

**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**FIRE AND RESCUE TECHNICIAN**

**KNQF LEVEL 5**

**PROGRAMME ISCED CODE: 1032 454A**

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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 the achievement of Kenya’s development blueprint, Vision 2030 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. These reforms resulted to the formulation of the Policy Framework for Reforming Education and Training (Sessional Paper No.14 of 2012). A key feature of this policy is the radical change in the design and delivery of the TVET training. This policy document requires that training in TVET be competency based, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

The reforms require that industry develops occupational standards to inform the development of Competency-Based Education and Training (CBET) curriculum. This occupational standard will thus inform development of the Fire Fighter Level 4 curriculum.

**PRINCIPAL SECRETARY,**

**STATE DEPARTMENT FOR TVET**

**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 TVET Act CAP 210A and sessional paper No.14 of 2012 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 the industry as well as increase the global competitiveness of the Kenyan labour force.

**CHAIRMAN OF THE COUNCIL**

# ACKNOWLEDGMENT

This occupational standard was developed through the combined effort of various stakeholders from private and public organizations. I am thankful to the management of these organizations for allowing their staff to participate in this course. I wish to acknowledge the invaluable contribution of industry players who provided input towards the development of these occupational standard.

I also thank all the individuals and organizations who participated in the validation of these occupational standard.

**COUNCIL SECRETARY**

# ACRONYMS/ABBREVIATIONS

PPE : Personal Protective Equipment

TVETA : Technical and Vocational Education and Training Authority

TVET : Technical and Vocational Education and Training

# KEY TO UNIT CODE

**Sector / Industry**

**Sub Sector**

**Occupational Area**

**Version Control**

**Unit of Competence Number**

**ISCED level, Programme Orientation and Level of Completion**

xx

x

xxx

x

x

x

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# OVERVIEW

Fire and Rescue Technology level 5 qualification consists of competencies that a person must have to manage fire service, fight fire outbreak, prevent fire outbreak, conduct emergency vehicle operations, install and maintain firefighting equipment and systems and conduct emergency response operation. It also involves providing Pre-Hospital Emergency Medical Care, carrying out rescue operations and conducting workplace fire drills.

Units of learning comprising Fire and Rescue Technology level 5 comprises of the following basic, common and core units:

**SUMMARY OF UNITS OF COMPETENCY**

|  |  |
| --- | --- |
| **BASIC UNITS OF COMPETENCY** | |
| **UNIT CODE** | **UNIT TITLE** |
| **BASIC UNITS OF COMPETENCY** | |
| 0611 451 01A | Apply Digital Literacy |
| 0031 441 02A | Apply Communication Skills |
| 0417 441 03A | Apply Work Ethics and Practices |
| 0413 441 04A | Apply Entrepreneurial Skills |
| **COMMON UNITS OF COMPETENCY** | |
| 1032 451 05A | Apply fire safety in building and construction |
| 0732 441 06A | Prepare technical drawings |
| 1032 441 07A | Apply fire science |
| **CORE UNITS OF COMPETENCY** | |
| 1032 451 08A | Manage Fire Service |
| 1032 451 09A | Carry out fire suppression |
| 1032 451 10A | Prevent Fire Outbreak |
| 1032 451 11A | Perform Emergency Vehicle Operations |
| 1032 451 12A | Install Fire Equipment and Systems |
| 1032 451 13A | Maintain Firefighting Equipment and Systems |
| 1032 451 14A | Conduct Emergency Response Operation |
| 1032 451 15A | Carry out rescue operation |
| 1032 451 16A | Provide pre-hospital emergency medical care |
| 1032 451 17A | Conduct work place drills |

# 

# BASIC UNITS OF COMPETENCY

# APPLY DIGITAL LITERACY

**UNIT CODE: 0611 451 01A**

**UNIT DESCRIPTION:**

This unit covers the competencies required to demonstrate digital literacy. It involves operating computer devices, solving tasks using the Office suite, accessing online/offline data and information, performing online communication and collaboration, applying cybersecurity skills and performing jobs online. It also involves applying job entry techniques.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes that make up workplace functions | **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 computer devices | * 1. C***omputer device*** usage is determined as per workplace requirements.   2. ***Computer hardware*** is identified according to job requirements.   3. ***Computer software*** is identified according to workplace requirements.   4. Computer devices are turned on or off as per the correct workplace procedure.   5. ***Mouse techniques*** are applied in solving tasks as per workplace requirements.   6. Keyboardtechniques are applied in solving tasks as per workplace requirements.   7. Computer files and folders are created and managed as per workplace requirements.   8. ***Internet connection option***s are identified and applied in connecting computer devices to the Internet.   9. ***External devices*** are identified and connected to the computer devices as per the job requirement. |
| 1. Solve tasks using Office suite | 1. ***Word processing concepts***are applied in solving workplace tasks as per job requirements. 2. Worksheet data is entered and prepared in accordance with work procedures. 3. Worksheet data is built and edited in accordance with workplace procedures. 4. ***Data manipulation*** on a worksheet is undertaken in accordance with work requirements. 5. Worksheets are saved and printed in accordance with job requirements. 6. ***Electronic presentation concepts***are applied in solving workplace tasks as per job requirements. |
| 1. Manage data and information | * 1. Office ***internet services*** are identified and applied in accordance with office procedures.   2. ***Internet access applications*** are determined in accordance with office operation procedures.   3. Internet search is performed as per job requirements.   4. Online digital content is downloaded in accordance with workplace requirements.   5. Digital content is identified and backed up in accordance with workplace procedures. |
| 1. Perform online communication and collaboration | * 1. Netiquette principles are observed as per work requirements.   2. Electronic mail communication is executed in accordance with workplace policy.   3. Digital content copyright and licenses are identified and applied according to workplace policies and regulatory requirements.   4. ***Online*** ***collaboration tools*** are applied in accordance with workplace policies and regulatory requirements. |
| 1. Apply cybersecurity skills | * 1. ***Data protection*** and ***privacy*** is classified in accordance with workplace policies and regulatory requirements.   2. ***Internet security threats*** are identified as per workplace policies and regulatory requirements.   3. Computer threats and crimes are detected in accordance to Information Management security guidelines   4. ***Cybersecurity control measures*** are applied in accordance with workplace policies and regulatory requirements. |
| 1. Perform online jobs | * 1. ***Online job platforms*** are identified as per the job requirements.   2. Online accounts and profiles are created in accordance with the work requirements.   3. Online jobs are identified according to the bidder’s skillset.   4. Online digital identity is managed according to industry best practices.   5. Online job bidding is done as per the specific job requirements.   6. Online tasks are executed according to the job requirements.   7. Personal online payment account is managed in accordance with financial regulations. |
| 1. Apply job entry techniques | * 1. ***Job opportunities*** are sought based on competencies.   2. A winning resume/CV is developed as per job advertisement.   3. An application/cover letter is developed based on the job advertisement.   4. ***certificates and testimonials*** are organized as per resume.   5. ***Interview skills*** are demonstrated as per job advertisement. |

**RANGE**

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

| **Variable** | **Range** |
| --- | --- |
| 1. Computer devices may include but are not limited to: | * Desktops * Laptops * Smartphones * Tablets * Smartwatches |
| 1. Computer hardware may include but are not limited to: | * The System Unit E.g., Motherboard, CPU, casing, * Input Devices e.g., Pointing, keying, scanning, voice/speech recognition, direct data capture devices. * Output Devices e.g., hardcopy output and softcopy output * Storage Devices e.g., main memory e.g., RAM, secondary storage (Solid state devices, Hard Drives, CDs & DVDs, Memory cards, Flash drives * Computer Ports e.g., HDMI, DVI, VGA, USB type C etc. |
| 1. Computer software may include but are not limited to: | * System software e.g., Operating System (Windows, Macintosh, Linux, Android, iOS) * Application Software e.g., Word Processors, Spreadsheets, Presentations etc. * Utility Software e.g., Antivirus programs |
| 1. External devices may include but are not limited to: | * Printers * Projectors * Smart Boards * Speakers * External storage drives * Digital/Smart TVs |
| 1. Word processing concepts may include but are not limited to: | * Creating word documents * Editing word documents * Formatting word documents * Saving word documents * Printing word documents |
| 1. Mouse techniques may include but are not limited to: | * Clicking * Double-clicking * Right-clicking * Drag and drop |
| 1. Internet connection options may include but are not limited to: | * Mobile Networks/Data Plans * Wireless Hotspots * Cabled (Ethernet/Fiber) * Dial-Up * Satellite * ISDN (Integrated Services Digital Network) |
| 1. Data manipulation may include but are not limited to: | * Use of formulae * Use of functions * Sorting * Filtering * Visual representation using charts |
| 1. Electronic presentation concepts may include but are not limited to: | * Creating slides * Editing slides * Formatting slides * Applying slide effects and transitions * Creating and playing slideshows * Saving presentations * Printing slides and handouts |
| 1. Internet services may include but are not limited to: | * Communication Services * Information Retrieval Services * File Transfer * World Wide Web Services * Web Services * Directory Services * Automatic Network Address Configuration * Newsgroup * Ecommerce |
| 1. Internet access applications/software may include but are not limited to: | * Browsers * Email Apps * eCommerce Apps |
| 1. Online collaboration tools may include but are not limited to: | * Online Storage * Online productivity applications * Online meetings, * Online learning environments, * Online calendars * Social networks |
| 1. Data protection and privacy may include but not limited to: | * Confidentiality of data/information * Integrity of data/information * Availability of data/information |
| 1. Internet security threats may include but not limited to: | * Malware attacks * Social engineering attacks * Software supply chain attacks * Advanced persistent threats (APT) * Distributed denial of service (DDoS) * Man-in-the-middle attack (MitM) * Password attacks * IoT Attacks * [Phishing Attacks](https://onlinedegrees.sandiego.edu/top-cyber-security-threats/#phishing-attacks) * [Ransomware](https://onlinedegrees.sandiego.edu/top-cyber-security-threats/#ransomware) |
| 1. Security threats control measures may include but not limited to: | * Counter measures against cyber terrorism * Physical Controls * Technical/Logical Controls * Operational Controls |
| 1. Online job platforms may include but are not limited to: | * Remo task * Data annotation.tech * Cloud worker * Upwork * Oneforma * Appen |
| 1. Job opportunities may include but not limited to: | * Self-employment * Service provision * product development * salaried employment |
| 1. Certificates and testimonialsmay include but not limited to: | * Academic credentials * Letters of previous employments/ services rendered * Letters of commendation * Certifications of participation * Awards |
| 1. Interview skills may include but not limited to: | * Listening skills * Grooming * Language command * Articulation of issues * Body language * Time management * Honesty * Generally knowledgeable in current affairs and technical area |

**REQUIRED KNOWLEDGE AND SKILLS**

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

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Computer Hardware and Software Concepts
* Computer Security Concepts (Data security and privacy)
* Cyber security threats and control measures
* Understanding Computer Crimes
* Detection and protection against computer crimes
* Laws governing protection of ICT in Kenya
* Digital Identity Management
* Netiquette Principles
* Fundamentals of Copyright and Licenses
* Word processing;

Functions and concepts of word processing;

Documents and tables creation and manipulations;

Document editing;

Document formatting;

Word processing utilities

* Spreadsheets;

Meaning, types and importance of spreadsheets;

Components of spreadsheets;

Functions, formulae, and charts, uses and layout;

Data formulation, manipulation and application to cells;

Editing & formatting spreadsheets;

* Presentation Packages;

Types of presentation Packages.

Creating, formulating, running, editing, printing and presenting slides and handouts

* Networking and Internet;

Internet connectivity.

Browser and digital content management;

Managing data, information, and digital content

Electronic mail and World Wide Web

* Fundamentals of Online Working;

Online Profile Management;

e-Portfolio Management;

Online Jobs Bidding;

Online Payment Systems;

* Job entry techniques

Job searching sites

Interview preparation skills

Interview handling

**Required skills**

The individual needs to demonstrate the following skills:

* Active listening
* Keyboard Skills
* Mouse Skills
* Analytical skills
* Creativity
* Interpretation Skills
* Communication
* Spreadsheet operations (applying fundamental operations such as addition, subtraction, division and multiplication)
* Computer Use Safety Skills
* Document Editing Skills
* Document Formatting Skills
* Document Printing Skills
* Netiquette Skills
* Internet Browsing Skills
* Problem Solving Skills
* Online Collaboration Skills
* Cybersecurity Skills
* CV writing
* grooming

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical aspects of competency | ***Assessment requires evidence that the candidate:***   * 1. Operated computer devices as per workplace policies and regulations.   2. Solved tasks using the office suite as per workplace policies and regulations.   3. Manage data and information as per workplace policies and regulations.   4. Performed online communication and collaboration as per workplace policies and regulations.   5. Applied cybersecurity skills in accordance with workplace policies and regulations.   6. Executed online tasks according to the job requirements.   7. Searched for job opportunity based on competencies.   8. Prepared job requirement documentations based on job opportunity.   9. Demonstrated interview skills based on the job opportunity. |
| 1. Resource implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place.   2. Access to relevant work environments where assessment can take place.   3. Resources relevant to the proposed activities or task. |
| 1. Methods of assessment | Competency in this unit may be assessed through:   * 1. Observation   2. Oral assessment   3. Portfolio of evidence   4. Interviews   5. Third party report   6. Written assessment   7. Practical assessment   8. Projects |
| 1. Context of assessment | Competency may be assessed:   * 1. Workplace or simulated workplace. |
| 1. Guidance information for assessment | * 1. Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

**APPLY COMMUNICATION SKILLS**

**UNIT CODE: 0031 441 02A**

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate communication skills. It involves applying communication channels, written, non-verbal, oral, and group communication skills.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes that make up workplace function | **PERFORMANCE CRITERIA**  These are assessable statements that specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the Range*** |
| --- | --- |
| 1. Apply communication channels | 1. Specific communication channels are identified and applied based on workplace requirements. 2. Challenges are identified and addressed as per the operational standards of the organization. 3. Communication channels are evaluated to meet workplace needs. |
| 1. Apply written communication skills | * 1. Types of written communication are identified and applied according to the workplace requirements.   2. Written communication needs are identified and implemented according to workplace procedures.   3. Written communication guidelines are analyzed, evaluated, and revised based on workplace needs. |
| 1. Apply non-verbal communication skills | 3.1 Existing non-verbal communication techniques are identified and applied based on organization policy.  3.2 Non-verbal communication techniques are articulated and modeled to enhance inclusivity according to workplace requirements. |
| 1. Apply oral communication skills | 4.1 Types of oral communication are identified and established as per organization policy.  4.2 Pathways of oral communication are identified and established as per organization policy.  4.3 Pathways of oral communication are reviewed according to organization procedures.  4.4 Pathways of oral communication are maintained according to the organization standards. |
| 1. Apply group communication skills | 1. Group communication strategies are appliedbased on the workplace needs. 2. Groups are organized in accordance with workplace procedures. 3. Effective questioning, listening and non-verbal communication techniques are used as per needs.   5.4 Group communication challenges are identified and addressed according to the workplace needs. |

**RANGE**

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

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

**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:

* Active listening
* Interpretation
* Negotiation
* Writing
* Oral skills
* Creative thinking
* Critical thinking
* Decision making
* Analytical
* Innovation
* Conflict skills
* Leadership
* Problem solving skills
* Management
* Organizational
* Teamwork

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Communication process
* Dynamics of groups
* Styles of group leadership
* Key elements of communications strategy
* Principles of effective communication
* Turn-taking techniques
* Conflict resolution techniques
* Work planning
* Work organization
* Company policies
* Company operations and procedure standards
* Fundamental rights at the workplace
* Personal hygiene
* Accountability
* Workplace problems and how to deal with them

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical aspects of Competency. | Assessment requires evidence that the candidate:   * 1. Identified and applied specific communication channels based on workplace requirements.   2. Identified and applied specific written communication correspondence according to the workplace requirements.   3. Applied and developed non-verbal strategies to communicate in all areas of the workplace requirements.   4. Established pathways of oral communication as per workplace policy.   5. Applied group communication strategies based on workplace needs. |
| 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. 3. Resources relevant to the proposed activity or tasks. |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   * 1. Observation   2. Oral assessment   3. Portfolio of evidence   4. Interviews   5. Third party report   6. Written assessment   7. Practical assessment   8. Projects |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. In a simulated work environment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# APPLY WORK ETHICS AND PRACTICES

**UNIT CODE: 0417 441 03A**

**UNIT DESCRIPTION**

This unit covers competencies required to effectively apply work ethics and practices. It involves the ability to: conduct self-management, promote ethical work practices and values, promote teamwork, manage workplace conflicts, maintain professional and personal development, apply problem-solving and promote customer care.

**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 Range*** |
| --- | --- |
| 1. Apply self-management skills | 1. Personal vision, mission and goals are formulated based on potential and concerning organization objectives and strategic plan 2. Self-esteem and a positive self-image are developed and maintained based on value 3. Emotional intelligence and stress management are demonstrated as per workplace requirements. 4. Assertiveness is developed and maintained based on the requirements of the job. 5. Accountability and responsibility for one's actions are demonstrated based on workplace instructions. 6. Time management, attendance and punctuality are observed as per the organization’s policy. 7. Personal goals are managed as per the organization’s objective 8. Self-strengths and weaknesses are identified based on personal objectives 9. Motivation, initiative and proactivity are utilized as per the organization policy 10. Individual performance is evaluated and monitored according to the agreed targets. |
| 1. Promote ethical work practices and values | 1. Integrity is demonstrated as per acceptable norms 2. Codes of conduct is applied as per the workplace requirements 3. Policies and guidelines are observed as per the workplace requirements 4. Professionalism is exercised in line with organizational policies |
| 1. Promote Team work | 3.1 ***Teams*** are formed to enhance productivity based on organization’s objectives  3.2 Duties are assigned to teams under the organization policy.  3.3 Team activities are managed and coordinated as per set objectives.  3.4 Team performance is evaluated based on set targets as per workplace policy.  3.5 ***Conflicts*** are resolved between team members in line with organization policy.  3.6 Gender and diversity-related issues are identified and mainstreamed in accordance with workplace policy.  3.7 Healthy ***relationships*** are developed and maintained in line with the workplace.  3.8 Adaptability and flexibility are applied in dealing with team members as per workplace policies |
| 1. Maintain professional and personal development | 4.1 ***Personal growth and development*** needs are identified and assessed in line with the requirements of the job.  *4.2* ***Training and career opportunities*** are identified and utilized based on job requirements.  4.3 ***Resources*** for training are mobilized and allocated based on organizations and individual skills needs.  4.4 Licenses and certifications relevant to the job and career are obtained and renewed as per policy.  4.5 Recognitions are sought as proof of career advancement in line with professional requirements.  4.6 Work priorities and personal commitments are balanced and managed based on the requirements of the job and personal objectives.  4.7 Dynamism and on-the-job learning are embraced in line with the organization’s goals and objectives. |
| 1. Apply Problem solving skills | 5.1 ***Creative, innovative*** and practical solutions are developed based on the problem  5.2 Independence and initiative in identifying and solving problems are demonstrated based on the requirements of the job.  5.3 Team problems are solved as per the workplace guidelines  5.4 Problem-solving strategies are applied as per the workplace guidelines  5.5 Problems are analyzed and assumptions tested as per the context of data and circumstances |
| 1. Promote Customer Care | 6.1 Customers' needs are identified based on their characteristics  6.2 Customer ***feedback*** is allowed and facilitated in line with organization policies.  6.3 Customer concerns and complaints are analyzed and resolved in line with the set organizational culture.  6.4 Proactive customer outreach programs are implemented as per organizational policies  6.5 Customer retention strategies are developed and implemented in line with the organizational policy |

**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. Feedback may include but not limited to: | * Verbal * Written * Informal * Formal |
| 1. Conflicts include but are not limited to: | * Interpersonal Conflict. * Intrapersonal Conflict. * Intergroup Conflict. * Intragroup Conflict. |
| 1. Relationships may include but not limited to: | * Man/Woman * Trainer/trainee * Employee/employer * Client/service provider * Husband/wife * Boy/girl * Parent/child * Sibling relationships |
| 1. Team may include but not limited to: | * Small work group * Staff in a section/department * Inter-agency group * Virtual teams |
| 1. Personal growth may include but not limited to: | * Growth in the job * Career mobility * Gains and exposure the job gives * Net workings * Benefits that accrue to the individual as a result of noteworthy performance |
| 1. Personal objectives may include but not limited to: | * Long term * Short term * Broad * Specific |
| 1. Trainings and career opportunities may include but not limited to | * Participation in training programs * Serving as Resource Persons in conferences and workshops * Capacity building |
| 1. Resource may include may but not limited to: | * Human * Financial * Technology |
| 1. Creative and innovative may include but not limited to: | * New ideas * Original ideas * Different ideas * Methods/procedures * Processes * New tools |
| 1. Emerging issues may include but not limited to: | * Artificial Intelligence * Data confidentiality * National cohesion * Open offices |

**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:

* Active listening
* Critical thinking
* Organizational
* Negotiation
* Monitoring
* Evaluation
* Problem solving
* Decision Making
* Leadership
* Creative/innovative thinking
* Adaptability
* Conflict management
* Emotional intelligence
* Teamwork

Required Knowledge

The individual needs to demonstrate knowledge of:

* Work values and ethics
* Company policies and procedures
* Company operations, procedures and standards
* Flexibility and adaptability
* Concept of time and leisure time
* Decision making
* Work planning
* Organizing work
* Monitoring and evaluation
* Record keeping
* Gender and diversity mainstreaming
* Drug and substance abuse
* Professional growth and development
* creativity
* Innovation
* problem solving
* customer care
* mentoring and coaching.
* Emerging issues

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical aspects of Competency | Assessment require evidence that the candidate:   * 1. Applied self-management skills as per organizational procedures.   2. Promoted ethical practices and values as per organizational procedures.   3. Promoted Teamwork as per workplace assignments.   4. Maintained professional and personal development as per organizational procedures.   5. Applied Problem-solving skills based on work requirements.   6. Identified customer needs based on their characteristics.   7. Gave back Customer feedback in line with organization policies. |
| 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. 3. Resources relevant to the proposed activity or tasks. |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Practical 2. Project 3. Third party reports 4. Portfolio of evidence 5. Written test 6. Oral questioning |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. In a simulated work environment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# APPLY ENTREPRENEURIAL SKILLS

**UNIT CODE : 0417 441 04A**

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate an understanding of entrepreneurship. It involves demonstrating an understanding of financial literacy, applying entrepreneurial concepts identifying entrepreneurship opportunities, applying business legal aspects, developing business innovative strategies, and developing business plans.

**ELEMENTS AND PERFORMANCE CRITERIA**

| **ELEMENT**  These describe the key outcomes that make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements that specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in Range*** |
| --- | --- |
| 1. Apply Financial Literacy Skills | 1. **Sources of personal and business** ***funds*** are identified as per financial procedures and standards 2. Personal finances are managed as per financial procedures and standards 3. Savings are managed as per financial procedures and standards 4. Debts are managed as per financial procedures and standards 5. Investments are undertaken as per financial procedures and standards 6. Insurance services are procured as per financial procedures and standards |
| 1. Apply entrepreneurial concept | 1. Entrepreneurs and Business persons are distinguished as per principles of entrepreneurship 2. ***Types of entrepreneurs*** are identified as per principles of entrepreneurship 3. Ways of becoming an entrepreneur are identified as per principles of Entrepreneurship 4. ***Characteristics of Entrepreneurs*** are identified as per principles of Entrepreneurship 5. Salaried employment and self-employment are distinguished as per principles of entrepreneurship 6. ***Requirements for entry into self-employment*** are identified according to business procedures and standards 7. Roles of an Entrepreneur in an enterprise are determined according to business procedures and standards 8. **Contributions of entrepreneurship** to National development are identified as per business procedures and standards |
| 1. Identify entrepreneurial opportunities | 1. Business ideas are identified as per business procedures and standards 2. Factors to consider when evaluating business opportunity viability are explored based on business procedure and standards 3. Entrepreneurial opportunities are evaluated as per business procedures and standards 4. Business ideas and opportunities are generated as per business procedures and standards 5. Business life cycle is analysed as per business procedures and standards |
| 1. Apply business legal aspects | 1. ***Forms of business ownership*** are identified as per legal procedures and practices 2. Business Registration and Licensing processes are identified as per legal procedures and practices 3. Types of Contracts and Agreements are analysed as per legal procedures and practices 4. Employment Laws are identified as per legal procedures and practices 5. Taxation laws are identified as per legal procedures and practices |
| 1. Innovate Business strategies | 1. Business innovation strategies are determined by the organization standards 2. Creativity in business development is demonstrated in accordance with business standards 3. ***Innovative business standards***  are developed as per business principles 4. Linkages with other entrepreneurs are created as per best practice 5. ICT is incorporated in business growth and development as per best practice |
| 1. Develop Business Plan | 1. Business idea is described as per business procedures and standards 2. Business description is developed as per business plan format 3. Marketing plan is developed as per business plan format 4. Organizational/Management plan is prepared in accordance with business plan format 5. Production/operation plan is prepared in accordance with business plan format 6. Financial plan is prepared in accordance with the business plan format 7. Executive summary is prepared in accordance with business plan format 8. Business plan is presented as per best practice 9. Business ideas are incubated as per institutional policy. |

**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. Sources of personal funds mayinclude but not limited to: | * Salary/Wages * Investments * Savings * Inheritance * Government Benefits |
| 1. Sources of business finance mayinclude but not limited to: | * Equity Financing * Debt Financing, * Personal Savings/Investment * Retained Earnings * Grants and Subsidies * Crowdfunding * supplier Credit: * Leasing and Asset Financing: |
| 1. Types of entrepreneurs may include but not limited to: | * Innovators * Imitators * Craft * Opportunistic * Speculators |
| 1. Characteristics of Entrepreneurs may include but not limited to: | * Creative * Innovative * Planner * Risk taker * Networker * Confident * Flexible * Persistent * Patient * Independent * Future oriented * Goal oriented |
| 1. Requirements for entry into self-employment may include but not limited to | * Technical skills * Management skills * Entrepreneurial skills * Resources * Infrastructure |
| 1. Forms of businesses ownership may include but not limited to: | * Sole proprietorship * Partnership * Limited companies * Cooperatives |
| 1. Innovative business standards may include but not limited to: | * New products * New methods of production * New markets * New sources of supplies * Change in industrialization |

**REQUIRED SKILLS AND KNOWLEDGE**

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

**Required Skills**

The individual needs to demonstrate the following skills:

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

**Required Knowledge**

The individual needs to demonstrate knowledge of:

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

**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 Sources of personal and business finance as per financial procedures and standards 2. Managed Personal finances as per financial procedures and standards 3. Made Investment decisions as per financial procedures and standards 4. GeneratedBusiness ideas and opportunities based on business procedure and standards 5. Analysed business life cycle based on business procedure and standards 6. Determined business innovative standards as per business principles 7. Developed and presented a business plan as per regulatory framework. |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place |
| 1. Methods of Assessment | Competency may be assessed through:   1. Written tests 2. Oral questions 3. Third party report 4. Interviews 5. Portfolio |
| 1. Context of Assessment | Competency may be assessed:   1. On-the-job 2. In a simulated work environment |
| 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

# APPLY FIRE SAFETY IN BUILDING AND CONSTRUCTION

**UNIT CODE: 1032 451 05A**

**UNIT DESCRIPTION**

This unit covers the competencies required to apply fire safety in building and construction**.** It involves competencies required to identify construction materials, identify properties of construction materials and constructing and dismantling trench timbering and building formwork. It also involves performing workshop practices.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **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 construction materials | * 1. Building plan is interpreted as per standard drawing convention.   2. ***Construction materials*** are identified based on construction requirementsand project scope.   3. Construction materials are categorized as per fire resistibility. |
| 2.Identify properties of construction materials | * 1. ***Physical properties*** of construction materials are identified based on code of practice.   2. ***Chemical properties*** of construction materials are identified based on code of practice.   3. ***Mechanical properties*** of construction materials are identified based on code of practice. |
| 3. Construct and dismantle rescue structures. | * 1. ***Rescue structures materials and tools*** are determined according to the construction rules and regulations.   2. Personal protective equipment is selected, fitted and used according to safety rules and regulations.   3. ***Rescue structure*** is constructed as per site topography.   4. Rescue structureis dismantled according to site procedures and critical structural safety requirements. |
| 4. Perform workshop practice. | 1. Workshop tasks are identified as per work requirement. 2. ***Masonry tasks*** are carried out as per work requirement. 3. ***Plumbing tasks*** carried out as per work requirement. 4. ***Carpentry tasks*** are performed as per work requirement. 5. ***Electrical operations*** ***tasks*** are carried out as per work requirement. |
| 5.Perform mechanical operations | * 1. Safety requirement in fire and rescue service are identified as per work procedure.   2. ***Mechanical tools*** are used appropriately to perform tasks in fire and rescue service as per work procedure.   3. Diesel and petrol engine components are identified as per work procedure.   4. Diesel and petrol engines are operated based on manufacturer’s manual   5. Diesel and petrol engine maintenance is performed as per manufacturer’s specification.   6. ***Water pumps*** are identified based on working principle.   7. Maintenance is performed on water pumps as per work procedure. |

**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**  *May include but is not limited to:* |
| 1. ***Construction materials*** | * Sand * Ballast cement * timber and timber products * metals and alloys * paints and varnishes * roofing materials |
| 1. ***physical properties*** | * porosity * surface texture * strength * density * thermal conductivity * wear and tear * expansivity |
| 1. ***chemical properties*** | * corrosion resistance * chemical resistance * combustibility |
| 1. ***Mechanical properties*** | * Toughness * Hardness * Fatigue * Stress and strain * Creep and stress rapture |
| ***5. Rescue structures materials and tools*** | * Timber * Nails * Wooden boards * Canvass * Gunny bags * Metal bar * Metal sheets |
| ***6.Rescue structure*** | * scaffold * Temporary ladder * Shores * Trench timbering * Formwork material |
| ***8. Masonry tasks*** | * Concrete mixing * Mortar mixing * Hacking * Plastering * Demolishing |
| ***9. Plumbing tasks*** | * Pipe fitting * Water pump fitting * Water reticulation |
| ***10.Carpentry tasks*** | * Wood cutting * Fitting and joinery |
| ***11.Electrical operations*** | * Panel installation * Conduiting |
| ***12.Mechanical tools*** | * Lifting tools * Drilling tools * Towing tools * Spreading tools * Cutting tools * Lighting tools |
| ***13. Water pumps*** | * + Centrifugal   + Submersible   + Reciprocating pump   + Hand pumps |

**REQUIRED KNOWLEDGE AND SKILLS**

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

* Tools and equipment
* Safety regulations
* Mathematics
* Electrical installation
* Power supply
* Engine operations
* Water pump operation
* Firefighting
* Circuit interpretation

**Required Skills**

* Analytical
* Critical thinking
* Problem solving
* Circuit interpretation
* Quality control analysis
* Complex problem solving
* Engineering drawings interpretation

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical aspects of competency | Assessment requires evidence that the candidate:   1. Interpreted building plan as per standard drawing convention. 2. categorized construction materials as per fire resistibility 3. Identified properties of construction materials based on codes of practice. 4. Constructed ***Rescue structure*** as per site topography. 5. Dismantled rescue structureaccording to site procedures and critical structural safety. 6. Performed workshop practices as per work requirement |
| 2.Resource implications | The following resources should be provided:   * + Appropriately simulated environment where assessment can take place   + Access to relevant work environment   + Resources relevant to the proposed activities or tasks |
| 3.Methods of assessment | Competency in this unit may be assessed through:   * + Practical assessment   + Projects   + Portfolio of evidence   + Third party report   + Written tests   + Oral assessment |
| 4.Context of assessment | Competency may be assessed:   * Workplace * Simulated workplace |
| 5.Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

# PREPARE TECHNICAL DRAWINGS

**UNIT CODE: 0732 441 06A**

**UNIT DESCRIPTION**

This unit covers the competencies required to prepare technical drawings. It involves competencies required to select, use and maintain drawing equipment and materials. It also involves producing plain geometry drawings, solid geometry drawings, pictorial and orthographic drawings and application of Computer Aided Design (CAD) packages.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **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. Use drawing equipment and materials. | 1.1 ***Drawing equipment*** are identified and gathered according to task requirement.  1.2 ***Drawing materials*** are identified and gathered according to task requirement.  1.3 Drawing equipment and materials are used as per work requirement. |
| 1. Produce plane geometry drawings | 1. Different types of lines are used in drawing and their meanings are identified according to ***standard drawing conventions*** 2. Freehand sketching of different types of geometric forms, tools, equipment, diagrams is conducted 3. Different types of ***geometric forms*** are constructed according to standard drawing conventions 4. Different types of angles are constructed according to principles of trigonometry 5. Different types of angles are measured using appropriate measuring tools 6. Angles are bisected according to standard conventions. |
| 1. Produce solid geometry, orthographic and pictorial drawings. | * 1. Drawings of patterns are interpreted according to standard drawing conventions.   2. Patterns are developed in accordance with standard drawing conventions   3. Symbols and abbreviations are identified and their meaning interpreted according to standard drawing conventions   4. First and third angle orthographic drawings are interpreted and produced in accordance with the standard drawing conventions.   5. Orthographic elevations are dimensioned in accordance with standard drawing conventions   6. Isometric drawings are interpreted and produced in accordance with standard conventions |
| 1. Apply CAD packages | * 1. User gets acquainted with the user interface and tools offered by CAD package according to task requirements.   2. CAD packages are selected according to task requirements.   3. CAD packages are applied in production of fire safety drawings according to task requirements. |

**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**  ***May include but is not limited to:*** |
| --- | --- |
| 1. Drawing equipment | Drawing boards, T and set squares, drawing sets, computers with CAD packages |
| 1. Drawing materials | Drawing papers, pencils, erasers, masking tapes, paper clips |
| 1. Geometric forms | Circles, triangles, rectangles, parallelogram, polygons, pyramids, conic sections, prisms, loci |
| 1. Standard Drawing Convention | * Anatomy of engineering drawing (title block, coordinate grid system, revision block, notes and legends) * Drawing scale (paper size and drawing symbols) * International drawing standards |

**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:

* Critical thinking
* Drawing
* Interpretation
* Drawing equipment handling
* Analysis and synthesis
* Communication
* Inter personal

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Drawing equipment and materials
* Freehand sketching
* Lettering
* Geometrical constructions
* Types of drawings
* Types of lines
* Isometric drawing conventions, features, characteristics, components
* Orthographic drawing conventions, features, characteristics, components
* Sketches and drawings of simple patterns

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   * 1. Used drawing equipment and materials as per work requirement   2. Conducted freehand sketching of different types of geometric forms, tools, equipment and diagrams.   3. Constructed different types of ***geometric forms*** according to standard drawing conventions.   4. Measured different types of angles using appropriate measuring tools according to standard drawing conventions.   5. Interpreted drawings of patterns according to standard drawing conventions.   6. produced and interpreted first and third angle orthographic drawings in accordance with the standard conventions   7. Interpreted and produced isometric drawings in accordance with standard conventions.   8. Applied CAD packages in production of fire safety drawings according to task requirements. |
| 1. Resource implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant work environment   3. Resources relevant to the proposed activities or tasks |
| 1. Resource implications | The following resources should be provided:   * + Appropriately simulated environment where assessment can take place   + Access to relevant work environment   + Resources relevant to the proposed activities or tasks |
| 1. Methods of assessment | Competency in this unit may be assessed through:   * + Practical assessment   + Projects   + Portfolio of evidence   + Third party report   + Written tests   + Oral assessment |
| 1. Context of assessment | Competency may be assessed:   * Workplace * Simulated workplace |

# **APPLY FIRE SCIENCE**

**UNIT CODE: 1032 441 07A**

**UNIT DESCRIPTION**

This unit covers the competencies required to apply fire science. It involves competencies required to carry out measurement, apply knowledge of properties of matter and concepts of density and pressure. It also involves applying principles of fluid flow and heat transfer and principle of combustion. The unit also deals with assessing impact of fire on biosystems, applying knowledge on emerging fire and rescue trends.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Carry out measurement. | * 1. Measuring instruments are identified as per work requirement.   2. ***Basic quantities*** and derived quantities are identified based on the SI units.   3. Interconversion of units is performed in accordance with systems of measurement. |
| 1. Apply knowledge of properties of matter | 1. Knowledge on physical and chemical properties of matter is applied as per physics principles. 2. Knowledge of kinetic theory of matter is applied as per physics principles***.*** 3. Knowledgeof ***Gas laws*** are applied as per physics principles. 4. Knowledge of ***fire behaviour*** is applied as per work requirement |
| 3. Apply concepts of density and pressure | * 1. Laws and principles in fluid pressure are applied as per physics principles.   2. Atmospheric pressure is determined as per physics principles.   3. Knowledge of density is applied according to physics principles. |
| 4.Apply principles of fluid flow and heat transfer | 1. Knowledge of Streamline and turbulent flow is applied in hose connection as per physics principles. 2. Bernoulli’s effect and equation of continuity are determined as per physics principles. .. 3. Knowledge on heat transfer is applied based on work requirement. 4. Thermal expansion is applied based on type of materials. |
| 5.Apply principle of Combustion | 1. Knowledge of fire properties is applied as per work requirement. 2. Knowledge of fire dynamics is applied as per work requirement 3. Knowledge of Combustion by- products is applied as per work requirement. |
| 6. Assess impact of fire on biosystems. | 1. ***Biosystems*** affected by fire is identified as per work procedure. 2. Fire impact on biosystems is determined as per work requirement. 3. Fire impact data is collected as per work procedure. 4. Fire impact data is analyzed as per work procedure. 5. Fire impact assessment report is prepared as per work procedure. |
| 7.Apply knowledge on emerging fire and rescue trends | 1. ***Emerging fire and rescue trends*** are identified and documented as per work requirement. 2. Emerging fire and rescue trends are analyzed as per work procedure***.*** 3. Emerging fire and rescue trends are applied as per work requirement. |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Basic Quantity includes but are not limited to: | * Mass * Length * Time * Temperature * Electric current |
| 1. Gas laws include but are not limited to: | * Boyles * Charles * Pressure |
| 1. Fire behavior may include but are not limited to: | * heat transfer, * ignition, * flame spread, * fire plumes, * heat flux |
| 1. ***Biosystems*** may include but are not limited to: | * human physiology * plant life * wildlife |
| 1. ***Emerging fire and rescue trends*** may include but are not limited to: | * Smart firefighting technology. * Automated suppression system * Drones * Robots * Chutes * Smoke detection system * Infrared detection system * Air sampling systems * Globalization and technology market trends |

**REQUIRED KNOWLEDGE AND SKILLS**

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

**Required knowledge**

* Chemistry of fire
* Fluid Mechanics
* Pressure and vacuum
* Nozzles and hoses
* Mathematics

**Required skills**

The individual needs to demonstrate the following skills:

* Problem solving
* Analytical
* Critical thinking
* Communication
* Decision making

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical aspects of competency | Assessment requires evidence that the candidate:   1. Carried out measurement of quantities as per work requirement 2. Applied knowledge of properties of matter as per work requirement. 3. Applied Laws and principles in fluid pressure as per physics principles. 4. Applied Knowledge of density according to physics principles. 5. Applied knowledge of Streamline and turbulent flow in hose connection as per physics principles. 6. Applied knowledge on heat transfer based on work requirement 7. Assessed fire impact on biosystems as per work requirement. 8. Applied emerging fire and rescue trends as per work requirement. 9. Applied principles of combustion as per work requirement. |
| 2.Resource implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant work environment   3. Resources relevant to the proposed activities or tasks |
| 3.Methods of assessment | Competency in this unit may be assessed through:   * + Practical assessment   + Projects   + Portfolio of evidence   + Third party report   + Written tests   + Oral assessment |
| 4.Context of assessment | Competency may be assessed:   * Workplace * Simulated workplace |
| 5.Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

# 

# CORE UNITS OF COMPETENCY

## MANAGE FIRE SERVICE

**UNIT CODE:** **1032 451 08A**

**UNIT DESCRIPTION**

This unit specifies the competencies required manage fire service. It involves incident management systems and performing paramilitary functions.

**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 paramilitary function | * 1. Chain of command are identified as per the ***paramilitary regulation***   2. Chain of command are adhered to as per paramilitary regulation   3. Standing orders are observed as per paramilitary regulation   4. Paramilitary parade is formed as per paramilitary regulation   5. Foot drills are conducted as per paramilitary regulation   6. Discipline is instilled as per paramilitary regulation   7. Personal grooming is maintained as per paramilitary regulation |
| 1. Manage emergency Incident operations | * 1. Nature of incident is determined as per the scene   2. Strategy for incident management is established as per the nature of incidence.   3. Duties are allocated as per the nature of incidence   4. Resources are allocated as per the nature of incidence   5. Scene is monitored as per the nature of incidence   6. Scene debriefs is conducted as per incident details |
| 3.Manage scene-safety | 1. Fire scene safety is assessed as per the nature of fire scene 2. Applicability of PPEs is verified as per the nature of the fire. 3. Safe system of work is established as per standard operating procedures. 4. Changes within Safe system of work are observed as per the nature of the fire. |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| * ***paramilitary regulation***   includes but not limited to: | * ***Foot drills*** * Standing orders * Parade * Dress code |

**REQUIRED KNOWLEDGE AND UNDERSTANDING**

The individual needs to demonstrate knowledge of:

**KNOWLEDGE**

* Conflict resolution
* Paramilitary guidelines
* Paramilitary command system
* Incident management systems

**SKILLS**

The individual needs to demonstrate the following skills:

* Leadership
* Communication
* Interpersonal
* Problem solving
* Management

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate: demonstrated ability to:   1. Knowledge on chain of command 2. Adhere to the chain of command 3. Observe standing orders 4. Fall into paramilitary parade formation 5. Conduct foot drills 6. Maintain personal grooming 7. Determine nature of incident 8. Establish strategy for incident management 9. Allocate duties 10. Allocate resources 11. Monitor scene |
| 1. Resource Implications | The following resources must be provided:   * 1. Communication equipment   2. Stationery   3. Computers |
| 1. Methods of Assessment | Competency may be accessed through:   1. Written tests 2. Oral questioning 3. Third party reports 4. Case studies |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (attachment) 4. Off the job assessment must be undertaken in a closely simulated workplace environment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## CARRY OUT FIRE SUPPRESSION

**UNIT CODE:** **1032 451 09A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to carry out fire suppression. It involves preparing fire suppression resources, carrying out fire scene size-up, saving fire-affected persons, extinguishing fire, performing fire scene property salvage, carrying out fire resources make-up  and providing fire incident feedback.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Prepare fire suppression resources | 1. ***Class of fire*** is determined as based on distress call. 2. ***Fire suppression personnel*** are allocated duties as per work requirement. 3. ***Fire suppression PPEs*** are donned as per work procedure. 4. Fire suppression personnel mounting is performed as per work requirement |
| 2.Carry out fire scene size-up | * 1. ***Scene assessment*** is carried out based on water emergency scene.   2. Rescue operation is planned based on presenting situation.   3. Resources required are determined as per presenting situation   4. Scene is cordoned as per work procedure |
| 3.Save fire-affected persons | * 1. Evacuation procedure is determined as per work requirement.   2. Affected persons evacuation is carried out as per work procedure   3. Post rescue care is provided as per presenting medical condition.   4. Handover of affected persons is carried out as per work procedure |
| 4.Perform fire extinguishment | * 1. Firefighting equipment is set up based on work requirement.   2. Fire extinguishment agent is identified as per work requirement.   3. Fire extinguishment is carried out as per work procedure.   4. Fire extinguishment overhaul is carried out as per work procedure.   5. Fire incident report is generated as per work procedure. |
| 5.Perform fire scene property salvage | * 1. Salvage method is determined as per nature of incident   2. Salvage is carried out as per nature of incident   3. Salvaged items are documented as per work procedure.   4. Handover of salvaged property is carried out as per work procedure. |
| 6. Carry out fire resources make-up | * 1. Resources  are retrieved  from fire  scene as per work procedure   2. Resources are accounted for as per work procedure   3. Resources are stowed as per work procedure |
| 7. Provide fire incident feedback | * 1. ***Incident debrief*** is carried out as per work procedure.   2. Public briefing is carried out as per work procedure.   3. ***Initial incident*** ***report*** is prepared as per work procedure. |

**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. Class of fire include but not limited to: | * Class A: Ordinary Combustibles * Class B: Flammable Liquids and Gases * Class C: Electrical Fires * Class D: Combustible Metals * Class K: Kitchen Fires |
| 1. Fire suppression personnel include but not limited to; | * Crew in charge * Branch man * Pump operator * Grounds messenger * Search and rescue officer 1 * Search and rescue officer 2 |
| 1. Fire suppression PPEs include but not limited to; | * Helmets * Gloves * Goggles * Respirators * Tunic * Banker pants * Flash hood * Self-contained Breathing apparatus |
| 1. Scene assessment include but not limited to; | * Size and Location of the Fire * Type of Fire * Structural Considerations * Scene Safety * Prevailing weather conditions * Need for additional Resources * Access and Egress Routes * Utility Hazards |
| 1. Incident debrief may include voluntary information to interested parties but not limited to; | * Crew * Affected persons * Public * Government agencies |
| 1. ***Initial incident*** ***report*** may include voluntary information to interested parties but not limited to; | * People involved * Property damage/salvaged * Scene condition |

**REQUIRED KNOWLEDGE AND SKILLS**

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

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Chemistry of fire
* Fluid Mechanics
* Pressure and vacuum
* Nozzles and hoses
* Incident Command System
* Firefighting techniques
* Mathematics
* Technical drawing
* Building and construction

**Required skills**

The individual needs to demonstrate the following skills:

* Problem solving
* Teamwork
* Analytical
* Communication
* Decision making
* Time management
* Conflict resolution

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical aspects of competency | Assessment requires evidence that the candidate:   1. Determined class of fire based on distress call. 2. Carried out *Scene assessment* based on water emergency scene. 3. Determined evacuation procedures as per work requirement. 4. Carried out fire extinguishment as per work procedure. 5. Carried out salvage as per nature of incident. 6. Stowed resources as per work procedure. 7. Carried outIncident debrief as per work procedure. |
| 1. Resource implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant work environment   3. Resources relevant to the proposed activities or tasks |
| 1. Methods of assessment | Competency in this unit may be assessed through:   * + Practical assessment   + Projects   + Portfolio of evidence   + Third party report   + Written tests   + Oral assessment |
| 1. Context of assessment | Competency may be assessed:   * Workplace * Simulated workplace |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

**MANAGE FIRE PREVENTION**

**UNIT CODE:** **1032 451 10A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to prevent fire outbreak. It involves conducting fire risk assessment, sensitizing community on fire risk, advising on fire suppression and scrutinizing development plan.

**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 fire risk assessment | 1. Communities exposed to fire risks are identified as per occupational safety and health standards 2. Risks are identified as per the type of structures and occupancy. 3. Identified risks are recorded as work place procedures 4. Community members are educated on best practices based on the risk exposure. |
| 1. Sensitize community on fire risk | * 1. Area of topography is established as per organization policy   2. Target group is identified as per the nature of risk exposure   3. Sensitization programme is prepared as per target group   4. Sensitization programme is delivered as per work place procedures. |
| 1. Conduct fire drills | * 1. Type of fire is identified as per the nature of incidence.   2. Fire alarm is raised as per standard operating procedures.   3. Fire brigade is contacted as per standard operating procedures.   4. ***Action*** is taken as per safety precautions.   5. Report is prepared as per the number of people in the assembly point. |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. ***Action***   includes but not limited to: | * + Fight fire   + Evacuate |

**REQUIRED KNOWLEDGE AND UNDERSTANDING**

The individual needs to demonstrate knowledge of:

**KNOWLEDGE**

* Occupation safety and health Act
* Building codes

**SKILLS**

The individual needs to demonstrate the following skills:

* Teaching
* Firefighting

**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:  Demonstrated ability to   1. Identify risks 2. Prepare fire risk assessment report 3. Sensitize community on fire risk 4. Advise on fire suppression |
| 1. Resource Implications | The following resources must be provided:   * 1. Stationery   2. Extinguishers |
| 1. Methods of Assessment | Competency may be accessed through:   * 1. Written tests   2. Oral questioning   3. Third party reports   4. Case studies  1. Observation |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (attachment) 4. Off the job assessment must be undertaken in a closely simulated workplace environment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## PERFORM EMERGENCY VEHICLE OPERATIONS

**UNIT CODE:** **1032 451 11A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to perform emergency vehicle operations.it involves conducing safe driving of emergency vehicle, maintaining fire engines, managing equipment inventory and conducting pump operations and water supply.

**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 safe driving of emergency vehicle | 1. Fire appliance is checked as per manufactures operational manual. 2. Fire appliance is driven to the incident as per highway code and traffic act 3. Safety of other road users is ensured as per highway code and traffic act |
| 1. Maintain fire engines | 1. Fire appliance is checked as per manufactures operational manual. 2. Vehicle ***maintenance service***s are conducted as per manufactures operational manual. 3. Maintenance service report is prepared as per work place procedures |
| 1. Manage equipment inventory | * 1. ***Equipment inventory*** is recorded as per work place procedures.   2. Equipment is tested as per work place procedures   3. Equipment are restocked as per work place procedures.   4. Equipment are stowed as per work place procedures.   5. Safety of equipment is maintained as per work place procedures. |
| 1. Conduct pump operations and water supply | 1. Power take off is engaged as per manufactures operational manual. 2. The fire engine pump is engaged as per manufactures operational manual. 3. Pump pressure is monitored as per manufactures operational manual. 4. Water delivery is engaged as per work place procedures 5. Water levels in the tank are monitored as per work place procedures 6. Water delivery is disengaged as per work place procedures 7. The fire engine pump is disengaged as per manufactures operational manual. 8. Power take off is disengaged as per manufactures operational manual. |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. ***maintenance service*** | * + Oil change   + Filter change   + Tire rotation   + Pressure checks   + Pump servicing |

**REQUIRED KNOWLEDGE AND UNDERSTANDING**

The individual needs to demonstrate knowledge of:

* Road traffic Act
* Highway code
* Vehicle servicing and maintenance
* Pump servicing and maintenance
* Mechanical repair

**SKILLS**

The individual needs to demonstrate the following skills:

* Driving
* Mechanical repair
* Pump operations

**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:  Demonstrated ability to;   1. Conduct safe driving of emergency vehicle 2. Manage equipment inventory 3. Conduct pump operations and water supply 4. Maintain fire engines |
| 1. Resource Implications | The following resources must be provided:   * 1. Fire appliance   2. Fire engine operational and maintenance manuals   3. Stationery   4. Mechanical repair tools   5. Repair kits |
| 1. Methods of Assessment | Competency may be accessed through:   1. Written tests 2. Oral questioning 3. Third party reports 4. Case studies |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (attachment) 4. Off the job assessment must be undertaken in a closely simulated workplace environment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

**PERFORM INSTALLATION FIRE EQUIPMENT AND SYSTEMS**

**UNIT CODE:** **1032 351 12A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to perform installation of fire equipment and systems. It involves inspection of fire equipment and systems installation site, identification of appropriate firefighting equipment and systems and mounting of fire equipment and systems

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **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. Inspect fire equipment and systems installation site | 1. Facility’s operations are identified. 2. Buildings are assessed as per building codes.. 3. ***Fire hazards*** are identified as per Occupational Health and Safety Act 2007. 4. ***Utility installations*** are assessed 5. sketch map of installation point is prepared |
| 1. Identify appropriate firefighting equipment   and systems | * 1. Fire safety equipment and systems are identified   2. ***Fire equipment and systems*** are classified according to Occupational Health and Safety Act 2007.   3. Classes of fire are described as per Occupational Health and Safety Act 2007.   4. Fire equipment and system colour coding is demonstrated. |
| 1. Mount fire equipment and system | * 1. Materials and resources for Installation of fire equipment and system are identified   2. Materials and resources for Installation of fire equipment and system are assembled   3. Specific sites for fire equipment and system are identified   4. Fire equipment and system are installed.   5. Fire equipment and system are tested. |

**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** |
| * Fire hazards include and not limited to; | * Faulty wiring * Worn out equipment * Power overload * Flammable liquid * Ordinary combustible fires |
| * Utility installations include and not limited to; | * Electricity * Water |
| * Fire equipment and systems include and not limited to; | * Fire extinguisher * Fire blankets * Fire hose * Signage * Fire sprinklers * Fire alarms * First aid kits * PPE`s * ladder |

**REQUIRED KNOWLEDGE AND SKILLS**

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

Required knowledge

The individual needs to demonstrate knowledge of:

* Applicable manufacturer units standards
* Electrical and mechanical principles
* Documentation
* Machine settings
* Principles of management
* Firefighting resources
* Maintenance guidelines Legislations on fire prevention
* Building codes

**Required skills**

The individual needs to demonstrate the following skills:

* Communication skills
* Analytical skills
* Evaluation skills
* Management skills
* Problem solving skills
* Time management

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| Critical aspects of competency | Assessment requires evidence that the candidate:   1. Assessed Buildings. 2. Identified Fire hazards. 3. Classified Fire equipment and systems 4. Explained classes of fire 5. Identified Materials and resources for Installation of fire equipment and system. 6. Identified specific sites for fire equipment and system. 7. Tested fire equipment and system |
| 1. Resource implications | The following resources should be provided:   * 1. Appropriate PPE`S   2. Manufacturer specification   3. Fire safety equipment and systems |
| 1. Methods of assessment | Competency in this unit may be assessed through:   * 1. Practical assessment   2. Observation   3. Oral questioning   4. Portfolio of evidence   5. Interviews   6. Third party report   7. Written tests |
| 1. Context of assessment | Competency may be assessed:   1. On the job 2. In work placement (attachment) 3. Off the job assessment must be undertaken in a closely simulated workplace environment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

**MAINTAIN FIREFIGHTING EQUIPMENT AND SYSTEM**

**UNIT CODE:** **1032 351 13A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to maintain firefighting equipment and system. It involves cleaning, repairing and storing of firefighting equipment

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **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. Clean firefighting equipment | 1. Firefighting equipment are categorized as per cleaning needs. 2. ***Cleaning resources*** are assembled as per work place procedures. 3. Firefighting equipment is dismantled as per manufactures guidelines. 4. Firefighting equipment is dried as per manufactures guidelines. 5. Firefighting equipment is reassembled as per manufactures guidelines**.** |
| 1. Repair firefighting equipment | 1. Equipment faults are identified as per work place procedures 2. Repair parts are sourced as per work place procedures 3. Faulty parts are fixed as per manufacturers guidelines 4. Equipment is tested for functionality. |
| 1. Store firefighting equipment | 1. Firefighting equipment are categorized as per work place procedures 2. **Firefighting equipment is stored as per the specification**. 3. Firefighting equipment inventory is maintained. 4. **Security of equipment is ensured as per work place 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** |
| * Firefighting equipment includes but not limited to: | * + Delivery hoses   + Pumps   + Hose reels   + Fire extinguisher |
| * Cleaning resources includes but not limited to: | * Warm water * Isopropyl alcohol * Vinegar |

**REQUIRED KNOWLEDGE AND SKILLS**

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

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Firefighting resources
* Maintenance guidelines
* Communication
* Storage

**Required skills**

The individual needs to demonstrate the following skills:

* Handling firefighting equipment
* Maintenance
* Repair
* Documentation

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| Critical aspects of competency | Assessment requires evidence that the candidate:   * 1. Identified Firefighting equipment is as per the work purpose.   2. classified firefighting equipment as per the type of fire   3. Assembled Cleaning resources as per work place procedures.   4. dismantled firefighting equipment as per manufactures guidelines   5. Reassembled Firefighting equipment as per manufactures guidelines.   6. Identified Equipment faults as per work place procedures.   7. fixed Faulty parts as per manufacturers guidelines   8. Stored firefighting equipment as per the specification. |
| 1. Resource implications | The following resources should be provided:   * 1. Firefighting equipment   2. Cleaning resources   3. Repair parts |
| 1. Methods of assessment | Competency in this unit may be assessed through:   * 1. Practical assessment   2. Observation   3. Oral questioning   4. Portfolio of evidence   5. Interviews   6. Third party report   7. Written tests |
| 1. Context of assessment | Competency may be assessed:   * 1. On the job   2. In work placement (attachment)   3. Off the job assessment must be undertaken in a closely simulated workplace environment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

**CONDUCT EMERGENCY RESPONSE OPERATION**

**UNIT CODE:** **1032 351 14A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to conduct emergency response. It involves determination of fire scene safety, conducting casualty evacuation and provision of emergency life support services.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **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.Determine fire scene safety | * 1. Scene seize up is conducted as per the nature of the incident   2. Scene is condoned as per the nature of the incident   3. Victims are mobilised to safety   4. Casualty is secured as per standard operating procedures |
| 2.Conduct casualty evacuation | * 1. Lifting and carrying method is determined as per the casualty condition.   2. Lifting and carrying equipment are determined as per the casualty condition.   3. Casualty is lifted and carried as per the safety precautions   4. incident report is prepared. |
| 3.Provide emergency life support services | * 1. ***Nature of incident*** is determined as per the standard operating procedures.   2. Casualty condition is managed as per the nature of incident.   3. Ambulance services are contacted   4. Health facilities are alerted.   5. Prepare incident report |

**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. ***Nature of incidents*** includes but not limited to: | * + Trauma   + Medical |

**REQUIRED KNOWLEDGE AND SKILLS**

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

Required knowledge

The individual needs to demonstrate knowledge of:

* First aid procedures
* Methods of communication
* Emergency medical service protocols
* Ambulance services
* Methods of patient assessment

**Required skills**

The individual needs to demonstrate the following skills:

* Communication
* Bleeding management
* Lifting and carrying
* Spine stabilization
* Patient assessment

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:  Demonstrated ability to:   1. Perform scene size up 2. Establish nature of incident 3. Manage casualty condition 4. Perform casualty evacuation 5. Write a casualty report |
| 1. Resource implications | The following resources should be provided:   1. Communication equipment 2. Stationery 3. Medical kits 4. Lifting and carrying equipment 5. PPEs |
| 1. Methods of assessment | Competency in this unit may be assessed through:   * 1. Practical assessment   2. Observation   3. Oral questioning   4. Portfolio of evidence   5. Interviews   6. Third party report   7. Written tests |
| 1. Context of assessment | Competency may be assessed:   * 1. On the job   2. In work placement (attachment)   3. Off the job assessment must be undertaken in a closely simulated workplace environment. |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

# CARRY OUT RESCUE OPERATION

**UNIT CODE: 1032 451 15A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to carry out rescue operation. It involves preparing rescue resources, carrying out scene size-up and rescue resources make up. It also involves conducting rescue activity and providing rescue incident feedback.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Prepare rescue resources | 1. ***Nature of emergency incident*** is determined based on distress call. 2. ***Rescue equipment*** and ***materials*** are assembled as per work requirement. 3. ***Rescue PPEs*** are identified as per work procedure. 4. ***Rescue personnel*** mounting is performed as per work requirement |
| 2.Carry out scene size-up | * 1. ***Scene assessment*** is carried out based on emergency scene.   2. Rescue operation is planned based on presenting situation.   3. Resources required are determined as per presenting situation   4. Scene is cordoned as per work procedure |
| 3. Conduct rescue activity | * 1. ***Rescue personnel*** are allocated duties as per work requirement.   2. PPEs are donned as per work requirement.   3. Rescue is carried out as per work plan.   4. Post rescue care is provided as per presenting medical condition.   5. Handover of affected persons is carried out as per work procedure |
| 4.Carry out rescue resources make up | * 1. Resources are retrieved from fire scene as per work procedure.   2. Resources are accounted for as per work procedure.   3. Resources are stowed as per work procedure. |
| 5.Provide rescue incident feedback | * 1. ***Incident debrief*** is carried out as per work procedure.   2. Public briefing is carried out as per work procedure.   3. Initial incident report is prepared as per work procedure. |

**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. ***Nature of emergency incident*** *may*include but not limited to: | **Road traffic accident rescue *incident***  **Structural collapse rescue *incident***  **water rescue *incident***   * + Drowning   + Storm   + Flash floods   + Flooding   + Sinking   + Marooning   **Rope rescue *incident***   * High rise rescue * Deep pit rescue * Trench rescue   **Hazardous material incident**  **●** Explosives  ● Flammables  ● Toxins  ● toxicants  ● Corrosive  ● Radioactive materials  ● Oxidizing materials  ● Ignitables |
| 1. ***Rescue equipment*** and ***materials*** includes but not limited to**:** | **Water rescue incident equipment and materials**   * + Connecting gadgets e.g pulley   + **Rescue Boats and Kayaks**   + Rescue Tubes and Buoyancy Aids   + Rescue line and Rescue Bags   + Lights   + Service marker buoy   + Air service supply   **Rope rescue incident equipment and materials**   * Rescue lines * Carabiners * Pulleys * Figure 8 plate * Tripod stand * Protraxion * Ascenders * Sling(webbing) * ID device   **Road traffic accident rescue equipment and materials**   * Communication Equipment * VHF radios station * Medical Equipment: * First aid kit * Trauma bag * Stretcher * Search and Rescue Tools * Hydraulic tools * Pneumatic tools * Manual tools * Electric tools * Shelter and Survival Equipment * Power and Lighting Equipment * Transportation and Evacuation Tools * Command and Control Equipment * Vehicle stabilizer   **Structural collapse rescue equipment and materials**   * Communication Equipment * VHF radios station * Mega phone * Medical Equipment: * First aid kit * Trauma bag * Stretcher * Search and Rescue Tools * Hydraulic tools * Pneumatic tools * Manual tools * Electric tools * Shelter and Survival Equipment * Power and Lighting Equipment * Transportation and Evacuation Tools * Command and Control Equipment * Shoring equipment   **Hazardous material incident equipment and materials**   * Containment equipment   + Shovels   + Cordoning tapes   + Traffic cones |
| 1. ***Rescue PPEs*** may include but not limited to: | **Water rescue PPEs**   * + Personal line   + Diving helmet   + Harnesses   + **Wetsuits or Dry suits**   + **Swimming Fins**   + **Life Jacket**   + **Flotation Devices**   + **Self-contained under water breathing apparatus**   **Rope rescue PPEs**   * Rope rescue helmet * Safety googles * Harness * Technical rescue Gloves * Head light   **Structural collapse rescue PPEs**   * Safety googles * Rescue overall * Technical rescue Gloves * Head light * Helmets * Respirators * Flash hood * Self-contained Breathing apparatus * Personal line * Ear muffs   **Road traffic accident PPEs**   * Safety googles * Rescue overall * Technical rescue Gloves * Head light * Helmets * Respirators * Self-contained Breathing apparatus * Personal line * Ear muffs * Medical gloves * Reflective jackets   **Hazard material incident PPEs**   * Safety googles * Hazmat suite * Hazmat Gloves * Head light * Helmets * Respirators * Self-contained Breathing apparatus * Ear muffs |
| 1. ***Rescue personnel may*** include but not limited to; | Hazardous material personnel  Structural rescue personnel  Road traffic accident personnel  Rope rescue personnel   * Mountain rescuers * High rise rescuers * Deep pit rescuers   **Water rescue personnel**   * + Lifeguards   + **Swift water Rescue Technicians**   + **Dive Rescue Teams**   + **Flood Rescue Teams**   + Marine Rescue Teams |
| 1. Scene assessment include but not limited to; | * Size and Location of the Fire * Type of water incident * Scene Safety * Prevailing weather conditions * Need for additional Resources * Utility Hazards |
| 1. Incident debrief include voluntary information to interested parties but not limited to; | * Crew * Affected persons * Public * Government agencies |

**REQUIRED KNOWLEDGE AND SKILLS**

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Fluid Mechanics
* Pressure and vacuum
* Incident Command System
* Mathematics
* Swimming techniques
* Technology of ropes
* Technical drawing
* Building and construction

**Required Skills**

The individual needs to demonstrate the following skills:

* Swimming
* Communication
* Documentation
* First aid
* Problem solving
* Teamwork
* Analytical
* Decision making
* Time management
* Conflict resolution

**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: Demonstrated ability to   1. Determined ***Nature of emergency incident*** based on distress call Identified and assembled emergency response equipment and materials. 2. Carried out *Scene assessment* based on emergency scene 3. Conducted rescue as per work plan. 4. Stowed resources as per work procedure. 5. Carried outIncident debrief as per work procedure. |
| 2.Resource implications | The following resources should be provided:   * Appropriately simulated environment where assessment can take place * Access to relevant work environment * Resources relevant to the proposed activities or tasks |
| 3.Methods of assessment | Competency in this unit may be assessed through:   * + Practical assessment   + Projects   + Portfolio of evidence   + Third party report   + Written tests   + Oral assessment |
| 4.Context of assessment | Competency may be assessed:   * Workplace * Simulated workplace |
| 5.Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

# PROVIDE PRE-HOSPITAL EMERGENCY MEDICAL CARE

**UNIT CODE: 1032 451 16A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to provide pre-hospital emergency medical care**.** It involves preparing pre-hospital emergency medical care resources performing pre-hospital emergency scene size-up, conducting pre-hospital emergency medical care procedure, performing pre-hospital emergency medical care resources make up and providing pre-hospital emergency medical care feedback.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements  ***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. prepare pre-hospital emergency medical care resources | 1. ***Nature of incident*** is determined based on distress call. 2. ***Prehospital emergency medical care tools and equipment*** are assembled as per work requirement. 3. Prehospital emergency medical care personnel are allocated duties as per work requirement. 4. ***Prehospital emergency medical care PPEs*** are assembled as per work requirement 5. Pre-hospital emergency medical care personnel mounting is performed as per work requirement |
| 2.Perform  pre-hospital emergency scene size-up | * 1. ***Scene assessment*** is carried out based on work procedure.   2. Rescue operation is planned based on presenting situation.   3. Resources required are determined as per presenting situation   4. Scene is cordoned as per work procedure |
| 3.Conduct  pre-hospital emergency medical care procedure | * 1. Prehospital emergency medical care PPEs are donned as per work procedure.   2. Procedure of emergency medical care is identified based on presenting condition.   3. Prehospital emergency medical care procedure is carried out based on presenting condition   4. Patient condition is monitored as per work procedure.   5. Patient hand over is performed as per work procedure. |
| 4.Perform   pre-hospital emergency medical care resources  make up | * 1. Resources are retrieved from emergency scene as per work procedure.   2. Resources are accounted for as per work procedure.   3. Prehospital emergency medical care Resources stowed as per work procedure |
| 5.Provide pre-hospital emergency medical care feedback | 1. Incident debrief is carried out as per work procedure. 2. Public briefing is carried out as per work procedure. 3. Pre-hospital emergency medical care report is prepared as per work procedure. |

**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** |
| ***Nature of incident*** may include but are not limited to: | * Trauma Assessment and Management * Bleeding Control and Shock Management * Musculoskeletal Injuries * Emergency Respiratory Care * Cardiac Emergencies * Medical Emergencies * Pediatric and Geriatric Emergency Care * Burns and scalds management * Environmental Emergencies |
| ***Prehospital emergency medical care tools and equipment*** may include but are not limited to: | * Communication Equipment * VHF radios station * First aid kit * Trauma bag * Stretcher * Oxygen cylinders * Shelter and Survival Equipment * Power and Lighting Equipment * Transportation and Evacuation Tools * Command and Control Equipment |
| ***Prehospital emergency medical care PPEs*** may include but are not limited to: | * Safety googles * Head light * Helmets * Respirators * Ear muffs * Medical gloves * Reflective jackets * Medical gown |
| ***Scene assessment*** may include but are not limited to: | * Size and Location of incident * Type of road traffic accident incident * Scene Safety * Prevailing weather conditions * Need for additional Resources * Utility Hazards |

**REQUIRED KNOWLEDGE AND SKILLS**

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

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Fluid Mechanics
* Pressure and vacuum
* Incident Command System
* Prehospital emergency medical care techniques
* Mathematics
* Technical drawing

**Required skills**

The individual needs to demonstrate the following skills:

* Problem solving
* Teamwork
* Analytical
* Communication
* Decision making
* Time management
* Conflict resolution

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| Critical aspects of competency | Assessment requires evidence that the candidate:   1. Determined nature of incident based on distress call. 2. Identified and assembled ***Prehospital emergency medical care tools and equipment*** as per work requirement. 3. Carried out ***Scene assessment*** based on work procedure. 4. Carried out prehospital emergency medical care procedure based on presenting condition. 5. Monitored patient condition as per work procedure. 6. Performed patient hand over as per work procedure. 7. Stowed prehospital emergency medical care resources as per work procedure. 8. Carried out ***Incident debrief*** as per work procedure   . |
| 2.Resource implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant work environment   3. Resources relevant to the proposed activities or tasks |
| 3.Methods of assessment | Competency in this unit may be assessed through:   * + Practical assessment   + Projects   + Portfolio of evidence   + Third party report   + Written tests   + Oral assessment |
| 4.Context of assessment | Competency may be assessed:   * Workplace * Simulated workplace |
| 5.Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |

# CONDUCT WORK PLACE DRILLS

**UNIT CODE: 1032 451 17A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to conduct work place drills. It involves carrying out ladder drill and pump drill, performing foot drill, hose drill and donning and doffing PPEs.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace functions | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements  ***(Bold and italicized terms are elaborated in the range)*** |
| 1.Carry out ladder drill | 1. ***Type of ladder*** isidentifiedas per work requirement. 2. Crew is assembled as per work requirement. 3. Ladder drill is conducted as per work requirement. 4. Ladder drill report is prepared as per work procedure. |
| 2.Perform foot drill | 1. Crew is assembled as per work requirement. 2. Foot drill is conducted as per work requirement. 3. Foot drill report is prepared as per work procedure. |
| 3. Perform Hose drill | 1. ***Type of hose and hose fittings is*** identifiedas per work requirement. 2. Crew is assembled as per work requirement. 3. Hose drill is conducted as per work requirement. 4. Hose drill report is prepared as per work procedure. |
| 4. Carry out pump drill | 1. ***Type of pump is*** identifiedas per work requirement. 2. Crew is assembled as per work requirement. 3. Pump drill is conducted as per work requirement. 4. Pump drill report is prepared as per work procedure. |
| 5. Perform donning and doffing | 1. PPEs are identified and assembledas per work requirement. 2. Crew is assembled as per work requirement. 3. Donning and doffing drill is conducted as per work requirement. 4. Donning and doffing drill report is prepared as per work procedure. |

**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** |
| ***Type of ladder*** may include but are not limited to: | * Extension ladders * Plat form ladders * Hook ladders * Folding ladders * Telescopic ladders * First floor ladders * Pilot ladders |
| ***Type of hose and hose fittings*** may include but are not limited to: | * Canvass hose * Rubber line hose * Dura line hose * Hose reel * Suction hose * Branch * Nozzles * Coupling * Adapters * collectors * dividers * inductors |
| ***Type of pump*** may include but are not limited to: | * Centrifugal * Submersible * Reciprocating pump * Hand pump |

**REQUIRED KNOWLEDGE AND SKILLS**

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

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Chemistry of fire
* Fluid Mechanics
* Pressure and vacuum
* Nozzles and hoses
* Incident Command System
* Audit methodology
* Firefighting techniques
* Mathematics
* Swimming techniques
* Technology of ropes
* Technical drawing
* Building and construction

**Required skills**

The individual needs to demonstrate the following skills:

* Problem solving
* Teamwork
* Analytical
* Communication
* Decision making
* Time management
* Conflict resolution

**EVIDENCE GUIDE**

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

|  |  |
| --- | --- |
| 1.Critical aspects of competency | Assessment requires evidence that the candidate:   1. Training needs assessment tools are developed as per work procedure. 2. ***Training needs data*** is collected as per work procedure 3. Training sessions are carried out as per training plan. 4. Fire service training evaluation tool is developed as per work procedure. 5. Training evaluation report is prepared as per work procedure. |
| 2.Resource implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant work environment   3. Resources relevant to the proposed activities or tasks |
| 3.Methods of assessment | Competency in this unit may be assessed through:   * + Practical assessment   + Projects   + Portfolio of evidence   + Third party report   + Written tests   + Oral assessment |
| 4.Context of assessment | Competency may be assessed:   * Workplace * Simulated workplace |
| 5.Guidance information for assessment | Holistic assessment with other units relevant to the industry sector and workplace job role is recommended. |