

**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**LEATHER TECHNICIAN**

**LEVEL 6**



**TVET CDACC**

**P.O. BOX 15745-00100**

**NAIROBI**

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# FOREWORD

The provision of quality education and training is fundamental to the Government’s overall strategy for social economic development. Quality education and training will contribute to achievement Kenya’s development blue print and sustainable development goals.

Reforms in the education sector are necessary for the achievement of Kenya Vision 2030 and meeting the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution and this resulted to the formulation of the Policy Framework for Reforming Education and Training. A key feature of this policy is the radical change in the design and delivery of the TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that these Occupational Standards were developed for the purpose of developing a competency-based curriculum for Leather Technology level 6. These Occupational Standards will also be the bases for assessment of an individual for competence certification.

It is my conviction that these Occupational Standards will play a great role towards development of competent human resource for the Leather sector’s growth and sustainable development.

**PRINCIPAL SECRETARY**

**VOCATIONAL AND TECHNICAL TRAINING**

**MINISTRY OF EDUCATION**

# PREFACE

Kenya Vision 2030 aims to transform the country into a newly industrializing, “middle-income country providing a high-quality life to all its citizens by the year 2030”. Kenya intends to create a globally competitive and adaptive human resource base to meet the requirements of a rapidly industrializing economy through life-long education and training. TVET has a responsibility of facilitating the process of inculcating knowledge, skills and attitudes necessary for catapulting the nation to a globally competitive country, hence the paradigm shift to embrace Competency Based Education and Training (CBET).

The Technical and Vocational Education and Training Act No. 29 of 2013 on Reforming Education and Training in Kenya, emphasized the need toreform curriculum development, assessment and certification. This called for shift to CBET to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

The TVET Curriculum Development, Assessment and Certification Council (TVET CDACC), in conjunction with Leather Sector Skills Advisory Committee (SSAC) have developed these Occupational Standards for a Leather technician. These occupational standards will be the bases for development of competency-based curriculum for Leather Technology Level 6. These Standards will also be the bases for assessment of an individual for competence certification.

The occupational standards are designed and organized with clear performance criteria for each element of a unit of competency. These standards also outline the required knowledge and skills as well as evidence guide.

I am grateful to the Council Members, Council Secretariat, Leather SSAC, expert workers and all those who participated in the development of these occupational standards.

**CHAIRPERSON**

**TVET CDACC**

# ACKNOWLEDGMENT

These Occupational Standards were developed through combined effort of various stakeholders from private and public organizations. I am sincerely thankful to the management of these organizations for allowing their staff to participate in this course. I wish to acknowledge the invaluable contribution of industry players who provided inputs towards the development of these Standards.

I thank TVET Curriculum Development, Assessment and Certification Council (TVET CDACC) for providing guidance on the development of these Standards. My gratitude goes to the Leather Sector Skills Advisory Committee (SSAC) members for their contribution to the development of these Standards. I thank all the individuals and organizations who participated in the validation of these Standards.

I acknowledge all other institutions which in one way or another contributed to the development of these Standards.

**CHAIRPERSON**

**LEATHER SECTOR SKILLS ADVISORY COMMITTEE**

# ABBREVIATION AND ACRONYMS

2D Two Dimensional

AIDS Acquired Immune Deficiency Syndrome

BC Basic Competency

CC Common Competency

CDACC Curriculum Development, Assessment and Certification Council

CR Core Competency

CU Curriculum

HIV Human Immuno-Deficiency Virus

ICT Information Communication Technology

LCD Liquid Crystal Display

LT Leather Technology

NEMA National Environmental Management Authority

OSHA Occupation Safety and Health Act

OSHS Occupation Safety and Health Standards

PESTEL Political Economic Social Technological Environmental and Legal

PPE Personal Protective Equipment

SSAC Sector Skills Advisory Committee

SWOT Strengths Weaknesses Opportunities and Threats

TEX Textile

TVET Technical and Vocational Education and Training

# KEY TO UNIT CODE

**TEX/OS/LT/BC/01/6/ A**

Industry or sector

Occupational Standards

Occupational area

Type of competency

Competency number

Competency level

Control version

# 

CONTENTS

[FOREWORD ii](#_Toc67398508)

[PREFACE iii](#_Toc67398509)

[ACKNOWLEDGMENT iv](#_Toc67398510)

[ABBREVIATION AND ACRONYMS v](#_Toc67398511)

[KEY TO UNIT CODE vi](#_Toc67398512)

[OVERVIEW viii](#_Toc67398513)

[BASIC UNITS OF COMPETENCY 1](#_Toc67398514)

[DEMONSTRATE COMMUNICATION SKILLS 2](#_Toc67398515)

[DEMONSTRATE NUMERACY SKILLS 6](#_Toc67398516)

[DEMONSTRATE ENTREPRENEURIAL SKILLS 18](#_Toc67398517)

[DEMONSTRATE EMPLOYABILITY SKILLS 25](#_Toc67398518)

[DEMONSTRATE ENVIRONMENTAL LITERACY 33](#_Toc67398519)

[DEMONSTRATE OCCUPATIONAL SAFETY AND HEALTH PRACTICES 38](#_Toc67398520)

[CORE UNITS OF COMPETENCY 43](#_Toc67398521)

[CARRY OUT ANIMAL FLAYING 44](#_Toc67398522)

[PERFORM HIDE /SKIN CURING 48](#_Toc67398523)

[CARRY OUT LEATHER PROCESSING 53](#_Toc67398524)

[MANAGE TANNERY WASTE 61](#_Toc67398525)

[PRODUCE LEATHER FOOTWEAR 65](#_Toc67398526)

[PRODUCE LEATHER GOODS 76](#_Toc67398527)

[PRODUCE UPHOLSTERY PRODUCTS 82](#_Toc67398528)

[OPERATE LEATHER PRODUCTION MACHINES 89](#_Toc67398529)

# OVERVIEW

Leather Technician Level 6 consists of competencies that an individual must achieve to enable him/her to work in a Leather sector. It entails animal flaying, hide /skin curing, leather processing, managing tannery waste, producing leather footwear, producing leather goods, producing upholstery products and operating leather production machines

**BASIC COMPETENCIES**

|  |  |
| --- | --- |
| **Unit of Competency Code** | **Unit of Competency Title** |
| TEX/OS/LT/BC/01/6/A | Demonstrate Communication Skills |
| TEX/OS/LT/BC/02/6/A | Demonstrate Numeracy Skills |
| TEX/OS/LT/BC/03/6/A | Demonstrate Digital Literacy |
| TEX/OS/LT/BC/04/6/A | Demonstrate Entrepreneurial Skills |
| TEX/OS/LT/BC/05/6/A | Demonstrate Employability Skills |
| TEX/OS/LT/BC/06/6/A | Demonstrate Environmental Literacy |
| TEX/OS/LT/BC/07/6/A | Demonstrate Occupational Safety and Health Practices |

**CORE COMPENTENCIES**

|  |  |
| --- | --- |
| **Unit of Competency Code** | **Unit of Competency Title** |
| TEX/OS/LT/CR/01/6/A | Carry Out Animal Flaying |
| TEX/OS/LT/CR/02/6/A | Perform Hide /Skin Curing |
| TEX/OS/LT/CR/03/6/A | Carry Out Leather Processing |
| TEX/OS/LT/CR/04/6/A | Manage Tannery Waste |
| TEX/OS/LT/CR/05/6/A | Produce Leather Footwear |
| TEX/OS/LT/CR/06/6/A | Produce Leather Goods |
| TEX/OS/LT/CR/07/6/A | Produce Upholstery Products |
| TEX/OS/LT/CR/08/6/A | Operate Leather Production Machines |

# BASIC UNITS OF COMPETENCY

# DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE:** TEX/OS/LT/BC/01/6/A

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate communication skills. It involves meeting communication needs of clients and colleagues, developing communication strategies, establishing and maintaining communication pathways, conducting interviews, facilitating group discussion and representing the organization.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the Range*** |
| 1. Meet communication needs of clients and colleagues | 1. Specific communication needs of clients and colleagues are identified and met based on workplace requirements 2. Different communication approaches are identified and applied according to clients’ needs 3. Conflict is identified and addressed as per the standards of the organization |
| 1. Develop communication strategies | * 1. Strategies for effective internal and external dissemination of information are developed as per organization’s requirements   2. Special communication needs are considered in developing strategies according workplace procedures   3. ***Communication strategies*** are analyzed, evaluated and revised based the workplace needs |
| 1. Establish and maintain communication pathways | * 1. Pathways of communication are established as per organization policy   2. Pathways are maintained and reviewed according to organization procedures |
| 1. Promote use of communication strategies | * 1. Information is provided to all areas of the organization as per strategy requirements   2. Effective communication techniques are articulated and modeled according work requirements   3. Personnel are given guidance about adapting communication strategies as per organization procedures |
| 1. Conduct interview | 1. A range of appropriate communication strategies are employed in ***interview situations*** based on the workplace requirements 2. Records of interviews are made and maintained in accordance with organizational procedures 3. Effective questioning, listening and nonverbal communication techniques are used as per needs |
| 1. Facilitate group discussion | 1. Mechanisms to enhance ***effective group interaction*** are identified and implemented according to workplace requirements 2. Strategies to encourage group participation are identified and used as per organizations’ procedures 3. Meetings objectives and agenda are set and followed based on workplace requirements 4. Relevant information is provided and feedback obtained according to set protocols 5. Evaluation of group communication strategies is undertaken in accordance with workplace guidelines 6. Specific communication needs of individuals are identified and addressed as per individual needs |
| 1. Represent the organization | 1. 7Relevant presentation are researched and presented based on internal or external communication forums requirements 2. Presentation is delivered in a clear and sequential manner as per the predetermined time 3. Presentation is made as per appropriate media 4. Difference views are respected based on workplace procedures 5. Written communication is done as per organizational standards 6. Inquiries are responded according to organizational standard |

**RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Communication strategies may include but not limited to: | * Language switch * Comprehension check * Repetition * Asking confirmation * Paraphrase * Clarification request * Translation * Restructuring * Approximation * Generalization |
| 1. Effective group interaction may include but not limited to: | * Identifying and evaluating what is occurring within an interaction in a nonjudgmental way * Using active listening * Making decision about appropriate words, behavior * Putting together response which is culturally appropriate * Expressing an individual perspective * Expressing own philosophy, ideology and background and exploring impact with relevance to communication |
| 1. Situations may include but not limited to: | * Establishing rapport * Eliciting facts and information * Facilitating resolution of issues * Developing action plans * Diffusing potentially difficult situations |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Communication
* Active listening
* Interpretation
* Negotiation
* Writing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Communication process
* Dynamics of groups
* Styles of group leadership
* Key elements of communications strategy

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical aspects of Competency | Assessment requires evidence that the candidate:   1. Developed communication strategies to meet the organization requirements and applied in the workplace 2. Established and maintained communication pathways for effective communication in the workplace 3. Used communication strategies involving exchanges of complex oral information |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace or appropriately simulated environment where assessment can take place 2. Materials relevant to the proposed activity or tasks |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Direct observation 2. Oral questioning 3. Written texts |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE NUMERACY SKILLS

**UNIT CODE:** TEX/OS/LT/BC/02/6/A

**UNIT DESCRIPTION**

This unit describes the competencies required to demonstrate numeracy skills. It involves; applying a wide range of mathematical calculations for work; applying ratios, rates and proportions to solve problems; estimating, measuring and calculating measurement for work; using detailed maps to plan travel routes for work; using geometry to draw and construct 2D and 3D shapes for work; collecting, organizing and interpreting statistical data; using routine formula and algebraic expressions for work and using common functions of a scientific calculator.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range.*** |
| 1. Apply a wide range of mathematical calculations for work | * 1. Mathematical information embedded in a range of workplace tasks and texts is extracted as per workplace procedures.   2. Mathematical information is interpreted and comprehended as per job specifications   3. A range of mathematical and problem solving processes are selected and used as per job specification   4. Different forms of fractions, decimals and percentages are flexibly used as per SOPs   5. Calculation performed with positive and negative numbers as per SOPs   6. Numbers are expressed as powers and roots and are used in calculations as per SOPs   7. Calculations done using routine formulas as per SOPs   8. Estimation and assessment processes are used to check outcome as per workplace procedures   9. Mathematical language is used to discuss and explain the processes, results and implications of the task as per workplace procedures |
| 1. Use and apply ratios, rates and proportions for work | * 1. Information regarding ratios, rates and proportions extracted from a range of workplace tasks and texts as per SOPs   2. Mathematical information related to ratios, rate and proportions is analysed as per SOPs   3. Problem solving processes are used to undertake the task as per workplace procedures   4. Equivalent ratios and rates are simplified as per SOPs   5. Quantities are calculated using ratios, rates and proportions as per SOPS   6. Graphs, charts or tables are constructed to represent ratios, rates and proportions as per SOPs   7. The outcomes reviewed and checked as per job specifications   8. Information is record using mathematical language and symbols as per workplace procedures |
| 1. Estimate, measure and calculate measurement for work | * 1. Measurement information embedded in workplace texts and tasks are extracted and interpreted as per job specifications   2. Appropriate workplace measuring equipment are identified and selected as per job specifications   3. Accurate measurements are estimated and made as per SOPs   4. The area of ***2D shapes*** including compound shapes are calculated as per SOPs   5. The volume of 3D shapes is calculated using relevant formulas as per SOPs   6. Sides of right angled triangles are calculated using Pythagoras’ theorem as per SOPs   7. conversions are perform between units of measurement as per job specification   8. Problem solving processes are used to undertake the task as per workplace Procedures   9. The measurement outcomes are reviewed and checked as per workplace procedures   10. Information is recorded using mathematical language and symbols appropriate for the task as per workplace procedures |
| 1. Use detailed maps to plan travel routes for work | * 1. Different types of maps are identified and interpreted as per job requirements   2. Key features of maps are identified as per job requirements   3. Scales are identified and interpreted as per job requirements   4. Scales are applied to calculate actual distances   5. Positions or locations are determined using directional information as per job requirements   6. Routes are planned by determining directions and calculating distances, speeds and times as per job requirements   7. Information is gathered and identified and relevant factors related to planning a route checked as per job requirements   8. Relevant equipment is select and checked for accuracy and operational effectiveness as per job requirements   9. Task is planned and recorded using specialized mathematical language and symbols appropriate for the task as per job requirements |
| 1. Use geometry to draw 2D shapes and construct 3D shapes for work | * 1. A range of 2D shapes and 3D shapes and their uses in work contexts is identified as per job specifications   2. Features of 2D and 3D shapes are named and described as per job specifications   3. Types of angles in 2D and 3D shapes are identified as per job specifications   4. Angles are drawn, estimated and measured using geometric instruments as per job requirements   5. Angle properties of 2D shapes are named and identified as per SOPs   6. Angle properties are used to evaluate unknown angles in shapes as per SOPs   7. Properties of perpendicular and parallel lines are applied to shapes as per SOPs   8. Understanding and use of symmetry is demonstrated as per SOPs   9. Understanding and use of similarity is demonstrated as per SOPs   10. The workplace tasks and mathematical processes required are identified as per workplace procedures   11. 2D shapes is drawn for work as per job specification   12. 3D shapes is constructed for work as per job specification   13. The outcomes are reviewed and checked as per workplace procedures   14. Specialized mathematical language and symbols appropriate for the task are used as per SOPs |
| 1. Collect, organize, and interpret statistical data for work | * 1. Workplace issue requiring investigation are identified as per workplace procedures   2. Audience / population / sample unit is determined as per workplace procedures as per workplace procedures   3. Data to be collected is identified as per workplace procedures   4. Data collection method is selected as per workplace procedures   5. Appropriate statistical data is collected and organized as per SOPs   6. Data is illustrated in appropriate formats as per SOPs   7. The effectiveness of different types of graphs are compared as per SOPs   8. The summary statistics for collected data is calculated as per SOPs   9. The results / findings are interpreted as per SOPs   10. Data is checked to ensure that it meets the expected results and content as per workplace procedures   11. Information from the results including tables, graphs and summary statistics is extracted and interpreted as per workplace procedure   12. Mathematical language and symbols are used to report results of investigation as per workplace procedure |
| 1. Use routine formula and algebraic expressions for work | * 1. Understanding of informal and symbolic notation, representation and conventions of algebraic expressions is demonstrated as per SOPs   2. Simple algebraic expressions and equations are developed as per job specification   3. Operate on algebraic expressions as per job requirement   4. Algebraic expressions are simplified as per job requirement   5. Substitution into simple routine equations is done as per SOPs   6. Routine formulas used for work tasks are identified and comprehended as per SOPs   7. Routine formulas are evaluate by substitution as per SOPs   8. Routine formulas transposed as per SOPs   9. Appropriate formulas are identified and used for work related tasks as per workplace procedures   10. Outcomes are checked and result of calculation used as per workplace procedures |
| 1. Use common functions of a scientific calculator for work | * 1. Required numerical information to perform tasks is located as per job specification   2. The order of operations and function keys necessary to solve mathematical calculation are determined as per job specification   3. Function keys on a scientific calculator are identified and used as per SOPs   4. Estimations are referred to check reasonableness of problem solving process as per workplace procedures   5. Appropriate mathematical language, symbols and conventions are used to report results as per workplace procedures |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. 2D shapes may include but not limited may include but not limited to: | * Triangles * Square * Rectangle * Triangle |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Measuring
* Logical thinking
* Computing
* Drawing of graphs
* Applying mathematical formulas
* Analytical

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Types of common shapes
* Differentiation between two dimensional shapes / objects
* Formulae for calculating area and volume
* Types and purpose of measuring instruments
* Units of measurement and abbreviations
* Fundamental operations (addition, subtraction, division, multiplication)
* Rounding techniques
* Types of fractions
* Different types of tables and graphs
* Meaning of graphs, such as increasing, decreasing, and constant value
* Preparation of basic data, tables & graphs

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical aspects of Competency | Assessment requires evidence that the candidate:   1. Developed communication strategies to meet the organization requirements and applied in the workplace 2. Established and maintained communication pathways for effective communication in the workplace 3. Used communication strategies involving exchanges of complex oral information |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace or appropriately simulated environment where assessment can take place 2. Materials relevant to the proposed activity or tasks |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Observation 2. Oral questioning 3. Written test 4. Portfolio of Evidence 5. Interview 6. Third party report |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

**DEMONSTRATE DIGITAL LITERACY**

**UNIT CODE:** TEX/OS/LT/BC/03/6/A

**UNIT DESCRIPTION**

This unit describes competencies required to demonstrate digital literacy. It involves, identifying computer software and hardware, applying security measures to data, hardware, and software in automated environment, applying computer software in solving task, applying internet and email in communication at workplace, applying desktop publishing in official assignments and preparing presentation packages.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the Range*** |
| 1. Identify appropriate computer software and hardware | * 1. Concepts of ICT are determined in accordance with computer equipment   2. Classifications of computers are determined in accordance with manufacturers specification   3. Appropriate computer software is identified according to manufacturer’s specification   4. Appropriate computer hardware is identified according to manufacturer’s specification   5. Functions and commands of operating system are determined in accordance with manufacturer’s specification |
| 1. Apply security measures to data, hardware, software in automated environment | * 1. ***Data security and privacy are classified*** in accordance with the prevailing technology   2. ***Security threats*** reidentified ***and control measures*** are applied in accordance with laws governing protection of ICT   3. Computer threats and crimes are detected in accordance to Information Management security guidelines   4. Protection against computer crimes is undertaken in accordance with laws governing protection of ICT |
| 1. Apply computer software in solving tasks | * 1. ***Word processing concepts*** are applied in resolving workplace tasks, report writing and documentation as per the job requirements   2. ***Word processing utilities*** are applied in accordance with workplace procedures   3. Worksheet layout is prepared in accordance with work procedures   4. Worksheet is built and data manipulated in the worksheet in accordance with workplace procedures   5. Continuous data manipulated on worksheet is undertaken in accordance with work requirements   6. Database design and manipulation is undertaken in accordance with office procedures   7. Data sorting, indexing, storage, retrieval and security is provided in accordance with workplace procedures |
| 1. Apply internet and email in communication at workplace | * 1. Electronic mail addresses are opened and applied in workplace communication in accordance with office policy   2. Office internet functions are defined and executed in accordance with office procedures   3. ***Network configuration*** is determined in accordance with office operations procedures   4. Official World Wide Web is installed and managed according to workplace procedures |
| 1. Apply Desktop publishing in official assignments | * 1. Desktop publishing functions and tools are identified in accordance with manufactures specifications   2. Desktop publishing tools are developed in accordance with work requirements   3. Desktop publishing tools are applied in accordance with workplace requirements   4. Typeset work is enhanced in accordance with workplace standards |
| 1. Prepare presentation packages | * 1. Types of presentation packages are identified in accordance with office requirements   2. Slides are created and formulated in accordance with workplace procedures   3. Slides are edited and run-in accordance with work procedures   4. Slides and handouts are printed according to work requirements |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Appropriate computer hardware may include but not limited to: | Collection of physical parts of a computer system such as:   * Computer case, monitor, keyboard, and mouse * All the parts inside the computer case, such as the hard disk drive, motherboard and video card |
| 1. Data security and privacy may include but not limited to: | * Confidentiality of data * Cloud computing * Integrity -but-curious data surfing |
| 1. Security and control measures may include but not limited to: | * Counter measures against cyber terrorism * Risk reduction * Cyber threat issues * Risk management * Pass-wording |
| 1. Security threats may include but not limited to: | * Cyber terrorism * Hacking |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Analytical skills
* Interpretation
* Typing
* Communication
* Computing (applying fundamental operations such as addition, subtraction, division and multiplication)
* Using calculator
* Basic ICT skills

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Software concept
* Functions of computer software and hardware
* Data security and privacy
* Computer security threats and control measures
* Technology underlying cyber-attacks and networks
* Cyber terrorism
* Computer crimes
* Detection and protection of computer crimes
* Laws governing protection of ICT
* Word processing;
* Functions and concepts of word processing.
* Documents and tables creation and manipulations
* Mail merging
* Word processing utilities
* Spread sheets;
* Meaning, formulae, function and charts, uses and layout
* Data formulation, manipulation and application to cells
* Database;
* Database design, data manipulation, sorting, indexing, storage retrieval and security
* Desktop publishing;
* Designing and developing desktop publishing tools
* Manipulation of desktop publishing tools
* Enhancement of typeset work and printing documents
* Presentation Packages;
* Types of presentation Packages
* Creating, formulating, running, editing, printing and presenting slides and handouts
* Networking and Internet;
* Computer networking and internet.
* Electronic mail and world wide web
* Emerging trends and issues in ICT;
* Identify and integrate emerging trends and issues in ICT
* Challenges posed by emerging trends and issues

**EVIDENCE** **GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   * 1. Identified and controlled security threats   2. Detected and protected computer crimes   3. Applied word processing in office tasks   4. Designed, prepared work sheet and applied data to the cells in accordance to workplace procedures   5. Opened electronic mail for office communication as per workplace procedure   6. Installed internet and World Wide Web for office tasks in accordance with office procedures   7. Integrated emerging issues in computer ICT applications   8. Applied laws governing protection of ICT |
| 1. Resource Implications | The following resources should be provided:   * 1. Access to relevant workplace where assessment can take place   2. Appropriately simulated environment where assessment can take place |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Oral questioning   3. Written test   4. Portfolio of Evidence   5. Interview   6. Third party report |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

**DEMONSTRATE ENTREPRENEURIAL SKILLS**

**UNIT CODE :** TEX/OS/LT/BC/04/6/A

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate understanding of entrepreneurship. It involves demonstrating understanding of an entrepreneur, entrepreneurship, and self-employment, identifying entrepreneurship opportunities, creating entrepreneurial awareness, applying entrepreneurial motivation, developing business innovative strategies and developing business plan.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT** | **PERFORMANCE CRITERIA** |
| 1. Demonstrate understanding of an Entrepreneur | 1. Entrepreneurs and Business persons are distinguished as per principles of entrepreneurship 2. ***Types of entrepreneurs*** are identified as per principles of entrepreneurship 3. Ways of becoming an Entrepreneur are identified as per principles of Entrepreneurship 4. ***Characteristics of Entrepreneurs*** are identified as per principles of Entrepreneurship 5. Factors affecting Entrepreneurship development are explored as per principles of Entrepreneurship |
| 1. Demonstrate understanding of Entrepreneurship and self-employment | 1. Entrepreneurship and self-employment are distinguished as per principles of entrepreneurship 2. Importance of self-employment is analysed based on business procedures and strategies 3. ***Requirements for entry into self-employment*** are identified according to business procedures and strategies 4. Role of an Entrepreneur in business is determined according to business procedures and strategies 5. Contributions of Entrepreneurs to National development are identified as per business procedures and strategies 6. Entrepreneurship culture in Kenya is explored as per business procedures and strategies 7. Born or made Entrepreneurs are distinguished as per entrepreneurial traits |
| 1. Identify Entrepreneurship opportunities | 1. Sources of business ideas are identified as per business procedures and strategies 2. Business ideas and opportunities are generated as per business procedures and strategies 3. Business life cycle is analysed as per business procedures and strategies 4. Legal aspects of business are identified as per procedures and strategies 5. Product demand is assessed as per market strategies 6. Types of ***business environment*** are identified and evaluated as per business procedures 7. Factors to consider when evaluating business environment are explored based on business procedure and strategies 8. Technology in business is incorporated as per best practice |
| 1. Create entrepreneurial awareness | 1. ***Forms of businesses*** are explored as per business procedures and strategies 2. Sources of business finance are identified as per business procedures and strategies 3. Factors in selecting source of business finance are identified as per business procedures and strategies 4. ***Governing policies*** on Small Scale Enterprises (SSEs) are determined as per business procedures and strategies 5. Problems of starting and operating SSEs are explored as per business procedures and strategies |
| 1. Apply entrepreneurial motivation | 1. ***Internal and external motivation*** factors are determined in accordance with motivational theories 2. Self-assessment is carried out as per entrepreneurial orientation 3. Effective communications are carried out in accordance with communication principles 4. Entrepreneurial motivation is applied as per motivational theories |
| 1. Develop innovative business strategies | 1. Business innovation strategies are determined in accordance with the organization strategies 2. Creativity in business development is demonstrated in accordance with business strategies 3. ***Innovative business strategies*** are developed as per business principles 4. Linkages with other entrepreneurs are created as per best practice 5. ICT is incorporated in business growth and development as per best practice |
| 1. Develop Business Plan | 1. Identified Business is described as per business procedures and strategies 2. Marketing plan is developed as per business plan format 3. Organizational/Management plan is prepared in accordance with business plan format 4. Production/operation plan in accordance with business plan format 5. Financial plan is prepared in accordance with the business plan format 6. Executive summary is prepared in accordance with business plan format 7. Business plan is presented as per best practice |

**RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Types of entrepreneurs may include but not limited to: | * Innovators * Imitators * Craft * Opportunistic * Speculators |
| 1. Characteristics of Entrepreneurs may include but not limited to: | * Creative * Innovative * Planner * Risk taker * Networker * Confident * Flexible * Persistent * Patient * Independent * Future oriented * Goal oriented |
| 1. Requirements for entry into self-employment may include but not limited to | * Technical skills * Management skills * Entrepreneurial skills * Resources * Infrastructure |
| 1. Internal and external motivation may include but not limited to: | * Interest * Passion * Freedom * Prestige * Rewards * Punishment * Enabling environment * Government policies |
| 1. Business environment may include but not limited to: | * External * Internal * Intermediate |
| 1. Forms of businesses may include but not limited to: | * Sole proprietorship * Partnership * Limited companies * Cooperatives |
| 1. Governing policies may include but not limited to: | * Increasing scope for finance * Promoting cooperation between entrepreneurs and private sector * Reducing regulatory burden on entrepreneurs * Developing IT tools for entrepreneurs |
| 1. Innovative business strategies may include but not limited to: | * New products * New methods of production * New markets * New sources of supplies * Change in industrialization |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Analytical
* Management
* Problem-solving
* Root-cause analysis
* Communication

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Decision making
* Business communication
* Change management
* Competition
* Risk
* Net working
* Time management
* Leadership
* Factors affecting entrepreneurship development
* Principles of Entrepreneurship
* Features and benefits of common operational practices, e. g., continuous improvement (kaizen), waste elimination,
* Conflict resolution
* Health, safety and environment (HSE) principles and requirements
* Customer care strategies
* Basic financial management
* Business strategic planning
* Impact of change on individuals, groups and industries
* Government and regulatory processes
* Local and international market trends
* Product promotion strategies
* Market and feasibility studies
* Government and regulatory processes
* Local and international business environment
* Relevant developments in other industries
* Regional/ County business expansion strategies

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | 1. Assessment requires evidence that the candidate: 2. Distinguished entrepreneurs and businesspersons correctly 3. Identified ways of becoming an entrepreneur appropriately 4. Explored factors affecting entrepreneurship development appropriately 5. Analysed importance of self-employment accurately 6. Identified requirements for entry into self-employment correctly 7. Identified sources of business ideas correctly 8. GeneratedBusiness ideas and opportunities correctly 9. Analysed business life cycle accurately 10. Identified legal aspects of business correctly 11. Assessed product demand accurately 12. Determined Internal and external motivation factors appropriately 13. Carried out communications effectively 14. Identified sources of business finance correctly 15. Determined Governing policy on small scale enterprise appropriately 16. Explored problems of starting and operating SSEs effectively 17. Developed Marketing, Organizational/Management, Production/Operation and Financial plans correctly 18. Prepared executive summary correctly 19. Determined business innovative strategies appropriately 20. Presented business plan effectively |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place |
| 1. Methods of Assessment | 1. Written tests 2. Oral questions 3. Third party report 4. Interviews 5. Portfolio of Evidence |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# 

# DEMONSTRATE EMPLOYABILITY SKILLS

**UNIT CODE:** TEX/OS/LT/BC/05/6/A

**UNIT DESCRIPTON**

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating interpersonal communication, critical safe work habits, leading a workplace team, planning and organizing work, maintaining professional growth and development, demonstrating workplace learning, problem solving skills and managing ethical performance.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the Range*** |
| 1. Conduct self-management | 1. Personal vision, mission and goals are formulated based on potential and in relation to organization objectives 2. Emotional intelligence is demonstrated as per workplace requirements. 3. Individual performance is evaluated and monitored according to the agreed targets. 4. Assertiveness is developed and maintained based on the requirements of the job. 5. Accountability and responsibility for own actions are demonstrated based on workplace instructions. 6. Self-esteem and a positive self-image are developed and maintained based on values. 7. Time management, attendance and punctuality are observed as per the organization policy. 8. Goals are managed as per the organization’s objective 9. Self-strengths and weaknesses are identified based on personal objectives |
| 1. Demonstrate interpersonal communication | 1. Writing skills are demonstrated as per communication policy 2. Negotiation and persuasion skills are demonstrated as per communication policy 3. Internal and external stakeholders’ needs are identified and interpreted as per the communication policy 4. Communication networks are established based on workplace policy 5. Information is shared as per communication policy |
| 1. Demonstrate critical safe work habits | * 1. Stress is managed in accordance with workplace policy.   2. Punctuality and time consciousness is demonstrated in line with workplace policy.   3. Personal objectives are integrated with organization goals based on organization’s strategic plan.   4. ***Resources*** are utilized in accordance with workplace policy.   5. Work priorities are set in accordance to workplace goals and objectives.   6. Leisure time is recognized and utilized in line with personal objectives.   7. ***Drugs and substances of abuse*** are identified and avoided based on workplace policy.   8. HIV and AIDS prevention awareness is demonstrated in line with workplace policy.   9. Safety consciousness is demonstrated in the workplace based on organization safety policy.   10. ***Emerging issues*** are identified and dealt with in accordance with organization policy. |
| 1. Lead a workplace team | 1. Performance targets for the ***team*** are set based on organization’s objectives 2. Duties are assigned in accordance with the organization policy. 3. ***Forms of communication*** in a team are established according to organization’s policy. 4. Team performance is evaluated based on set targets as per workplace policy. 5. Conflicts are resolved between team members in line with organization policy. 6. Gender related issues are identified and mainstreamed in accordance workplace policy. 7. Human rights and fundamental freedoms are identified and respected as Constitution of Kenya 2010. 8. Healthy relationships are developed and maintained in line with workplace. |
| 1. Plan and organize work | 1. Work plans are prepared based on activities and budget. 2. Assigned tasks are interpreted and expectations identified as per the workplace instructions. 3. Task occupational safety and health requirements are identified and observed regulations. 4. Work resources are identified, mobilized, allocated and utilized based on organization work plans. 5. Work activities are monitored and evaluated in line with work plans and workplace policy. 6. Work plans are reviewed based on target and available resources. |
| 1. Maintain professional growth and development | * 1. Personal training needs are identified and assessed in line with the requirements of the job.   2. ***Training and career opportunities*** are identified and utilized based on job requirements.   3. Resources for training are mobilized and allocated based organizations and individual skills needs.   4. Licensees and certifications relevant to job and career are obtained and renewed as per policy.   5. Work priorities and personal commitments are balanced and managed based on requirements of the job and personal objectives.   6. Recognitions are sought as proof of career advancement in line with professional requirements. |
| 1. Demonstrate workplace learning | * 1. Learning opportunities are sought and managed based on job requirement and organization policy.   2. Improvement in performance is demonstrated based on courses attended.   3. Application of learning is demonstrated in both technical and non-technical aspects based on requirements of the job   4. Time and effort is invested in learning new skills based on job requirements   5. Initiative is taken to create more effective and efficient processes and procedures in line with workplace policy.   6. New systems are developed and maintained in accordance with the requirements of the job.   7. Awareness of personal role in workplace ***innovation*** is demonstrated based on requirements of the job. |
| 1. Demonstrate problem solving skills | * 1. Creative, innovative and practical solutions are developed based on the problem   2. Independence and initiative in identifying and solving problems is demonstrated based on requirements of the job.   3. Team problems are solved as per the workplace guidelines   4. Problem solving strategies are applied as per the workplace guidelines   5. Problems are analyzed and assumptions tested as per the context of data and circumstances |
| 1. Manage ethical performance | * 1. Policies and guidelines are observed as per the workplace requirements   2. Self-worth and professionalism is exercised in line with personal goals and organizational policies   3. Code of conduct is observed as per the workplace requirements   4. Integrity is demonstrated as per legal requirement |

**RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Drug and substance abuse may include but not limited to: | Commonly abused   * Alcohol * Tobacco * Miraa * Over-the-counter drugs * Cocaine * Bhang * Glue |
| 1. Feedback may include but not limited to: | * Verbal * Written * Informal * Formal |
| 1. Relationships may include but not limited to: | * Man/Woman * Trainer/trainee * Employee/employer * Client/service provider * Husband/wife * Boy/girl * Parent/child * Sibling relationships |
| 1. Forms of communication may include but not limited to: | * Written * Visual * Verbal * Non verbal * Formal and informal |
| 1. Team may include but not limited to: | * Small work group * Staff in a section/department * Inter-agency group |
| 1. Personal growth may include but not limited to: | * Growth in the job * Career mobility * Gains and exposure the job gives * Net workings * Benefits that accrue to the individual as a result of noteworthy performance |
| 1. Personal objectives may include but not limited to: | * Long term * Short term * Broad * Specific |
| 1. Trainings and career opportunities may includes but not limited to | * Participation in training programs * Serving as Resource Persons in conferences and workshops |
| 1. Resource may include may but not limited to: | * Human * Financial * Technology |
| 1. Innovation may include but not limited to: | * New ideas * Original ideas * Different ideas * Methods/procedures * Processes * New tools |
| 1. Emerging issues may include but not limited to: | * Terrorism * Social media * National cohesion * Open offices |
| 1. Range of media for learning may include but not limited to: | * Mentoring * peer support and networking * IT and courses |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Interpersonal
* Communication
* Critical thinking
* Organizational
* Negotiation
* Monitoring
* Evaluation
* Record keeping
* Problem solving
* Decision Making
* Resource utilization
* Resource mobilization

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Work values and ethics
* Company policies
* Company operations, procedures and standards
* Occupational Health and safety procedures
* Fundamental rights at work
* Workplace communication
* Concept of time
* Time management
* Decision making
* Types of resources
* Work planning
* Organizing work
* Monitoring and evaluation
* Record keeping
* Gender mainstreaming
* HIV and AIDS
* Drug and substance abuse
* Professional growth and development
* Technology in the workplace
* Innovation
* Emerging issues

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical aspects of Competency | Assessment requires evidence that the candidate:   * 1. Conducted self-management   2. Demonstrated interpersonal communication   3. Demonstrated critical safe work habits   4. Demonstrated the ability to lead a workplace team   5. Planned and organized work   6. Maintained professional growth and development   7. Demonstrated workplace learning   8. Demonstrated problem solving skills   9. Demonstrated the ability to manage performance ethically |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Observation 2. Oral questioning 3. Written test 4. Portfolio of Evidence 5. Interview 6. Third party report |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE ENVIRONMENTAL LITERACY

**UNIT CODE:** TEX/OS/LT/BC/06/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to demonstrate environmental literacy. It involves, controlling environmental hazard and environmental pollution, demonstrating sustainable resource use, evaluating current practices in relation to resource usage, identifying environmental legislations/conventions for environmental concerns, implementing specific environmental programs, monitoring activities on environmental protection/Programs, analysing resource use and developing resource conservation plans

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the Range*** |
| 1. Control environmental hazard | 1. Storage methods for environmentally hazardous materials are strictly followed according to environmental regulations and OSHS. 2. Disposal methods of hazardous wastes are followed according to environmental regulations and OSHS. 3. ***PPE*** is used according to OSHS. |
| 1. Control environmental Pollution | * 1. Environmental pollution ***control measures*** are implemented in accordance with international protocols.   2. Procedures for solid waste management are observed according Environmental Management and Coordination Act 1999   3. Methods for minimizing noise pollution is complied with based on Noise and Excessive Vibration Pollution and Control Regulations, 2009 |
| 1. Demonstrate sustainable resource use | * 1. Methods for minimizing wastage are complied with based on organizational waste management guide   2. Waste management procedures are employed following principles of 3Rs (Reduce, Reuse, Recycle)   3. Methods for economizing and reducing resource consumption are practiced as per the Constitution of Kenya 2010 Article 69 . |
| 1. Evaluate current practices in relation to resource usage | * 1. Information on resource efficiency systems and procedures are collected and provided as per work groups/sector   2. Current resource usage is measured and recorded as per work group   3. Current purchasing strategies are analyzed and recorded according to industry procedures.   4. Current work processes to access information and data is analyzed following enterprise protocol. |
| 1. Identify environmental legislations/conventions for environmental concerns | 1. Environmental legislations/conventions and local ordinances are identified according to the different environmental aspects/impact 2. Industrial standard/environmental practices are described according to the different environmental concerns |
| 1. Implement specific environmental programs | 1. Programs/Activities are identified according to organizations policies and guidelines. 2. Individual roles/responsibilities are determined and performed based on the activities identified. 3. Problems/constraints encountered are resolved in accordance with organizations’ policies and guidelines 4. Stakeholders are consulted based on company guidelines |
| 1. Monitor activities on Environmental protection/Programs | 1. Activities are periodically monitored and Evaluated according to the objectives of the environmental program 2. Feedback from stakeholders are gathered and considered in Proposing enhancements to the program based on consultations 3. Data gathered are analyzed based on Evaluation requirements 4. Recommendations are submitted based on the findings 5. Management support systems are set/established to sustain and enhance the program 6. Environmental incidents are monitored and reported to 7. concerned/proper authorities |
| 1. Analyze resource use | 1. All resource consuming processes are Identified as per the organizational work plan 2. Quantity and nature of resource consumed is determined based on processes 3. Resource flow is analyzed as per different parts of the process. 4. Wastes are classified according to NEMA regulations on waste management. |
| 1. Develop resource Conservation plans | 9.1. Efficiency of use/conversion of resources is determined according to industry protocol.  9.2. Causes of low efficiency of use of resources are Determined based on industry protocol.  9.3. Plans for increasing the efficiency of resource use are developed based on findings. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. PPE may include but not limited to | * + Mask   + Gloves   + Goggles   + Safety hat   + Overall * Hearing protector |
| 1. Control measures may include but not limited to | * Methods for minimizing or stopping spread and ingestion of airborne particles * Methods for minimizing or stopping spread and ingestion of gases and fumes * Methods for minimizing or stopping spread and ingestion of liquid wastes |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Measuring
* Recording
* Analytical
* Monitoring
* Communication
* Writing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* PPEs
* Environmental regulations
* OSHS
* Pollution
* Waste management
* Principle of 3Rs
* Types of resources
* Techniques in measuring current usage of resources
* Environmental hazards
* Regulatory requirements

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   * 1. Controlled environmental hazard   2. Controlled environmental pollution   3. Demonstrated sustainable resource use   4. Evaluated current practices in relation to resource usage   5. Demonstrated knowledge of environmental legislations and local ordinances according to the different environmental issues /concerns.   6. Described industrial standard environmental practices according to the different environmental issues/concerns.   7. Resolved problems/ constraints encountered based on management standard procedures   8. Implemented and monitored environmental practices on a periodic basis as per company guidelines   9. Recommended solutions for the improvement of the program   10. Monitored and reported to proper authorities any environmental incidents |
| 1. Resource Implications | The following resources should be provided:   * 1. Workplace with storage facilities   2. Tools, materials and equipment relevant to the tasks (e.g. Cleaning tools, cleaning materials, trash bags)   3. PPE, manuals and references   4. Legislation, policies, procedures, protocols and local ordinances relating to environmental protection   5. Case studies/scenarios relating to environmental Protection |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   * 1. Observation   2. Oral questioning   3. Written test   4. Portfolio of Evidence   5. Interview   6. Third party report |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE OCCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE:** TEX/OS/LT/BC/07/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to demonstrate occupational health and safety practices. It involves identifying workplace hazards and risks, identifying and implementing appropriate control measures to hazards and risks and implementing OSH programs, procedures and policies/guidelines.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the Range*** |
| 1. Identify workplace hazards and risk | 1.1 ***Hazards*** in the workplace are identified ***based their indicators***  1.2 Risks and hazards are evaluated based on legal requirements.  1.3 ***OSH concerns*** raised by workers are addressed as per legal requirements. |
| 1. Control OSH hazards | 2.1 Hazard prevention ***and control measures*** are implemented as per legal requirement.  2.2 Risk assessment is conductedand a risk matrix developed based on likely impact.  2.3 ***Contingency measures***, including ***emergency procedures*** during workplace ***incidents and emergencies*** are recognized and established in accordance with organization procedures. |
| 1. Implement OSH programs | 3.1 Company OSH program are identified, evaluated and reviewed based on legal requirements.  3.2 Company OSH programs are implemented as per legal requirements.  3.3 Workers are capacity built on OSH standards and procedures as per legal requirements  3.4 ***OSH-related records*** are maintained as per legal requirements. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Hazards may include but not limited to: | * Physical hazards – impact, illumination, pressure, noise, * vibration, extreme temperature, radiation * Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects * Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors * Ergonomics * Psychological factors – over exertion/ excessive force,   awkward/static positions, fatigue, direct pressure,   * varying metabolic cycles * Physiological factors – monotony, personal relationship, work out cycle * Safety hazards (unsafe workplace condition) –confined space, excavations, falling objects, gas leaks, electrical, poor storage of materials and waste, spillage, waste and debris * Unsafe workers’ act (Smoking in off-limited areas, Substance and alcohol abuse at work) |
| 1. Indicators may include but not limited to: | * Increased of incidents of accidents, injuries * Increased occurrence of sickness or health complaints/ symptoms * Common complaints of workers related to OSH * High absenteeism for work-related reasons |
| 1. OSH concerns may include but not limited to: | * Workers’ experience/observance on presence of work hazards * Unsafe/unhealthy administrative arrangements (prolonged work hours, no break time, constant overtime, scheduling of tasks) * Reasons for compliance/non-compliance to use of PPEs or other OSH procedures/policies/guidelines |
| 1. Safety gears /PPE (Personal Protective Equipment) may include but not limited to: | * Arm/Hand guard, gloves * Eye protection (goggles, shield) * Hearing protection (ear muffs, ear plugs) * Hair Net/cap/bonnet * Hard hat * Face protection (mask, shield) * Apron/Gown/coverall/jump suit * Anti-static suits * High-visibility reflective vest |
| 1. Appropriate risk controls   may include but not limited to: | * Appropriate risk controls in order of impact are as follows: * Eliminate the hazard altogether (i.e., get rid of the dangerous machine) * Isolate the hazard from anyone who could be harmed (i.e., keep the machine in a closed room and operate it remotely; barricade an unsafe area off) * Substitute the hazard with a safer alternative (i.e., replace the machine with a safer one) * Use administrative controls to reduce the risk (i.e., train workers how to use equipment safely; train workers about the risks of harassment; issue signage) * Use engineering controls to reduce the risk (i.e., attach guards to the machine to protect users) * Use personal protective equipment (i.e., wear * gloves and goggles when using the machine) |
| 1. Contingency measures may include but not limited to: | * Evacuation * Isolation * Decontamination * (Calling designed) emergency personnel |
| 1. Incidents and emergencies may include but not limited to: | * Chemical spills * Equipment/vehicle accidents * Explosion * Fire * Gas leak * Injury to personnel * Structural collapse * Toxic and/or flammable vapors emission. |
| 1. OSH-related Records may include but not limited to: | * Medical/Health records * Incident/accident reports * Sickness notifications/sick leave application * OSH-related trainings obtained |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Communication
* Interpersonal
* Presentation
* Risk assessment
* Evaluation
* Critical thinking
* Problem solving
* Negotiation

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* General OSH Principles
* Occupational hazards/risks recognition
* OSH organizations providing services on OSH evaluation and/or work environment measurements (WEM)
* National OSH regulations; company OSH policies and protocols
* Systematic gathering of OSH issues and concerns
* General OSH principles
* National OSH regulations
* Company OSH and recording protocols, procedures and policies/guidelines
* Training and/or counseling methodologies and strategies

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Identified hazards in the workplace based their indicators 2. Evaluated workplace hazards based on legal requirements. 3. Addressed OSH concerns raised by workers as per legal requirements. 4. Implemented hazard prevention and control measures as per legal requirement. 5. Conducted risk assessment as per legal requirement. 6. Developed risk matrix based on likely impact. 7. Recognized and established contingency measures in accordance with organization procedures. 8. Identified, evaluated and reviewed company OSH program based on legal requirements. 9. Implemented company OSH programs as per legal requirements. 10. Capacity built workers on OSH standards and procedures as per legal requirements 11. Maintained OSH-related records as per legal requirements. |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Observation 2. Oral questioning 3. Written test 4. Portfolio of Evidence 5. Interview 6. Third party report |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# CORE UNITS OF COMPETENCY

# CARRY OUT ANIMAL FLAYING

**UNIT CODE:** TEX/OS/LT/CR/01/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to carry out animal flaying. It involves performing animal severing, loading carcass on cradle, making ripping lines, raising carcass and flaying carcass.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Perform animal severing | * 1. Observe occupational health and safety standards according to OSHA 2007   2. Required personnel is identified according to legal requirements.   3. ***Humane killer*** equipment is prepared according to manufacturer’s specifications.   4. ***Animal*** is guided towards knocking area according to severing operating procedures.   5. Animal is stunned and rolled towards severing area according to severing procedures.   6. Animal is severed according to hides, skin and trade act chapter 359. |
| 1. Load carcass on cradle | * 1. Observe occupational health and safety standards according to OSHA 2007   2. Loading personnel are identified according to organizational procedures.   3. Carcass is loaded on the cradle according to standard operating procedures. |
| 1. Make ripping lines | * 1. Observe occupational health and safety standards according to OSHA 2007   2. Flayer is identified according to legal requirements.   3. ***Required tools and equipment*** for ripping are identified according to standard operating procedures.   4. Ripping lines are cut according to standard operating procedures. |
| 1. Raise carcass | * 1. Observe occupational health and safety standards according to OSHA 2007   2. ***Raising equipment*** are identified according to organization’s available equipment   3. Carcass is raised and suspended according to hides, skins and leather trade |
| 1. Flay carcass | * 1. Observe occupational health and safety standards according to OSHA 2007   2. Flaying tools and equipment are identified according to hides and skins act.   3. Carcass is flayed according to hides and skins act.   4. Hide/skin is collected according to organizational policy |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Humane killer may include but is not limited to: | * Stunning gun * Knocking gun * Knocking bolt |
| 1. Animal may include but is not limited to: | * Big animal/(bovine)   Cow  Donkey  Bull  Buffalo   * Small animal (ovine)   Fish  Goat  Rabbit  Ostrich  Snake  Fish  Crocodile |
| 1. Required tools and equipment may include but is not limited to: | * Flaying knives * Severing knives * Sharpening steel * Pulleys * Humane killer |
| 1. Raising equipment may include but is not limited to: | * Pulleys * Chain * Gears |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Proper use of tools and equipment
* Flaying procedures
* Ripping
* Raising carcass
* Carcass cradling
* Hide and skin collection
* Use of safety gears
* Making ripping lines

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Legal requirements
* Occupational health and safety act (OSHA)
* Flaying methods
* Flaying tools
* Types of PPE used
* Hide, skin and leather trade act
* Raising equipment
* Animal classification
* Tools and equipment

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Performed animal severing 2. Loaded carcass on the cradle 3. Made ripping lines 4. Used humane killer tool 5. Collected Hides/skin 6. Raised carcass 7. Observed occupational health and safety 8. Identified tools and equipment for specific tasks 9. Flayed carcass |
| 1. Resource Implications | The following resources should be provided:   * 1. Human killer tools   2. Flaying knives   3. Sharpening steel   4. Severing knife   5. Safety gears/PPE   6. Cradle   7. Trolleys |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Portfolio of assessment   2. Interview   3. Case Study/Situation   4. Observation/Demonstration and oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# PERFORM HIDE /SKIN CURING

**UNIT CODE: UNIT CODE:** TEX/OS/LT/CR/02/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to perform hide/skin curing. It involves collecting animal hides/skins, carrying out hides/skin sorting, cleaning hide/skin, curing animal hide/skin and piling cured animal hide/skin.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| --- | --- |
| 1. Collect animal hide/skin | * 1. Tools and equipment for hide/skin collection are identified according to hides and skins act/ public health act.   2. ***Sources of the skin/hides*** are identified according to their availability.   3. Hides and skins are procured/ sourced according to organizational policy.   4. Hides/ skins are collected according to organization policy.   5. Hides/skins are transported from the source according to legal requirements. |
| 1. Carry out hide/skin selection, sorting and grading | * 1. Procedures or standards are identified to meet requirements   2. Requirements are checked to confirm correct application of procedures or standards according to ***OHS practices***and hides, skins and leather trade act   3. Hides/skins are assessed and examined to determine preservation requirements if necessary according to state of the skin   4. Hides/skins are visually inspected for defects.   5. Hides/skins are selected, sorted and graded according to hides, skins and leather trade act.   6. Documentation associated with tasks is accurately completed to meet required workplace procedures   7. Labels, tags or other identification are attached to skins/ hides as required as per organization procedures. |
| 1. Clean hides/skins | * 1. ***Cleaning resources*** are identified according to standard operating procedures   2. Hides/skins is spread on cleaning platform according to organizational procedure.   3. Loose flesh and fats are removed according to state of hides/skins   4. Hides/skins are cleaned to remove any contaminants as per type of cleaning detergent |
| 1. Cure animal hide/skin | * 1. ***Curing method*** is identified according to organization resources.   2. Curing resources are identified according to curing method identified.   3. Hides/skins are cured according to method identified.   4. Cured hides/skins are piled according to curing method used. |
| 1. Store cured animal hide/skin | * 1. Storage areas are identified according to hide, skins and leather trade act.   2. Appropriate pesticides are identified according to curing method   3. Hides/skins are dusted, inspected and redusted periodically with appropriate pesticides according to organizational procedures.   4. Hides/skins are stored according to curing method and organizational procedures |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. OHS practices may include but is not limited to: | * Manual handling techniques * Standard operating procedures * Personal protective equipment * Safe materials handling * Taking of rest breaks * Ergonomic arrangement of workplaces * Following marked walkways * Safe storage of equipment * Housekeeping * Reporting accidents and incidents |
| 1. Sources of the skin/hides may include but is not limited to: | * Slaughter houses * Imports * Homes * Market * Companies |
| 1. Cleaning resources may include but is not limited to: | * Cleaning platform * Brushes * Running water * Cleaning agent * Human resources * Fleshing knives |
| 1. Curing method may include but is not limited to: | * Dry suspension * Dry salting * Wet salting * Freezing * Pickling * Brining |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Select, Sort, grade hides and skin to required standard
* Identify defects
* Carry out safe handling procedures
* Monitor quality requirements for each stage of the process
* Recognize and report non-conforming outcomes
* Communicate effectively within the workplace
* Interpret and apply established procedures
* Document, assess, and transfer information
* Read, interpret, and follow information on work specifications, standard operating procedures and work instructions, and other reference material
* Maintain accurate records
* Sequence operations
* Meet specifications
* Clarify and check task-related information
* Carry out work according to OHS practices

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Safety work practices
* Required process resources
* Procedures for selecting, sorting and grading
* Quality standards
* Manual handling procedures
* Curing methods
* Cleaning agents
* Organization procedures and policies
* Sources of hides and skin
* Safety and environmental aspects of relevant organizations processes
* Workplace procedures
* Pesticides
* OHS practices, including hazard identification and control measures
* Record keeping and management

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Collected animal hide/skin 2. Carried out hide/skin selection, sorting and grading 3. Cleaned hides/skins 4. Cured hides/skins 5. Stored cured hides/skins 6. Identified tools and equipment for hides/skins collection 7. Identified sources of the skins/hides 8. Procured/ sourced hides and skins 9. Inspected hides/skins visually for defects 10. Removed loose flesh and fats 11. Identified curing resources 12. Kept and managed records |
| 1. Resource Implications | The following resources should be provided:   * 1. Preservation materials   2. Hides/skins   3. Personal Protective Equipment   4. Drying shed   5. Pallets   6. Store |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Portfolio Assessment   2. Interview   3. Case Study/Situation   4. Observation/Demonstration and oral questioning   5. Written exam |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# CARRY OUT LEATHER PROCESSING

**UNIT CODE:** TEX/OS/LT/CR/03/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to carry out leather processing. It involves selecting/sorting, weighing, soaking, unhairing, liming soaked hides/skins, carrying out fleshing, de-liming the, weighing de-limed, bating weighed, de-grease, pickling pelts, carrying out tanning process, post tanning operations and finishing operations.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Select/sort hides/skins | * 1. Procedures or standards are identified to meet requirements   2. Requirements are checked to confirm correct application of procedures or standards according to ***specifications of end product***   3. Hides/skins are selected, sorted and graded according to hides, skins and leather trade act.   4. Documentation associated with tasks is accurately completed to meet required workplace procedures |
| 1. Soak hides/skins | * 1. Make sure the work area is free from hazards according to OSHA   2. Obtain, check and confirm data on the work ticket or job card according to organization policy.   3. Determined loads and batches for soaking operations   4. Positioned self to achieve operator comfort and to minimise fatigue   5. Drums/pits/vats/paddles are loaded with skins/ hides for soaking operation in accordance with specified recipe   6. Ensure the right volume of water and soaking aids.   7. Ensure that complete soaking process has taken place.   8. Verify the salinity and temperature of solutions, using salinometer and thermometer   9. Change soak liquor at interval of 6 hours according to standard operating procedure.   10. Operate ***soaking machineries*** according to manufacturer’s specification. |
| 1. Lime soaked hide/skin | * 1. Soak liquor is drained according to standard operating procedures.   2. Water is added to the ***liming vessels*** according to the soaked/dry weight of the hides/skins   3. Liming chemicals are correctly identified and accurately weighed according to the specified recipe   4. ***Liming Chemicals*** are added to liming drum according to the specified recipe   5. Liming vessels is operated according to manufacturer’s manual and leather specifications.   6. Lime liquor PH is checked according to processing requirements.   7. Liming process completion is checked according to process requirement.   8. Limed stock is offloaded according to process requirement   9. Document liming operations according to process requirement. |
| 1. Carry out fleshing | * 1. Occupational health and safety is observed according to OSHA   2. ***Fleshing Tools, Equipment and machines*** are identified according to process requirement and availability in the organization.   3. Limed stock is transferred to fleshing area according organizational setup   4. Fleshing and scudding is carried out according to organizational setup. |
| 1. De-lime the pelts | * 1. Fleshed pelts are weighed to establish amount of ***deliming chemicals*** to be used according to requirements.   2. Deliming chemicals are calculated and weighed according to process requirement.   3. Surface deliming is carried out according to process requirements.   4. Water, deliming chemicals and pelts are added to deliming drum according process requirements.   5. Deliming process is carried out according to process requirements.   6. Deliming process is checked for completion according to process requirements.   7. Deliming liquor is drained according to process requirements   8. Pelts are thoroughly washed and water drained according to process requirements. |
| 1. Bate delimed pelts | * 1. Water at 370C – 380C is added to delimed pelts and maintained at the same temperature according to process requirements.   2. ***Bating agents*** are identified, calculated, weighed and added to the bating vessel according to process requirements   3. Bating process is carried out according to process requirements.   4. Bating process is tested for completion according to process requirements.   5. Bated pelts are thoroughly washed according to process requirements. |
| 1. De-grease pelts | * 1. ***Degreasing agents*** are identified, calculated, weighed and added to pelts according to process requirements.   2. Degreasing process is carried out according to process requirements.   3. Pelts are washed and drained according to process requirements   4. Pelts are offloaded and transferred to tanning yard and loaded to the tanning vessel according to organizational procedures. |
| 1. Pickle pelts | * 1. Water is calculated, and volume measured according to process requirements.   2. ***Pickling chemicals*** are identified, calculated and weighed based on pelt weight and added to tanning vessel based on the pelt weight.   3. Pickling process is carried out according to process requirements.   4. Performed regular checks to see the penetration by cutting the cross section of pelts and checking the pH and salinity by use of salinometer. |
| 1. De-pickle pelts | * 1. De-pickling chemicals are identified, calculated, weighed and added to pickle liquor in the tanning drum according to process requirements.   2. De-pickling process is carried out according to process requirements   3. De-pickling is checked for completion according to process requirements. |
| 1. Carry out tanning processes | * 1. Specific ***type of tannage*** is chosen according to specification of the leather requirements and pelt weight.   2. Appropriate ***tanning agents*** are identified, calculated, weighed/measured based on pelt weight and added to pickle liquor in the tanning vessel according to process requirements.   3. Tanning process is carried out and all control measures observed according to process requirements   4. Tanning process is checked for completion according to process requirements.   5. ***Other appropriate processes*** are carried out according to type of tannage.   6. Re-tannage is carried out according to leather requirements   7. Tanning liquor is drained out according to process requirements. |
| 1. Carry out post tanning operations | * 1. Leather thickness is adjusted according to type of leather   2. Shaved weight of the leather is taken according to process requirements.   3. Leather is neutralised according to process requirements   4. Leather is dyed according to leather specifications.   5. Fatliquoring is carried out according to process requirements   6. Leather is dried according to process requirements. |
| 1. Carry out finishing operations | * 1. Leather is conditioned according to leather specifications.   2. Leather is staked according to leather specifications.   3. Leather is plated according to leather specifications   4. Leather is pigmented according to leather specifications   5. Leather is glazed according to leather specifications. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Chemicals may include but is not limited to: | * Lime (Calcium hydroxide) * Sodium sulphide |
| 1. Liming vessels may include but is not limited to: | * Paddles * Drums * Vats * Pits * Troughs |
| 1. Fleshing Tools, Equipment and machines may include but is not limited to: | * Beam * Fleshing knives * Unhairing knives * Trolleys * Slicker * Fleshing machine * PPE |
| 1. Deliming chemicals may include but is not limited to: | * Ammonium sulphate * Ammonium chloride * Sodium bisulphite |
| 1. Bating agents may include but is not limited to: | * Pancreatic bates * Bacterial bates * Fungal bates |
| 1. Degreasing agents may include but is not limited to: | * + Organic solvents   + Non-ionic surfactants   + Enzymatic agents |
| 1. Pickling chemicals may include but is not limited to: | * + Industrial Sodium chloride   + Sulphuric acid   + Hydrochloric acid   + Formic acid   + Sodium formate   + pH indicators |
| 1. Type of tannage may include but is not limited to: | * Inorganic/ mineral   + Vegetable   + Synthetic   + Oil   + Aldehyde * Combination |
| 1. Tanning agents may include but is not limited to: | * + Basic Chromium(iii)sulphate   + Wattle extra (mimosa)   + Aluminium sulphate   + Syntans |
| 1. Other appropriate processes may include but is not limited to: | * Neutralization * Basification * Fixation * Bleaching * Dyeing |
| 1. Leather oils may include but is not limited to: | * Sulphated fish oil |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Identify and apply risk control measures
* Identify and report workplace hazards
* Follow workplace procedures for accidents and emergency situations
* Carry out work, including the operation of relevant machinery/equipment, according to  
  workplace occupational health and safety procedures

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Preparatory work prior to commencing operations
* The main types and characteristics of hides, skins or leather produced  
  by the company
* Information on work specifications, standard operating procedures
* Right method of loading into the drums, switching it on, temperature  
  control, washing of drums and valve control
* Sequence of drum operations in the tannery
* Knowledge on surfactants for soaking
* Basic functions and inputs of the rotary drum such as drum speed, drum  
  dimensions, salt concentration
* Quality specifications for soaking operation
* Common faults of hide
* Method to handle hides and materials and avoid making them  
  unusable
* Methods of checking if output has met the required specification
* Minor machine maintenance in accordance with workplace  
  procedures
* Common faults in tools and equipment and implications of working with  
  faulty equipment
* Procedure to correctly switch off the machine on completion of work  
  and do the necessary cleaning and maintenance activities
* Inputs required to ensure records and other documentation can be  
  completed where required
* Method of sharing domain related information with team members
* Manufacturers’ instructions

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Soaked hide/skin 2. Limed soaked hide/skin 3. Carried out fleshing 4. De-limed the pelts 5. Bated delimed pelts 6. De-greased pelts 7. Pickled pelts 8. De-pickled pelts 9. Carried out tanning processes 10. Carried out post tanning operations 11. Carried out finishing operations |
| 1. Resource Implications | The following resources should be provided:  2.1 Liming chemicals  2.2 De-liming chemicals  2.3 Dyes and pigments  2.4 Drums  2.5 Tanning chemicals  2.6 Pickling and de-pickling chemicals  2.7 Bating chemicals |
| 1. Methods of Assessment | Competency may be assessed through:  3.1 Portfolio Assessment  3.2 Interview  3.3 Case Study/Situation  3.4 Observation/Demonstration and oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# MANAGE TANNERY WASTE

**UNIT CODE: UNIT CODE:** TEX/OS/LT/CR/04/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to carry out leather processing. It involves analysing tannery waste, segregating tannery waste, requisitioning waste treatment materials, carrying out waste treatment, managing waste disposal and observing occupational health and safety.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| --- | --- |
| 1. Analyze tannery waste | * 1. ***Waste sources*** are identified according to organizational setup.   2. Tannery wastes are quantified according to sources identified.   3. Tannery waste is analyzed according to their composition. |
| 1. Segregate solid tannery waste | * 1. Tannery waste collection points identified according to organizational setup   2. Tannery solid wastes are collected and transferred to their collection points   3. Tannery solid wastes are segregated according to their type. |
| 1. Requisites waste treatment materials | * 1. Identify waste treatment materials/chemicals required according to the type of waste discharge.   2. Requisition forms are filled and submitted according to organizational policy   3. Requisite for the ***treatment materials/chemicals*** according to the type of waste discharge.   4. Requested materials/chemicals are received and inspected according to organizational policy and requisition specifications. |
| 1. Carry out waste treatment | * 1. ***Personal protective equipment (PPE)*** are identified and used according to OSHA   2. Method of waste treatment is identified according to nature of generated waste   3. Waste treatment materials/ chemicals are calculated, weighed/ measured according to volume of waste to be treated.   4. Waste is treated according to identified methods of treatment |
| 1. Manages waste disposal | * 1. Treated waste is tested for compliance according to NEMA regulations.   2. Treated waste is discharged/disposed according to NEMA regulations and organizational policy |
| 1. Observe occupational health and safety | * 1. Correct ***PPE***s are provided and used according to OSHA   2. All machines are guarded and operated according to manufacturer’s specifications and OSHA.   3. Housekeeping is maintained within production area according to company organizations   4. Incident causalities are recorded according to standard operating procedures.   5. First aid is administered according to standard operating procedures.   6. ***Firefighting equipment*** are maintained according to manufacturer’s specifications. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| * Waste sources may include but is not limited to: | * Tan yard * Beam yard * Dye house |
| * Personal protective equipment (PPE) may include but is not limited to: | * Gloves * Gas masks * Safety shoes/boots * Overall |
| * Firefighting equipment may include but is not limited to: | * Fire extinguisher * Fire alarm * Fire blanket * Water hose |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Treatment of tannery waste
* Segregation of waste
* Disposal of waste
* Fire fighting
* Identify and apply risk control measures
* Identify and report workplace hazards
* Follow workplace procedures for accidents and emergency situations
* Carry out work, including the operation of relevant machinery/equipment, according to  
  workplace occupational health and safety procedures

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Identify treatment chemicals and materials
* Types of tannery wastes
* Methods of waste treatment and disposal
* NEMA regulations
* Rights and responsibilities of parties under occupational health and safety legislation, regulations and codes of practice
* Workplace occupational health and safety policies and procedures related to the job role or function
* Workplace emergency and evacuation procedures
* The meaning of occupational health and safety signs and symbols
* Workplace reporting procedures in regard to risks, hazards and accidents
* Location and use of necessary safety equipment, including personal protective equipment
* Safe operating procedures for relevant machinery/equipment

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Analyzed tannery waste 2. Segregated solid tannery waste 3. Requested waste treatment materials 4. Carried out waste treatment 5. Managed waste disposal 6. Observed occupational health and safety |
| 1. Resource Implications | The following resources should be provided:  2.1 Treatment chemicals and materials.  2.2 PPE  2.3 Tannery waste.  2.4 Personnel |
| 1. Methods of Assessment | Competency may be assessed through:  3.1 Portfolio Assessment  3.2 Interview  3.3 Case Study/Situation  3.4 Observation/Demonstration and oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# PRODUCE LEATHER FOOTWEAR

**UNIT CODE: UNIT CODE:** TEX/OS/LT/CR/05/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to produce leather footwear. It involves Identifying types of leather shoes, designing leather footwear, producing footwear patterns, cutting footwear patterns, grading footwear patterns, producing footwear cutting dies, preparing footwear materials, cutting footwear materials, closing/stitching shoe uppers, carrying out footwear construction, carrying out shoe finishing operations, performing shoe room operations, operating footwear machines and observing occupational health and safety.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| --- | --- |
| 1. Carry out fashion/trends survey | * 1. ***Resources*** for survey process are identified according to standard operating procedures   2. Scope of survey is defined according to resources available.   3. Fashion survey is carried out according to standard operating procedures.   4. Data collected from survey is analyzed according to statistical techniques.   5. Survey report is generated according to survey conducted   6. Footwear designs are developed according to survey report |
| 1. Plan for design and construction of shoes | * 1. Production standards are set based on organization objectives.   2. ***Production tools, machines and equipment*** are identified based on shoe type.   3. Tools, machines and equipment are checked for serviceability and sufficiency as based on workplace policy and production requirements.   4. ***Production materials*** ***and supplies*** are requisitioned/obtained and allocated based on production and market targets and clients’ specifications.   5. ***Production tasks*** are identified, and organizational structure developed based on tasks to be performed.   6. Staff is identified, and duties allocated based on their competencies.   7. New staff is oriented to the organization and the job requirements as per workplace policy.   8. Production targets are set based on customers’ requirements/orders.   9. Production schedules are developed based on production targets.   10. Occupational safety and health are observed as per ***legal requirements.***   11. Production standard operating procedures are developed as per workplace policy. |
| 1. Design leather footwear using CAD | * 1. Obtain and check the data on the specification sheet and carry out functions in line with the responsibilities of job role   2. Set the machine parameters as per the manufacturer’s instruction   3. Draw the pattern on the CAD software, if applicable, as per specification given   4. Digitize the manual pattern on the CAD software, if applicable, as per specification given   5. Perform size wise grading of footwear as per measurements provided by client if applicable   6. Adjust the pattern specification as per the product standards and allowances required   7. Set parameters on CAM machine as per required output   8. Ensure the design output is cut and handed over to the next department   9. Ensure the work is saved as a back-up before shutting down the CAD machine   10. Shut down, after use, the CAD/CAM system carefully and in accordance with company instructions |
| 1. Produce footwear patterns | * 1. Footwear patterns tools and equipment are identified as per shoe design.   2. Shoe last is tapped according to standard operating procedures   3. ***Basic standard geometrical dimensions*** are calculated into pattern design according to set procedures.   4. Shoe design is sketched on masked shoe last   5. Masked tape is cut along asymmetrical centre according to standard designing procedures.   6. 3D tape pattern is transferred to 2D tape pattern according to set procedures. (Remove the formes and flatten)   7. Mean formes are developed according to designing procedures.   8. Standard formes are made according to shoe design   9. Footwear patterns are produced according to shoe design.   10. Produced shoe patterns are tested according to organizational policy.   11. Produced and tested footwear patterns are graded according to sizes and fittings. |
| 1. Produce footwear cutting dies | * 1. Die patterns are obtained according to organizational policy.   2. Footwear dies are produced according to the shoe pattern.   3. Produced footwear cutting dies are coded according to last design.   4. Cutting die is tested according to organizational policy.   5. Coating is done with rust proof paint as per organizational policy. |
| 1. Cut footwear materials | * 1. Prepare for footwear cutting operations according to standard patterns   2. Follow the instructions given on the work ticket or job card in line with the responsibilities of your job role.   3. Materials are inspected for defects according to production requirements   4. Correct tools, machine and equipment are used according to production requirement   5. Carry out cutting operations according to production requirements   6. Report any damaged work to the supervisor/ quality controller |
| 1. Prepare footwear components | * 1. Tools and equipment are identified as per the job to be done   2. Shoe components are grouped/ classified according to shoe parts/sizes and labels.   3. Other shoe accessories are obtained and stored   4. All footwear components are stored and secured according to organization policy. |
| 1. Close/Stitch shoe upper | * 1. Tools, equipment and machines for stitching are identified according to organizational procedures and facilities   2. All shoe components are assembled in accordance with shoe specifications   3. PPE is utilised according to OSHA   4. The upper components are stitched according to the production sample/ set standard procedures. |
| 1. Carry out footwear construction | * 1. Footwear parts obtained according to organizational policy   2. ***Bottom components*** are prepared and fixed according to shoe design.   3. Shoe uppers are lasted according to shoe design and size   4. Lasted shoe upper is attached to sole according to construction method. |
| 1. Carry out shoe finishing operations | * 1. Shoe trimming is done according to method of construction.   2. Footwear is polished according to type of materials used.   3. ***Other finishing operations*** are carried according to method of construction. |
| 1. Perform shoe room operations | * 1. Shoes are cleaned according to type of the material used.   2. Shoes are dressed according to type of material used.   3. Shoes are laced through the shoes according to the type of shoe.   4. Sock lining is inserted according to type of shoe.   5. Shoes are branded according to organizational procedures.   6. Quality of the shoe is inspected according to set standards   7. Shoes are packed up and stored according to organization. |
| 1. Operate footwear machines | * 1. Inspect the condition of the machine according to manufacturer’s specification.   2. Set machine parameters according to production requirements.   3. Operate footwear machines according to manufacturer’s specification.   4. Basic maintenance of footwear machines is carried out |
| 1. Observe occupational health and safety | * 1. Correct ***PPE***s are provided and used according to OSHA   2. All machines are guarded and operated according to manufacturer’s specifications and OSHA.   3. Housekeeping is maintained within production area according to company organizations   4. Incident causalities are recorded according to standard operating procedures.   5. First aid is administered according to standard operating procedures.   6. ***Firefighting equipment*** are maintained according to manufacturer’s specifications. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| * Type of leather shoe may include but is not limited to: | * **Derby** * **Oxford** * **Monk Strap** * **Loafer** * **Kilties** |
| * Shoe design and construction tools and equipment may include but is not limited to: | * 30 cm ruler * A metre rule * Anvil * Assorted hand needles * Irons box * Assorted machine needles * Assorted lasts * Assorted scissors * Assorted sewing machines * Awl * Camera * USB drive * Compact discs * Computer * Cutting machines * Cutting shears * Cutting table * Display boards * Edge creaser * Edge trimmer * Eyelet spreader |
| * Shoes design and construction materials, products and supplies may include but is not limited to: | * Assorted belts bows and shoes * Assorted buckles * Assorted buttons * Assorted clips * Assorted leather * Assorted glue * Assorted hooks * Assorted inter lining * Assorted lace * Assorted lining * Assorted needles * Assorted pins * Assorted PPE items * Assorted ribbons * Assorted rings * Assorted sewing threads * Assorted stiffeners * Assorted stitching threads * Assorted underlining * Beads * Brown papers * Bulbs * Card board * Chalk |
| * Production tasks may include but is not limited to: | * Designing * Sketching * Illustrating * Drafting * Laying * Cutting |
| * Legal requirements may include but is not limited to: | * Occupational safety and health Act * EMCA 2015 * NEMA regulations * County by-laws |
| * Technical data may include but is not limited to: | * Trim allowances * Shoe size * Lasting allowance * Folding allowances |
| * Other finishing operations may include but is not limited to: | * Roughening * Burnishing edges * Marking * Staining * Heel breasting |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Footwear designing
* Footwear design interpretation
* Pattern making
* Material cutting/clicking
* Footwear construction
* Material identification
* Perform shoe finishing operations
* Perform shoe room operations
* Stitching
* Machine operation
* Basic machine maintenance

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Footwear materials
* Cutting dies
* Footwear tools, machines and equipment
* Footwear research
* Materials used in making footwear
* Basic footwear design
* Defect Identification procedures
* Materials used in footwear repair -Thread nylon thread, dendrite  
  adhesives, bit pieces of Leathers of various colors, dendrite, rubber  
  soles of various thickness, rubber solution, heel stack, fillers, etc.
* Hand tools for repairing of footwear- Hand needle, screw driver,  
  spanners, hammers, iron rod, scrapper tool for roughing, etc.
* Stitching and pasting methods
* Trimming procedures
* Fixing various types of accessories of the footwear
* Heel making and fixing procedures
* Filling procedures
* Finishing procedures after the repair
* Method of cleaning and polishing

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Planned for design and construction of shoes 2. Designed leather footwear using CAD 3. Produced footwear patterns 4. Cut footwear patterns 5. Graded footwear patterns 6. Produced footwear cutting dies 7. Prepared footwear materials 8. Cut footwear materials 9. Closed/Stitched shoe upper 10. Carried out footwear construction 11. Carried out shoe finishing operations 12. Performed shoe room operations 13. Operated footwear machines |
| 1. Resource Implications | The following resources should be provided:   * 1. Lasts   2. Stiches   3. Assorted buttons   4. Assorted clips   5. Assorted embroidery threads   6. Assorted leather   7. Assorted glue   8. Assorted hooks   9. Assorted inter lining   10. Assorted knitting/ crochet threads   11. Assorted lace   12. Assorted lining   13. Assorted needles   14. Assorted pins   15. Assorted PPE items   16. Assorted ribbons   17. Assorted rings   18. Assorted sewing threads   19. Assorted stiffeners   20. Assorted stitching threads   21. Assorted underlining |
| 1. Methods of Assessment | Competency may be assessed through:  3.1 Portfolio Assessment  3.2 Interview  3.3 Case Study/Situation  3.4 Observation/Demonstration and oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

### PRODUCE LEATHER GOODS

**UNIT** **CODE:** TEX/OS/LT/CR/06/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to produce leather goods. It involves carrying out fashion/trends survey, designing leather articles, producing leather article patterns, cutting leather article patterns, preparing article materials, cutting article materials, making leather article, performing article finishing, operating and maintaining leather goods machines and observing occupational health and safety

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| --- | --- |
| 1. Carry out fashion/trends survey | * 1. ***Resources*** for survey process are identified according to standard operating procedures   2. Scope of survey is defined according to resources available.   3. Fashion survey is carried out according to standard operating procedures.   4. Data collected from survey is analyzed according to statistical techniques.   5. Survey report is generated according to survey conducted   6. Leather goods designs are developed according to survey report. |
| 1. Design leather articles | * 1. Working area safety is maintained and observed according to OSHA   2. Scope of the design is defined according to leather article and client’s requirement.   3. Set up and operate the computer hardware and software in accordance with supplier’s instructions and company requirements.   4. Manipulate and alter images in accordance with the scope of the required design to test ideas on the screen using the CAD software   5. Print off alternative designs to present a range of options suitable for production   6. Confirm with the final design and record carefully any agreed alterations   7. Back up the CAD system before turning off |
| 1. Produce leather goods patterns | * 1. Leather goods patterns tools and equipment are identified as per leather good design.   2. ***Dimensions*** are measured according to leather good design.   3. Leather good design is sketched according to production requirements   4. Leather good patterns are produced according to design.   5. Produced patterns are tested according to organizational policy.   6. Produced and tested leather goods patterns are graded according to sizes.   7. Dies are produced where applicable according to production needs |
| 1. Cut leather goods materials | * 1. Safety of work area is maintained free from hazards according to OSHA.   2. ***Work ticket*** is obtained and checked according to according to organizational policy.   3. Number of components needed for production is calculated according to article design.   4. Leather materials are selected and sorted according to article design.   5. Cutting equipment are set up according to manufacturer’s specifications.   6. Check the quality and characteristics of the material match the required standards before starting to cut.   7. Leather goods materials are cut, grouped and labelled according to standard patterns produced/designs   8. Tools and equipment for hand or machine cutting are operated according to manufacturer’s specifications.   9. Material and tools damage are controlled according to organization policy.   10. Tools and equipment imperfections are reported according to organizational policy.   11. Waste materials are disposed according to NEMA. Carry out closedown procedures on completion of work |
| 1. Prepare article materials | * 1. Tools and equipment are identified as per the job to be done   2. Leather good materials are grouped/ classified according to type of article.   3. Other leather goods accessories are obtained and utilised according design.   4. All leather goods materials are stored and secured according to organization policy. |
| 1. Make leather article | * 1. Tools, machines and equipment for making leather articles are identified according to type of article.   2. All leather components are assembled according to design specifications   3. PPE is utilised according to OSHA   4. Leather components are assembled and stitched according to assembling procedures. |
| 1. Perform article finishing | * 1. Trimming is done on the leather article according to method of construction.   2. Leather article is polished according to type of leather finish used.   3. ***Other finishing operations*** are carried according to method of construction.   4. Leather articles are packed and stored according to organizational policy. |
| 1. Operate and maintain leather goods machines | * 1. Inspect the condition of the machine according to manufacturer’s specification.   2. Set machine parameters according to production requirements.   3. Operate leather goods machines according to manufacturer’s specification.   4. Basic maintenance of leather goods machines is carried out |
| 1. Observe occupational health and safety | * 1. Correct ***PPE***s are provided and used according to OSHA   2. All machines are guarded and operated according to manufacturer’s specifications and OSHA.   3. Housekeeping is maintained within production area according to company organizations   4. Incident causalities are recorded according to standard operating procedures.   5. First aid is administered according to standard operating procedures.   6. ***Firefighting equipment*** are maintained according to manufacturer’s specifications. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range**  ***includes but is not limited to*** |
| * Other finishing operations may include but is not limited to: | * Staining * Burnishing * Edge creasing * Thonging |
| * Firefighting equipment may include but is not limited to: | * Fire extinguisher * Fire alarm * Fire blanket * Water hose |
| * Work ticket may include but is not limited to: | * In charge personnel * Type of job * Time lines * Work procedures |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Undertake the range of activities associated with selecting and modifying existing patterns
* Develop the pattern with consideration to the characteristics of leather and trimming
* Construct toiles or prototypes
* Test patterns and recommend alternative construction methods
* Use manual or CAD systems
* Communicate effectively with individuals, work groups and supervisors
* Maintain records, document and transfer information
* Interpret and carry out established procedures

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* The principles and concepts of pattern making
* Customer and enterprise fit requirements
* Cost efficiency in relation to pattern making
* Range of typical materials characteristics
* Marker making procedures
* Cutting and construction
* Safety and environmental aspects of relevant enterprise activities
* Workplace procedures and reporting processes
* Relevant OH&S legislation and codes of practice

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Carried out fashion/trends survey 2. Designed leather articles 3. Produced leather goods patterns 4. Cut leather goods materials 5. Prepared article materials 6. Made leather article 7. Performed article finishing 8. Operated and maintained leather goods machines 9. Observed occupational health and safety |
| 1. Resource Implications | The following resources should be provided:   * 1. Work specifications   2. Design drawings/sketches   3. Product construction instructions   4. Organisation work procedures   5. Organisational or external personnel   6. Quality and Kenyan standards and procedures   7. Customer/s requirements |
| 1. Methods of Assessment | Competency may be assessed through:  3.1 Portfolio Assessment  3.2 Interview  3.3 Case Study/Situation  3.4 Observation/Demonstration and oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# PRODUCE UPHOLSTERY PRODUCTS

**UNIT CODE:** TEX/OS/LT/CR/07/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to produce upholstery products. It involves conducting fashion and trend survey, designing upholstery product, producing upholstery patterns, cutting upholstery patterns, preparing upholstery materials, cutting upholstery materials, constructing/making upholstery product, carrying finishing operations, operating and maintaining upholstery machines and observing occupational health and safety.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| --- | --- |
| 1. Carry out fashion/trends survey | * 1. ***Resources*** for survey process are identified according to standard operating procedures   2. Scope of survey is defined according to resources available.   3. Fashion survey is carried out according to standard operating procedures.   4. Data collected from survey is analyzed according to statistical techniques.   5. Survey report is generated according to survey conducted   6. Upholstery designs are developed according to survey report. |
| 1. Determine job requirements | * 1. Identify job requirements, including product purpose, furniture style and upholstery foundations according to specifications, drawings, designs, project sheets or work instructions   2. Identify the workplace, health and safety (WHS) practices and procedures to be used according to OSHA |
| 1. Design upholstery product | * 1. Obtain and check the data on the specification sheet and carry out functions in line with the responsibilities of job role   2. Set the machine parameters as per the manufacturers instruction   3. Draw the pattern on the CAD software, if applicable, as per specification given   4. Digitize the manual pattern on the CAD software, if applicable, as per specification given   5. Perform size wise grading of upholstery as per measurements provided by client if applicable   6. Adjust the pattern specification as per the product standards and allowances required   7. Set parameters on CAM machine as per required output   8. Ensure the design output is cut and handed over to the next department   9. Ensure the work is saved as a back-up before shutting down the CAD machine   10. Shut down, after use, the CAD/CAM system carefully and in accordance with company instructions. |
| 1. Produce upholstery pattern | * 1. Leather upholstery patterns tools, machines and equipment are identified as per upholstery design.   2. ***Technical dimensions*** are calculated into pattern design according to design requirement.   3. Upholstery design is sketched according to client’s requirements.   4. Upholstery patterns are produced according to design   5. Produced upholstery patterns are tested according to organizational policy.   6. Produced and tested upholstery patterns are sized according to design requirements. |
| 1. Determine materials required | * 1. ***Material requirements*** are determined from specifications, project sheets or work instructions   2. Foam, foundation and frame requirements are determined as per job specifications   3. Cutting list and cutting plan is prepared for all upholstery components according to upholstery design and production requirements |
| 1. Prepare upholstery materials | * 1. Tools, machines and equipment are identified as per the job to be done   2. Upholstery materials are grouped/ classified according to type of article.   3. Measurements and calculations are checked for accuracy to ensure quality outcomes according to design.   4. Leather and foam are cut under supervision according to production procedures.   5. Upholstery materials are cut in accordance with design specifications.   6. Other upholstery accessories are obtained and utilised according design.   7. Frames are selected/ made/ availed according to client’s requirements   8. All upholstery components are stored and secured according to organization policy. |
| 1. Construct/make upholstery product | * 1. Work, health and safety (WHS) is complied with according to OSHA   2. Personal protective equipment (PPE) are used appropriately in accordance with OSHA   3. Stuffing and upholstering is carried in accordance with design specifications.   4. Finished items are checked against quality requirements |
| 1. Carry finishing operations | * 1. Trimming is done on the upholstered products according to ***method of construction***.   2. Upholstered product is polished according to type of materials used.   3. ***Other finishing operations*** are carried according to method of construction.   4. Upholstered products are packed and stored according to organizational policy. |
| 1. Operate and maintain upholstery machines | * 1. Inspect the condition of the machine according to manufacturer’s specification.   2. Set machine parameters according to production requirements.   3. Operate upholstery machines according to manufacturer’s specification.   4. Basic maintenance of upholstery machines is carried out according to manufacturer’s specifications |
| 1. Observe occupational health and safety | * 1. Correct ***PPE***s are provided and used according to OSHA   2. All machines are guarded and operated according to manufacturer’s specifications and OSHA.   3. Housekeeping is maintained within production area according to company organizations   4. Incident causalities are recorded according to standard operating procedures.   5. First aid is administered according to standard operating procedures.   6. ***Firefighting equipment*** are maintained according to manufacturer’s specifications. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| * Technical dimensions may include but is not limited to: | * Design * Allowances * Working dimensions |
| * Material requirements may include but is not limited to: | * Foam * Leather * Webbings straps * Stuffing * Hessian cloth * Frame * Leather |
| * Method of construction may include but is not limited to: | * Stitching * Nailing * Cementing |
| * Other finishing operations may include but is not limited to: | * Cleaning * Decorative trims |
| * PPE may include but is not limited to: | * Safety glasses * Face and head protection * Protective footwear * Protective clothing * Respiratory protection * Ear protection * Gloves |
| * Firefighting equipment may include but is not limited to: | * Fire extinguisher * Fire alarm * Fire blanket * Water hose |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Provide effective assistance with the preparation of preliminary design concepts
* Produce sketches manually or using cad systems
* Communicate effectively with individuals, work groups and supervisors
* Interpret and carry out established procedures
* Undertake the range of activities associated with selecting and modifying existing patterns
* Develop the pattern with consideration to the characteristics of leather and trimming
* Construct toiles or prototypes
* Test patterns and recommend alternative construction methods
* Use manual or CAD systems
* Maintain records, document and transfer information

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Safe work practices and procedures and use of PPE
* Types, characteristics, properties and selection criteria for materials used
* Capabilities, limitations and safety requirements of tools and equipment
* Matching requirements of fasteners to timbers/materials used
* Construction method in relation to the upholstery product being made.

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Conducted fashion and trend survey 2. Designed upholstery product 3. Produced upholstery pattern 4. Cut upholstery patterns 5. Prepared upholstery materials 6. Cut upholstery materials 7. Constructed/made upholstery product 8. Carried out finishing operations 9. Operated and maintained upholstery machines 10. Observed occupational health and safety. |
| 1. Resource Implications | The following resources should be provided:   * 1. Access to real or appropriately simulated upholstery product design situations   2. Real or simulated work areas   3. Materials   4. Equipment   5. Specifications   6. Relevant safety procedures and regulations   7. Quality standards   8. Organisation procedures and customer requirements |
| 1. Methods of Assessment | Competency may be assessed through:  3.1 Portfolio Assessment  3.2 Interview  3.3 Case Study/Situation  3.4 Observation/Demonstration and oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# OPERATE LEATHER PRODUCTION MACHINES

**UNIT CODE:** TEX/OS/LT/CR/08/6/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to operate leather production machines. It involves Prepare work pieces preparing workstation, setting up machine, performing machine operations, identifying faulty machine performance, dispatching completed work and observing occupational health and safety.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Prepare work pieces | * 1. Work bundle is received, checked and any follow up action assessed in accordance with workplace procedures   2. Quality of received component parts is assessed in accordance with workplace procedures   3. Work pieces are laid out in correct sequence in accordance with workplace procedures and specifications |
| 1. Prepare workstation | * 1. Position self to achieve operator comfort and to minimise fatigue   2. Machines are cleaned and checked in accordance with workplace procedures   3. Records are kept in accordance with ***workplace requirements*** |
| 1. Set up machine | * 1. Machine is set up and adjusted in accordance with manufacturer’s instructions, workplace requirements and specifications for the work   2. Dies, knives, attachments and parts are checked and changed as necessary   3. Guides are selected and adjusted as appropriate   4. Temperature is set according to specifications, as required   5. Machine is tested for correct operation |
| 1. Perform machine operation | * 1. Pieces are selected in accordance with specifications   2. Pieces are positioned on machine as appropriate   3. Machine is operated in accordance with machine and enterprise standards   4. Finished product is checked against specifications. |
| 1. Identify faulty machine performance | * 1. The performance of the machine is regularly checked for signs of faulty operations and action taken in accordance with workplace procedures |
| 1. Dispatch completed work | * 1. Pieces are bundled, stacked, stored or dispatched in accordance with workplace procedures   2. Production faults are recorded as required   3. Records are completed in accordance with workplace procedures |
| 1. Observe occupational health and safety | * 1. Correct ***PPE***s are provided and used according to OSHA   2. All machines are guarded and operated according to manufacturer’s specifications and OSHA.   3. Housekeeping is maintained within production area according to company organizations   4. Incident causalities are recorded according to standard operating procedures.   5. First aid is administered according to standard operating procedures.   6. ***Firefighting equipment*** are maintained according to manufacturer’s specifications. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| * Applicable regulations and legislation may include but is not limited to: | * Occupational health and safety legislation relevant to workplace activities * Workers’ compensation legislation |
| * Workplace context may include but is not limited to: | * Work organisation procedures and practices relating to the assembly and construction of leather goods * Conditions of service, legislation and industrial agreements * Workplace agreements and awards * Kenyan legislation * Standard work practices * Reporting actions include verbal and written communication in accordance with organisational policies and procedures * Communication may be oral, written or visual and can include simple data * Being responsible for the maintenance of own work quality and being required to contribute to the quality improvement of team or section output, where necessary * Safety, environmental, housekeeping and quality are as specified by machine/equipment manufacturers, regulatory authorities and the enterprise |
| * PPE may include but is not limited to: | * Safety glasses * Face and head protection * Protective footwear * Protective clothing * Respiratory protection * Ear protection * Gloves |
| * Firefighting equipment may include but is not limited to: | * Fire extinguisher * Fire alarm * Fire blanket * Water hose |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Handle receive and leather and leather
* Maintain accurate work records in accordance with procedures
* Carry out leather production machine tasks
* Carry out work in accordance with OH&S policies and procedures
* Meet work specifications
* Communicate effectively within the workplace
* Interpret and apply defined procedures

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Relevant OH&S legislation, codes of practice, policies and procedures
* Leather goods assembly processes
* Operating procedures for leather production machines
* Characteristics of typical leathers, leather, threads and other materials used in leather goods production
* Leather handling procedures
* Safety and environmental aspects of relevant production and assembly processes
* Workplace procedures
* Reporting procedures

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Prepared work pieces 2. Prepared workstation 3. Set up machine 4. Performed machine operation 5. Identified faulty machine performance 6. Dispatched completed work 7. Observed occupational health and safety |
| 1. Resource Implications | The following resources should be provided:   * 1. Access to real or appropriately simulated upholstery product design situations   2. Real or simulated work areas   3. Materials   4. Equipment   5. Specifications   6. Relevant safety procedures and regulations   7. Quality standards   8. Organisation procedures and customer requirements |
| 1. Methods of Assessment | Competency may be assessed through:  3.1 Portfolio Assessment  3.2 Interview  3.3 Case Study/Situation  3.4 Observation/Demonstration and oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |