

**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**FISHERIES (DRY DOCK) ARTISAN**

**LEVEL 4**



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 blueprint 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 TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that these occupational standards have been developed. It is my conviction that these occupational standards will play a great role towards development of competent human resource for the Fisheries Sector’s growth and development.

**PRINCIPAL SECRETARY,**

**VOCATIONAL AND TECHNICAL TRAINING**

**MINISTRY OF EDUCATION**

# PREFACE

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

The Technical and Vocational Education and Training Act No. 29 of 2013 on Reforming Education and Training in Kenya, emphasized the need to reform curriculum development, assessment and certification. This called for a 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 labor force.

TVET Curriculum Development, Assessment and Certification Council (TVET CDACC) in conjunction with Fisheries technology Sector Skills Advisory Committee (SSAC) have developed these occupational standards.

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, Fisheries technology SSAC, expert workers and all those who participated in the development of this occupational standards.

**CHAIRPERSON,**

**TVET CDACC**

# ACKNOWLEDGMENT

These occupational standards have been designed for competency-based training and has independent competencies of learning that allow the trainee flexibility in entry and exit. In developing the occupational standards, significant involvement and support was received from various organizations.

I recognize with appreciation the role of the Fisheries technology Sector Skills Advisory Committee (SSAC) in ensuring that competencies required by the industry are addressed in the standards. I also thank all stakeholders in the Fisheries technology sector for their valuable input and all those who participated in the process of developing these occupational standards.

I am convinced that these occupational standards will go a long way in ensuring that workers in Fisheries technology Sector acquire competencies that will enable them to perform their work more efficiently.

COUNCIL SECRETARY/CEO

TVET CDACC

# **ABBREVIATION AND ACRONYMS**

BC : Basic Competency

CR : Core Competency

CDACC : Curriculum Development Assessment and Certification Council

CC : Common Units

CU : Curriculum

OSHA : Occupation Safety and Health Act

PPE : Personal Protective Equipment

SSAC : Sector Skills Advisory Committee

TVET : Technical and Vocational Education and Training

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# KEY TO UNIT CODE

 **AGR / OS/FIS/ BC/CO/ CC /01/ 6/A**

Industry or sector

Occupational standards

Occupational area

Type of competency

Type of competency

Type of competency

Competency number

Competence level

# OVERVIEW

Fisheries Technician level 4 consists of competencies that a person must achieve to use standard measuring devices and instruments, prevent and fight fire, perform first aid treatment on board, manage sea vessels, manage fishing gear and manage fish aggregating devices within the institution’s/organizations acceptable Standard Operating Procedures (SOPs).

It entails of the following basic, core competencies as indicated below:

**Basic competencies**

|  |  |
| --- | --- |
| **Unit of competency code** | **Unit of competency title** |
| **AGR/OS/FISDO/BC/01/4/A** | Demonstrate communication skills |
| **AGR/OS/FISDO/BC/02/4/A** | Demonstrate occupational safety and health practices |
| **AGR/OS/FISDO/BC/03/4/A** | Demonstrate numeracy skills |
| **AGR/OS/FISDO/BC/04/4/A** | Demonstrate digital literacy |
| **AGR/OS/FISDO/BC/05/4/A** | Demonstrate entrepreneurial skills  |
| **AGR/OS/FISDO/BC/06/4/A** | Demonstrate employability skills |
| **AGR/OS/FISDO/BC/07/4/A** | Demonstrate environmental literacy |

**Common competencies**

|  |  |
| --- | --- |
| **Unit of competency code** | **Unit of competency title** |
| **AGR/OS/FISDO/CC/01/4/A** | Use standard measuring devices and instruments |
| **AGR/OS/FISDO/CC/02/4/A** | Prevent and fight fire |
| **AGR/OS/FISDO/CC/03/4/A** | Perform first aid treatment on board |

**Core competencies**

|  |  |
| --- | --- |
| **Unit of competency code** | **Unit of competency title** |
| **AGR/OS/FISDO/CR/01/4/A** | Perform breath hold diving operations |
| **AGR/OS/FISDO/CR/02/4/A** | Use standard measuring devices and instruments |
| **AGR/OS/FISDO/CR/03/4/A** | Prevent and fight fire |
| **AGR/OS/FISDO/CR/04/4/A** | Perform first aid treatment on board |

# BASIC UNITS OF COMPETENCY

## DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE:** AGR/OS/FISD/BC/01/4/A

**UNIT DESCRIPTION**

This unit covers the competencies required demonstrate communication skills. It involvesobtaining and conveying workplace information, completing relevant work-related documents, communicating information about workplace processes, leading workplace discussion and communicating workplace issues.

**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. Obtain and convey workplace information
 | 1. Specific and relevant information is accessed from ***appropriate sources*** based on standard procedures
2. Effective questioning, active listening and speaking skills are used to gather and convey information based on communication needs
3. Appropriate ***medium*** is used to transfer information and ideas in accordance with workplace guidelines
4. Appropriate non- verbal communication is used as per the communication needs
5. Appropriate lines of communicationwith supervisors and colleagues are identified and followed based on workplace requirements
6. Location and storage of information is undertaken according to workplace procedures
	1. Personal interaction is carried out clearly and concisely according to workplace requirements
 |
| 1. Complete relevant work-related documents
 | * 1. Range of forms relating to conditions of employment are completed according to workplace procedures
	2. Workplace data is recorded based on workplace requirements
	3. Errors in recording information are identified and acted upon in accordance with workplace policies
	4. Reporting requirements are completed according to organizational guidelines
 |
| 1. Communicate information about workplace processes
 | 1. Information sources are identified according to workplace procedures
2. ***Methods of communication*** are selected based on workplace guidelines
3. Multiple operations are communicated according to workplace structure
4. Work-related questions are asked and responded based on set protocols
5. Information is selected and organized according to workplace requirements
6. Verbal and written reporting is undertaken as per workplace requirements
7. Communication is maintained according to workplace standards
 |
| 1. Lead workplace discussions
 | 1. Response to workplace issues is sought and provided as per workplace protocol
2. Constructive contributions are made based on ***workplace discussions***
3. Workplace objectives and action plan are communicated according to workplace requirements
 |
| 1. Identify and communicate issues arising in the workplace
 | 1. Issues and problems are identified as per workplace guidelines
2. Problems and issues in the workplace are organized according to workplace operations
3. Dialogue is initiated with appropriate personnel as per workplace structure
4. Problems and issues raised are communicated as per the workplace reporting procedures
 |

**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. Methods of communication mayinclude but not limited to:
 | * Non-verbal gestures
* Verbal
* Face to face
* Two-way radio
* Speaking to groups
* Using telephone
* Written
* Internet
 |
| 1. Workplace discussion may include but not limited to:
 | * Coordination meetings
* Toolbox discussion
* Peer-to-peer discussion
 |

**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:

* Organization requirements for written and electronic communication methods
* Effective verbal communication methods
* Report writing
* Effective questioning techniques (clarifying and probing)
* Workplace etiquette

**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. Dealt with a range of communication/information at one time
2. Made constructive contributions in workplace issues
3. Sought workplace issues effectively
4. Responded to workplace issues promptly
5. Presented information clearly and effectively in written form
6. Used appropriate sources of information
7. Asked appropriate questions
8. Provided accurate information
 |
| 1. Resource Implications
 | 1. Access to relevant workplace where assessment can take place
2. Appropriately simulated environment where assessment can take place
3. Materials relevant to the proposed activity or tasks
 |
| 1. Methods of Assessment
 | 1. Third-party reports
2. Portfolio
3. Interview
4. Written tests
5. Observation
6. Oral questioning
 |
| 1. Context of Assessment
 | Competency may be assessed 1. On the job
2. Off the job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## DEMONSTRATE NUMERACY SKILLS

**UNIT CODE:** AGR/OS/FISD/BC/02/4/A

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate numeracy skills. It involves identifying and using whole numbers and simple fractions, decimals and percentages for work, identifying, measuring and estimating familiar quantities for work, reading and using familiar maps, plans and diagrams for work, identifying and describing common 2D and some 3D shapes for work, constructing simple tables and graphs for work using familiar data and identifying and interpreting information in familiar tables, graphs and charts for work.

**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 and use whole numbers and simple fractions, decimals and percentages for work
 | 1. Simple fractions, decimals and percentages identified and interpreted as per standard operating procedures.
2. Understanding of place value by organising numbers from smallest to largest demonstrated as SOPs
3. Required numerical information located and decision made on appropriate method to solve a problem as per SOPs
4. Limited range of calculations performed using the four operations using SOPs
5. Links between operations described as per SOPs
6. Estimations made to check reasonableness of results of problem-solving process as SOPs
7. Numerical information recorded, and the result of the task communicated using informal and some formal language and symbolism as per workplace procedures
 |
| 1. Identify, measure and estimate familiar quantities for work
 | 1. Measurement information in workplace tasks and texts identified and interpreted as per workplace procedures.
2. Familiar units of measurement needed for tasks is identified as per measurements manuals/charts
3. Familiar and simple amounts estimated as per workplace procedures.
4. Appropriate measuring equipment selected as per SOPs
5. ***Simple measuring equipment*** graduated in familiar units to measure relevant quantities is used as per graduation manuals.
6. Calculation done using familiar units of measurement as per SOPs
7. Measurements and results checked against estimates as per job specifications.
8. Results are recorded or reported as per workplace procedures
9. Results relevant to the workplace task are communicated using informal and some formal mathematical and general language as per workplace procedures.
 |
| 1. Read and use familiar maps, plans and diagrams for work
 | 1. Items and places are in familiar maps, plans and diagrams as per SOPs
2. Common symbols and keys recognised in familiar maps, plans and diagrams as per SOPs
3. Understanding of direction and location demonstrated by describing the location of objects, or route to familiar places as per SOPs
4. Instructions to locate familiar objects or places are given and followed as per SOPs
5. Informal and some formal oral mathematical language and symbols are used as per SOPs
 |
| 1. Identify and describe common 2D and some 3D shapes for work
 | 1. ***Common 2D shapes and some common 3D shapes*** in familiar situations are identified and named as per job requirements
2. Common 2D shapes and designs are compared and classified as per SOPs
3. Informal and some formal language used to describe common two-dimensional shapes and some common three-dimensional shapes in accordance with workplace procedures.
4. Simple items used to draw or construct common 2D shapes as per workplace procedures.
5. Common 3D shapes matched to their 2D sketches or nets as per SOPs
 |
| 1. Construct simple tables and graphs for work using familiar data
 | 1. Common types of graphs are identified and named as per SOPs
2. Familiar data to be collected is determined in accordance with job specifications.
3. A method to collect data is selected in accordance with workplace procedures.
4. A small amount of simple familiar data is collected as per workplace procedures
5. One or two variables determined from the data collected as per SOPs.
6. Data ordered and collated as per standard operating procedures.
7. A table is constructed and data entered as per SOPs
8. Graphs are constructed using data from table as per job specifications
9. Results are promptly checked as per workplace procedures
10. Graph information related to work is reported or discussed using informal and some formal mathematical and general language as per workplace procedures
 |
| 1. Identify and interpret information in familiar tables, graphs and charts for work
 | 1. Simple tables are identified in familiar texts and contexts in accordance with workplace procedures
2. Title, headings, rows and columns located in familiar tables as per SOPs
3. Information and data in simple tables identified and interpreted as per workplace procedures.
4. Information is related in accordance with workplace tasks
5. Familiar graphs and charts are identified in familiar texts and contexts as per SOPs
6. Title, labels, axes, scale and key from familiar graphs and charts are located as per SOPs
7. Information and data in familiar graphs and charts are identified and interpreted as per job requirements
8. Information is related to relevant workplace tasks as per job 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. Simple measuring equipment may include but not limited to:
 | * Rulers
* Watches/clocks
* Scales
* Thermometers
* AVO meter
 |
| 1. Common 2D shapes and common 3D shapes may include but not limited to:
 | * Round
* Square
* Rectangular
* Triangle
* Sphere
* Cylinder
* Cube
* Polygons
* Cuboids
 |

**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. Simple fractions, decimals and percentages are correctly identified and interpreted
	2. Performed a limited range of calculations using the 4 operations
	3. Performed calculations using familiar units of measurement
	4. Recognised common symbols and keys in familiar maps, plans and diagrams
	5. Constructed simple tables and graphs using familiar data
	6. Identified and interpret information in familiar tables, graphs and charts
 |
| 1. Resource Implications
 | 1. Access to relevant workplace where assessment can take place
2. Appropriately simulated environment where assessment can take place
3. Materials relevant to the proposed activity or tasks
 |
| 1. Methods of Assessment
 | Competency may be assessed through:1. Written Test
2. Interview
3. Oral Questioning
 |
| 1. Context of Assessment
 | Competency may be assessed 1. On the job
2. Off the job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## DEMONSTRATE DIGITAL LITERACY

**UNIT CODE:** AGR/OS/FISD/BC/03/4/A

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate digital literacy in a working environment. It entails identifying computer software and hardware, applying security measures to data, hardware, software, applying computer software in solving task sand applying internet and email in communication at workplace.

**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 computer software and hardware
 | * 1. ***Appropriate computer software*** is identified according to manufacturer’s specification
	2. ***Appropriate computer hardware*** is identified according to manufacturer’s specification
 |
| 1. Apply security measures to data, hardware, software
 | * 1. ***Data security and privacy are classified*** in accordance with the technological situation
	2. ***Security and control measures*** are applied in accordance with laws governing protection of ICT
	3. Computer threats and crimes are detected as per information security management guidelines.
	4. Protection against computer crimes is undertaken in accordance with laws governing protection of ICT
 |
| 1. Apply computer software in solving tasks
 | * 1. Basic word processing concepts are applied in resolving workplace tasks
	2. Word processing utilities are applied in accordance with workplace procedures
	3. Data is manipulated on worksheet in accordance with office procedures
 |
| 1. Apply internet and email in communication at workplace
 | * 1. Electronic mail is applied in workplace communication in accordance with office procedures
	2. Office internet functions are defined and executed in accordance with office procedures
	3. Network configuration and uses are determined in accordance with office operations 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.

|  |  |
| --- | --- |
| **Range** | **Variable** |
| 1. Appropriate computer software may include but not limited to:
 | * Operating system
* MS office
* Web browser
* Media players
 |
| 1. Appropriate computer hardware may include but not limited to:
 | * Computer Case
* Monitor
* Keyboard
* Mouse
* Hard Disk Drive
* Motherboard
* Video Card
 |
| 1. Data security and privacy may include but not limited to:
 | * Confidentiality
* Cloud computing
* Confidentiality
* Cyber terrorism
* Integrity -but-curious data serving
 |
| 1. Security and control measures may include but not limited to:
 | * Countermeasures and risk reduction
* Cyber threat issues
* Risk management
 |

**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
* Interpretation
* Typing
* Communication
* Computing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Input and output devices
* Central processing Unit (CPU)
* Peripherals
* Storage Media
* Software concept
* Types of concept
* Function of computer software
* Data security and privacy
* Security threats and control measures
* 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 sheet;
* Meaning, formulae, function and charts, uses, layout, data manipulation and application to cell
* Networking and Internet;
* Meaning, functions and uses of networking and internet.
* Electronic mail and world wide web
* Emerging trends and issues in ICT;
* Identify and apply 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 input, output, CPU and storage media devices of computers in accordance to computer specification
	2. Identified concepts, types and functions of computer software according to operation manual
	3. Identified and controlled security threats
	4. Detected and protected computer crimes
	5. Applied word processing in office tasks
	6. Prepared work sheet and applied data to the cells in accordance to workplace procedures
	7. Used Electronic Mail for office communication as per workplace procedure
	8. Applied internet and World Wide Web for office tasks in accordance with office procedures
	9. Applied laws governing protection of ICT
 |
| 1. Resource Implications
 | * 1. Access to relevant workplace where assessment can take place
	2. Appropriately simulated environment where assessment can take place
	3. Materials relevant to the proposed activity or tasks
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Practical assignment
	3. Interview
	4. Oral Questioning
	5. Observation
 |
| 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:** AGR/OS/FISD/BC/04/4/A

**UNIT DESCRIPTION**

This unit covers the competencies required demonstrate entrepreneurial skills. It involvescreating and maintaining small scale business, establishing small scale business customer base, managing small scale business and growing/ expanding small scale business.

**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. Create and maintain small scale business
 | 1. Generation and evaluation of business ideas is undertaken in accordance with the existing procedure
2. Competencies are matched with business opportunities in accordance with business practices.
3. Procedure for starting a small business is identified as per the legal requirements
4. SWOT/ PESTEL analysis and or industrial survey is carried out according to office procedures
5. ***Business operations*** are monitored and controlled following established procedures.
6. Quality assurance measures are implemented in accordance with the business practices.
7. Good relations are maintained with staff/workers as per the workplace policies.
8. Policies and procedures on occupational safety and health and environmental concerns are constantly observed as per the workplace policies
 |
| 1. Establish small scale business customer base
 | 1. Good customer relations are maintained in accordance with office procedures
2. New customers and markets are identified, explored and reached out to according to the marketing plan
3. Promotions/Incentives are offered to loyal customers in accordance with office procedures
4. Additional products and services are evaluated and tried in accordance with marketing strategy
5. Customer record is maintained in accordance with office procedures
 |
| 1. Manage small scale business
 | 1. Enterprise is built up and sustained in line with judicious control of cash flows.
2. Profitability of enterprise is ensured as per the internal controls.
3. Unnecessary or lower-priority expenses and purchases are avoided as per the marketing strategy
4. Basic cost-benefit analysis are undertaken in accordance with office procedures
5. Basic financial management are undertaken in accordance with office procedures
6. Basic financial accounting in undertaken in accordance with office procedures
7. Business ***internal controls*** are implemented in accordance with office procedure
8. Setting business priorities and strategies is carried out according to office procedures
9. Preparation and interpretation of basic financial statements is undertaken in accordance with set procedures
10. Preparation of business plansfor small business is undertaken in accordance with ***business strategy***
11. Business Social Responsibility is maintained in accordance with Standard Operations Procedures (SOP)
 |
| 1. Grow/ expand small scale business
 | 1. Prepared business growth strategy for small sale business in accordance with office procedures
2. Incorporated technology in small scale business growth in accordance with technological trends
3. Emerging issues and trends are considered in accordance with business growth strategy
4. Built audience interest in product/service according to growth strategy
5. Boosted cooperate communication according to business ***communication strategy***
 |

**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. Business operations may include but not limited to:
 | * Purchasing
* Accounting/administrative
* Work production/operations/sales
* Marketing
 |
| 1. Internal control may include but not limited to:
 | * Accounting systems
* Financial statements/reports
* Cash management
* Human resource management
 |
| 1. Business Strategy may include but not limited to:
 | * Management of wastages
* Environmental Conservation
 |
| 1. Communication strategy may include but not limited to:
 | * Blue print of exchange of information
* Technology and exchange of information
 |

**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:

* Marketing
* Advertising
* Basic bookkeeping
* Accounting
* Communication

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Generation and evaluation of business ideas
* Legal requirements for starting a small business
* SWOT/ PESTEL analysis
* Occupational Safety and Health
* Public relations concepts
* Business plan
* Business financing
* Marketing strategies
* Business management and control
* Production/ operation process
* Product promotion strategies
* Market and feasibility studies
* Business ethics
* Building customer relations
* Business models and strategies
* Types and categories of businesses
* Business internal controls
* Relevant national and local legislation and regulations
* Basic quality control and assurance concepts
* Building relations with customer and employees
* Building competitive advantage of the enterprise
* Business growth 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. Demonstrated entrepreneurial skills
2. Demonstrate competencies to create a small-scale business
3. Demonstrated ability to conceptualize and plan a micro/small business
4. Grew customer base for the small-scale business
5. Demonstrated ability to manage/operate a micro/small-scale business
6. Demonstrated competencies to grow a micro/small-scale business
 |

 |
| 1. Resource Implications
 |

|  |
| --- |
| The following resources should be provided:  |

1. Assessment location
2. Case studies on micro/small-scale enterprises
3. Assessment materials
 |
| 1. Methods of Assessment
 | Competency in this unit may be assessed through:

|  |  |
| --- | --- |
| 1. Written tests
2. Observation
3. Oral questioning
4. Portfolio
5. Projects
 |  |

 |
| 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:** AGR/OS/FISD/BC/05/4/A

**UNIT DESCRIPTON**

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating critical safe work habits, demonstrating workplace learning and workplace ethics.

**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 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. 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 workplace ethics
 | 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.

|  |  |
| --- | --- |
| **Range** | **Variable** |
| 1. Personal objectives may include but not limited to:
 | * Long term
* Short term
* Broad
* Specific
 |
| 1. Feedback may include but not limited to:
 | * Verbal
* Written
* Informal
* Formal
 |
| 1. Team may include but not limited to:
 | * Small work group
* Staff in a section/department
* Inter-agency group
 |
| 1. Drug and substance abuse may include but not limited to:
 | * Alcohol
* Tobacco
* Miraa
* Over-the-counter drugs
* Cocaine
* Bhang
* Glue
 |
| 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
 |
| 1. Innovation may include but not limited to:
 | * New ideas
* Original ideas
* Different ideas
* Methods/procedures
* Processes
* New tools
 |

**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
* Critical thinking
* Observation
* Organizing
* Record keeping
* Problem solving
* Decision Making
* Resource utilization

**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
* Personal hygiene practices
* Workplace communication
* Concept of time
* Time management
* Decision making
* Types of resources
* Work planning
* Record keeping
* Workplace problems and how to deal with them
* Assertiveness
* Team work
* HIV and AIDS
* Drug and substance abuse
* Safe work habits
* Professional growth and development
* Technology in the workplace
* Emerging issues
	+ Social media
	+ Terrorism
	+ National cohesion

**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 critical safe work habits
	3. Demonstrated workplace learning
	4. Demonstrated workplace ethics
 |
| 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. Oral questioning
2. Portfolio of evidence
3. Third Party Reports
4. Written tests
 |
| 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:** AGR/OS/FISD/BC/06/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to demonstrate environmental literacy. It involves controlling environmental hazard, controlling environmental pollution, demonstrating sustainable resource use and evaluating current practices in relation to resource usage.

**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 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 compiled following standard protocol.
	2. Procedures for solid waste management are observed according Environmental Management and Coordination Act 1999
	3. Methods for minimizing noise pollution complied following environmental regulations.
 |
| 1. Demonstrate sustainable use of resource s
 | * 1. Methods for minimizing wastage are complied with.
	2. ***Waste management procedures*** are employed following principles of 3Rs (Reduce, Reuse, Recycle)
	3. Methods for economizing or reducing resource consumption are practiced.
 |
| 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/sector
	3. Current purchasing strategies are analyzed and recorded according to industry procedures.
	4. Current work processes to access information and data is analyzed following enterprise protocol.
 |
| 1. Identify environmental legislations/conventions for environmental concerns
 | 1. Environmental legislations/conventions and local ordinances are identified according to the different environmental aspects/impact
2. Industrial standard/environmental practices are described according to the different environmental concerns
 |

**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 are not limited to:
 | * Masks
* Gloves
* Goggles
* Safety hat
* Overall
* Hearing protector
* Safety boots
 |
| 1. Environmental pollution control measures may include but are not limited to:
 | * Methods for minimizing or stopping spread and ingestion of airborne particles
* Methods for minimizing or stopping spread and inhaling gases and fumes
* Methods for minimizing or stopping spread and ingestion of liquid wastes
 |
| 1. Waste management procedures may include but are not limited to:
 | * Sorting
* Storing of items
* Recycling of items
* Disposal of items
* Handling
* Transport
 |
| 1. Current resources usage may include but are not limited to:
 | * Electric
* Water
* Fuel
* Telecommunications
* Supplies
* Materials
 |

**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
* Writing
* Communication

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Storage methods of environmentally hazardous materials
* Disposal methods of hazardous wastes
* Usage of PPE Environmental regulations
* OSHS
* Types of pollution
* Environmental pollution control measures
* Different solid wastes
* Solid waste management
* Different noise pollution
* Methods of minimizing noise pollution
* Solid Waste Act
* Methods of minimizing wastage
* Waste management procedures
* Economizing of resource consumption
* Principle of 3Rs
* Types of resources
* Techniques in measuring current usage of resources
* Calculating current usage of resources
* Types of workplace environmental hazards
* Environmental regulations
* Environmental regulations applying to the enterprise.
* Procedures for assessing compliance with environmental regulations.
* Collection of information on environmental and resource efficiency systems and procedures,
* Measurement and recording of current resource usage
* Analysis and recording of current purchasing strategies.
* Analysis current work processes to access information and data Analysis of data and information

**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 hazards
2. Controlled environmental pollution
3. Demonstrated sustainable resource use
4. Evaluated current practices in relation to resource usage
 |
| 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, etc.)
	3. PPEs
	4. Manuals and references
	5. Legislation, policies, procedures, protocols and local ordinances relating to environmental protection
	6. 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 tests
4. Third party reports
5. Portfolio
 |
| 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 OCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE:** AGR/OS/FISD/BC/07/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to practice safety and health and comply with OSH requirements relevant to work. It involves observing workplace procedures for hazards and risk prevention and participating in arrangements for workplace safety and health maintenance.

**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. Adhere to workplace procedures for hazards and risk prevention
 | 1. Arrangement of work area and items in accordance with workplace procedures requirements
2. Work standards and procedures are followed based on instructions
3. ***Prevention and control measures*** are applied based on instructions
 |
| 1. Participate in arrangements for workplace safety and health maintenance
 | 1. Orientations on ***OSH requirements and regulations*** is undertaken in line with policy.
2. Feedback on occupational health and safety are provided as per workplace instructions.
3. Workplace procedures for reporting hazards, incidents, injuries and sickness are adhered to as per workplace policy.
4. ***OSH-related training needs*** are identified and proposed as per workplace policy.
 |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Prevention and control measures may include but are not limited to:
 | * Eliminate the hazard
* Isolate the hazard
* Substitute the hazard with a safer alternative
* Use administrative controls to reduce the risk
* Use engineering controls to reduce the risk
* Use personal protective equipment
* Safety, Health and Work Environment Evaluation
* Periodic and/or special medical examinations of workers
 |
| 1. Safety gears /PPE (Personal Protective Equipment’s) may include but are 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. Incidents and emergencies may include but are 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 requirements / regulations may include but are not limited to:
 | * Building code
* Permit to Operate
 |
| 1. OSH-related trainings may include but are not limited to:
 | * Safety Orientations relevant to tasks
* Safe and Correct Operation of Tools and Equipment
* Health Orientations/trainings
* Prevention and Control of OSH Hazards in the workplace
* Chemical Handling
* Safety Trainings
* Prevention and Control of Work-related Injuries and Illness
* Basic First-aid Trainings
* Emergency Response Trainings
* Trainings on use of fire-extinguisher
 |

**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
* Knowledge management
* Collaborating
* Interpersonal
* Troubleshooting
* Critical thinking
* Observation

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* General OSH principles and legislations
* Principles of good housekeeping (5S)
* Company/workplace policies/ guidelines
* Standards and safety requirements of work process and procedures
* Standard Workplace emergency plan and procedures
* Safety and health requirements of tasks
* Workplace guidelines on providing feedback on OSH and security concerns
* OSH regulations
* Hazard control procedures
* OSH trainings relevant to work

**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. Arranged work area and items in accordance with
2. workplace procedures requirements
3. Followed work standards and procedures based on instructions
4. Applied ***Prevention and control measures*** based on instructions
5. Undertook orientations on ***OSH requirements and regulations*** in line with policy.
6. Provided feedback on occupational health and safety as per workplace instructions.
7. Adhered to workplace procedures for reporting hazards, incidents, injuries and sickness to as per workplace policy.
8. Identified and proposed ***OSH-related training needs*** as per workplace policy.
 |
| 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. Oral questioning
2. Portfolio of evidence
3. Third Party Reports
4. Written tests
 |
| 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. |

# COMMON UNITS OF COMPETENCY

## USE STANDARD MEASURING DEVICES AND INSTRUMENTS

**UNIT CODE:** AGR/OS/FISDO/CC/01/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to use standard measuring devices and

Instruments. It involves identifying standard measuring devices and instruments, reviewing the procedures in using standard measuring devices and instruments and following procedures of using measuring devices and instruments.

**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 Standard Measuring Devices and Instruments
 | 1. Standard measuring devices and instruments are identified according to manufacturer’s specifications
2. Devices and instruments for measuring are properly checked, sanitized and calibrated prior to use
 |
| 1. Review the Procedures in Using Standard Measuring Devices and Instruments
 | 1. Procedures in using the standard measuring devices and instruments are recalled according to manufacturer’s specifications
2. Printed procedures/brochures/catalogues are consulted according to specified food processing methods
 |
| 1. Follow Procedures of Using Measuring Devices and Instruments
 | * 1. Methods/practices of using measuring devices and instruments are strictly observed according to manufacturer’s specifications and workplace requirements
	2. Measuring devices and instruments are cleaned, wiped dry and stored after use to ensure conformity with workplace 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.

|  |  |
| --- | --- |
| Variables | Range |
| 1. Standard Measuring Devices may include but not limited to:
 | * Standard Measuring Devices
* Weighing scales and balances of various capacities and sensitivities
* Measuring cups of varying capacities for dry ingredients
* Measuring cups of varying capacities for liquid ingredients
 |
| 1. Standard Measuring Instruments may include but not limited to:
 | * Salinometer
* Thermometers of varying temperature range ( 0-300 C)
* Refractometer of varying range ( 0 – 90 B)
* Glassware like cylinders, beakers, flasks) of varying graduations
 |
| 1. Food Processing Methods may include but not limited to:
 | * Salting, Curing and Smoking
* Fermentation and Pickling
* Canning and Bottling
* Sugar Concentration
* Drying and Dehydration
 |

**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:

* Organizing skills
* Analytical skills
* Negotiation skills
* Interpersonal skills
* Communication skills
* Evaluation skills
* Problem solving
* Critical thinking
* Calibrating skills
* Sanitary handling of devices and instruments
* Measuring devices and instruments
* Storing measuring devices and instruments

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Safe handling of measuring devices and instruments
* Specifications and functions of measuring devices and instruments and breakages of measuring devices and instruments
* Procedures in cleaning, sanitizing and calibrating and storing equipment and instruments

**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 Standard Measuring Devices and Instruments
2. Reviewed the Procedures in Using Standard Measuring Devices and Instruments
3. Followed Procedures of Using Measuring Devices and Instruments
 |
| 1. Resource implications
 | The following resources must be provided:* 1. Weighing scales and balances of various capacities and sensitivities
	2. Measuring cups of varying capacities for dry ingredients
	3. Measuring cups of varying capacities for liquid ingredients
	4. Salinometer
	5. Thermometers of varying temperature range ( 0-300 C)
	6. Refractometer of varying range ( 0 – 90 B)
	7. Glassware like cylinders, beakers, flasks) of varying graduations
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Third party reports
	3. Oral questioning
	4. Interview
	5. Observation
 |
| 1. Context of Assessment
 | Assessment could be conducted:* 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. |

## PREVENT AND FIGHT FIRE

**UNIT CODE:** AGR/OS/FISDO/CC/02/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to prevent and fight fire. It involves managing fire prevention procedures, operating portable firefighting equipment, conducting interior search and rescue and fire-fighting operations.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the **key outcomes** which make up **workplace function**. | **PERFORMANCE CRITERIA**These are **assessable** statements which specify the required level of performance for each of the elements.***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Manage fire prevention procedures
 | 1. Fire hazards on board a vessel are identified and action is taken to eliminate or minimize them
2. Fire detection and firefighting equipment and systems are regularly checked and appropriate action is taken to ensure that they are operational
3. Appropriate educational activities are organized to ensure onboard personnel are aware of the dangers of fire, how to prevent it and what to do if a fire is detected
4. Personnel on board a vessel are made aware of emergency procedures to be followed in the event of fire
 |
| 1. Operate portable firefighting equipment
 | 1. Classes of fires are correctly identified in accordance with accepted fire-fighting practice
2. Correct portable fire-fighting equipment is selected and used to fight specific classes of fires
3. Methods of extinguishing fire on board a vessel are correctly applied
4. Correct techniques are used to recharge the various types of portable fire extinguisher
5. Where applicable, portable fire-fighting equipment is confirmed as operational following recharging
 |
| 1. Conduct interior search and rescue and fire-fighting operations
 | * 1. Procedures for donning and starting up SCBA / CABA are correctly applied
	2. Procedures for the logging of SCBA / CABA operations on a BA Control Board is correctly followed in accordance with vessel’s procedures and accepted fire-fighting practice
	3. Search and rescue operations in a smoke filled environment are correctly conducted as a member of a fire-fighting team in accordance with accepted fire-fighting practice
	4. Interior fires are extinguished using appropriate firefighting equipment and procedures as a member of a firefighting team in accordance with accepted fire-fighting practice
	5. Lifeline signals are correctly used during interior firefighting operations
	6. A compartment filled with high expansion foam is correctly entered as per accepted fire-fighting practice
 |

**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.

|  |  |
| --- | --- |
| Variables | RangeIncludes but not limited to: |
| 1. Classes of Fire may include but not limited to:
 | * **Class A**
	+ All solid materials, usually organic origin in nature (contains compounds of carbon) and generally produce glowing embers– i.e., wood, textiles, curtains, furniture and plastics.
* Class B
	+ All flammable liquids and solids, which can also be subdivided into :
	+ Miscible with water (i.e., petrol, oils, lubricants, paints and waxes)
	+ Non-miscible with water ( e.g., alcohol)
* Class C
	+ Fires involving domestic main gas, cylinder gases (e.g. Acetylene) or Liquid Petroleum Gases (LPG) such as Butane or Propane)
* Class D
	+ Fires involving metals (where water is generally ineffective and dangerous) i.e., metal powders such as magnesium, titanium, and alloys, etc.
* Class F
	+ New class specifically dealing with high temperature (360 degrees centigrade) cooking oils in large industrial catering kitchens, restaurants and takeaway establishments, etc.
* Electrical
	+ Electrical fires are not considered to constitute a fire class on their own, as electricity is a source of ignition that will feed the fire until removed. When the electrical supply has been isolated. The fire can be treated (generally) as Class A for extinguishing purposes. However, you should use a nonconducting agent on all possible occasions
 |
| 1. Fire detection and firefighting equipment and system may include but not limited to:
 | * Portable fire extinguisher including foam, water, CO2, dry chemical and wet foam
* Fire blankets
* C02 fixed system
* Foam installation including semi-portable and fixed system
* Sprinkler system
* Fire pumps (main and emergency fire pump
* Fire hoses, hydrants, branches and international shore connection
 |
| 1. Methods of extinguishing fire may include but not limited to:
 | * Cooling
* Reducing the ignition temperature by taking the heat out of the fire – using water (limiting the temperature)
* Smothering
* Limiting the oxygen available by smothering and preventing the mixture of oxygen and flammable vapor – by use of foam or a fire blanket
* Starving
* Limiting the fuel supply – by removing the source of fuel ; by switching off electrical power, isolating the flow of flammable liquids or pulling away burning wood or straw, etc.
* Chemical Reaction
* By interrupting the chain of combustion and combining the hydrogen atoms with chlorine atoms in the hydrocarbon chain, e.g. Halons extinguisher (NB: Halons have now generally been withdrawn under the Montreal Protocol of 1990, as ozone depleting agents)
 |

**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:

* Organizing skills
* Analytical skills
* Negotiation skills
* Interpersonal skills
* Communication skills
* Evaluation skills
* Problem solving
* Critical thinking
* Procedures in checking and replacing consumable materials in typical ship board fire detection, fire-fighting and safety equipment and system
* Procedures in identifying and evaluating operational and maintenance problems with fire-detection, firefighting, lifesaving and safety equipment and systems and determining appropriate courses of action
* Procedures in identifying and implementing improvements to maintenance for fire-detection and fire-fighting.
* Procedures on on-board housekeeping processes.

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Chemistry of fire and its relationship to materials typically carried on vessels
* Types of fire detection, firefighting, lifesaving and safety equipment and systems used on board vessels and the procedures for their use
* Relevant regulations, code of practice, policies and procedures related to the maintenance of fire detection, firefighting, lifesaving and safety equipment and system
* Faults that can occur with shipboard fire detection, firefighting, lifesaving and safety equipment and appropriate remedial action and solutions
* Statutory and typical company requirements for the documentation of maintenance procedures and outcomes for fire detection, firefighting, lifesaving and safety equipment and systems used on board vessels

**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. Managed and implemented fire prevention measures and procedures on board a vessel
2. Assessed the operational capability of fire detection and firefighting equipment and systems and initiate any required maintenance or replenishment action
3. Participated in simulated on board firefighting activities
4. Participated in search and rescue and firefighting teams
5. Implemented OHS principles and policies when carrying out firefighting duties
6. Communicated effectively with others as required during fire emergencies
 |
| 1. Resource implications
 | The following resources must be provided:* 1. Work place location
	2. Tools and equipment appropriate to schedule housekeeping activities and to monitor and maintain working condition
	3. Material relevant to the proposed activity and tasks
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Third party reports
	3. Oral questioning
	4. Interview
	5. Observation
 |
| 1. Context of Assessment
 | Assessment could be conducted:* 1. On-the-job
	2. Off-the–job
	3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## PERFORM FIRST AID TREATMENT ON BOARD

**UNIT CODE:** AGR/OS/FISDO/CC/03/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to perform first aid treatment on board. It involves performing immediate lifesaving first aid pending the arrival of medical assistance, recognizing the symptoms and acute illness and or injury and take appropriate action, managing wounds and bleeding, managing burns, managing bone, joint and muscle injuries and adapt first aid procedures for remote situations.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the **key outcomes** which make up **workplace function**. | **PERFORMANCE CRITERIA**These are **assessable** statements which specify the required level of performance for each of the elements.***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Perform immediate lifesaving first aid pending the arrival of medical assistance
 | 1. The priorities of First Aid Care are correctly applied in real or simulated first aid situation
2. The DRABC Action plan is correctly used to identify and control danger, loss of consciousness, loss of airway, breathing and circulation
3. An unconscious casualty is correctly placed in stable side position and the steps in clearing the airways to promote breathing in accordance with established first aid procedures
4. The correct method of Expired Air Resuscitation (EAR), External Cardiac Compression (ECC) and Cardio Pulmonary Resuscitation (CPR) is applied in real life resuscitation situation or in a simulated exercise using a mannequin
 |
| 1. Recognize the

symptoms and acute illness and or injury and take appropriate action | 1. The conditions requiring special first aid procedures are correctly identified
2. A real or simulated unconscious casualty is cared for in accordance with established first aid procedures
3. Causes of respiratory failure and breathing difficulty are correctly identified and appropriate care is provided for a real or simulated casualty with obstructed breathing
4. The symptoms and signs of casualty with angina pain, heart attack and heart failure are correctly identified
5. The symptoms and signs of poisoning, bites and stings are correctly identified and appropriate immediate management of the conditions is provided in real or simulated situation
6. A real or simulated conscious casualty with an acute illness and or injury is cared for in accordance with established first aid procedures
 |
| 1. Manage wounds and bleeding
 | 1. Severe external bleeding is correctly controlled in a real or simulated situation
2. The symptoms and signs of severe internal bleeding are correctly identified and appropriate immediate management of these conditions is provided in a real or simulated situation
3. A real or simulated laceration, abrasion and a deep puncture wound is correctly manage in accordance with established first aid procedures
4. The signs of wound infections are correctly identified and a real or simulated wound infection is correctly managed in accordance with established procedures
 |
| 1. Manage burns
 | 1. Immediate rescue procedures are correctly used in real or simulated first aid situations involving a burned casualty
2. The severity of burn is correctly assessed in terms of depth, position and size in accordance with established procedures
3. The correct method of treatment for burns and associated shock is correctly applied in real or simulated first aid situations involving a burned casualty
 |
| 1. Manage bone, joint and muscle injuries
 | 1. Symptoms and signs of fractures (simple and complicated) are correctly recognized in accordance with established first aid procedures
2. Problems and treatment associated with dislocated joints are correctly managed in accordance with established procedures
3. First aid treatment of pelvic and chest injuries and fractures of limbs, including immobilization techniques is correctly performed in accordance with established procedures
4. The symptoms and signs of sprains and strains are correctly identified in accordance with established procedure
 |
| 1. Adapt First Aid Procedures for ***Remote Situations***
 | 1. Risk in Emergency situations is correctly assessed in accordance to first aid procedures
2. First aid resources are correctly mobilized in accordance with established procedures
3. Operating procedures during emergencies are correctly followed in accordance to first aid 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.

|  |  |
| --- | --- |
| Variables | Range |
| 1. First aid Care on Board a vessel may include but not limited to:
 | * Acute illness or injury
* Laceration, abrasion and a deep puncture wounds
* Respiratory failure and breathing difficulty
* Shock as a result of severe injury
* Abdominal, pelvic and chest injuries
* Fractures of limbs
* Poisoning, bites and stings
* Sprains, strains and dislocations
* Facial, ear and eye injuries
* Suspected head, neck and back injuries
 |
| 1. Conditions requiring special first aid procedures may include but notlimited to:
 | * Explosion injuries
* Burns
* Poisons and envenomation
* Hypothermia and hyperthermia
 |
| 1. First aid resources and equipment include may include but notlimited to:
 | * Vessels/ medicine cabinet
* First aid boxes
* Emergency first aid carry bags
* Specific first aid resources
* Roller bandages
* Triangular bandages
* Face masks
* Cleaning swabs
* Cleaning brush
* Cleaning materials
* Medicines
* Vessel’s Medicine Cabinet
* First Aid Boxes
* Emergency first aid carry bags
 |

**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:

* Organizing skills
* Analytical skills
* Negotiation skills
* Interpersonal skills
* Communication skills
* Evaluation skills
* Problem solving
* Critical thinking
* Medical first aid procedures
* Procedures for conducting an initial patient first aid treatment
* Managing injuries and medical emergencies
* Managing medicine resources
* Techniques for care of wounds
* Correct methods of Expired Air Resuscitation (EAR), External
* Cardiac Compression (ECC) and Cardio Pulmonary
* Resuscitation (CPR)

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Duties and responsibilities of the designated first aid officer on board a vessel
* Knowledge on ways in which disease can spread on board a vessel and ways of preventing the spread
* Legal issues related to administration of drugs and medicines on board a vessel
* Knowledge of body structures and functions relevant to possible injury, illnesses and disease that may be encountered on board a vessel
* Maritime communication techniques related to health care and receiving radio medical advice from shore based advisers
* Marine publications containing information on first aid and medical treatment on board a vessel

**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. Recognized the symptoms and signs of acute illness and or injury and take appropriate action
2. Performed immediate lifesaving first aid
3. Managed wounds and bleeding
4. Managed burns
5. Managed bone, joints and muscle injuries
6. Adapted first aid procedures for remote situation
7. Communicated effectively with others during provision of first aid.
8. Prepared report on first aid situations and activities in accordance with company and regulatory requirements
 |
| 1. Resource implications
 | The following resources must be provided:1. Vessels/ medicine cabinet
2. Complete and operational first aid kit
3. Emergency first aid carry bags
4. Specific first aid resources
5. Roller bandages
6. Triangular bandages
7. Face masks
8. Cleaning swabs
9. Cleaning brush
10. Cleaning materials
11. Medicines
12. Vessel’s Medicine Cabinet
13. Emergency first aid carry bags
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Third party reports
	3. Oral questioning
	4. Interview
	5. Observation
 |
| 1. Context of Assessment
 | Assessment could be conducted: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

## MANAGE SMALL FISHING VESSELS

**UNIT CODE:** AGR/OS/FISDO/CR/01/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to manage small fishing vessels. It involves operating marine vessels, monitoring condition and seaworthiness of a vessel, performing routine maintenance tasks on small marine vessels, troubleshooting and maintaining low powered marine engines and applying weather information when navigating a Vessel.

**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. Operate marine vessels
 | * 1. Gathered ***tools, equipment*** and ***materials*** based on task requirement
	2. ***PPEs*** identified and gathered based on task requirements
	3. Safety measures adhered to in relation to marine vessels
	4. Engine oil levels in the outboard engine determined based on the distances to be covered and extent of task requirement
	5. Marine vessel is navigated and piloted through water body
	6. The rules of the navigation paths are maintained based on the water and atmospheric conditions and traffic density
	7. Safe speed is maintained based on ***factors*** determined by marine and atmospheric conditions
	8. Boat handling skills demonstrated in safely bringing the vessel back to the landing beach
	9. Applicable forces acting on the boat are identified based on marine and atmospheric conditions
 |
| 1. Monitor condition and seaworthiness of a vessel
 | * 1. Hull conditions are inspected for any visible damage and leakages
	2. Vessel ***appliances*** are inspected for functionality and working conditions
	3. The crew members are assessed for competence on use of facilities in the vessel
	4. Working conditions in the vessel is assessed based on task performed by the crew
 |
| 1. Perform routine maintenance tasks on a small marine vessels
 | * 1. Hull surface regularly cleaned using appropriate detergent and cleaning agents
	2. Dry docking is undertaken to inspect the vessel condition
	3. Vessels dried in the sun to allow for maintenance to commence
	4. Repair and replacement of worn out part undertaken based on extent of damage
	5. Lubrication of moving parts of the vessel and accessories undertaken based on manufacturers specifications
	6. Painting of the hull and some accessories is done based on clients’ preferences and requirements for marine conditions
 |
| 1. Troubleshoot and maintain low powered marine engines
 | * 1. Engine is physically observed for any physical damages on the surface
	2. Engine is started and observations made based on performance indicators
	3. Spark plugs removed, cleaned and inspected for signs of quality deterioration
	4. Defective plugs are replaced based on manufacturers specifications
	5. Gear case oil levels are checked based on specified levels
	6. Engine is cleaned and refinished and painted using marine enamel based on the prevailing marine conditions
	7. Battery is checked for full charge terminals cleaned
	8. Propeller is checked for correct pitch based on manufacturer’s specifications
	9. Worn out propeller blades are replaced as per manufacturer’s specifications
	10. Grease fittings are lubricated based on manufacturer’s recommended lubricants.
	11. The engine is test run on test tank for functionality before installation on a boat.
 |
| 1. Apply weather information when navigating a Vessel
 | * 1. Obtain and decipher weather and oceanographic information
	2. Apply weather and oceanographic data to safe navigation
	3. Maintain records of weather and oceanographic information and forecasts.
 |

**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.

|  |  |
| --- | --- |
| Variables | Range: |
| 1. PPEs may include but not limited to:
 | * Navigation equipment
* Safety boots
* Dust and fume masks
* Rinsing and storing equipment
 |
| 1. Safety equipment and spares may include but not limited to::
 | * Communications equipment
* Bailing or bilge pumping arrangements
* Fire extinguishers 3.4 personal floatation devices
* Alternative sources of propulsion and steering
* Anchoring devices
* Bilge removal systems
* Distress signaling devices: including flares, flags, signaling mirrors, other methods
* Water
* Tools and spare parts
* Torch and batteries
 |
| 1. Safety Measures may include but not limited to:
 | * Distribution and securing procedures
* Passengers
* Catch
* Cargo:
	+ Fishing gear
	+ Diving equipment
	+ Oyster farm equipment
	+ Aquaculture nets and gear
* Stock feed
* Monitoring equipment.
 |
| 1. Safe Speed may include but not limited to:
 | * Distance from supervision
* Distance from safe haven
* Operational limits (municipal or city waters)
* Speed limits
* Sectors
* Proximity to dangers
* Range of fuel tank
 |
| 1. Navigation may include but not limited to:
 | * Using propulsion motor
* Using outboard motor
* Using oars
* Using sails
* Alternative steering
 |
| 1. Boat handling skills may include but not limited to:
 | * Maneuvering in confined areas or heavy seas
* Towing
* Approaching a beach or landing
* Recovering person overboard
* Search and Rescue (SAR)
 |
| 1. Routine maintenance may include but not limited to:
 | * By controlling corrosion
* By controlling hull fractures and fatigue
* By controlling hull damage
* Cleanliness
 |
| 1. Seaworthiness of a vessel may include but not limited to:
 | * By day or night in both normal and emergency situations
* Under any possible conditions of sea, weather and loading
* While underway
* During berthing and unberthing operations
* While anchoring or mooring
* During dead on water (drifting)
* At all times when the vessel is at operational status
 |
| 1. Action taken to monitor the condition and seaworthiness of a vessel will depend on the limits of responsibility of the person concerned may include but not limited to:
 | * Routine inspections
* Checks prior to departure
* Checks on completion of a voyage
* Checks on completion of maintenance activities
* Checks in anticipation of a
* Change in sea and weather conditions
* Use of testing equipment to check watertight integrity
* Checks during an emergency which may have caused damage or changes to the seaworthiness of the vessel
 |
| 1. Repairs and maintenance procedures for a vessel will depend on the limits of responsibility of the person concerned may include but not limited to:
 | * Repairs to equipment, components, hull and vessel’s structure
* Surface preparation and painting (routine deck maintenance)
* Underwater inspection to determine marine growth in the hull
* Lubrication
* Replacement of faulty equipment or components
* Inspection/repair of main propulsion
 |
| 1. Documentation may include but not limited to:
 | * Procedures for monitoring of the condition and seaworthiness of vessel
* Vessel and equipment manufacturer’s instructions, specifications and recommended procedures
* Maintenance schedules and records
* Instructions of Kenya maritime authorities related to the seaworthiness of vessels
* Vessel’s license to operate
 |
| 1. Maintenance tools and equipment may include but not limited to:
 | * Hand tools including chipping hammers and scrapers
* Electric power tools such as grinders, sanders and drills
* Pneumatic power tools such as grinders, sanders and drills
* Marine preservative finish application equipment such as brushes, spay guns, rollers
* Rinsing and storing equipment
* Personal protection clothing and equipment such as:
	+ Eye and ear protection
	+ Safety boots
	+ Dust and fume masks including various cartridges
 |

**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:

* Vessel navigation skills
* Analytical skills
* Negotiation skills
* Interpersonal skills
* Communication skills
* Evaluation skills
* Problem solving
* Critical thinking
* Adjusting gear components to improve performance
* Icing
* Numeracy skills
* Reading operating instructions for electronic detection
* Equipment.

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Post mortem changes in fish
* Fish harvesting methods
* Fish preservation methods
* Fish movement behavior,
* Water current movement patterns

**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 PPEs are as per task requirements.
2. Tools, equipment and materials are gathered as per task requirements
3. Maneuvered a small vessel while engaged in common tasks
4. Performed basic deck maintenance
5. Carried out cleaning activities
6. Selected and applied appropriate paint systems for areas aboard a vessel
7. Checked and performed basic maintenance on deck fittings, equipment and systems
8. Exercised all required safety, environmental and hazard control precautions and procedures during planned maintenance operations
9. Communicated effectively with others when carrying out maintenance procedures onboard a vessel
 |
| 1. Resource implications
 | The following resources must be provided:* 1. Fully operational fishing boat with fishing gears
	2. Enterprise procedures
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Third party reports
	3. Oral questioning
	4. Interview
	5. Observation
 |
| 1. Context of Assessment
 | Assessment could be conducted:1. On-the-job
2. Off-the–job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## MANAGE OUTBOARD MOTORS

**UNIT CODE:** AGR/OS/FISDO/CR/02/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to Operate and maintain marine outboard motors. It involves operating outboard motors, maintaining outboard motors, repair and basic outboard motor faults.

**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. Operate outboard

motors | 1. Pre-start checks are performed on the motor as per manufacturer’s guidelines.
2. Outboard motors are started and stopped according to the engine manufacturer’s instructions.
3. Outboard motor controls are used to maneuver according to the engine manufacturer’s instructions.
4. Outboard motor cooling systems are checked according to manufacturer’s recommendations.
5. Trim and tilt mechanisms are operated according to manufacturer’s instructions.
 |
| 1. Maintain outboard

motors | 1. Fuel filters are changed and fuel quality is maintained according to manufacturer’s instructions.
2. Electrical systems are maintained to ensure reliable electrical supply to the outboard motor.
3. Water is flushed from the internal and external parts of the outboard motor as per manufactures guidelines
4. Engine and gearbox oil is checked, changed and lubricated according to manufacturer’s instructions.
5. Engine mounting gear is secured and checked as per manufactures guidelines
 |
| 1. Repair

basic outboardmotor faults | * 1. Fuel-related difficulties are identified and rectified according to trouble shooting guides and manufacturer’s instructions.
	2. Electrical faults are identified and rectified according to trouble shooting guides and manufacturer’s instructions.
	3. Outboard engines that were immersed are serviced according to manufacturer's instructions.
	4. Outboard motor propulsion faults are identified and rectified according to manufacturer’s instructions.
 |

**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.

|  |  |
| --- | --- |
| Variables | Range |
| 1. Pre-start checks may include but not limited to:
 | * Amount of fuel in the fuel tank
* Appropriate fuel
* Water depth
* Cooling water intake submerged
* Motor attachment points
* Fuel hose connected, full and free of constrictions
* Fuel tank depressurized.
 |
| 1. Started may include but not limited to:
 | * Pull start
* Electric start
 |
| 1. Controls may include but not limited to:
 | * Remote throttle and gear levers
	+ Tiller
	+ Steering wheel
* Tilt and trim mechanisms
 |
| 1. Checked may include but not limited to:
 | * Cooling water circulation indicator
	+ Temperature gauge
* Temperature warning sound
 |
| 1. Fuel quality may include but not limited to:
 | * By estimating fuel consumption at turning points
* Contamination
	+ Fuel to oil ratio
	+ Filter type and quality.
 |
| 1. Propulsion faults may include but not limited to:
 | * Bent or broken propeller
* Broken shear pin or drive spline
* Fouling Pitch.
 |
| 1. Documentation may include but not limited to:
 | * Motor manufacturer’s instructions and recommended
* Procedures
* Instructions of Kenya maritime authorities
 |
| 1. Government and international requirements may include but not limited to:
 | * Relevant Kenyan Government legislation, regulations and Orders and international requirements related to the operation and maintenance of outboard motors on coastal vessels.
 |

**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:

* Organizing skills
* Analytical skills
* Negotiation skills
* Interpersonal skills
* Communication skills
* Evaluation skills
* Problem solving
* Critical thinking
* checking, operating and maintaining an outboard motor that is
* used to propel a small vessel
* Literacy skills used for:
* Reading trouble shooting charts
* Reading manufacturers’ instruction manuals.
* Numeracy skills used for:
* Calculating fuel to oil ratios or using tables to find and add
* Correct volume of lubricating oil
* Estimating fuel consumption and time at turning points

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Relevant Marina regulations and related memorandums
* Outboard motor fuel systems
* Outboard motor cooling systems
* Outboard motor lubrication systems
* Battery connection
* Trouble shooting
* International Convention for the Prevention of Pollution from Ships (MARPOL) 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. Operated and maintained outboard motors and be able to
2. Diagnose and rectify basic faults when in isolated situations
3. Started and stopped an outboard motor
4. Operated all controls on an outboard motor to propel a dinghy ahead and astern
5. Performed basic maintenance on an outboard motor
6. Stored an outboard motors
 |
| 1. Resource implications
 | The following resources must be provided:* 1. Fully operational vessel, and or
	2. An appropriate simulation of an outboard motor on a small vessel
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Third party reports
	3. Oral questioning
	4. Interview
	5. Observation
 |
| 1. Context of Assessment
 | Assessment could be conducted:1. On-the-job
2. Off-the–job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## MANAGE FISHING GEAR

**UNIT CODE:** AGR/OS/FISDO/CR/03/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to manage fishing gear. It involves designing fishing gear, constructing fishing gear, operating fishing gear and maintaining fishing gear.

**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. Design fishing gear
 | * 1. Type of fishing gear is determined based on the type of target catch.
	2. Fish behavior is determined as per the fish species and size.
	3. Depth of the water determined as per the fishing area.
	4. ***Measurements of the fishing gear*** determined as per the method of fishing
	5. Mesh size determined based on the size of the target fish.
 |
| 1. Construct fishing gear
 | * 1. ***Material for fishing gear*** is determined based on the type of fishing gear, place and target species.
	2. Material for fishing gear assembled based on the based on the selected material
	3. Fishing gear is made as per the design
	4. The fishing gear is tested as per SOPs
 |
| 1. Operate fishing gear
 | * 1. The fishing area is surveyed and determined as per the fishing method
	2. Fishing gear Set up as per the SOPs
	3. Fishing gear monitored based on fish population and duration of the catch
	4. Fishing gear is hauled based on the catch.
	5. Fish is harvested from the fishing gear SOPs
	6. The catch is landed and sorted based on size and species
 |
| 1. Maintain fishing gear
 | 1. The fishing gear is cleaned and dried as per the SOPs
2. The condition of the fishing gear is assessed based on SOPs
3. Materials and tools for repair are assembled based on the type of gear and nature of repair.
4. Fishing gear repair is carried out as per the SOPs.
5. Fishing gear is stored as per the SOPs
 |

**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.

|  |  |
| --- | --- |
| Variables | Range |
| 1. Measurements of the fishing gear may include but not limited to:
 | * Ply
* Diameter
* TEX, RTEX
* Material type:
	+ PE
	+ PA
* Monofilament
* Braided
* Twisted
* Mesh size for mending purposes
* Mesh size for fisheries regulation purposes
 |
| 1. Material for fishing gear may include but not limited to:
 | * Gill netting:
* Monofilament
* Multi-monofilament
* Purse seine netting
* Knotted and knotless netting
* Braided twine
* Twisted twine
* Polyethylene (PE)
* Polyamide (nylon) (PA)
* Strengthening ropes
 |

**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:

* Organizing skills
* Analytical skills
* Negotiation skills
* Interpersonal skills
* Communication skills
* Evaluation skills
* Problem solving
* Critical thinking
* Repairing or replacing all worn gear components, excluding damage to netting material
* Assembling and dismantling connecting devices
* Ensuring gear is deployed untwisted
* Using machinery to deploy and retrieve fishing gear
* Stowing fishing gear
* Sorting catch
* Reading sizes of connecting gear.
* Measuring length or diameter.

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Factors that make components effective or defective
* Order in which gear components are connected and disconnected
* Basic operating principle of the fishing gear
* Principles that contribute to
* Personal, seafood and vessel hygiene
* Environmental and resource protection
* Workplace safety
* Vessel stability

**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. Designed fishing gear
2. Constructed fishing gear
3. Operated fishing gear
4. Maintained fishing gear
 |
| 1. Resource implications
 | The following resources must be provided:* 1. Fully operational vessel with fishing gear and catch suitable for sorting
	2. Enterprise procedures
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Third party reports
	3. Oral questioning
	4. Interview
	5. Observation
 |
| 1. Context of Assessment
 | Assessment could be conducted:* 1. On-the-job
	2. Off-the–job
	3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## MANAGE FISH AGGREGATING DEVICES (FADs)

**UNIT CODE:** AGR/OS/FISDO/CR/04/4/A

**UNIT DESCRIPTION**

This unit specifies the competencies required to manage fish aggregating devices it involves designing Fish aggregating devices , setting up Fish aggregating devices and maintaining Fish aggregating devices.

**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. Design Fish aggregating devices
 | 1. Type of ***FAD*** is determined based on the target species
2. Site selection
3. Model of the FAD is determined as per the habitat of the target species.
4. Materials, tools and equipment identified and gathered as per the model of the FAD
5. The FAD is assembled as per the model.
 |
| 1. Set up Fish aggregating devices
 | 1. Means of transport identified based on weight of the FAD and distance to the site
2. Substrate is determined as per the anchoring needs
3. The number and distance between FADs is determined as per the scale
4. The FAD is fixed as per the substrate and wave direction
 |
| 1. Maintain Fish aggregating devices
 | 1. FADs are monitored as per the purpose
2. FADs are repaired as per the physical condition
3. FADs are treated as per the level of colonization by harmful organisms.
 |

**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.

|  |  |
| --- | --- |
| Variables | Range |
| 1. FAD may include but not limited to:
 | * Fish aggregating devices
 |

**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:

* Organizing skills
* Analytical skills
* Negotiation skills
* Interpersonal skills
* Communication skills
* Evaluation skills
* Problem solving
* Critical thinking

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Meaning of fish aggregating devices(FADs), target species
* Types of FADs
* Site selection
* Models of the FADs
* Materials, tools and equipment for construction of FADs
* Construction procedures for FADs
* Impacts of FADs
* Guidelines on setting up FADs
* Transportation of FADs
* Types of substrates
* Factors to consider when setting up FADs
* Procedures for fixing FADs

**EVIDENCE GUIDE**

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

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| 1. Critical Aspects of Competency
 | Assessment requires evidence that the candidate:1. Designed Fish aggregating devices
2. Set up Fish aggregating devices
3. Maintained Fish aggregating devices
 |
| 1. Resource implications
 | The following resources must be provided:* 1. Workshop
	2. Fishing ground
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Third party reports
	3. Oral questioning
	4. Interview
	5. Observation
 |
| 1. Context of Assessment
 | Assessment could be conducted:* 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. |