcomes	After the module is completed, the trainees would be able to: <ul style="list-style-type: none"> • Undertake simple calculations • Workout percentages and ratios • Construct and interpret simple graphical presentations • Perform data summaries and construct tables
Content	<ul style="list-style-type: none"> • Introduction to Measurements, • Construction and interpretation of graphical presentations (graphs, pie charts, bar charts..) • Basic mathematical calculations (addition, subtraction, multiplication, division, averages, ratios, diameters, volumes, areas, etc..) • Understanding instruments of measurements (rulers, weighing scales, barometer, cylinder,,) • Introduction to tabulation and data management basics
Teaching strategy	The teaching methodology could involve class room teaching, field trips, assignments (self study), group discussions, practical sessions (indicate the ones as appropriate for the particular module)
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%)

Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	Should attend all class and practical/field sessions Should get pass mark in final grade that encompass written exams, reports of assignments, practical exams
Module calendar	2 weeks
Reading materials	(give reference materials list that could be source of additional information for the trainees regarding the particular module)

Learning Module 14

Module title	Principles of Product Development
Module code	KLD-PD 221
Credit /total hours/ECTS	2 Cr.hrs
Module type	Compulsory
Pre-requisite module	none
Description of module	Introduces basic concepts with regard to Pre-Design, Design, Selection, Pathfinder, Tooling in footwear and leather goods development
Learning outcomes	After the module is completed, the trainees would be able to: <ul style="list-style-type: none"> • Identify the stages involved in new product development • Carry out market research to develop a new innovative product. • Understand the concepts of quality and its application in new product development.
Content	Basics Introduction to Product Development Stages in New Product Development Detailed analysis of product development process from idea generation through to market launch. Role and application of market research in new product development Development of New Leather Product <ul style="list-style-type: none"> • A Product That Sells Itself • A Growing List Of Qualified Buyers • An Offer That They Won't Refuse • A Sales Page That Makes Them Comfortable Buying • A Team Of Affiliates Promoting Your Offer

	<ul style="list-style-type: none"> • Pre-Launch Content That Builds Trust And Goodwill <p>Written report, product launch and presentation of findings.</p>
Teaching strategy	The teaching methodology could involve class room teaching, field trips, assignments (self study), group discussions, practical sessions (indicate the ones as appropriate for the particular module)
Assessment criteria	<ul style="list-style-type: none"> • Individual project (----%) • Group project and presentation (--%) • Written test (-----%) • Practical work (-----%) • Etc....
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments <p>Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examination</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books <p>(modify/change as appropriate for the particular module)</p>
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments • Pass mark in practical exams
Module calendar	2- weeks
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • ----- • Etc..

Learning Module 15

Module title	Environmental management and conservancy
Module code	KLD-EC 251
Credit /total hours/ECTS	2Chrs
Module type	Compulsory
Pre-requisite module	Non
Description of module	To impart theoretical and practical knowledge on critical aspects of controlling, managing and remediation of the environment and understand the leather sector related activities impact on the environment.

Learning outcomes	<p>After the module is completed, the trainees would be able to:</p> <ul style="list-style-type: none"> • Acquire knowledgeable on general principles of environmental management. • Carry out basic diagnostics criterion towards conservancy. • Build awareness towards occupational hazards and safety measures related to the leather industry. • Undertake preliminary interventional strategy in reducing pollution and adapting cleaner methodologies in processing and production.
Content	<p>The earth's physical resources (air, water, soil and minerals) and human being's impact upon them. Depletion of natural resources, sustainable management of natural resources. Environmental and toxicological pollution: types and sources of pollution, effects of pollution on earth's physical resources. Solid and liquid wastes, management of solid wastes, management of liquid wastes, hazardous wastes. Prevention and control of pollution with specific reference to leather processing. The functions of the National Environmental Management Agencies and the Water Resources Management Agencies, in relation to leather processing.</p>
Teaching strategy	<p>The teaching methodology could involve class room teaching, field trips, assignments (self study), group discussions, practical sessions (indicate the ones as appropriate for the particular module). To include all the cited parameters with theory (including assignments) encompassing 50%, practical 30%, field trips (& individual reports) 15% and group discussions (with group reports) 5%.</p>
Assessment criteria	<ul style="list-style-type: none"> • Individual project (15%) • Group project and presentation (5%) • Written test (50%) • Practical work (30%)
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should organize classes and field sessions, conduct lectures, give guidance to students for self study and assignments, motivate students to actively participate in class and field sessions and conduct and evaluate examinations and assignments • Students should attend classes and practical/field sessions, actively participate in class and practical/field sessions, submit duly completed reports of assignments and attend all examinations
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials • Overhead projectors and transparencies, LCDs and laptops, photocopier and photocopy papers, flip charts • Journals • Reference books • Text books
Module requirements	<ul style="list-style-type: none"> • Should attend all class and practical/field sessions • Should get pass mark in all written exams • Pass mark in reports of assignments

	<ul style="list-style-type: none"> • Pass mark in practical exams
Module calendar	2 weeks
Reading materials	<ul style="list-style-type: none"> • Pepper, L.I., Gerba, P.C., Brusseau, M.L Pollution Science, Academic Press (Elsevier Science, USA), San Diego, California, USA • Mwinyihija, M. (2010). Ecotoxicological diagnosis in the tanning industry. New York, NY: Springer Publisher. • The Rivers Handbook. Vol. 2 Hydrological and Ecological Principles, (Calow P. & Petts, G.E. (Eds.)). Blackwell Scientific, Oxford. • Moriarty, F., (1999). Ecotoxicology: The study of pollutants in the ecosystems, pp 217 - 221. Academic press, San Diego, USA • Etc.. <p>(give reference materials list that could be source of additional information for the trainees regarding the particular module)</p>

Learning Module 16

Module title	Industrial Attachment II
Module code	KLC-IA 316
Credit /total hours/ECTS	3 Cr.hrs
Module type	Compulsory/not compulsory
Pre-requisite module	None
Description of module	Practical exposure of students to activities in leather industry is mandatory for students to develop skills in processing hides and skins and manufacturing footwear and other leather goods.
Learning outcomes	<p>After the module is completed, the trainees would be able to further strengthen their skills and knowhow in one or more of the following activities:</p> <ul style="list-style-type: none"> • Preservation of hides and skins • Identification of defects in hides and skins • Grading and classification of hides and skins and leather • Tanning operations • Footwear and other leather goods manufacturing
Content	This module covers skills development in hides and skins production, processing to leather; quality determination and grading of hides and skins and leather, Defects in hides and skin, footwear and other leather goods manufacturing
Teaching strategy	The teaching methodology could involve close supervision of students during their industry attachment, demonstrations and hands-on training
Assessment criteria	<ul style="list-style-type: none"> • Regular attendance during the whole industrial attachment period: 40% • Recording of activities performed during the attachment period: 40% • presentation/group or individual: 20%
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • attendance • Reports of assignments • Practical demonstration
Role of instructors and students	<ul style="list-style-type: none"> • Instructors should closely supervise and give guidance to students for self study and assignments, motivate students to actively

	<p>participate in leather processing activities of industries of their assignment. Students should attend actively participate in leather processing and all manufacturing activities of industries of their assignment</p>
Teaching support and inputs	<ul style="list-style-type: none"> • Internet • Journals • Reference books • Text books
Module requirements	<p>Should attend all practical/field sessions Should get pass mark in final grade that encompass reports of assignments, and final report of the Industry attachment</p>
Module calendar	2 months
Reading materials	<ul style="list-style-type: none"> • ----- • ----- • -----

Annex 1: Staff and Facilities Profile

Table 1: Distribution of Staff by Qualification

Status	Diploma	BSc	MSc	PhD	Total
Fulltime	3	3	1	-	7
Expatriate	-	-	-	-	-
Total	3	3	1	-	7

Table 2: Facilities at Karari Training Center

Facilities	Capacity/unit	Total capacity
Library	--- seats	
PC pool	-----seats	1
Class rooms	-----seats	-
Laboratory	-----seats	-
Workshops	-----students	-
Conference hall	----- seats	-
Vehicles		

Annex 2. Composition of Curriculum Development Task Force

The task force is constituted of 12 participants (8 drawn from COMESA/LLPI, Kenya, Uganda, Zambia and Zimbabwe, and 4 from the Sudan). All the participants are representing important stakeholders, i.e. academicians, tanners, manufacturers, and consultants in the leather sector. Table 1 shows the details of the participants by country and professional background.

Table1. List of Diploma Level Curriculum Development Task Force Participants

No.	Name	Gender	Country	Organization/Position	Address E-mail, Phone, Cell, Fax	Qualification
1	Dr. Mwinyikione Mwinyihija	M	COMESA/LLPI	COMESA/LLPI Executive Director	nmwinyi@gmail.com +251 114 396279 +251 930 077660 +251 114 390900	PhD, DSc, FSB, FCIWEM., HSC, CSci., Cenv., Cbiol., C.WEM
2	Dr Tadesse H. Mamo	M	COMESA/LLPI	COMESA/LLPI Training, Consultancy and Extension Expert	tadessehmano@gmail.com tadessehmano@comesa-llpi.org +251 114390327 +251 911407931	MSc DVM
3	Mr. Nicholas Mudungwe	M	COMESA/LLPI	COMESA/LLPI Cluster Management Expert	nmudungwe@comesa.int +251 114 396279 +251 933 007516 +251 114 390900	MBA BSc
4	Prof. Alemu, Mekonnen Hailemariam	M	COMESA/LLPI	COMESA/LLPI Value Chain Information Expert	Mekonnen57@gmail.com; mekonnenH@comesa-llpi.org +251 114 396279 +251 911 662669 +251 114 390900	MVSc. DVM
5	Mr. Harrison Mungai Ndungu	M	Kenya	Capacity Building, Ministry of Industrialization	harrison1mungai@yahoo.co.uk +254 204 442321 +254 722 959765	H.Dip

6	Ms. Ronett Atukunda Ecel	F	Uganda	Lecturer (Economics), Makerere University, 6Business School,	ratukunda@gmail.com ratukunda@mubs.ac.ug +256 772 326267	BA, MAEPP PhD ongoing
7	Mr. Preston Viswamo	M	Zambia	Head of Leather Products Technology Center, Deputy Registrar, Copperbelt Leather Industry Cluster Co-ordinator, Copperstone University,	pviswamo@yahoo.com +260 977 333421, Fax: +260 212 230289,	BA MSc on going
8	Mr. Shoko Clement	M	Zimbabwe	Leather Consultant, Tricastol Enterprises	shokoclement@gmail.com +263 772 470484	BSc
9	Alzein Idriss	M	Sudan	Instructor, Karari	Zeinkoo12@gmail.com +249 922700274	MSc
10	Sara Ibrahim	F	Sudan	Instructor, Karari	sarraelaaz@hotmail.com +249 12920098	Dip
11	Prof. D.A Asyouti	M	Sudan	Leather Consultan	+249 912393218	PhD
12	Moneim Younis	M	Sudan	Footwear and leather goods Consultant	monyounis@yahoo.com +249 185333382 +249 912206038	