

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**OIL PIPELINE FIRE OFFICER**

**LEVEL 5**



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 of 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 National occupational Standards were developed for the purpose of developing a competency-based curriculum for Oil Pipeline officer Level 5 These Occupational Standards will also be the bases for assessment of an individual for competence certification.

It is my conviction that these National occupational Standards will play a great role towards development of competent human resource for the Oil and gas 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 and the emphasized the need to reform 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 Oil and gas Sector Skills Advisory Committee (SSAC), have developed these National Occupational Standards for an Oil and Pipeline fire officer. These standards will be the bases for development of competency-based curriculum for Oil pipeline fire officer Level 5 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, Oil and gas SSAC, expert workers and all those who participated in the development of these occupational standards.

**Prof. CHARLES M. M. ONDIEKI, PhD, FIET (K), Con. EngTech.**

**CHAIRMAN, TVET CDACC**

# ACKNOWLEDGEMENT

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 Oil and Gas 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 institutions which in one way or another contributed to the development of these Standards.

**CHAIRMAN**

**MINING SECTOR SKILLS ADVISORY COMMITTEE**

# ACRONYMNS

BC Basic Competency

CBET Competency Based Education and Training

CC Common Competency

CDACC Curriculum Development Assessment and Certification Council

CR Core Competency

CU Curriculum

EMCA Environmental Management and Coordination Act

KCSE Kenya Certificate of Secondary Education

KNQA Kenya National Qualifications Authority

MoE Ministry of Education

NGO Non-Governmental Organization

OS Occupational Standards

OSHA Occupation Safety and Health Act

PPE Personal Protective Equipment

SSAC Sector Skills Advisory Committee

TVET Technical and Vocational Education and Training

CR Core

FO Fire Officer

OG Oil and Gas

TVET Technical and Vocational Education and Training

# KEY TO UNIT CODE

OG/OS /FO/CR /01/5 / A

Industry or sector

Occupational Standards

Occupational area

Type of competency

Competency number

Competency level

Version control

# TABLE OF CONTENTS

[FOREWORD ii](#_Toc29853671)

[PREFACE iii](#_Toc29853672)

[ACKNOWLEDGEMENT iv](#_Toc29853673)

[ACRONYMNS v](#_Toc29853674)

[KEY TO UNIT CODE vi](#_Toc29853675)

[TABLE OF CONTENTS vii](#_Toc29853676)

[OVERVIEW viii](#_Toc29853677)

[BASIC UNITS OF COMPETENCY 1](#_Toc29853678)

[DEMONSTRATE COMMUNICATION SKILLS 2](#_Toc29853679)

[DEMONSTRATE NUMERACY SKILLS 6](#_Toc29853680)

[DEMONSTRATE DIGITAL LITERACY 12](#_Toc29853681)

[DEMONSTRATE ENTREPRENEURIAL SKILLS 18](#_Toc29853682)

[DEMONSTRATE EMPLOYABILITY SKILLS 23](#_Toc29853683)

[DEMONSTRATE ENVIRONMENTAL LITERACY 32](#_Toc29853684)

[DEMONSTRATE OCCUPATIONAL SAFETY AND HEALTH PRACTICES 39](#_Toc29853685)

[CORE UNITS OF COMPETENCY 46](#_Toc29853686)

[CONDUCT FIRE SAFETY TRAINING 47](#_Toc29853687)

[SUPERVISE FIRE SAFETY IN THE WORKPLACE 51](#_Toc29853688)

[SUPERVISE FIRE-FIGHTERS/FIRE WARDENS IN THE WORKPLACE 55](#_Toc29853689)

[RESPOND TO FIRE INCIDENTS/ACCIDENTS IN THE WORKPLACE 58](#_Toc29853690)

[INVESTIGATE WORKPLACE FIRE INCIDENTS/ACCIDENTS 62](#_Toc29853691)

[CONDUCT FIRE RISK ASSESMENT IN THE WORKPLACE 65](#_Toc29853692)

**OVERVIEW**

Oil Pipeline officer Level 5 qualification consists of competencies that a person must achieve to enable him/her to Conduct Fire safety training, supervise fire safety in the workplace, supervise fire-fighters and fire wardens in the workplace, respond to fire incidents/ accidents in the workplace, investigate workplace fire incidents/accidents, conduct fire risk assessment in the workplace and maintaining fire equipment and materials

The units of competency comprising this qualification include the following basic, common and core competencies:

**Basic Units of Competency**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| OG/OS/FO/BC/01/5/A | Demonstrate communication skills |
| OG/OS/FO/BC/02/5/A | Demonstrate numeracy skills |
| OG/OS/FO/BC/03/5/A | Demonstrate digital literacy |
| OG/OS/FO/BC/04/5/A | Demonstrate entrepreneurial skills |
| OG/OS/FO/BC/05/4/A | Demonstrate employability skills |
| OG/OS/FO/BC/06/5/A | Demonstrate environmental literacy |
| OG/OS/FO/BC/07/5/A | Demonstrate occupational safety and health practices |

**Core Units of Competency**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| OG/OS/FO/CR/01/5/A | Conduct Fire Safety Training |
| OG/OS/FO/CR/02/5/A | Supervise Fire Safety in the Workplace |
| OG/OS/FO/CR/03/5/A | Supervise Fire-fighters and Fire Wardens in the Workplace |
| OG/OS/FO/CR/04/5/A | Respond to Fire Incidents/ Accidents in the Workplace |
| OG/OS/FO/CR/05/5/A | Investigate Workplace Fire Incidents/Accidents |
| OG/OS/FO/CR/06/5/A | Conduct Fire Risk Assessment in the Workplace |
| OG/OS/FO/CR/07/5/A | Maintain Fire Equipment and Materials |

**BASIC UNITS OF COMPETENCY**

# DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE:** OG/OS/FO/BC/01/5/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:** OG/OS/FO/BC/02/5/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:** OG/OS/FO/BC/03/5/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 :** OG/OS/FO/BC/04/5/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:** OG/OS/FO/BC/05/5/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:** OG/OS/FO/BC/06/5/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 , analyzing 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 analysed and recorded according to industry procedures.   4. Current work processes to access information and data is analysed 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 is 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. Analyse 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 analysed 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:** OG/OS/FO/BC/07/5/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**

# CONDUCT FIRE SAFETY TRAINING

**UNIT CODE:** OG/OS/FO/CR/01/5/A

**UNIT DESCRIPTION**

The unit standard specifies the competencies required to conduct fire safety training. It involves preparing for the training; including the training programme and the requisite tools and equipment, setting up and conducting the training using appropriate methodology, evaluating the training and completing the training according to specifications.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key  outcomes which make up  workplace function | **PERFORMANCE CRITERIA**  ***(Bold and italicized terms are elaborated in the Range)*** |
| --- | --- |
| 1. Prepare for the fire safety training | * 1. Training requirements are determined from workplace policies, work instructions, safety training needs analysis, training plans, workplace risk assessment reports and interview with staff   2. Trainees are selected from the training needs report   3. Fire safety trainers are identified according to training areas   4. Tools and equipment necessary are selected and checked for serviceability before commencement.   5. Materials appropriate for the training are assembled.   6. Fire safety training programme is prepared as per workplace procedure   7. Training evaluation tools are developed according to workplace requirements   8. Safety and environmental requirements are identified as per training requirements |
| 1. Conduct the fire safety training | * 1. Training environment is managed in accordance with workplace procedures   2. Training is delivered following the set plan in accordance with workplace procedures |
| 1. Evaluate the fire safety training | * 1. Evaluation is conducted as per workplace procedures.   2. Evaluation data is analyzed using standard analytical methods to determine areas for training review |
| 1. Complete the training | * 1. Training location is cleaned in accordance with workplace procedures   2. Tools and equipment are cleaned, inspected, stored and defects reported according to workplace procedures   3. Training report is prepared as per workplace procedures   4. Report is shared with appropriate personnel in accordance with 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**  ***May include but is not limited to:*** |
| --- | --- |
| Tools and equipment include but not limited to: | * Teaching aids * Fire-fighting equipment and accessories * Personal protective equipment (PPE) |
| Safety and environmental requirements include but not limited to: | * Occupational Safety and Health Act 2007 * Environmental Management and Coordination Act, 1999 |
| Materials include but not limited to: | * Fire-fighting foam, dry chemical powder, water, sand and fire blankets |
| Other industries include but not limited to: | * Chemical and pharmaceutical industries |

**Required Knowledge**

This section describes the required knowledge which supports performance. This knowledge will need to be considered in the learning and assessment process.

The individual needs to demonstrate knowledge of:

* + Safe working practices and procedures to be followed when performing training demonstrations
  + Performance management methods
  + How to conduct hazard identification, risk assessment and control (HIRAC)
  + Methods of performing training needs analysis
  + Developing schemes of work and lessons plans
  + How to prepare teaching notes and aids
  + Analysis of training needs assessment and developing a training programme
  + Fire safety management and standards in the industry
  + Design basis of processes and plant
  + Piping and instrumentation diagrams (PIDs) interpretation
  + Premises layout and design drawings interpretation
  + Quality management systems and quality assurance process
  + Training assessment methods
  + Fire safety equipment and accessories inspection and operation
  + Work authorization procedure in the workplace
  + Training report writing and monitoring and evaluation methods

# SUPERVISE FIRE SAFETY IN THE WORKPLACE

**UNIT CODE: OG/OS/FO/CR/02/5/A**

**UNIT DESCRIPTION**

The unit standard specifies the competencies required to supervise fire safety in the workplace. It involves preparing for the task, performing the supervision by developing and reviewing workplace safety plans and its implementation, completing the work to required instruction and evaluating the effectiveness of this supervision for continual improvement as per workplace procedures. Unit standard applies to the oil and gas and other industries.

**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 for fire safety supervision | * 1. Job requirements are determined from workplace instructions   2. Safety requirements are followed in accordance with workplace safety plans and policies   3. Tools and equipment required are selected, inspected for serviceability and deployed before commencement   4. Materials appropriate for the job are identified and located   5. Environmental protection requirements are identified and applied in accordance with workplace procedures and statutory obligations   6. Workplace fire plan is determined and agreed upon by all parties |
| 1. Conduct fire safety supervision | * 1. Workplace safety plans are reviewed according to workplace instructions   2. Personnel in the work use PPEs according to workplace procedure   3. Permit to work (PTW) are adhered and required copy is availed at the worksite as per workplace procedures   4. Equipment and plant for use in the workplace are inspected and approved for safety as per industry procedures   5. Fire hazard analysis/job safety analysis is done for each work task to identify and control the hazards and risks as per industry standards and procedures.   6. Emergency preparedness including prioritisation for human life is assessed and provided for according to workplace procedures |
| 1. Evaluate effectiveness of workplace fire safety supervision | * 1. Documentation for inspection, testing and maintenance for fire detection and alarm systems, emergency communication equipment, portable, mobile and installed fire suppression systems are verified as per industry workplace standards and procedures.   2. Inspection and testing of fire detection and alarm systems, emergency communication equipment, portable mobile and installed fire suppression systems are done and returned to operability status as per industry standards and procedures |
| 1. Complete the fire safety supervision | * 1. Work handover and close out is conducted according to workplace standards and procedures   2. Reports of fire safety supervision and incidents/accidents are filed as per workplace standards and procedures   3. Appropriate workplace personnel are notified in accordance with 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** |
| --- | --- |
| Tools and equipment include but not limited to: | * Fire-fighting equipment and accessories for the industry * Fire tender * Personal protective equipment (PPE) |
| Safety and environmental requirements include but not limited to: | * Workplace safety procedures and related legislation |
| Materials include but not limited to: | * Fire-fighting foam, cold fire solution, dry chemical powder, water, pressurized carbon dioxide and fire blankets |
| Other industries include but not limited to: | * Chemical and pharmaceutical industries |

**REQUIRED SKILLS AND KNOWLEDGE**

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

**Required knowledge**

The section describes the required knowledge which supports performance. This knowledge will need to be considered in the learning and assessment process.

The individual needs to demonstrate knowledge of:

* + Safe working practices and procedures in the industry
  + Chemistry of fire
  + Inspection, testing and maintenance of fire detection and alarm, communication and suppression systems in the industry
  + Permit to work (PTW) system for oil and gas and related industries
  + Fire safety materials inspection and testing
  + Piping and instrumentation diagrams(PIDs) interpretation
  + Premises layout and design drawings interpretation
  + Fire safety management and standards in the industry
  + How to conduct hazard identification, risk assessment and control (HIRAC)
  + Design basis and operation of processes and plant
  + Job safety analysis methods
  + Risk assessment approaches in a workplace
  + Fire safety legislations and applicable standards

# SUPERVISE FIRE-FIGHTERS/FIRE WARDENS IN THE WORKPLACE

**UNIT CODE: OG/OS/FO/CR/03/5/A**

**UNIT DESCRIPTION**

The unit standard specifies the competencies required to supervise fire-fighters and fire wardens in the workplace. It involves preparing the supervision programme, supervising the fire- fighters and fire wardens and periodically evaluating their performance using workplace procedures and completing the supervision according to workplace instructions.

This unit standard applies to the oil and gas and other industries.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key  outcomes which make up  workplace function | **PERFORMANCE CRITERIA**  ***(Bold and italicized terms are elaborated in the Range)*** |
| --- | --- |
| 1. Prepare for Fire- fighters and Fire Wardens supervision | * 1. Job requirements are determined from workplace procedures and instructions.   2. Induction programme is developed based on workplace safety procedures and instructions.   3. Fire safety duty rota is developed as per workplace requirements.   4. Performance evaluation criteria are developed as per workplace procedures and instructions.   5. Tools and equipment required are selected, inspected for serviceability and deployed before commencement.   6. Materials appropriate for the job are identified and located. |
| 1. Carry out the supervision | * 1. Fire-fighters and fire wardens work performance is observed on the job and improved according to workplace procedures and instructions.   2. Lessons learned from emergency drill scenarios is reviewed and communicated to Fire Fighters and Fire Wardens as per workplace procedures for service improvement.   3. Feedback from fire-fighters and fire wardens is received, reviewed and discussed for adoption for system improvements. |
| 1. Evaluate effectiveness of the supervision | * 1. Emergency drill scenarios are identified, tested and communicated to fire-fighters and fire wardens according to workplace procedures and instructions.   2. Fire-fighters and fire wardens’ continuous professional development (CPD) performance is monitored as per workplace procedures. |
| 1. Complete the supervision of fire- fighters and fire wardens | * 1. Reports of fire-fighters and fire wardens’ supervision is prepared and shared with appropriate personnel as per workplace procedures   2. Lessons learned are extracted and shared with respective fire-fighters and fire wardens as per workplace procedure |

**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**  ***May include but is not limited to:*** |
| --- | --- |
| Tools and equipment include but not limited to: | * Workplace fire-fighting equipment and accessories * Personal protective equipment (PPE) |
| Safety and environmental requirements include but not limited to: | * Workplace safety procedures and related legislation |
| Materials include but not limited to: | * Fire-fighting material e.g. foam |
| Other industries include but not limited to: | * Chemical and pharmaceutical industries |

**REQUIRED KNOWLEDGE**

The section describes the required knowledge which supports performance. This knowledge will need to be considered in the learning and assessment process.

The individual needs to demonstrate knowledge of:

* Workplace emergency response and evacuation procedures
* Incident command system (ICS) structure and operationalization
* Permit to work (PTW) system for oil and gas and related industries
* Performance measurement methods for personnel
* Premises fire plans and emergency procedures development and use
* Evacuation equipment inspection and testing requirements
* Fire safety materials inspection and testing
* Piping and instrumentation diagrams (PIDs) interpretation
* Premises layout and design drawings interpretation
* Emergency management standards in the industry
* Job safety analysis methods
* Risk assessment approaches in a workplace
* Fire safety legislations and applicable standards
* Communication methods and requirements during emergency situations

# RESPOND TO FIRE INCIDENTS/ACCIDENTS IN THE WORKPLACE

**UNIT CODE: OG/OS/FO/CR/04/5/A**

**UNIT DESCRIPTION**

The unit standard specifies the competencies required to respond to fire incidents/accidents in the workplace. It involves preparing for the responses by ensuring adequate preparedness, responding to an incident/accident by donning fire-fighter personal protective equipment (PPEs) and safely using fire-fighting equipment according to workplace emergency response procedure and completing the work to required standards.

This unit standard applies to the oil and gas and other industries.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key  outcomes which make up  workplace function | **PERFORMANCE CRITERIA**  ***(Bold and italicized terms are elaborated in the Range)*** |
| --- | --- |
| 1. Prepare for response to fire incidents / accidents | * 1. Response requirements are determined from workplace procedure and instructions   2. Safety requirements are determined and followed in accordance with workplace safety procedures   3. Response tools and equipment required are selected, inspected for serviceability and kept on standby as per applicable procedures   4. Materials appropriate for the task are identified and located   5. Premises layout plans and PIDs are identified and located at the response command centre   6. Fire-fighters and fire wardens are identified, notified and remain on standby as per workplace procedures   7. Incident command system (ICS) for the workplace is developed, practiced and appropriate personnel notified as necessary   8. Environmental protection requirements are identified and applied in accordance with workplace procedures and statutory obligations |
| 1. Respond to fire incident / accident | * 1. Emergency standby teams are notified and respond according to workplace procedures.   2. Fire-fighting equipment and materials are mobilised to the scene according to workplace procedure.   3. Premises occupants are notified according to procedure.   4. Fire scene survey is conducted and recorded according to workplace procedure.   5. Fire suppression approach is identified and communicated to responders who apply the same as per procedure.   6. Fire-fighting progress is monitored and updated according to workplace procedures and standards.   7. Coordination of external agencies responding to fire incident is done according to workplace procedures and instructions for tier II and III respectively.   8. Fire extinguishing at the scene is confirmed according to workplace procedures. |
| 1. Complete the fire response | * 1. Response demobilization is coordinated as per workplace procedures   2. Report of fire incident response is prepared and shared with appropriate personnel according to workplace procedures. |
| 1. Evaluate fire response effectiveness | * 1. Response post-mortem is coordinated according to workplace procedures and industry standards.   2. Lessons learned are shared with appropriate personnel in the ICS according to workplace procedure. |
| 1. Monitor corrective action implementation | * 1. Corrective action plan is developed according to workplace procedures.   2. Follow-up is done with respective parties according to workplace procedures and reports submitted to appropriate workplace personnel. |

**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**  ***May include but is not limited to:*** |
| --- | --- |
| Tools and equipment include but are not limited to: | * Fire-fighting equipment and accessories for the industry * Fire tender * Personal protective equipment (PPE) * Gas testers * Ambulance * Tents and seats |
| Safety and environmental requirements include but are not limited to: | * Workplace safety procedures and related legislation |
| Materials include but are not limited to: | * Fire-fighting foam, cold fire solution, dry chemical powder, water, pressurized carbon dioxide, medical supplies |
| Other industries include but are not limited to: | * Chemical and pharmaceutical industries |

**REQUIRED KNOWLEDGE**

This section describes the required knowledge which supports performance. This knowledge will need to be considered in the learning and assessment process. The individual needs to demonstrate knowledge of:

* Incident command system (ICS) requirements
* How to use site emergency response plan and procedure
* Communication and codes used in emergency
* Map and weather reading and interpretation
* Hazardous materials (HazMat) management in an emergency site
* Fire scene survey techniques
* Fire suppression methods for various scenarios
* Scene commander roles in fire emergency response
* Role of external agencies in emergency situations
* Systematic demobilization from a response
* Techniques of conducting emergency response post-mortem

# INVESTIGATE WORKPLACE FIRE INCIDENTS/ACCIDENTS

**UNIT CODE: OG/OS/FO/CR/05/5/A**

**UNIT DESCRIPTION**

The unit standard specifies the competencies required to investigate workplace fire incident/accident. It involves preparing for the investigation which includes putting together the investigation team, tools and equipment, conducting the investigation and completing the investigation to required standard.

This unit standard applies to the oil and gas and other industries

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key  outcomes which make up  workplace function | **PERFORMANCE CRITERIA**  ***(Bold and italicized terms are elaborated in the Range)*** |
| --- | --- |
| 1. Prepare for the incident/accident investigation | * 1. Investigation requirements are determined from workplace instructions.   2. Tools and equipment are selected and checked for serviceability before commencement.   3. Investigation team is selected and briefed according to workplace procedures.   4. Safety and environmental requirements applicable to the task are identified and documented.   5. Incident/accident scene is preserved according to workplace instructions.   6. Job safety analysis (JSA) and permit to work (PTW) is prepared according to workplace procedure. |
| 1. Conduct the investigation | * 1. Incident/accident information is gathered according to workplace procedure.   2. Information gathered is analysed according to workplace procedure.   3. Root cause of incident/accident is determined in accordance with workplace procedures. |
| 3. Complete the incident/ accident investigation | * 1. Tools and equipment are cleaned, inspected, stored and defects reported according to workplace procedures.   2. Investigation report and lessons learned are shared with appropriate personnel in accordance with workplace procedures.   3. Corrective action plan is monitored and closed out according to workplace procedure. |

**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**  ***May include but is not limited to:*** |
| --- | --- |
| Tools and equipment include but are not limited to: | * Personal protective equipment (PPE) * Camera * Measuring instruments and gauges * Sampling tools * Gas tester |
| Safety and environmental requirements include but are not limited to: | * Occupational Safety and Health Act, 2007 * Environmental Management and Coordination Act, 1999 |
| Other industries include but are not limited to: | * Chemical and pharmaceutical industries |

**REQUIRED KNOWLEDGE**

This section describes the required knowledge which supports performance. This knowledge will need to be considered in the learning and assessment process.

The individual needs to demonstrate knowledge of:

* Safe working practices and procedures to be followed in the premises
* How to perform job safety analysis
* Methods of incident/accident scene preservation
* Work authorization procedure in the workplace
* Legislative and administrative framework governing incident and accidents investigation in the industry
* Factors to consider in forming multi-disciplinary investigation teams
* Techniques of gathering information
* Methods of sampling and sample custody management
* Data analysis methods and interpretation
* Methods of performing root cause analysis in investigations
* Premises layout and design drawings interpretation
* Processes design basis and operational requirements
* Incident/accident investigation report writing
* Monitoring and evaluation methods of action plans

**CONDUCT FIRE RISK ASSESMENT IN THE WORKPLACE**

**UNIT CODE: OG/OS/FO/CR/06/5/A**

**UNIT DESCRIPTION**

The unit standard specifies the competencies required to conduct fire risk assessment in a workplace. It involves preparing for the task which includes identifying the multi-disciplinary team, gathering the tools and equipment, identifying the hazards, analysing the risks, evaluating the risks and deciding on the risk treatment interventions and completing the work to required standard.

This unit standard applies to the oil and gas and other industries

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key  outcomes which make up  workplace function | **PERFORMANCE CRITERIA**  ***(Bold and italicized terms are elaborated in the Range)*** |
| --- | --- |
| 1. Prepare for the fire risk assessment | * 1. Requirements for the task are determined from workplace instructions.   2. Tools and equipment are selected and checked for serviceability before commencement.   3. Multi-disciplinary team is selected and briefed according to workplace procedures.   4. Safety and environmental regulations applicable to the task and industry are identified and documented.   5. Job safety analysis (JSA) and permit to work (PTW) are prepared according to workplace procedure. |
| 1. Conduct the risk assessment | * 1. Hazards are identified according to workplace procedure   2. Who could be harmed is determined according to workplace instructions   3. Risk control measures in place are identified |
| 3. Complete the risk assessment | * 1. Risks are analysed according to workplace standards   2. Risks are evaluated according to workplace procedure and standards   3. Required risk treatment is determined and recorded as per instructions   4. Report and improvement plan are shared with appropriate personnel in accordance with workplace procedures   5. Corrective action plan is monitored and closed out according to workplace procedure |

**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**  ***May include but is not limited to:*** |
| --- | --- |
| Tools and equipment include but not limited to: | * Personal protective equipment (PPE) * Camera * Measuring instruments and gauges |
| Safety and environmental requirements include but not limited to: | * Occupational Safety and Health Act, 2007 * Environmental Management and Coordination Act, 1999 |
| Other industries include but not limited to: | * Chemical and pharmaceutical industries |

**REQUIRED KNOWLEDGE**

The section describes the required knowledge which supports performance. This knowledge will need to be considered in the learning and assessment process.

The individual needs to demonstrate knowledge of:

* + Process and plant design and operating basis
  + Hazard identification techniques
  + Information gathering techniques
  + Design drawings interpretation
  + Risk assessment and analysis methods
  + Risk evaluation tools and methods
  + Safe working practices and procedures to be followed in the premises
  + Job safety analysis methods
  + Work authorization procedure in the workplace
  + Risk assessment legislative and administrative framework for the industry
  + Factors to consider in forming multi-disciplinary investigation teams
  + Techniques of gathering information
  + Monitoring and evaluation methods

# MAINTAIN FIRE FIGHTING EQUIPMENT

**UNIT CODE:** **OG/OS/FO/CR/07/5/A**

**UNIT DESCRIPTION**

The unit standard specifies the competencies required to maintain fire-fighting equipment and material. It involves preparing for the maintenance by gathering requisite tools, equipment and materials, controlling the associated risks through a job safety analysis, maintaining the fire-fighting equipment and materials to required specifications and completing the work to required workplace standards.

This unit standard applies to the oil and gas and other industries.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key  outcomes which make up  workplace function | **PERFORMANCE CRITERIA**  ***(Bold and italicized terms are elaborated in the Range)*** |
| --- | --- |
| 1. Prepare for fire equipment and materials maintenance | * 1. Requirements for the task are determined from workplace instructions.   2. Tools and equipment are selected and checked for serviceability before commencement.   3. Materials and spares appropriate for the job are identified and located   4. Safety and environmental regulations applicable to the task are identified and documented.   5. Contracts for fire equipment and materials service are identified.   6. Job safety analysis (JSA) and permit to work (PTW) are prepared according to workplace procedure |
| 1. Carry out the maintenance | * 1. Fire-fighting equipment are inspected, tested and serviced according to workplace procedures   2. Fire-fighting materials are inspected, tested and replaced according to workplace procedures   3. Fire-fighting materials are sampled, handled and transferred to external laboratories according to workplace procedures and instructions   4. Emergency communication equipment are inspected, tested and serviced according to workplace procedures   5. Fire-fighting equipment and materials service contracts are coordinated as per workplace procedures and instructions |
| 3. Complete the fire equipment and materials maintenance | * 1. Maintenance report is shared with appropriate personnel in accordance with workplace procedures   2. Corrective action plan implementation is monitored and closed out according to workplace procedure |

**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**  ***May include but is not limited to:*** |
| --- | --- |
| Tools and equipment include but are not limited to: | * Personal protective equipment (PPE) * Fire-fighting equipment repair tools and accessories * Measuring gauges |
| Materials include but are not limited to: | * Fire-fighting foam, cold fire, dry chemical powder and fire blankets |
| Safety and environmental requirements include but are not limited to: | * Occupational Safety and Health Act 2007 * Environmental Management and Coordination Act 1999 |
| Other industries include but are not limited to: | * Chemical and pharmaceutical industries |

**REQUIRED KNOWLEDGE**

The section describes the required knowledge which supports performance. This knowledge will need to be considered in the learning and assessment process.

The individual needs to demonstrate knowledge of:

* Fire-fighting equipment design and operating principles
* Different types of equipment maintenance programmes
* Fire-fighting materials and testing of their efficacy
* Emergency communication equipment service requirements
* Types of portable, fixed, and mobile fire-fighting equipment in the industry
* Job safety analysis in maintenance tasks
* Work authorization procedure in the workplace
* Legislative and administrative framework affecting fire equipment and materials maintenance