

REPUBLIC OF KENYA

COMPETENCY BASED CURRICULUM

FOR

BUILDING TECHNICIAN

LEVEL 5

PROGRAMME CODE: 0732 454 A

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# FOREWORD

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

Reforms in the education sector are necessary to achieve Kenya Vision 2030 and meet the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution, and this resulted in the formulation of the Policy Framework for Reforming Education and Training in Kenya (Sessional Paper No. 14 of 2012). A key feature of this policy is the radical change in the design and delivery of TVET training. This policy document requires that training in TVET be competency-based, curriculum development be industry-led, certification be based on demonstration of competence, and the mode of delivery allow for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that this curriculum has been developed. For trainees to build their skills on foundational hands-on activities of the occupation, units of learning are grouped in modules. This has eliminated duplication of content and streamlined exemptions based on skills acquired as a trainee progresses in the up-skilling process, while at the same time allowing trainees to be employable in the shortest time possible through the acquisition of part qualifications.

It is my conviction that this curriculum will play a great role in developing competent human resources for the Construction Sector’s growth and development.

**PRINCIPAL SECRETARY**

**STATE DEPARTMENT FOR TVET**

**MINISTRY OF EDUCATION**

# PREFACE

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

CAP 210A and Sessional Paper No. 1 of 2019 on Reforming Education and Training in Kenya for Sustainable Development emphasized the need to reform curriculum development, assessment, and certification. This called for a shift to CBET to address the mismatch between skills acquired through training and skills needed by industry, as well as increase the global competitiveness of the Kenyan labour force.

This curriculum has been developed in adherence to the Kenya National Qualifications Framework and CBETA standards and guidelines. The curriculum is designed and organized into Units of Learning with Learning Outcomes, suggested delivery methods, learning resources, and methods of assessing the trainee’s achievement. In addition, the units of learning have been grouped in modules to concretize the skills acquisition process and streamline upskilling.

I am grateful to all expert trainers and everyone who played a role in translating the Occupational Standards into this competency-based modular curriculum.

# ACKNOWLEDGEMENTS

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 construction. 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 construction Sector acquire competencies to perform their work more efficiently and effectively.

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# ABBREVIATIONS AND ACRONYMS

BRC - BRITISH REINFORCEMENT CONCRETE

CBET - COMPETENCY BASED EDUCATION AND TRAINING

CD -COMPACT DISK

CPU - CENTRAL PROCESSING UNIT

CV - CURRICULUM VITAE

DPM - DAMP PROOF MEMBRANE

DVD -DIGITAL VERSATILE DISK

DVI -DIGITAL VISUAL INTERFACE

EMCA -ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT

HDMI -HIGH DEFINATION MULTIMEDIA INTERFACE

ICT -INFORMATION COMMUNATION TECHNOLOGY

IOT -INTERNET OF THINGS

MITM -MAN IN THE MIDDLE

PHD -DOCTOR OF PHILOSOPHY

PPEs -PERSONAL PROTECTIVE EQUIPMENTS

TVET -TECHNICAL VOCATIONAL EDUCATION AND TRAINING

URI -UNIFORM RESOURSE IDENTIFIER

USB -UNIVERSAL SERIAL BUS

VGA -VIDEO GRAPHICS ARRAY

Dr. -DOCTOR

# KEY TO ISCED UNIT CODE



# COURSE OVERVIEW

Building Technician Level 5 qualification consist of competencies that a person must acquire to enable him/her to be certified as a Building Technology Craftsperson. The competencies include performing masonry structures construction, performing masonry work finishes, producing of simple masonry products, construction site preliminary works, executing building substructure, superstructure, building finishes and external works.

The units of Learning comprising Building Technician Level 5 include the following basic,

common and core units:

**SUMMARY OF UNITS OF LEARNING**

**MODULE I**

|  |  |  |  |
| --- | --- | --- | --- |
| CORE UNITS OF LEARNING | | | |
| **Unit Code** | **Units Title** | **Unit Duration (Hours)** | **Credit Factor** |
| 0732 251 01A | Masonry works | 130 | 13.0 |
| 0732 251 02A | Masonry Works Finishes I | 90 | 9.0 |
| 0732 251 03A | Masonry Unit Production | 100 | 10.0 |
| **SUB TOTAL** | | **320** | **32.0** |

**MODULE II**

|  |  |  |  |
| --- | --- | --- | --- |
| **COMMON UNITS OF LEARNING** | | | |
| **Unit Code** | **Units Title** | **Unit Duration (Hours)** | **Credit Factor** |
| 0417 341 04A | Workplace essential skills | 20 | 2.0 |
| SUB TOTAL | | 20 | 2.0 |
| CORE UNITS OF LEARNING | | | |
| **Unit Code** | **Units Title** | **Unit Duration (Hours)** | **Credit Factor** |
| 0732 351 05A | Building Site Preliminary Works | 70 | 7.0 |
| 0732 351 06A | Building Temporary Works | 120 | 12.0 |

**MODULE III**

**BASIC UNIT**

|  |  |  |
| --- | --- | --- |
| 0031 451 07A | Communication skills | 40 |

**COMMON UNITS**

|  |  |  |
| --- | --- | --- |
| 0541 451 08A | Basic mathematics I | 60 |
| 0732 451 09A | Technical drawing | 80 |

**CORE UNITS**

|  |  |  |
| --- | --- | --- |
| 0732 451 10A | Building Substructure works | 120 |
| 0732 451 11A | Doors and windows | 50 |
| 0732 451 12A | External works | 60 |
|  | **SUBTOTAL** | **410HRS** |

**MODULE IV**

**BASIC UNIT**

|  |  |  |
| --- | --- | --- |
| 0417 451 13A | Work Ethics and Practices | 40 |

**COMMON UNITS**

|  |  |  |
| --- | --- | --- |
| 0541 451 14A | Basic mathematics II | 80 |
| 0732 451 15A | Construction material science | 60 |

**CORE UNITS**

|  |  |  |
| --- | --- | --- |
| 0732 451 16A | Building superstructure works | 80 |
| 0732 451 17A | Masonry Works Finishes II | 80 |
|  | **SUBTOTAL** | **340 HRS** |
| **INDUSTRIAL ATTATCHMENT** |  | **480 HRS** |
|  | **GRAND TOTAL** | **1760 HRSs** |

**Entry Requirements**

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

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

**Or**

1. Masonry Level 4 Certificate

**Or**

1. Equivalent KNQF level 4 qualification as determined by relevant regulatory body

**Trainer qualifications**

Qualifications of a trainer for this course include:

1. Possession of a higher qualification than building technology level 5 or in related trade area; and
2. License by TVETA
3. License by regulatory body (where applicable)

**Industry Placement/Training**

An individual enrolled in this course will be required to undergo Industrial attachment for a minimum period of 480 hours in a construction 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. Summative assessment shall focus more on critical aspects of the Unit of competency.
3. During summative assessment basic and common units shall be integrated or assessed concurrently with the core units.
4. Formative and summative assessment weights shall constitute 60% and 40% of the overall score respectively.
5. Theoretical and practical weight ­­­­­­­­­­­­­­­­for each unit of learning shall be as follows;
6. 10:90 for units in module 1 and module 2
7. 30:70 for units in module 3 and module 4
8. For a candidate to be declared competent in a unit of competency, the candidate must meet the following conditions:
9. Obtained at least 40% in theory assessment in formative and summative assessments.
10. Obtained at least 50% in practical assessment in formative and summative assessment where applicable.
11. 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.
12. Assessment performance rating for each unit of competency shall be as follows:

|  |  |
| --- | --- |
| **MARKS** | **COMPETENCE RATING** |
| 80 -100 | Mastery |
| 65 - 79 | Proficiency |
| 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 attain Full building technician Level 5 certificate, the candidate must demonstrate competence in all the Units of Competency as given in the qualification pack. Statement of Attainment certificate may be awarded upon demonstration of competence in certifiable element within a unit.

These certificates will be issued by ……… (QAI)

# 

# MODULE I

**MASONRY WORKS**

**UNIT CODE: 0732 251 01A**

**UNIT DURATION:** 130Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Perform Masonry Works

**Unit Description**

This unit specifies the competencies required to perform masonry works. It entails Interpret building drawings, setting out the building, laying of foundation concrete, construction of foundation walls, Construct ground floor slab, Construct reinforced concrete elements and Construct superstructure walls. It applies in the construction industry.

**Summary of Learning Outcomes:**

|  |  |
| --- | --- |
| **Learning Outcomes** | **Duration (Hours)** |
| 1. Interpret building drawings | **10** |
| 1. Set-out building | **20** |
| 1. Lay building foundation concrete | **20** |
| 1. Construct foundation walls | **20** |
| 1. Construct ground floor slab | **30** |
| 1. Construct reinforced concrete elements | **10** |
| 1. Construct superstructure walls | **20** |
|  | **TOTAL 130 HRS** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Interpret Building   drawings | 1. Symbols and abbreviation 2. Measurements 3. Building elevations 4. Building sections | * Practical * Projects * Third Party Reports * Written tests |
| 1. Set-out building | 1. PPEs    * 1. Types      2. uses 2. Setting out tools and equipment’s    * 1. Types      2. uses 3. Setting out methods    * 1. 3-4-5 Method      2. Builder’s square 4. Profiling    * 1. Profile boards 5. Levelling    * 1. Surface levelling 6. Transferring measurements to the ground 7. Setting out tools and equipment are maintained and stored based on manufacturer’s instructions. 8. Over site excavation is carried out as per SOPs | * Observation * Written tests * Oral questioning * Third party report * Portfolio |
| 1. Lay building foundation concrete | * 1. PPEs      1. Types      2. uses   2. Materials and tools      1. Types      2. uses   3. Excavation of trenches      1. Methods         1. Mechanical         2. Manual         3. Procedures   4. Foundation trenches      1. Types      2. Strip      3. Pad foundations   5. Foundation treatment      1. procedures   6. Foundation blinding      1. procedures | * Practical * Projects * Third Party Reports * Written tests |
| 1. Construct foundation walls | * 1. Measurement transfer      1. Procedures   2. Foundation walling units      1. Types         1. Masonry blocks         2. Bricks         3. laying procedures   3. Backfilling      1. procedures | * Practical * Projects * Third Party Reports * Written tests |
| 1. Construct ground floor slab | * 1. PPEs      1. Types      2. Uses   2. Hardcore      1. laying procedures   3. Murram blinding      1. Laying procedures   4. Formwork      1. erection procedures   5. Damp proofing      1. Types         1. Damp proofing membrane         2. Damp proof spray         3. Waterproofing additives      2. procedures   6. Concrete casting      1. procedures   7. Curing      1. methods         1. Water         2. Jute Sacks         3. Blankets         4. Sand         5. Curing agents      2. procedures | * Practical * Projects * Third Party Reports * Written tests |
| 6. Construct reinforced concrete elements | * 1. PPEs      1. Types      2. Uses   2. Column concrete kicker      1. Casting      2. Curing   3. Concrete elements      1. Casting         1. Columns         2. Beams   4. Curing | * Practical * Projects * Third Party Reports * Written tests |
| 7. Construct superstructure walls | * 1. PPEs      1. Types      2. Uses   2. Damp Proof Course      1. Laying procedure   3. Masonry wall units      1. Mortar preparation      2. Laying procedure   4. Bridging of walls      1. Arches      2. Lintels | * Practical * Projects * Third Party Reports * Written tests |

**Suggested Methods of Instruction**

* Practical
* Project
* Demonstrations
* Group Discussions
* Direct instructions

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Reference materials i.e. textbooks |  | 14 pcs | 1:2 |
|  | Rolls Flip Charts |  | 5 pcs | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Whiteboards |  | 1 pc | 1:25 |
|  | Lecture room | 9m by 8m | 1 |  |
|  | Workshop | 10m by 10m | 1 |  |
|  | Desktop computers/laptops |  | 14 pcs | 1:2 |
| **C** | **Consumable materials** | | | |
|  | Assorted colour of whiteboard markers |  | 10 pcs | 10:1 |
|  | Assorted timber |  | Sufficient |  |
|  | Assorted nails |  | Sufficient |  |
|  | Pegs |  | Sufficient |  |
|  | Masonry walling units |  | Sufficient |  |
|  | Damp proof course |  | Sufficient |  |
|  | Hoop iron |  | Sufficient |  |
|  | Mortar |  | Sufficient |  |
| **D** | **Tools and Equipment** | | | |
|  | Technical Drawing Instruments (Rulers, Protractors, Compasses, Set-squares) |  | 25 Sets | 1:1 |
|  | Builders Line |  | 5 pcs | 1:5 |
|  | Mason Square |  | 5 pcs | 1:5 |
|  | Claw Hammer |  | 5 pcs | 1:5 |
|  | Claw bar |  | 5 pcs | 1:5 |
|  | Tape measure |  | 5 pcs | 1:5 |
|  | Spirit Level |  | 5 pcs | 1:5 |
|  | Mason Hammer |  | 5 pcs | 1:5 |
|  | Shovel |  | 5 pcs | 1:5 |
|  | Bucket |  | 5 pcs | 1:5 |
|  | Wheelbarrow |  | 5 pcs | 1:5 |
|  | Trowel |  | 5 pcs | 1:5 |
|  | Plumb Bob |  | 5 pcs | 1:5 |
|  | Wood Float |  | 5 pcs | 1:5 |

**MASONRY WORKS FINISHES I**

**UNIT CODE: 0732 251 02A**

**UNIT DURATION:** 90Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of competency: Perform Masonry Works Finishes I

**Unit Description**

This unit specifies the competencies required to perform masonry works finishes. It entails Carrying out wall plastering, laying floor screed, carrying out Rendering and Carrying out keying and pointing. It applies in the construction industry.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **Learning Outcomes** | **Duration (Hours)** |
| 1. Carry out wall plastering | **30** |
| 1. Lay floor screed | **30** |
| 1. Carry out wall Rendering | **15** |
| 1. Carry out Keying and Pointing | **15** |
|  | **TOTAL 90 HRS** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Carry out wall plastering | * 1. Personal protective equipment   1.1.1 Types  1.1.2 Uses   * 1. Wall Plumbness      1. Checking procedure      2. Dot guides      3. Plastering      4. Application procedure   2. Plaster curing | * Practical * Projects * Third Party Reports * Written tests |
| 1. Lay floor screed | 1. Personal protective equipment    * 1. Types      2. Uses 2. Floor preparation procedure 3. Screeding    * 1. Types         1. Bonded Screed         2. Unbonded Screed         3. Floating Screed      2. Laying procedure 4. Screed curing | * Practical * Projects * Third Party Reports * Written tests |
| 1. Carry out wall Rendering | * 1. Personal protective equipment      1. Types      2. Uses   2. Wall preparation   Procedure   * 1. Rendering      1. Materials         1. Cement         2. Aggregates      2. Application procedure   2. Curing of render | * Practical * Projects * Third Party Reports * Written tests |
| 1. Carry out keying and pointing. | * 1. Wall surface preparation   2. Mortar mix   3. Keying   4. Pointing      1. Tuck      2. Flush      3. Recessed      4. Weathered | * Practical * Projects * Third Party Reports * Written tests |

**Suggested Methods of Instruction**

* Practical
* Project
* Demonstrations
* Group Discussions
* Direct instructions

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Reference materials i.e. textbooks |  | 14 pcs | 1:2 |
|  | Rolls Flip Charts |  | 5 pcs | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Whiteboards | For trainer’s use | 1 pc | 1:25 |
|  | Lecture room | 9m by 8m | 1 |  |
|  | Workshop | 10m by 10m | 1 |  |
|  | Desktop computers/laptops | For both trainer’s and trainee’ use | 25 pcs | 1:1 |
| **C** | **Consumable materials** | | | |
|  | Assorted colour of whiteboard markers |  | 10 pcs | 10:1 |
|  | Assorted timber |  | Sufficient |  |
|  | Assorted nails |  | Sufficient |  |
|  | Pegs |  | Sufficient |  |
|  | Mortar |  | Sufficient |  |
| **D** | **Tools and Equipment** | | | |
|  | Builders Line |  | 5 pcs | 1:5 |
|  | Mason Square |  | 5 pcs | 1:5 |
|  | Claw Hammer |  | 5 pcs | 1:5 |
|  | Claw bar |  | 5 pcs | 1:5 |
|  | Tape measure |  | 5 pcs | 1:5 |
|  | Spirit Level |  | 5 pcs | 1:5 |
|  | Mason Hammer |  | 5 pcs | 1:5 |
|  | Shovel |  | 5 pcs | 1:5 |
|  | Bucket |  | 5 pcs | 1:5 |
|  | Wheelbarrow |  | 5 pcs | 1:5 |
|  | Trowel |  | 5 pcs | 1:5 |
|  | Plumb Bob |  | 5 pcs | 1:5 |
|  | Wood Float |  | 5 pcs | 1:5 |
|  | Steel float |  | 5 pcs | 1:5 |
|  | Straight edge |  | 5 pcs | 1:5 |
|  | Keying tool |  | 5 pcs | 1:5 |
|  | Mason chisel |  | 5 pcs | 1:5 |
|  | Spade |  | 5 pcs | 1:5 |

**MASONRY UNITS PRODUCTION**

**UNIT CODE: 0732 251 03A**

**UNIT DURATION:** 100 Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of competency: Produce Masonry Products

**Unit Description**

This unit specifies the competencies required to produce simple masonry products. It entails Interpret Masonry units’ drawings, production of masonry clay units, concrete masonry products and stabilized soil masonry products and performing stone dressing.

**Summary of Learning Outcomes**

|  |  |
| --- | --- |
| **Learning Outcomes** | **Duration (Hours)** |
| Interpret masonry units’ drawings | **10** |
| Produce clay masonry units | **20** |
| Produce concrete masonry products | **30** |
| Produce stabilized soil masonry units | **20** |
| Perform stone dressing | **20** |
|  | **TOTAL 100 HRS** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Interpret Masonry units’ drawings | 1. Dimensions 2. Elevations 3. Measuring angles | * Practical * Projects * Third Party Reports * Written tests |
| 1. Produce clay masonry units | * 1. Personal protective equipment      1. Types      2. Uses   2. Clay preparation      1. Procedure   3. Clay bricks      1. Moulding procedure.      2. Sun drying   4. Kilning      1. Procedure | * Practical * Projects * Third Party Reports * Written tests |
| 1. Produce concrete masonry products | * 1. Personal protective equipment      1. Types      2. Uses   2. Concrete      1. Block specification      2. Preparation procedure   3. Concrete blocks curing | * Practical * Projects * Third Party Reports * Written tests |
| 1. Produce stabilized soil masonry units | * 1. Personal protective equipment      1. Types      2. Uses   2. Materials      1. Job specifications      2. Preparation procedure   3. Soil blocks      1. Preparation procedure   4. Soil blocks curing | * Practical * Projects * Third Party Reports * Written tests |
| 1. Perform stone dressing | * 1. PPEs      1. Types      2. Uses   2. Stone dressing tools and equipment      1. Types      2. Uses      3. Stone dressing | * Practical * Projects * Third Party Reports * Written tests |

**Suggested Methods of Instruction**

* Practical
* Project
* Demonstrations
* Group Discussions
* Direct instructions

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Reference materials i.e. textbooks | For trainee’s use | 14 pcs | 1:2 |
|  | Rolls Flip Charts | For both trainer’s and trainee’ use | 5 pcs | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Whiteboards | For trainer’s use | 1 pc | 1:25 |
|  | Lecture room | 9m by 8m | 1 |  |
|  | Workshop/shade | 10m by 10m | 1 |  |
|  | Desktop computers/laptops | For both trainer’s and trainee’ use | 25 pcs | 1:1 |
| **C** | **Consumable materials** | | | |
|  | Assorted colour of whiteboard markers |  | 10 pcs | 10:1 |
|  | Assorted timber |  | Sufficient |  |
|  | Assorted nails |  | Sufficient |  |
|  | Pegs |  | Sufficient |  |
|  | Mortar |  | Sufficient |  |
|  | Quarry dust |  | Sufficient |  |
|  | Cement/ lime |  | Sufficient |  |
|  | Clay |  | Sufficient |  |
|  | Grease/oil |  | Sufficient |  |
| **D** | **Tools and Equipment** | | | |
|  | Technical Drawing Instruments (Rulers, Protractors, Compasses, Set-squares) |  | 25 Sets | 1:1 |
|  | Tape measure |  | 5 pcs | 1:5 |
|  | Mason Hammer |  | 5 pcs | 1:5 |
|  | Shovel |  | 5 pcs | 1:5 |
|  | Bucket |  | 5 pcs | 1:5 |
|  | Wheelbarrow |  | 5 pcs | 1:5 |
|  | Trowel |  | 5 pcs | 1:5 |
|  | Wood Float |  | 5 pcs | 1:5 |
|  | Steel float |  | 5 pcs | 1:5 |
|  | Spade |  | 5 pcs | 1:5 |
|  | Moulds |  | 5 pcs | 1:5 |

# MODULE II

**WORKPLACE ESSENTIAL SKILLS**

**UNIT CODE: 0417 351 04A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Learning: Apply workplace essential skills

**Duration of Unit:** 20 Hours

**Unit Description**

This unit covers the competencies required to apply workplace essential skills. It involves, applying communication skills, promoting ethical work practices and values, and applying entrepreneurial skills.

**Summary of Learning Outcomes**

By the end of this unit, the trainee should be able to;

|  |  |  |
| --- | --- | --- |
| S/No. | Learning Outcome | Duration (Hours) |
|  | Apply Communication Skills | **8** |
|  | Promote work ethical practices and values | **4** |
|  | Apply Entrepreneurial skills | **8** |

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

| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| --- | --- | --- |
| 1. Apply communication skills | * 1. Communication process:      1. Sender      2. Message      3. Channel      4. Receiver      5. Feedback   2. Principles of effective communication:      1. Courtesy      2. Correctness      3. Completeness   3. Communication barriers:      1. Language      2. Emotions      3. Channel   4. Flow of communication:      1. Downward      2. Upward   5. Sources of information:      1. Employee      2. Customers’ feedback      3. Organization documents   6. Organizational policies   7. Workplace etiquette   8. Channels/medium/mode of communication   9. Written communication:      1. Letters      2. SMS      3. Notices      4. Memo   10. Non-verbal cues:       1. Posture       2. Gestures       3. Facial expression   11. Dressing/grooming   12. Oral communication:       1. Face-to-face       2. Telephone conversation   13. Group discussion techniques | * Oral assessment * Practical Assessments * Written assessment |
| 1. Promote ethical work practices and values | * 1. Personal Management      1. Self-Awareness      2. Self Esteem      3. Stress Management      4. Assertiveness      5. Drug and Substance abuse      6. Time Management   2. Integrity   3. Core Values and beliefs   4. Professionalism   5. Organizational codes of conduct   6. Teamwork   7. Conflict Resolution   8. Customer Care | * Oral assessment * Written assessment * Third-party reports * Practical assessment |
| 1. Apply entrepreneurial skills | * 1. Personal finances management      1. Simple bookkeeping (sales, purchases debts, and profits)      2. Budgeting   2. Savings management   3. Sources of personal and business funds   4. Investments   5. Entrepreneurial roles and characteristics   6. Salaried employment and self-employment   7. Requirements for entry into self-employment   8. Regulatory requirements   9. Benefits of business planning | * Written assessment * Oral assessment * Third party report * Practical assessment |

**Suggested Methods of Instruction**

* Assignments
* Brainstorming
* Case studies
* Demonstration
* Group Discussion
* Guest speakers
* Presentations
* Question and answer
* Role play

**Recommended Resources for 25 trainees**

|  |  |  |
| --- | --- | --- |
| **General Resources** | **Tools and Equipment** | **Materials and Supplies** |
| * 25 Desktop computers/laptops | 25 mobile phones | * Flashcards |
| * Internet connection | Telephone | * Flip charts |
| * 1 Projector * 1 Printer |  | * 2 packets of assorted colors of whiteboard marker pens |
| * 1 Whiteboard |  | * Printing papers |
| * 5 Business plan templates * 1 Overhead projectors * Internet * Video clips * 5 Newspapers and Handouts * 5 Business Journals |  | * 25 sets of Writing materials Stationery * Charts |

**BUILDING SITE PRELIMINARY WORKS**

**UNIT CODE: 0732 351 05A**

**UNIT DURATION:** 70Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Learning: perform building site preliminary works

**Unit Description**

This unit describes the competence required to perform building site preliminary works.

It involves carrying out site clearance, carrying out site hoarding and building construction site amenities.

**Summary of Learning Outcomes:**

By the end of this unit, the trainee should be able to;

|  |  |  |
| --- | --- | --- |
| 1. S/No | 1. **Learning Outcomes** | 1. Durations |
|  | 1. Carry out site clearance | 1. 10 |
|  | 1. Carry out site hoarding | 1. 20 |
|  | 1. Build construction site amenities | 1. 40 |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Carry out site clearance | * 1. PPEs      1. Types      2. Uses   2. Site clearance tools and equipment      1. Slasher      2. Mattock      3. Rake      4. Sledge hammer      5. Fork Jembe      6. Machete      7. Uses   3. Site clearance      1. Demarcation      2. Demolition      3. Grabbing of shrubs      4. Diversion of water channels and services      5. Site stripping      6. Trim hedges   4. Methods of site clearance      1. Mechanical methods      2. Manual methods   Explosives /Detonators   * 1. Demolition   2. Methods of debris disposal      1. Incineration      2. Composting      3. Recycling | * Practical * Projects * Third Party Reports * Written tests |
| 1. Carry out site hoarding | * 1. PPEs      1. Types      2. Uses   2. Hoarding tools      1. Types      2. Uses   3. Hoarding materials      1. GI sheets      2. Assorted Timber   4. Demarcation and Erection of hoarding   5. Hoarding erected as per work requirements   6. Dismantling of hoarding   7. Storage of hoarding materials | * Practical * Projects * Third Party Reports * Written tests |
| 1. Build construction site amenities | * 1. PPEs      1. Types      2. Uses   2. Tools and equipment      1. Types      2. Uses   3. Site amenities materials assembling      1. Types      2. Construction   4. Site amenities are constructed as per the site plan   5. Demolition of Site amenities   6. Storage of site amenity materials | * Projects * Written tests * Practical tests * Oral tests |

**Suggested Methods of Instruction**

* Practical
* Project
* Demonstrations
* Group Discussions
* Direct instructions

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Reference materials i.e. textbooks | For trainee’s use | 14 pcs | 1:2 |
|  | Rolls Flip Charts | For both trainer’s and trainee’ use | 5 pcs | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Whiteboards | For trainer’s use | 1 pc | 1:25 |
|  | Workshop/ construction site | 10m by 10m | 1 | 4:1 |
|  | Lecture room | 9m by 8m | 1 |  |
|  | Desktop computers/laptops | For both trainer’s and trainee’ use | 25 pcs | 1:1 |
| **C** | **Consumable materials** | | | |
|  | Assorted colour of whiteboard markers | For trainer’s use | 10 pcs | 10:1 |
|  | Assorted timber | For trainee’s use | Sufficient |  |
|  | Assorted nails | For trainee’s use | Sufficient |  |
|  | Pegs | For trainee’s use | Sufficient |  |
|  | Hoarding materials | For trainee’s use | Sufficient |  |
|  | Chalk lime | For trainee’s use | Sufficient |  |
| **D** | **Tools and Equipment** | | | |
|  | Spirit Level | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Builders Line | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Mason Square | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Mason Hammer | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Claw Hammer | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Shovel | For trainee’s use | 5 pcs | 1:5 |
| 1. s | 1. Bucket | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Wheelbarrow | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Claw bar | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Panga | For trainee’s use | 5 pcs | 1:5 |
|  | 1. Handsaw | For trainee’s use | 5 pcs | 1:5 |

**BUILDING TEMPORARY WORKS**

**UNIT CODE: 0732 453 06A**

**UNIT DURATION:** 120 Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Perform Building Temporary Works.

**Unit Description**

This unit specifies the competencies required to perform building temporary works efficiently and safely. It involves performing timbering works, preparing building formwork, preparing construction scaffolds and preparing building shores.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| 1. S/No | 1. **Learning Outcomes** | 1. Durations |
|  | 1. Perform timbering works | 1. 30 | |
|  | 1. Prepare building formwork | 1. 30 | |
|  | 1. Prepare construction scaffolds | 1. 30 | |
|  | 1. Prepare building shores | 1. 30 | |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Outcome** | **Content** | | **Suggested Assessment Methods** | |
| 1. Perform timbering works | * 1. PPEs      1. Types      2. Uses      3. Identification   2. Timbering tools and equipment      1. Types      2. Uses   3. Trench timbering   4. Erection of timbering   5. Dismantling of timbering   6. Storage of timbering materials      1. Methods | | * Practical * Projects * POE evaluation * Third party reports * Written tests | |
| 1. Prepare building formwork | * 1. PPEs      1. Types      2. Uses   2. Building formwork tools and equipment      1. Types      2. Uses   3. Preparation of formwork      1. Shapes and sizes   4. Erection of formwork   5. Striking of formwork   6. Storage of formwork materials      1. Methods | | * Practical * Projects * POE evaluation * Third party reports * Written tests | |
| 1. Prepare construction scaffolds |  | * 1. PPEs      1. Types      2. Uses   2. scaffold tools and equipment      1. Types      2. Uses   3. Scaffold materials      1. Types      2. Uses   4. Erection of scaffold      1. Types   5. Dismantling of scaffold   6. Storage of scaffold materials      1. Methods |  | * Practical * Projects * POE evaluation * Third party reports * Written tests |
| 1. Prepare building shores |  | * 1. PPEs      1. Types      2. Uses   2. Shoring tools and equipment      1. Types      2. Uses   3. Shoring materials      1. Types      2. Preparation      3. Shapes and sizes   4. Building shores size is prepared as per work requirement   5. Erection of shores   6. Dismantling of shores   7. Storage of shoring materials |  | * Practical * Projects * POE evaluation * Third party reports * Written tests |

**Suggested Methods of Instruction**

* Practical
* Projects
* Demonstrations
* Group Discussion
* Direct Instruction

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Desktop computers/laptops | Anny model | 5 | 1:5 |
|  | Tape measures | 5 metres | 25 | 1:1 |
|  | Builders line |  | 5 | 1:5 |
|  | Claw hammer |  | 5 | 1:5 |
|  | Mason square |  | 5 | 1:5 |
|  | Timber | Assorted | Sufficient |  |
|  | Nails | Assorted | Sufficient |  |
|  | Claw bar |  | 5 | 1:5 |
|  | Panga |  | 5 | 1:5 |
| 1. 5 | Jembe |  | 5 | 1:5 |
|  | Pick axe |  | 5 | 1:5 |
|  | Iron sheets | Assorted | Sufficient |  |
|  | Hand saw |  | 5 | 1:5 |
|  | Mallet |  | 5 | 1:5 |
| **B** | **Learning Facilities & Infrastructure** | | | |
|  | Lecture Room | (9\* 8 sq. metres) | 1 | 1:25 |
|  | Workshop/ construction site |  | 1 | 1:25 |
|  | Internet Connection | System | 1 | 1:25 |
|  | Whiteboard | Glass, melamine, porcelain | 1 | 1:25 |

# MODULE III

## COMMUNICATION SKILLS

**UNIT CODE:** **0031 541 07A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Communication Skills

**Duration of Unit:** 40 hours

**Unit Description**

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

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| S/NO | Learning Outcomes | Duration (Hours) |
| 1. | To Apply Communication Channels. | 4 |
| 2. | To Apply Written Communication Skills. | 10 |
| 3. | To Apply Non-Verbal Skills. | 6 |
| 4. | To Apply Oral Communication Skills. | 8 |
| 5. | To Apply Group Communication Skills. | 12 |
|  |  | TOTAL 40HRS |

**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 | * Oral questions * Written assessment * Observation * Portfolio of Evidence * Practical assessment * Third party report |
| 1. Apply written communication skills | 1. Types of written communication 2. Elements of communication 3. Organization requirements for written communication | * Oral assessment * Written assessment * Observation * Portfolio of Evidence * Practical assessment * Third party report |
| 1. Apply non-verbal communication skills | 1. Utilize body language and 2. gestures 3. Apply body posture 4. Apply workplace dressing code | * Oral assessment * Written assessment * Observation * Portfolio of Evidence * Practical 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 | * Oral assessment * Written assessment * Observation * Portfolio of Evidence * Practical 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 | * Oral assessemnt * Written assessment * Observation * Portfolio of Evidence * Practical assessment |

**Suggested Methods of Instruction**

· Discussion

* Roleplaying
* Simulation
* Direct instruction
* Demonstration
* Field trips
* Viewing of related videos

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. 1. | Charts | · Flip Charts  · Rules and Regulations | 5 | 1:5 |
| 1. 2. | Report Writing Templates | Printed copies and softcopies | 25 | 1:1 |
| 1. 3. | Assorted Markers | whiteboard markers and permanent | 50 | 1:1 |
| 1. 4. | Samples Of CVS | Printed copies and softcopies | 5 | 1:5 |
| 1. 5. | External Storage Media | Flash disks, Compass Disks; Re-Writable | 1 | 1:25 |
| 1. 6. | Smartboard/Smart TV (Where Applicable) | LCD or projector | 20 | 1:25 |
| **B** | **Learning Facilities & Infrastructure** | | | |
| 7. | Lecture/Theory Room | (9\* 8 sq. metres) | 1 | 1:25 |
| 8. | Workshop | (10\* 15 sq. metres) | 1 | 1:25 |
| 9. | Internet Connection | WI-FI, Dial-Up, Cable, Fixed-wireless, | 1 | 1:25 |
| **C** | **Consumable Materials** | | | |
| 10. | Flashcards | Alphabet, Numbers, Math | 25 | 1:1 |
|  | Printing Papers | Sizes A4, A3, A2 etc | 5 reams | 1:5 |
| **D** | **Tools And Equipment** | | | |
|  | Computers/Laptops | Any model | 1 | 1:25 |
|  | Projector | LED.LCD, Laser | 5 | 1:5 |
|  | Printer | Inkjet, LaserJet | 1 | :25 |
|  | Computers Software: | •Windows/Linux/Macintosh Operating System  •Microsoft Office Software  •Google Workspace Account  Antivirus Software | 1 | 1:1 |
|  | Whiteboard | Glass, melamine, porcelain | 1 | 1:25 |
|  | Mobile Phones | Smartphones | 5 | 1:5 |

## BASIC MATHEMATICS I

**UNIT CODE: 0541 451 08A**

**Relationship to Occupational Standards**

This unit addresses the unit of competency: Apply Basic Mathematics I

**Duration of Unit:** 60 Hours

**UNIT DESCRIPTION:**

This unit describes the competencies required in applying basic mathematics. It involves carrying out mensuration, applying basic arithmetic, applying basic algebra and applying statistics.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOMES** | **DURATION(HOURS)** |
| 1. | Carry out basic Mensuration | 10 |
| 2. | Apply basic arithmetic | 10 |
| 3. | Apply basic Algebra | 20 |
| 4. | Apply basic Statistics | 20 |
|  | **TOTAL** | **60 HRS** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| * + - 1. Carry out basic Mensuration | * 1. Units of measurement   2. Conversion of units   3. Perimeters and areas   4. Volume and Surface area of solids   5. Area of irregular figures | * Written assessments * Assignments * Supervised exercises |
| * + - 1. Apply basic arithmetic | * 1. Whole numbers   2. Simple fractions   3. Decimals   4. Percentage   5. Place value   6. Ranges   7. Rounding off   8. Arithmetic Percentages and Proportions   9. Decimals   10. Standard forms | * Written assessments * Assignments * Supervised exercises |
| * + - 1. Apply basic Algebra | * 1. Indices and logarithms   2. Linear equations   3. Use of a calculator to solving problems   4. Simultaneous equations   5. Simple algebraic equations   6. Form of simple algebraic equations | * Written assessments * Assignments * Supervised exercises |
| * + - 1. Apply basic Statistics | * 1. Identification of grouped and ungrouped data   2. Ungrouped data organization   3. Frequency table data representation   4. Mean, Mode and Median of grouped and ungrouped data   5. Charts   6. Chart data interpretation. | * Written assessments * Assignments * Supervised exercises |

**Suggested Delivery Methods**

* Practical
* Projects
* Group discussion
* Direct instruction

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Scientific Calculators | Casio FX-82MS | 25 | 1:1 |
|  | Rulers | 30 CM,15 CM | 25 | 1:1 |
|  | pencils | HB, H,2H | 25 | 1:1 |
|  | erasers | Staedtler | 25 | 1:1 |
|  | Charts | with presentations of data | 25 | 1:1 |
|  | Graph books | A4, A3 | 25 | 1:1 |

## TECHNICAL DRAWING

**UNIT CODE: 0732 451 09A**

**Relationship to Occupational Standards**

This unit addresses the unit of competency: **Apply Technical Drawing**

**Duration of Unit:** 80 Hours

**UNIT DESCRIPTION**

This unit covers the competencies required to prepare and interpret technical drawings. It involves competencies to use and maintain drawing equipment and materials. It also involves producing plain geometry drawings, solid geometry drawings, pictorial and orthographic drawings

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOME** | **DURATION(HOURS)** |
| 1. | Use and maintain drawing equipment and materials | 10 |
| 2. | Produce plane geometry drawings | 20 |
| 3. | Produce solid geometry drawings | 25 |
| 4. | Produce pictorial and orthographic drawings | 25 |
| 5. | Interpret building drawings | 20 |
|  | **TOTAL** | **100HRS** |

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

| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| --- | --- | --- |
| 1. Select, use and maintain drawing equipment and materials | * 1. Identification of drawing equipment      1. Drawing boards      2. T and set squares      3. drawing sets   2. Identification of drawing materials      1. Drawing papers      2. Pencils      3. Erasers      4. masking tapes      5. paper clips   3. Use and maintenance of drawing equipment’s   4. Use of drawing materials   5. Waste material disposal-EMCA 1999 | * Practical * Written tests * Third party reports * Oral assesment |
| 1. Produce plane geometry drawings | * 1. Types of lines used in drawings   2. Construction of geometric forms      1. Circles      2. Triangles      3. Rectangles      4. Parallelogram      5. Polygons      6. Pyramids      7. conic sections      8. prisms, loci   3. Construction of angles      1. -types   4. Measurement of different angles   5. Bisection of different angles   6. Freehand sketching of geometric forms, tools and equipment | * Practical * Written tests * Third party reports * Oral assesment |
| 1. Produce solid geometry drawings | * 1. Interpretation of sketches and drawings of patterns   2. Development of truncated and untruncated regular solids | * Practical * Written tests * Third party reports * Oral assesment |
| 1. Produce orthographic and pictorial drawings. | * 1. Meaning of abbreviations and symbols   2. Drawing and interpretation of orthographic drawings      1. 1st angle      2. 3rd angle   3. Dimensioning of orthographic drawings   4. Interpretation and production of isometric drawings   5. interpretation of oblique drawings | * Practical * Written tests * Third party reports * Oral assessment |
| 1. Interpret building drawings. | * 1. Symbols and abbreviations      1. -Identification      2. -Meaning of symbols   2. interpretation of Dimensions and annotations   3. Interpretation of building section elements   4. Interpretation of building elevations. | * Practical * Written tests * Third party reports * Oral assessment |

**Suggested Methods of Delivery** **Dimensions and annotations** Demonstration by trainer

* Practice by the trainee
* Group discussions
* Direct instruction

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1 | T-square | 800mm-plastic or wooden | 25 | 1:25 |
| 2 | Set squares | 30,60 degrees,  45 degrees by 300mm | 25 | 1:25 |
| 3 | Drawing sets | Helix technical drawing set | 25 | 1:25 |
| 4 | French curves | Hyperbola, parabola and elliptical (Clear Tint) | 25 | 1:25 |
| 5 | Drawing tables | Dimensions 600x800 wooden or plastic | 25 | 1:25 |
|  | Building drawings | Architectural drawing  Structural drawing  Mechanical drawing  Electrical drawing | 5 | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture/theory room | (9\* 8 sq. metres) | 1 | 1:25 |
|  | Drawing room | 15\* 10 sq. metres) | 1 | 1:25 |

# 

## BUILDING SUBSTRUCTURE WORKS

**UNIT CODE:** **0732 451 10A**

**UNIT DURATION:** 120 Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Perform Building Substructure Works

**Unit Description**

This unit specifies the competencies required to performing building substructure works. It involves, executing foundation excavation works, laying foundation concrete, carrying out foundation walling and laying out construction oversite concrete.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOME** | **DURATION(HOURS)** |
| 1. | Execute foundation excavation works | **20** |
| 2. | Lay foundation concrete | **40** |
| 3. | Carry out foundation walling | **30** |
| 4. | Lay out construction over-site concrete | **30** |
|  | **TOTAL** | **120HRS** |

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** | |
| 1.Execute foundation excavation works | * 1. PPEs      1. Types      2. Uses   2. Types of foundation   3. Trench excavation tools and equipment      1. Types      2. Uses   4. Trench timbering materials      1. Preparation   5. Trench excavation   6. Erection of trench timbering   7. Trench Dewatering      1. Methods   8. Anti – termite treatment      1. Uses | •Practical  •Projects  •POE evaluation  •Third party reports  •Written tests | |
| 2. Lay foundation concrete | 1. PPEs 2. Concrete works tools and equipment identification 3. ***Concrete class***    * 1. Class 15      2. Class 20      3. Class 25      4. Class 30 4. ***Batching of Concrete materials***    * 1. Cement      2. Fine aggregates      3. Course aggregates      4. Water 5. Fixing of Reinforcement bars 6. Mixing of Batched materials 7. Placing of Fresh concrete 8. Compaction of concrete 9. Curing |  | |
| 3 Carry out foundation walling | 1. PPEs 2. ***Foundation wall construction tools and equipment***    * 1. Trowel      2. Spade      3. Wheelbarrows      4. Building line      5. Plumb bob      6. Spirit level      7. Mason square 3. Preparation of ***Foundation wall construction materials*** 4. Transformation of Foundation wall dimensions. 5. Foundation wall is erection 6. Curing process 7. Backfilling   . |  | |
| 4 lay out construction over-site concrete | * 1. PPEs   2. Tools and equipment   3. Ground construction materials      1. Hard-core      2. Blinding      3. Damp-proof membrane      4. BRC   4. Functional requirements of oversite concrete   5. Laying of hard-core      1. Functions of hard-core      2. Procedure   6. Formwork erection   7. Blinding      1. Materials      2. Function of blinding.      3. Procedure   8. Termite control      1. Importance   9. Laying of DPM      1. Materials      2. Procedure   10. Laying of BRC mesh       1. Procedure   4.11 Over-site concrete construction materials   * + 1. Cement     2. Fine aggregates     3. Course aggregates     4. Water   4.12 Concrete slab castinng  4.13 Curing |  | * Practical assessment * Projects * Third party report * Written assessment * Oral assessment * Portfolio of evidence | |

**Suggested Methods of Instruction**

* Practical
* Projects
* Demonstrations
* Group Discussion
* Direct Instruction

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Desktop computers/laptops | Anny model | 5 | 1:5 |
|  | Tape measures | 5 metres | 25 | 1:1 |
|  | Builders line |  | 5 | 1:5 |
|  | Mason square |  | 5 | 1:5 |
|  | Timber | Assorted | Sufficient |  |
|  | Nails | Assorted | Sufficient |  |
|  | Claw bar |  | 5 | 1:5 |
|  | Panga |  | 5 | 1:5 |
| 1. 5 | Jembe |  | 5 | 1:5 |
|  | Pick axe |  | 5 | 1:5 |
|  | Cement/ lime |  | 25 bags | 1:1 |
|  | spade |  | 5 | 1:5 |
|  | Trowel |  | 25 | 1:1 |
|  | Spirit level |  | 5 | 1:5 |
|  | Plumb bob |  | 25 | 1:1 |
|  | Wood float |  | 25 | 1:1 |
|  | Bar bender |  | 5 | 1:5 |
|  | BRC Mesh/ Reinforcement bars |  | 5 | 1:5 |
|  | Hardcore |  | 10Ton | 1:5 |
|  | Murram |  | 10Ton | 1:5 |
|  | Ballast |  | 10Ton | 1:5 |
|  | Sand |  | 10Ton | 1:5 |
|  | DPM |  | 1roll |  |
|  | Anti- termite control |  | 10L | 1:5 |
|  | Concrete mixer |  | 1 | 1:25 |
|  | Dumpy level |  | 5 | 1:5 |
|  | Total Station |  | 5 | 1:5 |
|  | Tamping rod/ poker vibrator |  | 1 | 1:25 |
| **B** | **Learning Facilities & Infrastructure** | | | |
|  | Lecture Room | (9\* 8 sq. metres) | 1 | 1:25 |
|  | Workshop/ construction site |  | 1 | 1:25 |
|  | Internet Connection | System | 1 | 1:25 |
|  | Whiteboard | Glass, melamine, porcelain | 1 | 1:25 |

## DOORS AND WINDOWS

UNIT CODE: **0732451 11A**

**UNIT DURATION: 50 Hours**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Install doors and windows

**Unit Description**

This unit describes the competencies required to install doors and windows. It involves

Installing door and window frames, constructing and fixing door and windows and fixing iron mongeries.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOME** | **DURATION(HOUR)** |
|  | To install door and window frames | **20** |
|  | To construct and fix door and window shutters | **20** |
|  | Fix iron mongeries | **10** |
|  | **TOTAL** | **50** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Install door and window frames | 1. Preparation and interpretation of door and window schedule 2. Costing of doors and windows frames 3. Fixing door and window frames | * Written assessment * Practical * Projects * Oral |
| 1. construct and fix door and window shutters | 2.1 Door and window ***shutters***   * + 1. Metallic     2. Plastic     3. Glass     4. Wooden   2.2 Construction of Doors and window shutters  2.3 positioning of Doors and windows | * Written assessment * Practical * Projects * Oral |
| 1. Fix iron mongeries | * 1. *Identification* ***of Iron mongeries***      1. Fasteners      2. Peg Stay      3. Enclosures      4. Ball catchers      5. Locks      6. Hinges      7. Handles      8. Stoppers      9. Nails and screws   2. Fitting of Iron mongeries   3. Testing of Iron Mongeries |  |

**Suggested Methods of Instruction**

* Viewing of related videos
* Discussion
* Direct Instruction
* Lecture
* Question and answer
* Site visits
* Practical

**Recommended Resources for 20 Trainees**

* Drawing room
* 10 Desktop computers/laptops
* 20 Drawing tables
* Drawing papers
* Internet connection
* 1 Projector
* 1 Whiteboard
* 1 roll Flip Chart
* Assorted colour of whiteboard markers
* 1 Blueprinter
* Drawing instruments
* Hand tools
* Carpentry workshop
* Tiles
* Lining boards
* Lime

## 

## EXTERNAL WORKS

**UNIT CODE: 0732 451 12A**

**UNIT DURATION: 60 Hours**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: execute external works

**UNIT DESCRIPTION**

This unit describes the competencies required to execute external works. It involves performing landscaping, constructing drainage system, laying external paving, and constructing gates and fences.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| S/No | **Learning Outcomes** | Durations |
|  | To perform landscaping | 15 |
|  | To construct drainage system | 15 |
|  | To lay external paving | 15 |
|  | To construct gates and fences | 15 |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Perform landscaping | 1. Determination of area for landscaping 2. Preparation of landscaping ground 3. Planting vegetative features 4. Method of irrigation 5. Beatification    * 1. Ornamental trees      2. Grassing      3. Flowers      4. Shrubs      5. Ground cover      6. Garden furniture      7. Garden lighting | * Written texts * Practical * Projects * Oral |
| 1. Construct drainage system | * 1. Interpretation of Drainage drawings   2. Excavation ***of Drainage channels***      1. Open channels      2. Closed channels   3. Backfilling, Levelling and compacting   4. ***Laying of Drainage pipes***      1. concrete pipes      2. PVC pipes      3. GI pipes      4. PPR pipes   5. Construction of Drainage channels and collection chambers | * Written assessment * Practical * Projects * Oral |
| 1. Lay external paving | 1. Ground survey 2. Ground excavation 3. Base preparation 4. Levelling 5. Kerbs stones, surface drainage 6. Laying external paving 7. Marking | * Written assessment * Practical * Projects * Oral |
| 1. Construct gates and fences | 1. Gate location and orientation 2. Gate measurements 3. Gate supporting systems    * 1. RC columns      2. Stanchions      3. Stone Piers 4. Procurement and installation of the gate 5. Perimeter fence 6. Essential services    * 1. CCTVS cameras      2. security lighting      3. razor wire      4. Electric fence. | * Written assessment * Practical * Projects * Oral |

**Suggested Methods of Instruction**

* Viewing of related videos
* Discussions
* Direct Instruction
* Lecture
* Question and answer
* Site visits
* Practicals

**Recommended Resources for 20 Trainees**

* 10 Desktop computers/laptops
* Internet connection
* 1 Projector
* 1 Whiteboard
* 1 roll Flip Chart
* Assorted colour of whiteboard markers
* Precast concrete kerbs
* Precast concrete paving units
* Quarry dust
* Sand
* Cement
* Ballast
* Construction tools
* 10 Spade
* 5 Wheelbarrows
* 20 Painting brushes
* 20 Trowels
* 20 Spririt levels
* 20 Screw drivers
* 20 Hammers
* 20 Plumb bobs
* 20 Wooden float
* 20 Steel float
* 20 Head pans

# 

# 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 entails conducting self-management skills, promoting ethical work practices and values, promoting teamwork, maintaining professional and personal development, applying problem-solving skills and promoting customer care.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOMES** | **DURATION(HOURS)** |
| 1. | To Apply Self-Management Skills | **10** |
| 2. | To Promote Ethical Practices and Values | **4** |
| 3. | To Promote Teamwork | **10** |
| 4. | To Maintain Professional and Personal Development | **10** |
| 5. | To Apply Problem-Solving Skills | **4** |
| 6. | To Promote Customer Care. | **2** |
|  | **TOTAL** | **40 HRS** |

**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 * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 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 | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 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 8. Leading a team 9. Team performance and evaluation 10. Conflicts and conflict resolution 11. Gender and diversity mainstreaming 12. Developing Healthy workplace relationships 13. Adaptability and flexibility 14. Coaching and mentoring skills | * Observation * Written assessment * Oral assessment * Third party reports * 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 | * Observation * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 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 * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |
| 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 * Written assessment * Oral assessment * Third party reports * Portfolio of evidence * Project * Practical |

**Suggested Methods of Instruction**

● Instructor lead facilitation of theory using active learning strategies.

● Demonstrations

● Simulation/Role play

● Group Discussion

● Presentations

● Projects

● Case studies

● Assignments

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
| 1. | Charts | · Flip Charts  · Rules and Regulations | 5 | 1:5 |
| 2. | Markers | whiteboard markers and permanent markers | 50 | 1:1 |
| 3. | Video clips  Audio tapes | MP4, MP3 | 5 | 1:5 |
| **B** | **Learning Facilities & Infrastructure** | | | |
| 4. | Lecture/Theory Room | (9\* 8 sq. metres) | 1 | 1:25 |
| 5. | Internet Connection | WI-FI, Dial-Up, Cable, Fixed-wireless, | 1 | 1:25 |
| **C** | **Consumable Materials** | | | |
| 6. | Flashcards | Alphabet, Numbers, Math | 25 | 1:1 |
| 7. | Stationery | Printing Papers, and Exercise Books Sizes A4, A3, A2 etc | 5 reams | 1:5 |
| **D** | **Tools And Equipment** | | | |
| 8. | Computers/Laptops | Any model | 1 | 1:25 |
| 9. | Projector | LED.LCD, Laser | 5 | 1:5 |
| 10. | Whiteboard | Glass, melamine, porcelain | 1 | 1:25 |
| 11. | Mobile Phones | Smartphones | 5 | 1:5 |

## BASIC MATHEMATICS II

**UNIT CODE: 0541 451 14A**

**Relationship to Occupational Standards**

This unit addresses the unit of competency: Apply Basic Mathematics II

**Duration of Unit:** 80 Hours

**UNIT DESCRIPTION:**

This unit describes the competencies required in applying basic mathematics. It involves performing trigonometry calculations, performing geometric calculations and applying linear graphs.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOME** | **DURATION(HOURS)** |
| 1. | Perform Trigonometry calculations | **30** |
| 2. | Perform geometric calculations | **30** |
| 3. | Apply linear graphs | **20** |
|  | **TOTAL** | **80 HRS** |

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

|  |  |  |
| --- | --- | --- |
| * + - 1. Perform Trigonometry calculations | * 1. Trigonometric calculations   2. Trigonometric ratios   3. Trigonometric Calculations | * Written assessments * Assignments * Supervised exercises |
| * + - 1. Perform geometric calculations | * 1. Geometrical figures   2. Areas of figures   3. Apply Pythagoras’ theorem | * Written tests * Assignments * Supervised exercises |
| * + - 1. Apply linear graphs | * 1. Data set identification   2. Scales in graphs   3. Axes labeling   4. Linear graph plotting   5. Distance against time   6. Temperature against time   7. Velocity against time   8. Graph analysis | * Written assessments * Assignments * Supervised exercises |

**Suggested Delivery Methods**

* Practical
* Projects
* Group discussion
* Direct instruction

**Recommended Resources for 25 trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Scientific Calculators | Casio FX-82MS | 25 | 1:1 |
|  | Rulers | 30 CM,15 CM | 25 | 1:1 |
|  | pencils | HB, H,2H | 25 | 1:1 |
|  | erasers | Staedtler | 25 | 1:1 |
|  | Charts | with presentations of data | 25 | 1:1 |
|  | Graph books | A4, A3 | 25 | 1:1 |

## CONSTRUCTION MATERIAL SCIENCE

**UNIT CODE: 0722 451 15A**

**Relationship to Occupational Standards**

This unit addresses the unit of competency: Apply construction material science.

**Duration of Unit:** 60 Hours

**UNIT DESCRIPTION**

This unit describes the competence in applying Construction materials science. It involves identifying essential construction materials and their properties, selecting quality construction materials, testing construction material and handling and use of construction materials.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOMES** | **DURATION(HOURS)** |
| **1.** | Identify essential construction materials | **10** |
| **2.** | Identify properties of construction materials | **10** |
| **3.** | Select quality construction materials | **10** |
| **4.** | Test construction materials | **10** |
| **5.** | Handle construction materials | **10** |
| **6.** | Use construction materials | **10** |
|  | **TOTAL** | **60 HRS** |

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

| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| --- | --- | --- |
| Identify essential construction materials | * 1. Identification of construction material      1. walling materials      2. roofing materials      3. clay and clay products      4. class and class products      5. timber and timber products      6. reinforcing materials      7. finishing materials      8. roofing materials      9. finishing materials      10. binding materials      11. Glass and glass products      12. Bitumen and bituminous products | * Practical * Written tests * Third party reports * Oral assessment |
| Identify properties of construction materials | * 1. Identification of physical properties of construction materials      1. Porosity      2. Surface texture      3. Strength      4. Density      5. Thermal conductivity      6. Wear and tear   2. Identification of chemical properties of construction materials      1. Corrosion resistance      2. Chemical resistance   3. Identification of mechanical properties of construction materials      1. Toughness      2. Hardness      3. Fatigue      4. Stress and strain      5. Creep and stress rapture      6. Strength | * Practical * Written tests * Third party reports * Oral assessment |
| Select quality construction materials | * 1. Analysis and evaluation of Cost implications of construction materials   2. Selection of Quality of construction materials      1. -cost      2. -availability      3. -requirement   3. Selection criteria of construction materials. | * Practical * Written tests * Third party reports * Oral assessment |
| Test construction materials | * 1. Sampling of construction materials      1. -random sampling   2. Test parameters      1. Compression      2. Weathering      3. Durability      4. Water absorption      5. Impurity tests      6. Tensile tests      7. Workability      8. Plasticity      9. Aggregates crushing value      10. Optimum moisture content   3. Testing of construction materials | * Practical * Written tests * Third party reports * Oral assessment |
| Handle construction materials | * 1. Handling of identified construction materials   2. Identification of safety requirements of construction materials   3. Safety requirements of construction materials | * Practical * Written tests * Third party reports * Oral assessment |
| Use construction materials | * 1. Assembling of Construction materials, tools and equipment.   2. Preparation of construction materials   3. Requirement of construction materials      1. -uses | * Practical * Written tests * Third party reports * Oral assessment |

**Suggested Methods of Delivery**

* Projects
* Group discussions
* Direct instruction
* Practical’s
* Third party reports

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Charts | Procedures, rules and regulations, flow charts, Diagrams | 5 | 1:5 |
|  | Stationery | A4 Exercise  Pens  Graph papers  Eraser  Pencils | 25 each | 1:1 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture/theory room | (9\* 8 sq. metres) | 1 | 1:25 |
|  | Equipped material testing lab | (15\*10 sq. metres) | 1 | 1:25 |

## BUILDING SUPERSTRUCTURE WORKS

UNIT CODE: 0732 453 16A

**UNIT DURATION:** 80 Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Carry Out Building Super Structure Works

**Unit Description**

This unit specifies the competencies required to perform building super structure works. It involves: Erecting structural elements, laying of superstructure walls, carrying out upper floor construction and fixing building casements.

These entail activities that are carried out above the ground level of a building and also contribute greatly to the functionality and stability of the structure under construction.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOMES** | **DURATION(HOURS)** |
| **1.** | Erect structural elements | **20** |
| **2.** | Lay superstructure walls | **20** |
| **3.** | Carry out upper floor construction. | **20** |
| **4.** | Fix building casements | **20** |
|  | **TOTAL** | **80 HRS** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1.Erect structural elements | 1. ***PPEs*** 2. Assembling of ***Structural element tools* *and equipment*** 3. Preparation of ***Structural element materials*** 4. Fixing of Reinforcement bars 5. Erection of Formwork. 6. Placing of Concrete 7. Strucking of Formwork 8. Curing requirement | * Practical * Projects * POE evaluation * Third party reports * Written tests |
| 2. Lay superstructure walls | * 1. PPEs      1. Types      2. Uses   2. Wall construction tools and equipment      1. Types      2. Uses   3. Wall construction      1. External      2. Partitioning      3. Cavity      * 1. Walling materials      1. Cement      2. Fine aggregate      3. Walling units      4. Hoop iron      5. Water   2. Screed   3. DPC   4. Erection of construction wall   5. Waste materials      1. Reuse   6. Superstructure wall opening   7. Superstructure wall curing | * Practical * Projects * POE evaluation * Third party reports * Written tests |
| 1. Carry out upper floor construction | * 1. PPEs   Types   * + 1. Uses   1. Upper floors      1. Types Ribbed      2. Hollow pots      3. Flat slab   2. Upper floor construction tools and equipment      1. Types      2. Uses      3. Design considerations   3. Upper floor construction materials   4. Erection of formwork   5. Upper floor installation   6. Form work strucking   7. Upper floor curing | * Practical * Projects * POE evaluation * Third party reports * Written tests |
| 4 Fix building casements | 1. PPEs 2. ***Building Casement*** positioning 3. Obtaining of Building Casements 4. Fixing of Building Casements | * Practical * Projects * POE evaluation * Third party reports * Written tests |

**Suggested Methods of Instruction**

* Practical
* Projects
* Demonstrations
* Group Discussion
* Direct Instruction

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Desktop computers/laptops | Any model | 5 | 1:5 |
|  | Tape measures | 5 metres | 25 | 1:1 |
|  | Builders line |  | 5 | 1:5 |
|  | Mason square |  | 5 | 1:5 |
|  | Timber | Assorted | Sufficient |  |
|  | Nails | Assorted | Sufficient |  |
|  | Claw bar |  | 5 | 1:5 |
|  | Cement/ lime |  | 25 bags | 1:1 |
|  | spade |  | 5 | 1:5 |
|  | Trowel |  | 25 | 1:1 |
|  | Spirit level |  | 5 | 1:5 |
|  | Plumb bob |  | 25 | 1:1 |
|  | Wood float |  | 25 | 1:1 |
|  | Bar bender |  | 5 | 1:5 |
|  | BRC Mesh/ Reinforcement bars |  | 5 | 1:5 |
|  | Dpc |  | 1 roll | 1:5 |
|  | Ballast |  | 10Ton | 1:5 |
|  | Sand |  | 10Ton | 1:5 |
|  | Concrete mixer |  | 1 | 1:25 |
|  | Tamping rod/ poker vibrator |  | 1 | 1:25 |
|  | Prefabricated building casements |  | sufficient |  |
|  | Batching boxes |  | 5 | 1:5 |
|  | Hoop Iron |  | 1 roll | 1:5 |
|  | Binding wire |  | 1 roll | 1:5 |
| **B** | **Learning Facilities & Infrastructure** | | | |
|  | LectureRoom | (9\* 8 sq. metres) | 1 | 1:25 |
|  | Workshop/ construction site |  | 1 | 1:25 |
|  | Internet Connection | System | 1 | 1:25 |
|  | Whiteboard | Glass, melamine, porcelain | 1 | 1:25 |

## MASONRY WORKS FINISHES II

UNIT CODE: 0732 453 17A

**UNIT DURATION:** 80 Hours

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Perform Building Finishes II

**Unit Description**

This unit specifies the competencies required to perform building finishes. It involves laying tiles, laying terrazzo and applying Paint. These are tasks and activities carried out at almost the tail end of construction.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **S/NO** | **LEARNING OUTCOME** | **DURATION(HOURS)** |
| **1** | Lay tiles on surfaces | **26** |
| **2** | Lay terrazzo on surfaces | **36** |
| **3** | Apply Paint | **18** |
|  |  | **TOTAL 80 HRS** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Lay tiles on surfaces | * 1. PPEs   2. ***Tiling tools* *and equipment***   3. Tiling Surface screeding   4. ***Tiling materials***   5. Tile setting   6. Tile cutting.   7. Tiles fixing   8. Tile joint   9. Tiled surface cleaning | Practical  •Projects  •POE evaluation  •Third party reports  Written tests |
| 1. Lay terrazzo on surfaces | * 1. PPEs   2. ***Terrazzo tools and equipment***  1. Terrazzo Surface screeding    1. ***Terrazzo materials***    2. Terrazzo dividing strips    3. Mixing Terrazzo chips.    4. Green terrazzo mixture    5. Green terrazzo mixture compacting    6. curing    7. Terrazzo surface grounding    8. Polishing Terrazzo surface | Practical  •Projects  •POE evaluation  •Third party reports  Written tests |
| 1. Apply Paint | * 1. PPEs      1. Types      2. uses   2. Cordoning off methods      1. Physical barrier      2. Temporary barriers      3. Safety signage      4. Masking and taping      5. Work site zoning   3. Working platform methods.      1. scaffolding   4. Surface preparation      1. Filler      2. Sanding      3. Scrapping existing paint   5. Setting out of painting area.   6. Paint mixing      1. Manual mixing      2. Mechanical mixing      3. Computerised mixing   7. Application paint      1. Brush painting      2. Roller painting      3. Spray painting   8. Painting equipment maintenance | 1. Written Assessments 2. Reports 3. Written Tests 4. Practical Assessments 5. Observation |

**Suggested Methods of Instruction**

* Practical
* Projects
* Demonstrations
* Group Discussion
* Direct Instruction

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Desktop computers/laptops | Any model | 5 | 1:5 |
|  | Tape measures | 5 metres | 25 | 1:1 |
|  | Builders line |  | 5 | 1:5 |
|  | Mason square |  | 5 | 1:5 |
|  | Cement/ lime |  | 25 bags | 1:1 |
|  | spade |  | 5 | 1:5 |
|  | Trowel |  | 25 | 1:1 |
|  | Spirit level |  | 5 | 1:5 |
|  | Plumb bob |  | 25 | 1:1 |
|  | Wood float |  | 25 | 1:1 |
|  | Steel float |  | 25 | 1:1 |
|  | Concrete chisel |  | 25 | 1:1 |
|  | Straight edge |  | 5 | 1:5 |
|  | Sand |  | 10Ton | 1:5 |
|  | Tiles |  | 10 packets | 1:5 |
|  | Tile cutter |  | 5 | 1:5 |
|  | Tile spacer |  | 5 packets | 1:5 |
|  | Concrete mixer |  | 1 | 1:25 |
|  | Tamping rod/ poker vibrator |  | 1 | 1:25 |
|  | Terrazzo chippings |  | 10 packets | 1:5 |
|  | Surface grinder |  | 1 | 1:25 |
|  | Wire brush |  | 5 | 1:5 |
|  | Keying rod |  | 5 | 1:5 |
|  | Batching boxes |  | 5 | 1:5 |
| **B** | **Learning Facilities & Infrastructure** | | | |
|  | LectureRoom | (9\* 8 sq. metres) | 1 | 1:25 |
|  | Workshop/ construction site |  | 1 | 1:25 |
|  | Internet Connection | System | 1 | 1:25 |
|  | Whiteboard | Glass, melamine, porcelain | 1 | 1:25 |