

**THE REPUBLIC OF KENYA**

**COMPETENCY- BASED MODULAR CURRICULUM**

**FOR**

**FIRE AND RESCUE TECHNOLOGY**

**KNQF LEVEL 5**

**PROGRAMME ISCED CODE: 1032 454A**

©2025

All rights reserved. No part of this curriculum may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods without the prior written permission of the authorizing agent, except in the case of brief quotations embodied in critical reviews and certain other non-commercial uses permitted by copyright law. For permission requests, write to the Council Secretary/CEO/Chief Principal at the address below:

# FOREWORD

The provision of quality education and training is fundamental to the Government’s overall strategy for socio-economic development. Quality education and training contribute to achievement focused on Kenya’s development blueprint and sustainable development goals.

Reforms in the education and training sector are necessary for achievement of Kenya Vision 2030 and meeting the provisions the Constitution of Kenya. The education sector had to be aligned to the Constitution and this resulted in formulation of the Policy Framework for Reforming Education and Training (Sessional Paper No. 14 of 2012). A key feature of this policy is the change in the design and delivery of TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery that allows for multiple entry and exit in TVET programs.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that this Curriculum has been developed.

It is my conviction that this curriculum will play a great role towards development of competent human resource for the Science Laboratory sector’s growth and sustainable development.

**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 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 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 worker behavior necessary for catapulting the nation to a globally competitive country, hence the paradigm shift to embrace Competency Based Education and Training (CBET).

The Technical and Vocational Education and Training (TVETA) Act CAP 210A and the Sessional Paper No. 14 of 2012 on Reforming Education and Training in Kenya, emphasized the need toreform curriculum development, assessment and certification. This called for a shift to CBET to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

This curriculum has been developed in adherence to the Kenya National Qualification Framework and CBETA standards and guidelines. The curriculum is designed and organized into Units of Learning with Learning Outcomes; suggested delivery methods, training/learning resources and methods of assessing the trainee’s achievement. The curriculum is competency-based and allows multiple entry and exit to the course.

I am grateful to the Council Members, Council Secretariat, and Science Laboratory expert workers and all those who participated in the development of this curriculum.

# ACKNOWLEDGMENT

This curriculum has been designed for competency-based training and has independent units of learning that allow the trainee flexibility in entry and exit. In developing the curriculum, significant involvement and support were received from expert trainers, institutions and organizations.

I recognize with appreciation the role of the National Sector Skills Committee (NSSC) in ensuring that competencies required by the industry are addressed in the curriculum. I also thank all stakeholders in the Science Laboratory and research sector for their valuable input and everyone who participated in developing this curriculum.

I am convinced that this curriculum will go a long way in ensuring that individuals aspiring to work in the Science Laboratory and Research Sector acquire competencies to perform their work more efficiently and effectively.

# ABBREVIATIONS AND ACRONYMS

PPE : Personal Protective Equipment

TVETA : Technical and Vocational Education and Training Authority

TVET : Technical and Vocational Education and Training

Table of Contents

[FOREWORD iii](#_Toc197175050)

[PREFACE iv](#_Toc197175051)

[ACKNOWLEDGMENT v](#_Toc197175052)

[ABBREVIATIONS AND ACRONYMS vi](#_Toc197175053)

[KEY TO UNIT CODE xv](#_Toc197175054)

[OVERVIEW xvi](#_Toc197175055)

[MODULE 1 20](#_Toc197175056)

[FIRE SERVICE MANAGMENT 21](#_Toc197175057)

[**LEARNING OUTCOMES** 21](#_Toc197175058)

[**DURATION (HOURS)** 21](#_Toc197175059)

[Paramilitary Function 21](#_Toc197175060)

[20 21](#_Toc197175061)

[Incident Management Systems 21](#_Toc197175062)

[20 21](#_Toc197175063)

[Scene-Safety 21](#_Toc197175064)

[10 21](#_Toc197175065)

[**TOTAL** 21](#_Toc197175066)

[**50** 21](#_Toc197175067)

[FIGHTING FIRE OUTBREAK 24](#_Toc197175068)

[**LEARNING OUTCOMES** 24](#_Toc197175069)

[**DURATION (HOURS)** 24](#_Toc197175070)

[Fire Suppression Resources 24](#_Toc197175071)

[10 24](#_Toc197175072)

[Fire Scene Size-Up 24](#_Toc197175073)

[20 24](#_Toc197175074)

[Fire-Affected Persons 24](#_Toc197175075)

[20 24](#_Toc197175076)

[Fire Extinguishment 24](#_Toc197175077)

[20 24](#_Toc197175078)

[Fire Scene Property Salvage 24](#_Toc197175079)

[20 24](#_Toc197175080)

[Fire Resources Make-Up 24](#_Toc197175081)

[20 24](#_Toc197175082)

[Fire Incident Feedback 24](#_Toc197175083)

[10 24](#_Toc197175084)

[**TOTAL** 24](#_Toc197175085)

[**120** 24](#_Toc197175086)

[FIRE PREVENTION 30](#_Toc197175087)

[**LEARNING OUTCOMES** 30](#_Toc197175088)

[**DURATION (HOURS)** 30](#_Toc197175089)

[Fire Risk Assessment 30](#_Toc197175090)

[20 30](#_Toc197175091)

[Sensitize Community on Fire Risk 30](#_Toc197175092)

[20 30](#_Toc197175093)

[Fire Suppression 30](#_Toc197175094)

[30 30](#_Toc197175095)

[**TOTAL** 30](#_Toc197175096)

[**70** 30](#_Toc197175097)

[EMERGENCY VEHICLE OPERATIONS 33](#_Toc197175098)

[**LEARNING OUTCOMES** 33](#_Toc197175099)

[**DURATION (HOURS)** 33](#_Toc197175100)

[Safe Driving of Emergency Vehicle 33](#_Toc197175101)

[30 33](#_Toc197175102)

[Fire Engines 33](#_Toc197175103)

[20 33](#_Toc197175104)

[Pump Operations and Water Supply 33](#_Toc197175105)

[30 33](#_Toc197175106)

[Equipment Inventory 33](#_Toc197175107)

[20 33](#_Toc197175108)

[**TOTAL** 33](#_Toc197175109)

[**100** 33](#_Toc197175110)

[MODULE II 36](#_Toc197175111)

[INSTALLATION OF FIRE EQUIPMENT AND SYSTEMS 37](#_Toc197175112)

[**LEARNING OUTCOMES** 37](#_Toc197175113)

[**DURATION (HOURS)** 37](#_Toc197175114)

[40 37](#_Toc197175115)

[Appropriate Firefighting Equipment and Systems 37](#_Toc197175116)

[40 37](#_Toc197175117)

[70 37](#_Toc197175118)

[**TOTAL** 37](#_Toc197175119)

[**150** 37](#_Toc197175120)

[FIREFIGHTING EQUIPMENT AND SYSTEMS MAINTENACE 39](#_Toc197175121)

[**LEARNING OUTCOMES** 39](#_Toc197175122)

[**DURATION (HOURS)** 39](#_Toc197175123)

[Firefighting Equipment 39](#_Toc197175124)

[40 39](#_Toc197175125)

[Firefighting Equipment 39](#_Toc197175126)

[40 39](#_Toc197175127)

[Firefighting Equipment 39](#_Toc197175128)

[40 39](#_Toc197175129)

[**TOTAL** 39](#_Toc197175130)

[**120** 39](#_Toc197175131)

[EMERGENCY RESPONSE OPERATION 42](#_Toc197175132)

[**LEARNING OUTCOMES** 42](#_Toc197175133)

[**DURATION (HOURS)** 42](#_Toc197175134)

[20 42](#_Toc197175135)

[40 42](#_Toc197175136)

[Emergency Life Support Services 42](#_Toc197175137)

[40 42](#_Toc197175138)

[**TOTAL** 42](#_Toc197175139)

[**100** 42](#_Toc197175140)

[MODULE III 45](#_Toc197175141)

[DIGITAL LITERACY 46](#_Toc197175142)

[**LEARNING OUTCOMES** 46](#_Toc197175143)

[**DURATION (HOURS)** 46](#_Toc197175144)

[Operate Computer Devices 46](#_Toc197175145)

[6 46](#_Toc197175146)

[Solve Tasks Using Office Suite 46](#_Toc197175147)

[14 46](#_Toc197175148)

[Manage Data and Information 46](#_Toc197175149)

[6 46](#_Toc197175150)

[Perform Online Communication and Collaboration 46](#_Toc197175151)

[4 46](#_Toc197175152)

[Apply Cybersecurity Skills 46](#_Toc197175153)

[4 46](#_Toc197175154)

[Perform Online Jobs 46](#_Toc197175155)

[4 46](#_Toc197175156)

[Apply Job Entry Techniques 46](#_Toc197175157)

[2 46](#_Toc197175158)

[**TOTAL** 46](#_Toc197175159)

[**40** 46](#_Toc197175160)

[COMMUNICATION SKILLS 57](#_Toc197175161)

[**LEARNING OUTCOMES** 57](#_Toc197175162)

[**DURATION (HOURS)** 57](#_Toc197175163)

[Apply communication channels. 57](#_Toc197175164)

[10 57](#_Toc197175165)

[Apply written communication skills. 57](#_Toc197175166)

[12 57](#_Toc197175167)

[Apply non-verbal skills. 57](#_Toc197175168)

[4 57](#_Toc197175169)

[Apply oral communication skills. 57](#_Toc197175170)

[4 57](#_Toc197175171)

[Apply group communication skills 57](#_Toc197175172)

[10 57](#_Toc197175173)

[**TOTAL** 57](#_Toc197175174)

[**40** 57](#_Toc197175175)

[TECHNICAL DRAWINGS 61](#_Toc197175176)

[**LEARNING OUTCOMES** 61](#_Toc197175177)

[**DURATION (HOURS)** 61](#_Toc197175178)

[Drawing Equipment and Materials. 61](#_Toc197175179)

[20 61](#_Toc197175180)

[Plane Geometry Drawings 61](#_Toc197175181)

[30 61](#_Toc197175182)

[Solid Geometry, Orthographic and Pictorial Drawings. 61](#_Toc197175183)

[40 61](#_Toc197175184)

[CAD Packages 61](#_Toc197175185)

[30 61](#_Toc197175186)

[**TOTAL** 61](#_Toc197175187)

[**120** 61](#_Toc197175188)

[FIRE SCIENCE 65](#_Toc197175189)

[**LEARNING OUTCOMES** 65](#_Toc197175190)

[**DURATION (HOURS)** 65](#_Toc197175191)

[Measurement. 65](#_Toc197175192)

[20 65](#_Toc197175193)

[Properties Of Matter 65](#_Toc197175194)

[20 65](#_Toc197175195)

[Density And Pressure 65](#_Toc197175196)

[20 65](#_Toc197175197)

[Apply Principles of Fluid Flow and Heat Transfer 65](#_Toc197175198)

[20 65](#_Toc197175199)

[Principle Of Combustion 65](#_Toc197175200)

[20 65](#_Toc197175201)

[Fire On Biosystems. 65](#_Toc197175202)

[30 65](#_Toc197175203)

[Emerging Fire and Rescue Trends 65](#_Toc197175204)

[20 65](#_Toc197175205)

[**TOTAL** 65](#_Toc197175206)

[**150** 65](#_Toc197175207)

[PRE-HOSPITAL EMERGENCY MEDICAL CARE 3](#_Toc197175208)

[**LEARNING OUTCOMES** 3](#_Toc197175209)

[**DURATION (HOURS)** 3](#_Toc197175210)

[Pre-Hospital Emergency Medical Care Resources 3](#_Toc197175211)

[10 3](#_Toc197175212)

[Pre-Hospital Emergency Scene Size-Up 3](#_Toc197175213)

[30 3](#_Toc197175214)

[Pre-Hospital Emergency Medical Care Procedure 3](#_Toc197175215)

[30 3](#_Toc197175216)

[Pre-Hospital Emergency Medical Care Resources Make Up 3](#_Toc197175217)

[30 3](#_Toc197175218)

[Pre-Hospital Emergency Medical Care Feedback 3](#_Toc197175219)

[20 3](#_Toc197175220)

[**TOTAL** 3](#_Toc197175221)

[**120** 3](#_Toc197175222)

[MODULE IV 9](#_Toc197175223)

[WORK ETHICS AND PRACTICES 10](#_Toc197175224)

[**LEARNING OUTCOMES** 10](#_Toc197175225)

[**DURATION (HOURS)** 10](#_Toc197175226)

[Apply Self-Management Skills 10](#_Toc197175227)

[10 10](#_Toc197175228)

[Promote Ethical Work Practices and Values 10](#_Toc197175229)

[4 10](#_Toc197175230)

[Promote Team Work 10](#_Toc197175231)

[10 10](#_Toc197175232)

[Maintain Professional and Personal Development 10](#_Toc197175233)

[10 10](#_Toc197175234)

[Apply Problem Solving Skills 10](#_Toc197175235)

[4 10](#_Toc197175236)

[Promote Customer Care 10](#_Toc197175237)

[2 10](#_Toc197175238)

[**TOTAL** 10](#_Toc197175239)

[**40** 10](#_Toc197175240)

[ENTREPRENEURIAL SKILLS 15](#_Toc197175241)

[**LEARNING OUTCOMES** 15](#_Toc197175242)

[**DURATION (HOURS)** 15](#_Toc197175243)

[Apply Financial Literacy Skills 15](#_Toc197175244)

[6 15](#_Toc197175245)

[Apply The Entrepreneurial Concept 15](#_Toc197175246)

[4 15](#_Toc197175247)

[Identify Entrepreneurship Opportunities 15](#_Toc197175248)

[6 15](#_Toc197175249)

[Apply Business Legal Aspects 15](#_Toc197175250)

[6 15](#_Toc197175251)

[Innovate Business Strategies 15](#_Toc197175252)

[6 15](#_Toc197175253)

[Develop A Business Plan 15](#_Toc197175254)

[12 15](#_Toc197175255)

[**TOTAL** 15](#_Toc197175256)

[**60** 15](#_Toc197175257)

[FIRE SAFETY IN BUILDING AND CONSTRUCTION 19](#_Toc197175258)

[**LEARNING OUTCOMES** 19](#_Toc197175259)

[**DURATION (HOURS)** 19](#_Toc197175260)

[Construction Materials 19](#_Toc197175261)

[20 19](#_Toc197175262)

[Properties of Construction Materials 19](#_Toc197175263)

[20 19](#_Toc197175264)

[Rescue Structures. 19](#_Toc197175265)

[30 19](#_Toc197175266)

[Workshop Practices 19](#_Toc197175267)

[20 19](#_Toc197175268)

[Mechanical Operations 19](#_Toc197175269)

[30 19](#_Toc197175270)

[**TOTAL** 19](#_Toc197175271)

[**120** 19](#_Toc197175272)

[RESCUE OPERATION 24](#_Toc197175273)

[**LEARNING OUTCOMES** 24](#_Toc197175274)

[**DURATION (HOURS)** 24](#_Toc197175275)

[Rescue Resources 24](#_Toc197175276)

[20 24](#_Toc197175277)

[Scene Size-Up 24](#_Toc197175278)

[30 24](#_Toc197175279)

[Rescue Activity 24](#_Toc197175280)

[20 24](#_Toc197175281)

[Rescue Resources Make Up 24](#_Toc197175282)

[30 24](#_Toc197175283)

[Rescue Incident Feedback 24](#_Toc197175284)

[20 24](#_Toc197175285)

[**TOTAL** 24](#_Toc197175286)

[**120** 24](#_Toc197175287)

[WORK PLACE DRILLS 30](#_Toc197175288)

[**DURATION (HOURS)** 30](#_Toc197175289)

[Foot Drill 30](#_Toc197175290)

[30 30](#_Toc197175291)

[Hose Drill 30](#_Toc197175292)

[30 30](#_Toc197175293)

[Pump Drill 30](#_Toc197175294)

[30 30](#_Toc197175295)

[Donning and Doffing 30](#_Toc197175296)

[30 30](#_Toc197175297)

[**TOTAL** 30](#_Toc197175298)

[**150** 30](#_Toc197175299)

# 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

# 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 LEARNING**

|  |  |  |  |
| --- | --- | --- | --- |
| **UNIT CODE** | **UNIT TITLE** | **UNIT DURATION (HOURS)** | **CREDIT FACTOR** |
| **MODULE I** | | | |
| 1032 251 01A | Fire Service Management | **50** | **5** |
| 1032 251 02A | Fighting fire outbreak | 120 | **12** |
| 1032 251 03A | Fire Prevention | **70** | **7** |
| 1032 251 04A | Emergency Vehicle Operation | 100 | **10** |
| **SUB TOTAL** | | **320** | **32** |
| **MODULE II** | | | |
| 1032 351 05A | Installation of Fire Equipment and Systems | 150 | **15** |
| 1032 351 06A | Firefighting Equipment and Systems Maintenance | 120 | **12** |
| 1032 351 07A | Emergency Response Operation | 100 | **10** |
| **SUB TOTAL** | | **370** | **37** |
| **MODULE III** | | | |
| 0413 441 08A | Digital Literacy | 40 | 4 |
| 0031 441 09A | Communication Skills | 40 | **4** |
| 0732 441 10A | Technical Drawings | 120 | **12** |
| 1032 441 11A | Fire Science | 150 | **15** |
| 1032 451 12A | Pre-Hospital Emergency Medical Care | 120 | **12** |
| **SUB TOTAL** | | **470** | **47** |
| **MODULE IV** | | | |
| 0417 441 13A | Work Ethics and Practices | 40 | 4 |
| 0413 441 14A | Entrepreneurial Skills | 40 | 4 |
| 1032 451 15A | Fire Safety in Building and Construction | 120 | **12** |
| 1032 451 16A | Rescue Operation | 120 | **12** |
| 1032 451 17A | Drills Training | 150 | **15** |
| **SUB TOTAL** | | 470 | **47** |
|  | **INDUSTRIAL TRAINING** | **480** | **48** |
| **GRAND TOTAL** | | **2110** | **211** |

**Entry Requirements**

**Fire and Rescue Technology Level 5**

An individual entering this course should have any of the following minimum requirements:

1. Kenya Certificate of Secondary Education (KCSE) mean grade D Plain

or

1. completion of KNQF level 4 in firefighting or related course

b)      Equivalent qualification as determined by the Technical and Vocational and Training Authority (TVETA).

**Trainer Qualification**

1. Must have a minimum of a KNQF level 6 qualification in Fire and Rescue Technology or its equivalent.
2. Must be licensed by TVETA.

**Industry Training**

An individual enrolled in this course will be required to undergo Industry training for a minimum period of 480 hours in Fire and Rescue sector. The industrial training may be taken after completion of all units for those pursuing the full qualification or be distributed equally in each unit for those pursuing part qualification. In the case of dual training model, industrial training shall be as guided by the dual training policy.

**Assessment**

The course shall be assessed formatively and summatively:

1. During formative assessment all performance criteria shall be assessed based on performance criteria weighting.
2. Number of formative assessments shall minimally be equal to the number of elements in a unit of competency.
3. During summative assessment basic and common units may be integrated in the core units or assessed as discrete units.
4. Theoretical and practical weighting for each unit of learning shall be as follows:
5. 10:90 for units in module I and II
6. 30:70 for units in module III and module IV
7. Formative and summative assessments shall be weighted at 60% and 40% respectively in the overall unit of learning score

For a candidate to be declared competent in a unit of competency, the candidate must meet the following conditions:

1. Obtained at least 40% in theory assessment in formative and summative assessments.
2. Obtained at least 60% in practical assessment in formative and summative assessment where applicable.
3. Obtained at least 50% in the weighted results between formative assessment and summative assessment where the former constitutes 60% and the latter 40% of the overall score.
4. Assessment performance rating for each unit of competency shall be as follows:

|  |  |
| --- | --- |
| **MARKS** | **COMPETENCE RATING** |
| 80 -100 | Attained Mastery |
| 65 - 79 | Proficient |
| 50 - 64 | Competent |
| 49 and below | Not Yet Competent |
| Y | Assessment Malpractice/irregularities |

1. Assessment for Recognition of Prior Learning (RPL) may lead to award of part and/or full qualification.

**Certification**

A candidate will be issued with a Certificate of Competency upon demonstration of competence in a core Unit of Competency. To be issued with Kenya National TVET Certificate in Fire and Rescue Technology Level 5, the candidate must demonstrate competence in all the Units of Competency as given in the qualification pack. A Statement of Attainment certificate may be awarded upon demonstration of competence in certifiable element within a unit.

These certificates will be issued by Qualification Awarding Institution

# MODULE 1

# FIRE SERVICE MANAGMENT

**UNIT CODE:** **1032 251 01A**

**Duration of Unit:** 50 Hours

**Relationship to Occupational Standards**

This unit addresses the unit of competency: Manage fire service.

**Unit Description**

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

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Paramilitary Function | 20 |
| Incident Management Systems | 20 |
| Scene-Safety | 10 |
| **TOTAL** | **50** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Perform paramilitary function | * 1. Importance of chain of command   2. Commands   3. Foot drills   4. Parade formation | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report * projects |
| 1. Manage emergency Incident operations | * 1. Scene identification   2. Dispatch   3. Scene size up   4. Scene safety   5. Resource allocation   6. Scene monitoring   7. Scene debriefs | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Manage scene-safety | * 1. Fire scene safety   2. Applicability of PPEs   3. Safe system of work   4. Safe system of work | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |

**Suggested Delivery Methods**

* Instructor led facilitation of theory
* Demonstration by trainer
* Practical work by trainee
* Viewing of related videos

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 3 | 1:25 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
|  | Jump suit |  | 25 | 1:1 |
|  | VHF Radios |  | 25 | 1:1 |

# 

# FIGHTING FIRE OUTBREAK

**UNIT CODE:** 1032 251 02A

**UNIT DURATION:** 120 Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Manage Fire Outbreak

**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.

Summary of Learning Outcomes

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Fire Suppression Resources | 10 |
| Fire Scene Size-Up | 20 |
| Fire-Affected Persons | 20 |
| Fire Extinguishment | 20 |
| Fire Scene Property Salvage | 20 |
| Fire Resources Make-Up | 20 |
| Fire Incident Feedback | 10 |
| **TOTAL** | **120** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Prepare fire suppression resources | * 1. Classes of fire      1. Class A      2. Class B      3. Class C      4. Class D      5. Class K/F | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
|  | * 1. Fire suppression personnel      1. Crew in charge      2. Branch man      3. Pump operator      4. Grounds messenger      5. Search and rescue officer 1      6. Search and rescue officer 2   2. Fire suppression PPEs      1. Helmets      2. Gloves      3. Goggles      4. Respirators      5. Tunic      6. Banker pants      7. Flash hood      8. Self-contained Breathing apparatus      9. Mounting of fire suppression personnel | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Carry out fire scene size-up | * 1. Scene assessment      1. Size and Location of the Fire      2. Type of Fire      3. Safety      4. Prevailing weather conditions      5. Need for additional Resources      6. Access and Egress Routes      7. Utility Hazards      8. Planning for rescue operation      9. Determine required resources      10. Cordoning of Scene | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Save fire-affected persons | * 1. Evacuation procedure      1. Components of evacuation plan      2. Evacuation of affected person      3. Dragging      4. Rolling      5. Crawling   2. Post rescue care      1. Initial assessment         1. Check for response AVPU         2. Airways breathing and circulation( ABC)      2. Psychosocial support      3. Handover of affected persons         1. Patient care report         2. Re uniting | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Perform fire extinguishment | * 1. Firefighting equipment set up      1. Identify water point      2. Laying water delivery hose      3. Connect nozzle      4. Pump operation   2. Fire extinguishment agent      1. Foam      2. CO2      3. Water      4. Dry powder      5. FM200   3. Methods of fire extinguishment      1. Cooling      2. Starvation      3. Smothering   4. Fire extinguishment overhaul      1. Secondary search         1. Opening void spaces         2. Soaking shouldering material         3. Remove excess water         4. Assessment of structural         5. integrity   5. Fire incident report      1. Location of the incident      2. Details of the owner      3. Details of affected persons      4. Cause of the fire      5. Type of fire      6. Particulars of property      7. Method of fire containment      8. Resources deployed      9. Challenges encountered      10. Time taken | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Perform fire scene property salvage | * 1. Methods of Fire scene property salvage      1. Smoke expulsion      2. Heat removal      3. Control water run off   2. Property Salvage      1. Covering      2. Removal      3. Squeezing      4. Drying   3. Salvaged items documentation      1. Personal details of owner      2. List of salvage items      3. Location of salvaged items      4. Position of salvaged items      5. Action taken      6. Details of personnel involved      7. Handover of salvaged property   4. Release of salvaged property and documentation. | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 6. Carry out fire resources make-up | * 1. Retrieval of fire resources      1. Knocking off of pump      2. Disconnection of equipment      3. Recovery of equipment   2. Accounting of fire Resources      1. Assembly of equipment      2. Tally equipment      3. Inspection of equipment   3. Stowing of fire resources      1. Clean equipment      2. Pack in compartment      3. Secure equipment | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Provide fire incident feedback | * 1. Fire incident Debrief      1. Define the audience      2. Account for people involved      3. Receive narrations from crew      4. Summarize the incident   2. Public briefing      1. Summarize the incident      2. Address safety and security concerns of scene      3. Create fire safety awareness      4. Initial incident reporting         1. People involved         2. Property damage/salvaged         3. Scene condition | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |

**Suggested Methods of Instruction**

* Practical demonstration of tasks by trainer
* Practice by trainees
* Observations and comments and corrections by trainers
* Instructor facilitation of theory
* Case study
* Industry visits
* Simulation
* Projects

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
|  | Jump suit |  | 25 | 1:1 |
|  | VHF Radios |  | 25 | 1:1 |

# FIRE PREVENTION

**UNIT CODE: 1032 251 03A**

**Duration of Unit:** 70 Hours

**Relationship to Occupational Standards**

This unit addresses unit of competency: Prevent Fire Outbreak

**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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Fire Risk Assessment | 20 |
| Sensitize Community on Fire Risk | 20 |
| Fire Suppression | 30 |
| **TOTAL** | **70** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Conduct fire risk assessment | * 1. Area of operation   2. Types of structure   3. Fire risks and hazards   4. Record keeping | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Sensitize community on fire risk | * 1. Fire science   2. Fire risk assessment   3. Fire risk reduction   4. Importance of sensitization   5. Ways of sensitization | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |
| 1. Conduct fire Drills | * 1. Fire extinction   2. Methods of fire extinction   3. Firefighting media   4. Types of fire extinguishers   5. Usage of fire extinguisher | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report   projects |

**Suggested Methods of Delivery**

* Instructor led facilitation of theory
* Demonstration by trainer
* Practical work by trainee
* Viewing of related videos

**Recommended Resources for 25 trainees;**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | Portable CO2 Fire extinguishers |  | 5 | 1:5 |
|  | Portable water Fire extinguishers |  | 5 | 1:5 |
|  | Portable foam Fire extinguishers |  | 5 | 1;5 |
|  | Portable dry powder Fire extinguishers |  | 5 | 1:5 |
|  | Portable wet chemical Fire extinguishers |  | 5 | 1:5 |
|  |  |  |  |  |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
|  | Jump suit |  | 25 | 1:1 |
|  | VHF Radios |  | 25 | 1:1 |

# EMERGENCY VEHICLE OPERATIONS

**UNIT CODE: 1032 251 04A**

**Duration of Unit:** 100 **Hours**

**Relationship to Occupational Standards**

This unit addresses the unit of competency:Perform Emergency Vehicle Operations

**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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Safe Driving of Emergency Vehicle | 30 |
| Fire Engines | 20 |
| Pump Operations and Water Supply | 30 |
| Equipment Inventory | 20 |
| **TOTAL** | **100** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Conduct safe driving of emergency vehicle | * 1. Road signs   2. Road traffic safety   3. Ethical rules of the road   4. Defensive driving   5. Standard operating procedures | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report * projects |
| 1. Maintain fire engines | * 1. Engine servicing | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report * Projects |
| 1. Conduct pump operations and water supply | * 1. Power take off engagement   2. Pump engagements   3. Pressure controls   4. Water delivery   5. Hoses   6. Types of hoses   7. Branch management   8. Fire ground communication   9. Water relay   10. Water drafting/lifting | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report * Projects |
| 1. Manage equipment inventory | * 1. Stowing   2. Locker drill   3. Equipment inventory   4. Restocking of consumables   5. Storage | * Oral assessment * Written assessment * Observation * Practical * Portfolio of evidence * Third party report * Projects |

**Suggested Methods of Delivery**

* Instructor led facilitation of theory
* Demonstration by trainer
* Practical work by trainee
* Viewing of related videos

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
| 8. | Jump suit |  | 25 | 1:1 |
| 9. | VHF Radios |  | 25 | 1:1 |

# 

# MODULE II

# INSTALLATION OF FIRE EQUIPMENT AND SYSTEMS

**UNIT CODE: 1032 351 05A**

**UNIT DURATION:** 150Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency:  **Install fire equipment and systems**

**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

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Fire Equipment and Systems Installation Site | 40 |
| Appropriate Firefighting Equipment and Systems | 40 |
| Fire Equipment and System | 70 |
| **TOTAL** | **150** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1.Inspect fire equipment and systems installation site | * 1. Facility’s operations   2. Assessment of Buildings   3. Fire hazards   4. Utility installation assessment.   1.5 Sketch map of installation point | * Written Assessment * Observation * Portfolio of evidence * Third party reports * Practical assessment * Observation * Oral Assessment |
| 2.Identify appropriate firefighting equipment  and systems | 1. Facility usage is identified as per work procedure. 2. Fire safety hazards are identified as per work procedure. 3. Fire equipmentinstallation layout is prepared as per work procedure. 4. Fire safety equipment for installation is identified based on facility usage. 5. Fire safety equipment is installed as per work procedure.   2.6 Fire safety equipment is tested as per work procedure | * Written Assessment * Observation * Portfolio of evidence * Third party reports * Practical assessment * Observation * Oral Assessment |
| 3. Mount fire equipment and system | 1. Materials and resources for Installation of fire equipment and system. 2. Specific sites for fire equipment and system are identified 3. Fire equipment and system installation. 4. Fire equipment and system testing | * Written Assessment * Observation * Portfolio of evidence * Third party reports * Practical assessment * Observation * Oral assessment |

**Suggested Methods of Instruction**

* Role playing
* Viewing of related videos
* Discussion
* Direct Instruction

# FIREFIGHTING EQUIPMENT AND SYSTEMS MAINTENACE

**UNIT CODE: 1032 351 06 A**

**UNIT DURATION:** 120Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: maintain firefighting equipment and systems

**Unit Description**

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

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Firefighting Equipment | 40 |
| Firefighting Equipment | 40 |
| Firefighting Equipment | 40 |
| **TOTAL** | **120** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Clean firefighting equipment | 1.1Firefighting equipment   * 1. Cleaning resources   2. Firefighting equipment is dismantling   3. Firefighting equipment drying   4. Firefighting equipment reassembling | * Portfolio of evidence * Third party reports * Practical assessment * Observation * Oral assessment * Project |
| 2. Repair firefighting equipment | * 1. Equipment faults   2. Repair parts   3. Faulty parts fixing   2.4 Equipment testing for functionality. | * project * Third party reports * Practical assessment * Observation * Oral questioning |
| 3.Store firefighting equipment | 3.1 Firefighting equipment are categorization   * 1. Firefighting equipment storage.   2. Firefighting equipment inventory   3. Security of equipment | * Written ASSESSMENT * Observation * Interview * Third party reports * Practical assessment * Observation * Oral questioning |

**Suggested Methods of Instruction**

* Role playing
* Viewing of related videos
* Discussion
* Direct Instruction

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | 5 Hand drills |  | 5 | 1:25 |
|  | Packet of bits |  | packet |  |
|  | Solder wire |  | 1 roll |  |
|  | Ladder |  | 5 | 1:25 |
|  | Pressure gauge |  | 5 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |

# 

# EMERGENCY RESPONSE OPERATION

**UNIT CODE: 1032 351 07A**

**UNIT DURATION:** 100 Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: **conduct emergency response operation**

**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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Fire Scene Safety | 20 |
| Casualty Evacuation | 40 |
| Emergency Life Support Services | 40 |
| **TOTAL** | **100** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1.Determine fire scene safety | 1.1Scene seize up   * 1. Scene condoning   2. Victims’ mobilization   3. Securing Casualty | * Interview * Third party reports * Practical assessment * Observation * Oral questioning |
| 2.Conduct casualty evacuation | * 1. Lifting and carrying methods   2. Lifting and carrying equipment are determined as per the casualty condition.   3. Lifting Casualty   2.4incident report | * Project * Third party reports * Practical assessment * Observation * Oral assessment * Written assessment |
| 3.Provide emergency life support services | 3.1Nature of incident 3.2 Casualty condition is managed as per the nature of incident.  3.3Ambulance services  3.4Prepare incident report | * Project * Third party reports * Practical assessment * Observation * Oral assessment * Portfolio of evidence |

**Suggested Methods of Instruction**

* Role playing
* Viewing of related videos
* Discussion
* Direct Instruction

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
|  | Jump suit |  | 25 | 1:1 |
|  | VHF Radios |  | 25 | 1:1 |

# MODULE III

# DIGITAL LITERACY

**UNIT CODE: 0611 451 08A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Apply Digital Literacy

**Duration of Unit:** 40 Hours

**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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Operate Computer Devices | 6 |
| Solve Tasks Using Office Suite | 14 |
| Manage Data and Information | 6 |
| Perform Online Communication and Collaboration | 4 |
| Apply Cybersecurity Skills | 4 |
| Perform Online Jobs | 4 |
| Apply Job Entry Techniques | 2 |
| **TOTAL** | **40** |

**Learning Outcomes, Content, and Suggested Assessment Methods**

| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| --- | --- | --- |
| 1. Operate computer devices | * 1. Meaning and importance of digital literacy   2. Functions and Uses of Computers   3. Classification of computers   4. Components of a computer system   5. Computer Hardware      1. The System Unit E.g. Motherboard, CPU, casing      2. Input Devices e.g. Pointing, keying, scanning, voice/speech recognition, direct data capture devices.      3. Output Devices e.g. hardcopy output and softcopy output      4. Storage Devices e.g. main memory e.g. RAM, secondary storage (Solid state devices, Hard Drives, CDs & DVDs, Memory cards, Flash drives      5. Computer Ports e.g. HDMI, DVI, VGA, USB type C etc.   6. Classification of computer software   7. Operating system functions   8. Procedure for turning/off a computer   9. Mouse use techniques   10. Keyboard Parts and Use Techniques   11. Desktop Customization   12. File and Files Management using an operating system   13. Computer Internet Connection Options       1. Mobile Networks/Data Plans       2. Wireless Hotspots       3. Cabled (Ethernet/Fiber)       4. Dial-Up   1.14 Satellite  1.15 Computer external devices management   1. Device connections 2. Device controls (volume controls and display properties) | * Observation * Portfolio of Evidence * Project * Written assessment * Practical assessment * Oral assessment |
| 1. Solve tasks using office suite | 1. Meaning and Importance of Word Processing 2. Examples of Word Processors 3. Working with word documents 4. Open and close word processor 5. Create a new document 6. Save a document 7. Switch between open documents 8. Enhancing productivity 9. Set basic options/preferences 10. Help resources 11. Use magnification/zoom tools 12. Display, hide built-in tool bar 13. Using navigation tools 14. Typing Text 15. Document editing (copy, cut, paste commands, spelling and Grammar check) 16. Document formatting 17. Formatting text 18. Formatting paragraph 19. Formatting styles 20. Alignment 21. Creating tables 22. Formatting tables 23. Graphical objects 24. Insert object (picture, drawn object) 25. Select an object 26. Edit an object 27. Format an object 28. Document Print setup   2.9.1 Page layout,  2.9.2 Margins set up  2.9.3 Orientation.   1. Word Document Printing 2. Meaning & Importance of electronic spreadsheets 3. Components of Spreadsheets 4. Application areas of spreadsheets 5. Using spreadsheet application 6. Parts of Excel screen: ribbon, formula bar, active cell, name box, column letter, row number, Quick Access Toolbar. 7. Cell Data Types 8. Block operations 9. Arithmetic operators (formula bar (-, +, 10. Cell Referencing 11. Data Manipulation 12. Using Functions (Sum, Average, SumIF, Count, Max, Max, IF, Rank, Product, mode etc) 13. Using Formulae 14. Sorting data 15. Filtering data 16. Visual representation using charts 17. Worksheet printing     1. Electronic Presentations     2. Meaning and Importance of electronic presentations     3. Examples of Presentation Software     4. Using the electronic presentation application 18. Parts of the PowerPoint screen (slide navigation pane, slide pane, notes, the ribbon, quick access toolbar, and scroll bars). 19. Open and close presentations 20. Creating Slides (Insert new slides, duplicate, or reuse slides.) 21. Text Management (insert, delete, copy, cut and paste, drag and drop, format, and use spell check). 22. Use magnification/zoom tools 23. Apply or change a theme. 24. Save a presentations 25. Switch between open presentations     1. Developing a presentation 26. Presentation views 27. Slides 28. Master slide     1. Text 29. Editing text 30. Formatting 31. Tables     1. Charts 32. Using charts 33. Organization charts     1. Graphical objects 34. Insert, manipulate 35. Drawings     1. Prepare outputs 36. Applying slide effects and transitions     1. Check and deliver 37. Spell check a presentation 38. Slide orientation 39. Slide shows, navigation   2.26 Print presentations (slides and handouts) | * Observation * Portfolio of Evidence * Project * Written assessment * Practical assessment * Oral assessment |
| 1. Manage data and information | 1. Meaning of Data and information 2. Importance and Uses of data and information 3. Types of internet services    1. Communication Services    2. Information Retrieval Services    3. File Transfer    4. World Wide Web Services    5. Web Services    6. Automatic Network Address Configuration    7. News Group    8. Ecommerce    9. Types of Internet Access Applications    10. Web browsing concepts    11. Key concepts    12. Security and safety    13. Web browsing    14. Using the web browser    15. Tools and settings    16. Clearing Cache and cookies    17. URIs    18. Bookmarks    19. Web outputs    20. Web based information    21. Search    22. Critical evaluation of information    23. Copyright, data protection    24. Downloads Management    25. Performing Digital Data Backup (Online and Offline)    26. Emerging issues in internet | * Observation * Portfolio of Evidence * Project * Written assessment * Practical assessment * Oral assessment |
| 1. Perform online communication and collaboration | 1. Netiquette principles 2. Communication concepts    1. Online communities    2. Communication tools    3. Email concepts 3. Using email    1. Sending email    2. Receiving email    3. Tools and settings    4. Organizing email 4. Digital content copyright and licenses 5. Online collaboration tools    1. Online Storage (Google Drive)    2. Online productivity applications (Google Docs & Forms)    3. Online meetings (Google Meet/Zoom)    4. Online learning environments    5. Online calendars (Google Calendars)    6. Social networks (Facebook/Twitter - Settings & Privacy) 6. Preparation for online collaboration    1. Common setup features    2. Setup 7. Mobile collaboration    1. Key concepts    2. Using mobile devices    3. Applications    4. Synchronization | * Observation * Portfolio of Evidence * Project * Written assessment * Practical assessment * Oral assessment |
| 1. Apply cybersecurity skills | 1. Data protection and privacy    1. Confidentiality of data/information    2. Integrity of data/information    3. Availability of data/information    4. Internet security threats    5. Malware attacks    6. Social engineering attacks    7. Distributed denial of service (DDoS)    8. Man-in-the-middle attack (MitM)    9. Password attacks    10. IoT Attacks    11. [Phishing Attacks](https://onlinedegrees.sandiego.edu/top-cyber-security-threats/#phishing-attacks)    12. [Ransomware](https://onlinedegrees.sandiego.edu/top-cyber-security-threats/#ransomware)    13. Computer threats and crimes    14. Cybersecurity control measures 2. Physical Controls 3. Technical/Logical Controls (Passwords, PINs, Biometrics) 4. Operational Controls    1. Laws governing protection of ICT in Kenya 5. The Computer Misuse and Cybercrimes Act No. 5 of 2018 6. The Data Protection Act No. 24 Of 2019 | * Observation * Portfolio of Evidence * Project * Written assessment * Practical assessment * Oral assessment |
| 1. Perform online jobs | 1. Introduction to online working 2. Types of online Jobs 3. Online job platforms    1. Remotask    2. Data annotation tech    3. Cloud worker    4. Upwork    5. Oneforma    6. Appen 4. Online account and profile management 5. Identifying online jobs/job bidding 6. Online digital identity 7. Executing online tasks 8. Management of online payment accounts. | * + Observation   + Oral assessment   + Portfolio of evidence   + Third party report   + Written assessment |
| 1. Apply job entry techniques | 1. Types of job opportunities 2. Self-employment 3. Service provision 4. product development 5. salaried employment 6. Sources of job opportunities 7. Resume/ curriculum vitae 8. What is a CV 9. How long should a CV be 10. What to include in a AC 11. Format of CV 12. How to write a good CV 13. Don’ts of writing a CV     1. Job application letter 14. What to include 15. Addressing a cover letter 16. Signing off a cover letter     1. Portfolio of Evidence 17. Academic credentials 18. Letters of commendations 19. Certification of participations 20. Awards and decorations     1. Interview skills 21. Listening skills 22. Grooming 23. Language command 24. Articulation of issues 25. Body language 26. Time management 27. Honesty     1. Generally knowledgeable in current affairs and technical area | * + Observation   + Oral assessment   + Portfolio of evidence   + Written assessment |

**Suggested Methods Instruction**

* + Practical
  + Projects
  + Demonstrations
  + Group discussions
  + Direct instruction

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Power point presentations | For trainer’s use | 1 | 1:25 |
|  | Sample CVs | For trainee’s use | 5 | 1:5 |
|  | * Sample job applications | For trainee’s use | 5 | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture/theory room |  | 1 | 1:25 |
|  | Computers with OS (Windows/Linux/Mac), Microsoft Office, Google Workspace, Antivirus | For trainee’s use | 25 | 1:1 |
|  | Internet connection | For trainees and trainer’s use | 1 connection | 1:25 |
|  | Whiteboard | For trainer’s use | 1 | 1:25 |
|  | Smartboard/Smart TV (Where applicable) | For trainer’s use | 1 | 1:25 |
| **C** | **Consumable materials** | | | |
|  | Printing papers | For trainer and trainee use | Varies | Varies |
|  | Assorted whiteboard markers | For trainer’s use | Varies | Varies |
| **D** | **Tools and Equipment** | | | |
|  | Printers | For trainer’s use | 2 | 1:12 |
|  | External storage media | For trainer and trainee use | Varies | 1:1 or 1:5 depending on need |
|  | Projector | For trainer’s use | 1 | 1:25 |

# 

# COMMUNICATION SKILLS

**UNIT CODE:** **0031 441 09A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Apply Communication Skills

**Duration of Unit:** 40 hours

**Unit Description**

This unit encompasses the skills necessary for effective communication. It includes the utilization of various communication methods, such as written, non-verbal, oral, and group communication techniques.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Apply communication channels. | 10 |
| Apply written communication skills. | 12 |
| Apply non-verbal skills. | 4 |
| Apply oral communication skills. | 4 |
| Apply group communication skills | 10 |
| **TOTAL** | **40** |

**Learning Outcomes, Content, and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Apply communication channels | 1. Communication process 2. Principles of effective communication 3. Channels/medium/modes of communication 4. Factors to consider when selecting a channel of communication 5. Barriers to effective communication 6. Flow/patterns of communication 7. Sources of information 8. Organizational policies | * Practical assessment * Observation * Portfolio of Evidence * Oral questions * Written assessment * Third party report |
| 1. Apply written communication skills | * 1. Types of written communication   2. Elements of communication   3. Organization requirements for written communication | * Practical assessment * Observation * Portfolio of Evidence * Oral questions * Written assessment * Third party report |
| 1. Apply non-verbal communication skills | * 1. Utilize body language and Gestures   2. Apply body posture   3. Apply workplace dressing code | * Practical assessment * Observation * Portfolio of Evidence * Oral questions * Written assessment * Third party report |
| 1. Apply oral communication skills | * 1. Types of oral communication pathways   2. Effective questioning techniques   3. Workplace etiquette   4. Active listening | * Practical assessment * Observation * Portfolio of Evidence * Oral questions * Written assessment * Third party report |
| 1. Apply group discussion skills | * 1. Establishing rapport   2. Facilitating resolution of issues   3. Developing action plans   4. Group organization techniques   5. Turn-taking techniques   6. Conflict resolution techniques   7. Team-work | * Practical assessment * Observation * Portfolio of Evidence * Oral questions * Written assessment * Third party report |

**Suggested Methods of Instruction**

* Discussion
* Roleplaying
* Simulation
* Direct instruction
* Demonstration
* Field trips

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/no.** | **Category/item** | **Description/specification** | **Quantity** | **Recommended ratio(item: trainee)** |
| 1. **Learning materials** | | | | |
|  | Case studies | Published case studies | 5 | 1:5 |
|  | Business plan templates | Standard business plan templates | 5 | 1:5 |
|  | Video clips | Digital types | 25 | 1:25 |
|  | Newspapers and Handouts | Well reputed news papers | 5 | 1:5 |
|  | Business Journals | Well reputed journals | 5 | 1:5 |
| 1. **Learning facilities and infrastructure** | | | | |
|  | Lecture/theory room | 72m2 | 1 | 1:25 |
|  | Whiteboard | 4 feet by 8 feet | 1 | 1:25 |
|  | Projector | LCD High resolution | 1 | 1:25 |
|  | Computers | RAM: 8GB | 25 | 1:25 |
|  | Printers | Ink Jet | 2 | 1:13 |
|  | Smart TV | LCD | 1 | 1:25 |
|  | Internet connection | Adequate speed |  | 1:25 |
| 1. **Consumable materials** | | | | |
|  | Stationary materials | Pens, pencils, papers | Enough for 25 | 1:25 |
|  | Assorted whiteboard markers | Non-permanent | Enough for 25 | 1:25 |

TECHNICAL DRAWINGS

**UNIT CODE: 0732 441 10A**

**UNIT DURATION: 120 Hours**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Apply fire science

This unit covers the competencies required to prepare and interpret 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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Drawing Equipment and Materials. | 20 |
| Plane Geometry Drawings | 30 |
| Solid Geometry, Orthographic and Pictorial Drawings. | 40 |
| CAD Packages | 30 |
| **TOTAL** | **120** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Use drawing equipment and materials. | 1. Drawing equipment 2. T and set squares 3. drawing sets 4. computers with CAD packages 5. Drawing boards 6. Drawing materials 7. Drawing papers, 8. Pencils 9. Erasers 10. masking tapes 11. paper clips 12. using drawing equipment and drawing materials | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project   + Practical |
| **2.**Produce plane geometry drawings | 1. Types of lines in drawings 2. Freehand sketching of different types of geometric forms, tools, equipment, diagrams 3. Constructing geometric forms 4. Circles 5. Triangles 6. rectangles, 7. Parallelogram 8. Polygons 9. Pyramids 10. conic sections, 11. prisms 12. loci 13. Construction of different angles 14. Measurement of different angles 15. Bisection of angles | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| **3.**Produce solid geometry, orthographic and pictorial drawings | 1. Interpretation of drawings of patterns 2. Development and interpenetrations of solids e.g. cylinder to cylinder and cylinder to triangular, prism 3. Meaning of symbols and abbreviations 4. Interpretation of First and third angle orthographic drawings 5. Dimensioning of Orthographic elevations 6. Interpretation of Isometric drawings | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project   + Practical |
| **4**. Apply CAD packages | 1. User interface and tools offered by CAD package 2. Identification of CAD packages e.g. AutoCAD, circuit maker 3. Application of CAD packages in drawing of: 4. Plane geometry 5. Solid 6. Orthographic 7. Pictorial | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project   + Practical |

**Suggested Methods of Delivery**

* Projects
* Demonstration by trainer
* Practice by the trainee
* Discussions

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Power point presentations | For trainer’s use | 1 | 1:25 |
|  |  |  |  |  |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture room | For training | 1 | 1:25 |
|  |  |  |  |  |
| **C** | **Tools and Equipment** | | | |
|  | Computer | For trainer’s use | 1 | 1:25 |
|  | Scientific calculator | For trainee’s use | 25 | 1:1 |
|  | Projector | For trainer’s use | 1 | 1:25 |
|  | Graph book | For trainee’s use | 25 | 1:1 |
|  | SMP Mathematical table | For trainee’s use | 25 | 1:1 |
|  | White board ruler | For trainer’s use | 1 | 1:25 |
|  | White board compass | For trainer’s use | 1 | 1:25 |
|  | White board protractor | For trainer’s use | 1 | 1:25 |
|  | Geometrical set | For trainee’s use | 25 | 1:1 |

# **FIRE SCIENCE**

**UNIT CODE: 1032 441 11A**

**UNIT DURATION: 150 Hours**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Apply fire science

**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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Measurement. | 20 |
| Properties Of Matter | 20 |
| Density And Pressure | 20 |
| Apply Principles of Fluid Flow and Heat Transfer | 20 |
| Principle Of Combustion | 20 |
| Fire On Biosystems. | 30 |
| Emerging Fire and Rescue Trends | 20 |
| **TOTAL** | **150** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Carry out measurement. | 1. Measuring instruments 2. Metre rule 3. Tape measure 4. Pressure gauge 5. Clinical thermometer 6. Beam balance 7. Basic quantities and derived quantities 8. Length 9. Temperature 10. Mass 11. Pressure 12. Density 13. velocity 14. Interconversion of units is performed 15. Centimetres to metre 16. Litres to cubic metres 17. PSI to bars | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 2.Apply knowledge of properties of matter | 1. physical and chemical properties of matter 2. Colour 3. Texture 4. Solubility 5. Conductivity 6. Flammability 7. Reactivity 8. kinetic theory of matter 9. Gas laws 10. Charles law 11. Boyles law 12. Pressure law     1. Fire behaviour  * fire triangle * Fire Development Stages * Flashover and Backdraft * Fire Spread Patterns * Fire Behaviour in Enclosed Spaces * Fire Plumes and Smoke Movement | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 3. Apply concepts of density and pressure | 1. Laws and principles in fluid pressure 2. Pascal's Law 3. Archimedes principle 4. Law of floatation 5. Determination of atmospheric pressure 6. Calculation of density | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 4.Apply principles of fluid flow and heat transfer | 1. Definition of streamline and turbulent flow 2. Bernoulli’s effect 3. Derivation of Bernoulli equation 4. Application of Bernoulli effect. 5. Heat transfer 6. conduction 7. convection 8. radiation 9. Thermal expansion  * Factors affecting thermal expansion. | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 5.Apply principle of Combustion | 1. Fire properties 2. Combustion 3. Heat 4. Light 5. Oxygen consumption 6. Rapid oxidation 7. Flame 8. Smoke 9. Ignition 10. Fuel consumption 11. Radiant energy 12. Fire dynamics 13. fire behaviour 14. flame temperature 15. smoke behaviour 16. Combustion by-products 17. Carbon Dioxide (CO2) 18. Water Vapor (H2O) 19. Carbon Monoxide (CO) 20. Soot (Particulate Matter) 21. Nitrogen Oxides (NO2) 22. Sulfur Dioxide (SO2) 23. Volatile Organic Compounds (VOCs) 24. Particulate Matter (PM) 25. Ash and Residues 26. Hydrocarbons | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 6.Assess impact of fire on biosystems. | 1. Introduction to biosystems. 2. *Biosystems* affected by fire 3. human physiology 4. plant life 5. wildlife 6. Impact of fire on biosystems 7. Collection of fire impact data 8. Analysis of fire impact data 9. Fire impact assessment report | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 7.Apply knowledge on emerging fire and rescue trends | * 1. Emerging fire and rescue trends   2. Smart firefighting technology.   3. Automated suppression system   4. Drones   5. Robots   6. Chutes   7. Analyzing Emerging fire and rescue trends   8. Applying Emerging fire and rescue trends | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |

**Suggested Methods of Instruction**

* Practical demonstration
* Practice by trainees
* Observation and comments and correction by trainers
* Instructor facilitation of theory
* Case studies
* Simulations
* projects

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
| 8. | Jump suit |  | 25 | 1:1 |
| 9. | VHF Radios |  | 25 | 1:1 |

PRE-HOSPITAL EMERGENCY MEDICAL CARE

**UNIT CODE: 1032 451 12A**

**UNIT DURATION: 120 Hours**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: **Provide pre-hospital emergency medical care**

**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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Pre-Hospital Emergency Medical Care Resources | 10 |
| Pre-Hospital Emergency Scene Size-Up | 30 |
| Pre-Hospital Emergency Medical Care Procedure | 30 |
| Pre-Hospital Emergency Medical Care Resources Make Up | 30 |
| Pre-Hospital Emergency Medical Care Feedback | 20 |
| **TOTAL** | **120** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. prepare pre-hospital emergency medical care resources | * + 1. Nature of incident     2. Trauma Assessment and Management     3. Bleeding Control and Shock Management     4. Musculoskeletal Injuries     5. Emergency Respiratory Care     6. Cardiac Emergencies     7. Medical Emergencies     8. Pediatric and Geriatric Emergency Care     9. Burns and scalds management     10. Environmental Emergencies     11. Prehospital emergency medical care tools and equipment.     12. Communication Equipment     13. First aid kit     14. Trauma bag     15. Stretcher     16. Oxygen cylinders     17. Shelter and Survival Equipment     18. Power and Lighting Equipment     19. Transportation and Evacuation Tools     20. Command and Control Equipment     21. Prehospital emergency medical care personnel     22. Emergency medical responders.     23. First aiders     24. Prehospital emergency medical care PPEs     25. Safety googles     26. Head light     27. Helmets     28. Respirators     29. Ear muffs     30. Medical gloves     31. Reflective jackets     32. Medical gown.     33. Pre-hospital emergency medical care personnel mounting | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Perform  pre-hospital emergency scene size-up | * 1. Scene assessment  1. Size and Location of incident 2. Type of emergency incident 3. Scene Safety 4. Prevailing weather conditions 5. Need for additional Resources 6. Utility Hazards    1. Rescue operation planning 7. Remove patient from danger 8. Removing danger from the patient 9. Condition of the patient.    1. Determination of rescue operation resources    2. Scene cordoning | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Conduct pre-hospital emergency medical care procedure | * 1. Prehospital emergency medical care PPEs donning   2. Types of emergency medical care procedure  1. Trauma 2. Medical    1. Carrying prehospital emergency medical care procedure       1. Trauma Assessment and Management       2. Bleeding Control and Shock Management       3. Musculoskeletal Injuries       4. Emergency Respiratory Care       5. Cardiac Emergencies       6. Medical Emergencies       7. Pediatric and Geriatric Emergency Care       8. Burns and scalds management       9. Environmental Emergencies    2. Monitoring patient condition    3. Patient hand over | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Perform   pre-hospital emergency medical care resources make up | 1. Resources retrieval from emergency scene. 2. Resources accounting 3. Stowing prehospital emergency medical care resources | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Provide pre-hospital emergency medical care feedback | 1. Incident debrief for crew 2. Carrying out public briefing 3. Pre-hospital emergency medical care report 4. Patient Information 5. Chief Complaint 6. Mechanism of Injury or Nature of Illness 7. Vital Signs 8. Patient History 9. Physical Examination Findings: 10. Interventions and Treatments: 11. Transport Information: 12. Response detail 13. Witness statements 14. Date and time | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |

**Suggested Methods of Instruction**

* Practical demonstration
* Practice by trainees
* Observation and comments and correction by trainers
* Instructor facilitation of theory
* Case studies
* Simulations

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
| 8. | Jump suit |  | 25 | 1:1 |
| 9. | VHF Radios |  | 25 | 1:1 |

# MODULE IV

# WORK ETHICS AND PRACTICES

**UNIT CODE:** 0417 441 13A

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Apply work ethics and practices.

**Duration of Unit:** 40 hours

**Unit Description**

This unit covers competencies required to demonstrate employability skills. 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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Apply Self-Management Skills | 10 |
| Promote Ethical Work Practices and Values | 4 |
| Promote Team Work | 10 |
| Maintain Professional and Personal Development | 10 |
| Apply Problem Solving Skills | 4 |
| Promote Customer Care | 2 |
| **TOTAL** | **40** |

**Learning Outcomes, Content, and Suggested Assessment Methods**

| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| --- | --- | --- |
| 1. Apply self-management skills | 1. Self-awareness 2. Formulating personal vision, mission, and goals 3. Healthy lifestyle practices 4. Strategies for overcoming work challenges 5. Emotional intelligence 6. Coping with Work Stress. 7. Assertiveness versus aggressiveness and passiveness 8. Developing and maintaining high self-esteem 9. Developing and maintaining positive self-image 10. Time management 11. Setting performance targets 12. Monitoring and evaluating performance targets | * Observation * Portfolio of evidence * Project * Practical * Written assessment * Oral assessment |
| 1. Promote ethical work practices and values | * 1. Integrity   2. Core Values, ethics and beliefs   3. Patriotism   4. Professionalism   5. Organizational codes of conduct   6. Industry policies and procedures | * Portfolio of evidence * Project * Practical * Observation * Written assessment * Oral assessment |
| 1. Promote teamwork | * 1. Types of teams   2. Team building   3. Individual responsibilities in a team   4. Determination of team roles and objectives   5. Team parameters and relationships   6. Benefits of teamwork   7. Qualities of a team player  1. Leading a team 2. Team performance and evaluation 3. Conflicts and conflict resolution 4. Gender and diversity mainstreaming 5. Developing Healthy workplace relationships 6. Adaptability and flexibility 7. Coaching and mentoring skills | * Observation * Written assessment * Oral assessment * Portfolio of evidence * Project * Practical |
| 1. Maintain Professional and Personal Development | 1. Personal vs professional development and growth 2. Avenues for professional growth 3. Recognizing career advancement 4. Training and career opportunities 5. Assessing training needs 6. Mobilizing training resources 7. Licenses and certifications for professional growth and development 8. Pursuing personal and organizational goals 9. Managing work priorities and commitments 10. Dynamism and on-the-job learning | * Project * Practical * Observation * Written assessment * Oral assessment * Portfolio of evidence |
| 1. Apply problem-solving skills | 1. Causes of problems 2. Methods of solving problems 3. Problem-solving process 4. Decision making 5. Creative thinking and critical thinking process in development of innovative and practical solutions | * Observation * Project * Portfolio of evidence * Practical * Written assessment * Oral assessment |
| 1. Promote customer care | 1. Identifying customer needs 2. Qualities of good customer service 3. Customer feedback methods 4. Resolving customer concerns 5. Customer outreach programs 6. Customer retention | * Observation * Project * Practical * Portfolio of evidence * Written assessment * Oral assessment |

**Suggested Methods of Instruction**

* + Practical
  + Projects
  + Demonstrations
  + Group discussions
  + Direct instruction

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Power point presentations | For trainer’s use | 1 | 1:25 |
|  | Charts | For trainees and Trainer’s use | 6-10 | 1:5 pr 1:10 |
|  | * Video clips | For trainees and Trainer’s use | Varies | Varies |
|  | Audio tapes | For trainees and Trainer’s use | Varies | Varies |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture/theory room | For Trainer/trainee’s use | 1 | 1:25 |
|  | Computers | For trainee’s use | 25 | 1:1 |
|  | Radio sets | For trainee’s use | 3-5 | 1:5 or 1:10 |
|  | TV sets | For trainee’s use | 3-5 | 1:5 or 1:10 |
| **C** | **Consumable materials** | | | |
|  | Stationery | For trainees and trainer’s use | Varies | Varies |
| **D** | **Tools and Equipment** | | | |
|  | LCD projectors | For trainer’s use | 1 | 1:25 |

# ENTREPRENEURIAL SKILLS

**UNIT CODE:** 0413 441 14A

**Relationship to occupational standards**

This unit addresses the unit of competency: Apply Entrepreneurial skills.

**Duration of unit:** 40 hours

**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, and developing business innovative strategies and business plans.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Apply Financial Literacy Skills | 6 |
| Apply The Entrepreneurial Concept | 4 |
| Identify Entrepreneurship Opportunities | 6 |
| Apply Business Legal Aspects | 6 |
| Innovate Business Strategies | 6 |
| Develop A Business Plan | 12 |
| **TOTAL** | **60** |

**Learning Outcomes, Content and Suggested Assessment Methods**

| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| --- | --- | --- |
| 1. Apply Financial Literacy | 1. Personal finance management 2. Balancing between needs and wants 3. Budget Preparation 4. Saving management 5. Factors to consider when deciding where to save 6. Debt management 7. Factors to consider before taking a loan 8. Investment decisions 9. Types of investments 10. Factors to consider when investing money 11. Insurance services 12. insurance products available in the market 13. Insurable risks | * Practical * Portfolio of evidence * Project * Observation * Written assessment * Oral assessment * Third party reports * Interviews |
| 2.Apply Entrepreneurial Concept | * 1. Difference between Entrepreneurs and Business persons   2. Types of entrepreneurs   3. Ways of becoming an entrepreneur   4. Characteristics of Entrepreneurs   5. salaried employment and self-employment   6. Requirements for entry into self-employment   7. Roles of an Entrepreneur in an enterprise   8. Contributions of Entrepreneurship | * Observation * Project * Written assessment * Oral assessment * Third party report |
| 3.Identify Entrepreneurship Opportunities | * 1. Sources of business ideas   2. Factors to consider when evaluating business opportunity   3. Business life cycle | * Observation * Project * Written assessment * Oral assessment * Third party report |
| 4.Apply Business Legal Aspects | * 1. Forms of business ownership   2. Business registration and licensing processing   3. Types of contracts and agreements   4. Employment laws   5. Taxation laws | * Observation * Project * Written assessment * Oral assessment * Third party report |
| 5.Innovate Business Strategies | * 1. Creativity in business   2. Innovative business strategies   3. Entrepreneurial Linkages   4. ICT in business growth and development | * Observation * Project * Written assessment * Oral assessment * Third party report |
| 6.Develop Business Plan | * 1. Business description   2. Marketing plan   3. Organizational/Management   4. plan   5. Production/operation plan   6. Financial plan   7. Executive summary   8. Business plan presentation   9. Business idea incubation | * Observation * Written assessment * Project * Oral assessment * Third party report |

**Suggested Methods of Instruction**

* Direct instruction with active learning strategies
* Project (Business plan)
* Case studies
* Field trips
* Group Discussions
* Demonstration
* Question and answer
* Problem solving
* Experiential
* Team training
* Guest speakers

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/no.** | **Category/item** | **Description/specification** | **Quantity** | **Recommended ratio(item: trainee)** |
| 1. **Learning materials** | | | | |
|  | Report writing templates | Digital report template | 5 | 1:5 |
|  | Flashcards | Educational flash cards | 5 | 1:5 |
|  | Flip charts | Educational flip charts | 5 | 1:5 |
| 1. **Learning facilities and infrastructure** | | | | |
|  | Lecture/theory room | 72m2 | 1 | 1:25 |
|  | Whiteboard | 4 feet by 8 feet | 1 | 1:25 |
|  | Projector | LCD High resolution | 1 | 1:25 |
|  | Computers | RAM: 8GB | 25 | 1:25 |
|  | Printers | Ink Jet | 2 | 1:13 |
| 1. **Consumable materials** | | | | |
|  | Printing Papers | A4 | Enough for 25 | 1:25 |
|  | Assorted whiteboard markers | Non-permanent | Enough for 25 | 1:25 |
| 1. **Tools and equipment** | | | | |
|  | Mobile phones | Functioning smart phone | Enough for 25 | 1:25 |

FIRE SAFETY IN BUILDING AND CONSTRUCTION

**UNIT CODE:** 1032 451 15A

**UNIT DURATION:** 120Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Apply fire safety in building and construction

**Unit Description**

This unit covers the competencies required to prepare technical drawings. 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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Construction Materials | 20 |
| Properties of Construction Materials | 20 |
| Rescue Structures. | 30 |
| Workshop Practices | 20 |
| Mechanical Operations | 30 |
| **TOTAL** | **120** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Identify construction materials | * 1. Types of building   2. Interpretation of building plan   3. Construction materials  1. Sand 2. Ballast 3. cement 4. timber and timber products 5. metals and alloys    1. Construction materials categorization | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Identify properties of construction materials | * 1. Physical properties  1. porosity 2. surface texture 3. strength 4. density 5. thermal conductivity 6. wear and tear 7. expansivity    1. Chemical properties 8. corrosion resistance 9. chemical resistance 10. combustibility     1. Mechanical properties 11. Toughness 12. Hardness 13. Fatigue 14. Stress and strain 15. Creep and stress rapture | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Construct and dismantle rescue structures. | * 1. Rescue structures materials and tools  1. Timber 2. Nails 3. Wooden boards 4. Canvass 5. Gunny bags 6. Metal bar 7. Metal sheets    1. Personal protective equipment    2. Types of Rescue structure 8. scaffold 9. Temporary ladder 10. Shores 11. Trench timbering 12. Formwork material     1. Rescue structure dismantling | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Perform workshop practices | * 1. Identification of workshop tasks   2. Masonry tasks  1. Concrete mixing 2. Mortar mixing 3. Hacking 4. Plastering 5. Demolishing    1. Plumbing tasks 6. Pipe fitting 7. Water pump fitting 8. Water reticulation    1. Carpentry tasks 9. Wood cutting 10. Fitting and joinery     1. Electrical operations tasks 11. Panel installation 12. Conduiting | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 5.Perform mechanical operations | * 1. Safety requirement in fire and rescue service   2. Mechanical tools  1. Lifting tools 2. Drilling tools 3. Towing tools 4. Spreading tools 5. Cutting tools 6. Lighting tool    1. Components of diesel and petrol engine.    2. Operation of diesel and petrol engines.    3. Maintenance of diesel and petrol engine    4. Types of water pumps    5. Centrifugal    6. Submersible    7. Reciprocating pump    8. Hand pumps    9. Maintenance of water pumps | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |

**Suggested Methods of Instruction**

* Practical assessment
* Written test
* Oral questions
* Field visits
* Third party reports
* Portfolio

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | lifting tools |  | 1 | 1:25 |
|  | Drilling tools |  | 1 | 1:25 |
|  | Towing tools |  | 1 | 1:25 |
|  | Spreading tools |  | 1 | 1:25 |
|  | Cutting tools |  | 1 | 1:25 |
|  | Lighting tools |  | 1 | 1:25 |
|  | Centrifugal pump |  | 1 | 1:25 |
|  | Submersible pump |  | 1 | 1:25 |
|  | Reciprocating pump |  | 1 | 1:25 |
|  | Hand pumps |  | 1 | 1:25 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
| 8. | Jump suit |  | 25 | 1:1 |
| 9. | VHF Radios |  | 25 | 1:1 |

# RESCUE OPERATION

**UNIT CODE: 1032 451 16A**

**UNIT DURATION: 120 Hours**

**Relationship to Occupational Standard**

This unit addresses the Unit of Competency: carry out rescue operation

**Unit Description**

This unit specifies the competencies required to carry out water 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.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Rescue Resources | 20 |
| Scene Size-Up | 30 |
| Rescue Activity | 20 |
| Rescue Resources Make Up | 30 |
| Rescue Incident Feedback | 20 |
| **TOTAL** | **120** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Prepare rescue resources | * 1. Nature of emergency incident  1. Road traffic accident rescue 2. Structural collapse rescue 3. Water rescue 4. Rope rescue 5. Hazardous material rescue    1. Rescue equipment and materials 6. Road traffic accident rescue equipment and materials 7. Structural collapse rescue equipment and materials 8. Water rescue equipment and materials 9. Rope rescue equipment and materials 10. Hazardous material rescue equipment and materials     1. Rescue PPEs 11. Road traffic accident rescue PPEs 12. Structural collapse rescue PPEs 13. Water rescue PPEs 14. Rope rescue PPEs 15. Hazardous material rescue PPEs     1. Rescue personnel 16. Hazardous material personnel 17. Structural rescue personnel 18. Road traffic accident personnel 19. Rope rescue personnel     1. Mountain rescuers     2. High rise rescuers     3. Deep pit rescuers        1. Water rescue personnel     4. Lifeguards     5. Swift water Rescue Technicians     6. Dive Rescue Teams     7. Flood Rescue Teams     8. Marine Rescue Teams | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 2.Carry out scene size-up | * 1. Scene assessment  1. Size and Location of incident 2. Type of incident 3. Scene Safety 4. Prevailing weather conditions 5. Need for additional Resources 6. Access and Egress Routes 7. Utility Hazards    1. Planning for rescue operation       1. Duties are identified    2. Determination of required resources 8. Requisition of additional resources    1. Cordoning of Scene 9. Cordoning materials 10. Cordoning tapes 11. Cordoning ropes 12. Cordoning Cones 13. Cordoning Appliances 14. Human cordon 15. Determination of area of operation 16. Safety considerations 17. Incident privacy 18. Dignity of affected persons 19. Scene security | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 3. Conduct rescue activity | * 1. Duty allocation for Rescue personnel   2. Donning of PPEs   3. Carrying out rescue  1. Location of the affected person 2. Assessment of the affected person’s condition 3. Application of required rescue method 4. Evacuation of affected person    1. Post rescue care 5. Initial assessment 6. Check for response(AVPU) 7. Airways breathing and circulation( ABC) 8. Psychosocial support    1. Handover of affected persons 9. Patient care report 10. Re uniting | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 4.Carry out rescue resources make up | * 1. Retrieval of rescue resources  1. Disconnection of equipment 2. Recovery of equipment    1. Accounting for rescue resources 3. Assembly of equipment 4. Tally equipment 5. Inspection of equipment    1. Stowing of rescue resources 6. Clean equipment 7. Pack in compartment 8. Secure equipment | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 5.Provide rescue incident feedback | * 1. Incident debrief  1. Define the audience 2. Account for people involved 3. Receive narrations from crew 4. Summarize the incident    1. Public briefing 5. Summarize the incident 6. Address safety and security concerns of scene 7. Create fire safety awareness    1. Initial incident reporting 8. People involved 9. Property damage/salvaged 10. Scene condition | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |

**Suggested Methods of Instruction**

* Practical demonstration of tasks by trainer
* Practice by trainees
* Observations and comments and corrections by trainers
* Instructor facilitation of theory
* Case study
* Industry visits
* Simulation
* Projects

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
| 8. | Jump suit |  | 25 | 1:1 |
| 9. | VHF Radios |  | 25 | 1:1 |

# **WORK PLACE DRILLS**

**UNIT CODE: 1032 451 17A**

**UNIT DURATION: 150 Hours**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: **conduct work place drills**

**Unit description**

This unit specifies the competencies required to conduct work place training. It involves conducting fire service training needs assessment, performing both fire service personnel training and fire service training evaluation.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **LEARNING OUTCOMES** | **DURATION (HOURS)** |
| Ladder Drill | 30 |
| Foot Drill | 30 |
| Hose Drill | 30 |
| Pump Drill | 30 |
| Donning and Doffing | 30 |
| **TOTAL** | **150** |

**Learning Outcomes, Content and Suggested Assessment Methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Carry out ladder drill | * 1. Identification types of ladders  1. Extension ladders 2. Plat form ladders 3. Hook ladders 4. Folding ladders 5. Telescopic ladders 6. First floor ladders 7. Pilot ladders    1. Assembling Crew    2. Conducting ladder drill 8. Ladder rescue drill 9. Ladder evacuation drill 10. Ladder crawling drill 11. Roof ladder drill 12. Ladder climbing drill 13. Ladder carry drill     1. Ladder drill report 14. Date and time 15. Objective 16. Names of participants 17. Description of drill 18. Challenges encountered | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. perform foot drill | * 1. Assembling crew   2. Conducting foot drill  1. Formation and Inspection Drill 2. Marching Drill 3. Turns and Wheels Drill 4. Saluting Drill 5. Extended Order Drill 6. Close Order Drill 7. Parade Drill    1. Foot drill report 8. Date and time 9. Objective 10. Names of participants 11. Description of drill 12. Challenges encountered | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Perform Hose drill | * 1. Type of hose and hose fittings  1. Canvass hose 2. Rubber line hose 3. Dura line hose 4. Hose reel 5. Suction hose 6. Branch 7. Nozzles 8. Coupling 9. Adapters 10. collectors 11. dividers 12. inductors     1. Assembling crew     2. Conducting hose drill 13. Hose deployment drill 14. Advancing and retreating hose line drill 15. Hose stretch drill 16. High-rise hose pack drill 17. Stair climb with hose 18. hose advancement through obstacles 19. hydrant connection drill 20. Hose replacement drill     1. hose drill report 21. Date and time 22. Objective 23. Names of participants 24. Description of drill 25. Challenges encountered | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. Carry out pump drill | * 1. Types of pumps  1. Centrifugal 2. Submersible 3. Reciprocating pump 4. Hand pump    1. Assembling crew    2. Conducting Pump drill 5. Priming and Starting drill 6. Drafting Drill 7. Relay Pumping Drill 8. Pressure and Flow Control Drill 9. Tank-to-Pump Operation Drill 10. Foam System Operation Drill 11. Water Shuttle Operations Drill     1. drill report 12. Date and time 13. Objective 14. Names of participants 15. Description of drill 16. Challenges encountered | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 1. perform donning and doffing | * 1. Assembling and identification of PPEs  1. Helmet 2. Flash hood 3. Tunic 4. Bunker pants 5. Structural firefighting gloves 6. Fire safety boot 7. Self-contained breathing apparatus    1. Assembling crew    2. Conducting donning and doffing drill 8. Structural Firefighting PPE Donning Drill 9. SCBA Donning and Doffing Drill 10. Wildland Fire PPE Donning Drill 11. PPE Check and Inspection Drill Doffing Under Stress Drill 12. Team Donning and Doffing Drill     1. Donning and doffing drill report. 13. Date and time 14. Objective 15. Names of participants 16. Description of drill 17. Challenges encountered | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |

**Suggested Methods of Instruction**

* Practical demonstration
* Practice by trainees
* Observation and comments and correction by trainers
* Instructor facilitation of theory
* Case studies
* Simulations
* Projects

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Desktop computer/laptop | For trainer’s use | 1 | 1:25 |
|  | Internet connection | Wi-Fi |  | 1:25 |
|  | Projector |  | 1 | 1:25 |
|  | Whiteboard | 4 x 8 ft | 1 | 1:25 |
|  | Assorted colour of whiteboard markers | Red, blue and black | 25 | 1:1 |
|  | Fire Service Uniform |  | 25 | 1:1 |
|  | Job procedure manuals |  | 25 | 1:1 |
|  | Standard Operating Procedures |  | 5 | 1:5 |
|  | Extension ladders |  | 5 | 1:5 |
|  | Plat form ladders |  | 5 | 1:5 |
|  | Hook ladders |  | 5 | 1:5 |
|  | Folding ladders |  | 5 | 1:5 |
|  | Telescopic ladders |  | 5 | 1:5 |
|  | First floor ladders |  | 5 | 1:5 |
|  | Pilot ladders |  | 5 | 1:5 |
|  | Canvass hose |  | 10 | 2:5 |
|  | Rubber line hose |  | 10 | 2:5 |
|  | Dura line hose |  | 5 | 1:5 |
|  | Hose reel |  | 10 | 2:5 |
|  | Suction hose |  | 10 | 2:5 |
|  | Branch |  | 5 | 1:5 |
|  | Nozzles |  | 5 | 1:5 |
|  | Coupling |  | 10 | 2:5 |
|  | Adapters |  | 5 | 1:5 |
|  | collectors |  | 5 | 1:5 |
|  | dividers |  | 5 | 1:5 |
|  | inductors |  | 5 | 1:5 |
|  | Helmet |  | 25 | 1:1 |
|  | Flash hood |  | 25 | 1:1 |
|  | Tunic |  | 25 | 1:1 |
|  | Bunker pants |  | 25 | 1:1 |
|  | Structural firefighting gloves |  | 25 | 1:1 |
|  | Fire safety boot |  | 25 | 1:1 |
|  | Self-contained breathing apparatus |  | 25 | 1:1 |
|  | Water points |  | 5 | 1:5 |
|  | Hydrant |  | 1 | 1:25 |
|  | **Personal Protective Equipment** | | | |
| 1. | Safety Boots |  | 25 | 1:1 |
| 2. | Tunic |  | 25 | 1:1 |
| 3. | Masks |  | 25 | 1:1 |
| 4. | Gloves |  | 25 | 1:1 |
| 5. | Eye Protection (goggles, shield) |  | 25 | 1:1 |
| 6. | Hearing protection (ear muffs, ear plugs) |  | 25 | 1:1 |
| 7. | Flash hood |  | 25 | 1:1 |
| 8. | Jump suit |  | 25 | 1:1 |
| 9. | VHF Radios |  | 25 | 1:1 |