

**REPUBLIC OF KENYA**

**COMPETENCY BASED MODULAR CURRICULUM**

**FOR**

**CARPENTERY AND JOINERY**

**LEVEL 3**

**ISCED PROGRAMME CODE: 0732 254 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).

TVET ACT, 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.

# 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 construction 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

CBET Competency Based Education and Training

EMCA Environmental Management and Coordination Act

ICT Information Communication Technology

ISCED International Standard Classification of Education

ISO International Organization for Standardization

OS Occupational Standard

OSH Occupational Safety and Health

PPE Personal Protective Equipment

TVET Technical and Vocational Education and Training

# KEY TO ISCED UNIT CODE



# COURSE OVERVIEW

Carpentry and Joinery Level 3 qualification consist of competencies that a person must achieve to enable him/her to perform carpentry and joinery works. It involves constructing temporary works, fixing door and door frames and installing cabinetry works.

SUMMARY OF UNITS OF LEARNING

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **Unit of Competency Title** | **Unit Duration (Hours)** | **Credit Factor** |
| 0732 251 01A | TEMPORARY WORKS | 130 | 13 |
| 0732 251 02A | DOOR & WINDOW FRAMES | 100 | 10 |
| 0732 251 03A | CABINETRY WORKS | 120 | 12 |
|  | SUB TOTAL | 350 | 35 |
|  | INDUSTRIAL TRAINING | 240 | 24 |
|  | GRAND TOTAL | 590 | 59 |

The total duration of the course is **590** hours.

**Entry Requirements**

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

1. Kenya certificate of primary education.

OR

1. Any other equivalent qualification as determined by TVET Authority

**Industrial attachment**

An individual enrolled in this course will be required to undergo a field attachment for a minimum period of 240 hours in a Construction sector.

**Trainer qualification**

A trainer for any of the Units of Competency in this course must:

1. Have a minimum of KNQF Level 5 qualification in carpentry and joinery or its equivalent qualification in the related area of specialization.
2. Be registered by TVETA

**Industry Training**

An individual enrolled in this course will be required to undergo Industry training for a minimum period of 240 hours in 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 involve practical assessment focusing more on critical aspects of the respective unit of competency.
3. Theoretical and practical weight shall be 10:90 respectively for each unit of learning;
4. Theoretical (written/oral) assessment shall have formative and summative assessments weighted at 60% and 40% respectively in the overall unit of learning score
5. 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 Certificate** in carpentry and joinery Level 3 certificate, the candidate must demonstrate competence in all the Units of Competency as given in the qualification pack. A Statement of Attainment certificate may be issued upon demonstration of competence in a certifiable element within a unit.

The certificates will be issued by the Qualification Awarding Institution

### **TEMPORARY WORKS**

**UNIT CODE : 0732 251 01A**

**Relationship to Occupational Standards**

This unit addresses the unit of competency: Construct temporary works

**Duration of Unit:** 130 Hours

**UNIT DESCRIPTION**

This unit describes the competencies required to construct temporary works. It involves setting out and preparing for temporary works, installing trench timbering for excavation support, constructing and erecting form work for concrete structures, installing and securing shuttering for concrete works, dismantling and removing temporary works.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| S/No. | Learning Outcome | Duration (Hours) |
|  | Set Out and Prepare for Temporary Works | 35 |
|  | Install Trench Timbering for Excavation Support | 25 |
|  | Construct and Erect Form work for Concrete Structures | 25 |
|  | Install and Secure Shuttering for Concrete Work | 25 |
|  | Dismantle and Remove Temporary Works | 20 |
| Total | | 130 |

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** | |
| * + - 1. Set Out and Prepare for Temporary Works | * 1. Personal protective equipment      1. gloves      2. helmet      3. safety boots   2. Drawings for temporary structures      1. units’ conversion      2. symbols and abbreviation      3. drawing equipment      4. freehand sketching   3. Tools, equipment s and Materials,      1. hand tools      2. portable power tools      3. timber      4. manufactured boards      5. material handling   4. Measuring and marking out      1. tools and equipment      2. measuring      3. marking out      4. cutting out      5. joining the components   5. Safety regulation and risk management      1. safety      2. materials quality standards      3. workshop safety standards      4. site safety standards      5. general safety standards   6. housekeeping practices | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports | |
| * + - 1. Install Trench Timbering for Excavation Support | * 1. Trench timbering materials      1. Identify materials      2. Tools and equipment      3. Select temporary works materials      4. Prepare temporary works members      5. Install temporary work      6. Safety checks   2. Timber walling boards, poling boards, struts for trench support      1. Tools and equipment      2. Selection of appropriate struts      3. Placement of struts      4. Safety checks   3. Securing and bracing      1. tools and equipment      2. selection of appropriate braces      3. placement of braces      4. safety checks   4. Safe access and stability of trench timbering      1. identify entry points      2. identify appropriate materials for entry points      3. placement of supports      4. safety checks   5. inspecting and maintaining timbering throughout excavation works      1. identify critical areas      2. tools and equipment      3. selection of appropriate materials      4. reinforce critical areas      5. safety checks   6. Housekeeping practices | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports | |
| * + - 1. Construct and Erect Formwork for Concrete Structures | * 1. Formwork materials      1. identify formwork materials      2. prepare formwork materials   2. Assembling and positioning formwork for construction elements (beams, columns, walls and slabs)      1. identify construction elements      2. select appropriate materials      3. prepare materials      4. assemble formwork members      5. install formwork members      6. safety checks   3. Securing formwork      1. selection of appropriate formwork support members      2. prepare materials      3. install support to formwork      4. safety checks   4. dimensions, alignment and plumb levels      1. interpret working drawing      2. tools and equipment      3. correct errors      4. safety checks   5. release agents      1. identify release agents      2. select appropriate release agents      3. prepare release agents      4. tools and equipment      5. apply release agents      6. inspection   6. Housekeeping practices | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports | |
| 1. Install and Secure Shuttering for Concrete Work | * 1. Shuttering materials      1. identify shuttering materials      2. select shuttering materials      3. tools and equipment      4. prepare shuttering materials      5. assemble shuttering members      6. safety checks   2. Positioning and fitting shuttering      1. identification of concrete elements      2. tools and equipment      3. select shuttering members      4. prepare shuttering members      5. position shuttering members      6. install shuttering members      7. safety checks   3. reinforcement access      1. identify reinforcement access points      2. selection of materials      3. reinforce access points      4. safety checks   4. Reinforcing shuttering before pouring concrete      1. identify critical areas      2. section of appropriate materials      3. tools and equipment      4. reinforce critical areas      5. safety checks   5. Housekeeping practices | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports | |
| 5. Dismantle and remove temporary works | * 1. Concrete curing      1. Inspect concrete      2. Reporting the condition of the concrete   2. Dismantling and removing supports      1. identify members to dismantle      2. tools and equipment      3. Satety measures      4. strike off supports to formwork      5. strike off the formwork      6. site clearance   3. Reusable materials      1. select materials      2. tools and equipment      3. store reusable materials      4. house keeping   4. Waste materials disposal      1. identify materials on site      2. tools and equipment      3. dispose of non-reusable materials      4. housekeeping practices | | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports |

**Suggested Methods of Instruction**

1. Practical
2. Demonstration
3. Project based learning
4. Group discussion
5. Hands on practice

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Textbooks | * Carpentry and joinery | 5 | 1:5 |
|  | Temporary works manuals | Temporary works | 5 | 1:5 |
|  | Charts | * Flip Charts * Rules and Regulations | 5 | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture/theory room | (30\* 40 sq. feet) | 1 | 1:25 |
|  | Workshop | (30\* 40 sq. feet) | 1 | 1:25 |
| **C** | **Consumable materials** |  |  |  |
|  | Timber | Plank (4\*2) 7ft long  Battens (6\*1-long 7ft) | 3pcs  5pcs | 1:25 |
|  | Sand paper | Rolls/ pieces | 4 rolls/25 pcs | 1:1 |
|  | Brushes | Sizes 2,3,4 and 5 inches | 25 sets | 1:1 |
|  | Varnish | Litres | 10 | 1:25 |
|  | Wood glue | Kilograms | 20 | 1:25 |
|  | Nails | Ordinary nails 1.5 inches  Lost head nails 1.5 inches | 5kg  5kgs | 1:25 |
|  | Glazing | Panels | 5 panels | 1:1 |
|  | Ironmongery | Hinges  Latches  Locks | 75pcs  75pcs  25pcs | 3:1  3:1  1:1 |
| D | **Tools and Equipment** | | | |
|  | Planes | Jack planes | 25 pcs | 1:1 |
|  | Saw | Hand saws | 25 pcs | 1:1 |
|  | Squares | Tri square | 25 pcs | 1:1 |
|  | Benches with two vices | Pieces | 13 pcs | 1:2 |
|  | Tape measure | Pieces | 25 pcs | 1:1 |
|  | Spirit levels | Pieces | 5 pcs | 1:5 |
|  | Bevel squares | Pieces | 13 pcs | 1:2 |
|  | Mortise gauges | Pieces | 5 pcs | 1:5 |
|  | Claw hammers | Pieces | 25 pcs | 1:1 |
|  | Chisels | Pieces | 25pcs | 1:1 |
|  | Wooden mallets | Pieces | 25pcs | 1:1 |
|  | Sash clamps | Pieces | 5 | 1:5 |
|  | G-clamps | Pieces | 13 | 1:2 |
|  | Plumb bobs | Pieces | 13 | 1:2 |
|  | Drilling machine | Pieces | 5 | 1:5 |

### **DOOR AND WINDOW FRAMES**

**UNIT CODE: 0732 251 02A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Fix door and window frames

**Duration of Unit:** 100 Hours

**Unit Description**

This unit describes the competence required to fix door and window frames. It involves setting out and preparing openings for frames, positioning and securing door and window frames, applying fixings and reinforcements and finishing and inspecting installed frames.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| S/No. | Learning Outcome | Duration (Hours) |
|  | Set Out and Prepare Openings for Frames | 30 |
|  | Position and Secure Door and Window Frames | 20 |
|  | Apply Fixings and Reinforcements | 30 |
|  | Finish and Inspect Installed Frames | 20 |
| Total | | 100 |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Set Out and Prepare Openings for Frames | * 1. Drawings for door and window frame installation      1. Read architectural and technical drawings.      2. Frame positioning, dimensions, and clearance requirements.   2. Dimensions of Openings Against Design Requirements      1. Measure and mark the correct frame positions.      2. Check width, height, and depth of the opening.      3. Compare actual site measurements with specified dimensions.   3. Materials, tools and equipment   4. Alignment of Openings      1. Use leveling tools (spirit level, plumb bob, laser level) to check accuracy.      2. -Ensure the opening is square to prevent misalignment of doors/windows.   5. Surface preparations and treatments      1. Clear the opening of debris, dust, and obstructions.      2. Ensure a smooth, even surface for frame installation.      3. Treat timber frames with anti-termite and moisture-resistant coatings where applicable. | * Observation * Oral assessment * Portfolio of evidence * Third party report * Written assessment * Project * Practical |
| 1. Position and Secure Door and Window Frames | * 1. Type of door and window frames      1. Standard Single Frame      2. Double Door Frame      3. Pocket Door Frame      4. Bi-fold Frame      5. Pivot Frame      6. Knock-Down (KD) Frame      7. Welded Frame      8. Rabbeted Jamb      9. Flat Jamb      10. Split Jamb      11. Cased Opening Frame   2. lifting techniques      1. Align the frame within the designated opening as per specifications.      2. Use support aids like temporary props if necessary.   3. Securing Frames Using Wedges or Clamps      1. Place wooden wedges or clamps at key points to hold the frame in place.      2. Ensure the frame remains stable during adjustments and fastening.      3. Avoid over-tightening, which may cause frame distortion.   4. Checks ie Plumbness, Level, and Correct Alignment      1. Use a spirit level and plumb bob to verify vertical and horizontal alignment.      2. Adjust wedges and supports as needed to maintain accuracy.      3. Ensure proper clearance for doors and windows to operate smoothly.   5. Fixing Frames      1. Select fasteners suitable for the material and structural requirements.      2. Secure the frame at designated fixing points to ensure stability.      3. Use corrosion-resistant screws, nails, or anchors for durability.   6. Expansion Gaps and Appropriate Packing      1. Leave adequate space for frame expansion and contraction.  Use packing materials (e.g., shims, spacers) to maintain even gaps.      2. Seal gaps. | * Observation * Oral assessment * Portfolio of evidence * Third party report * Written assessment * Project * Practical |
| 1. Apply Fixings and Reinforcements | * 1. Fixings and Reinforcements      1. Identify suitable fixings      2. based on frame material and structure.  Choose fasteners such as screws, nails, bolts, and anchors.      3. Select reinforcements like brackets, braces, and corner blocks.   2. Installing Fixings to Secure Frames      1. Position and drill pilot holes for fixings where necessary.      2. Insert and tighten fasteners to ensure firm attachment.      3. Check for movement or misalignment and make adjustments.   3. Reinforcing StructuralStability      1. Install additional braces or support plates as required.      2. Use adhesives or bonding agents for extra reinforcement.      3. Ensure all joints and connections are firm and secure.   4. Inspection and Testing of Fixings and Reinforcements      1. Verify that all fastenings are tight and secure.      2. Check for proper weight distribution and load-bearing capacity.      3. Test door/window operation to ensure stability and smooth function. | * Observation * Oral assessment * Portfolio of evidence * Third party report * Written assessment * Project * Practical |
| 1. Finish and Inspect Installed Frames | * 1. Surface preparation      1. Remove excess adhesives, sealants, and debris.   Sand rough edges and surfaces for a smooth finish.      2. Fill gaps or holes using appropriate fillers   2. Protective and Decorative Finishes      1. Select appropriate finishes (paint, varnish, stain, or sealant).      2. Apply finishing materials evenly for aesthetic appeal and durability.      3. Allow adequate drying time and apply additional coats if necessary.   3. Inspection      1. Verify alignment, level, and plumb positioning.      2. Check for smooth operation of doors and windows.      3. Assess durability and structural integrity.   4. Adjustments and Corrections      1. Rectify minor defects such as uneven surfaces or misalignment.      2. Reinforce weak points or loose fixings.      3. Ensure compliance with project specifications and industry standards.   5. Cleaning and Maintenance of Installed Frames      1. Remove protective coverings and excess finishing materials.      2. Wipe down surfaces to enhance appearance.      3. Advise on long-term care and maintenance of frames. | * Observation * Oral assessment * Portfolio of evidence * Third party report * Written assessment * Project * Practicals |

**Suggested Methods of Instruction**

1. Practical
2. Demonstration
3. Project based learning
4. Group discussion
5. Hands on practice

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Textbooks | * Woodworking hand book * Woodworking basics * Woodwork technology Motivate * Carpentry and joinery * Ebooks | 5 | 1:5 |
|  | Manuals | * Tools and equipment use * Painting * Safety in workshops | 5 | 1:5 |
|  | Charts | * Flip Charts * Rules and Regulations * Safety in workshops | 5 | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture/theory room | (30\* 40 sq. feet) | 1 | 1:25 |
|  | Workshop | (30\* 40 sq. feet) | 1 | 1:25 |
| **C** | **Consumable materials** |  |  |  |
|  | Timber | Planks, boards, frames batten as per the furniture to be made | Sufficient | 1:1 |
|  | Glue | Kilograms | 25 | 1:5 |
|  | Varnish | Litres | 5 | 1:5 |
|  | Paint | Litres | 13 | 1:2 |
|  | Thinner | Litres | 13 | 1:2 |
|  | Sand paper | Pieces or Rolls | 4 rolls/50 pcs | 1:25 |
|  | Filler | Kilograms | 10 | 1:25 |
|  | Nails | Ordinary nails 1.5 inches  Lost head nails 1.5 inches | 5kg  5kgs | 1:5  1:5 |
|  | Screws | Assorted Self-tapping screws | 5 | 1:5 |
| **D** | **Tools and Equipment** | | | |
|  | Plane | Jack plane, smoothening plane, block plane, plough plane, bullnose, spoke shave, rebate plane | 25 | 1:1 |
|  | Saws | Crosscut saw, Ripsaw, Dovetail saw, Mortise and Tenon saw, Coping saw, Compass saw, Hack saw | 25 | 1:1 |
|  | Squares | Try square, bevel square, framing square, speed square, engineer square | 25 | 1:1 |
|  | Working bench | Wooden | 13 | 1:2 |
|  | Hammer | Claw hammers, ball pein hammer, engineers hammer | 25 | 1:1 |
|  | Chisels | Assorted Wood chisels, cold chisel | 25 | 1:1 |
|  | Mallet | Wood mallet, rubber mallet | 25 | 1:1 |
|  | Clamps | Sash Camp, G-clamp, F-clamp, Quick action clamps, corner clamps | 5 | 1:5 |
|  | Brace | Carpenters brace, rachet brace | 5 | 1:5 |

### **CABINETRY WORKS**

**UNIT CODE: 0732 251 03A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Carry out cabinetry works.

**Duration of Unit:** 120 Hours

**UNIT DESCRIPTION**

This unit specifies the competencies required to carry out cabinetry works. It involves setting out and preparing work area, assembling and preparing cabinet units, installing built in cabinets, kitchen cabinets, and wardrobes.

**Summary of Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| S/No. | Learning Outcome | Duration (Hours) |
|  | Set Out and Prepare Work Area | **40** |
|  | Assemble and Prepare Cabinet Units | **50** |
|  | Install Built-in Cabinets, Kitchen Cabinets, and Wardrobes | **30** |
| Total | | **120** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Set Out and Prepare Work Area | * 1. Interpretation of drawings and measurements for cabinetry installation.      1. Symbols and abbreviations         1. Doors         2. Windows         3. Concrete         4. Wrot Timber         5. Unwrot Timber         6. Brick work         7. Block work         8. Reinforcement      2. Unit conversion         1. Metres         2. Millimeters         3. Centimeters         4. kilometers   2. Site conditions, wall, and floor levels for cabinet fitting.      1. Site Conditions      2. Floor levels      3. Wall conditions   3. Tools, equipment, and materials      1. Tools and equipment         1. Hand tools         2. Power tools      2. Materials         1. Timber         2. Manufactured boards         3. Iron Mongery   4. Cleaning and removing workplace obstructions      1. Housekeeping activities         1. Clearing the working area         2. Sweeping the working area         3. Tools cleaning         4. Tools organization         5. Proper material storage         6. Proper waste disposal | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports |
| 1. Assemble and Prepare Cabinet Units | * 1. Personal protective equipment      1. Types      2. Uses   2. Checking and sorting cabinet components      1. Cabinet components         1. Cabinet box (carcass)         2. Cabinet doors         3. Cabinet Drawers         4. Cabinet back panels         5. Shelves      2. Design Specifications         1. Size         2. Shape         3. Material   3. Joinery techniques      1. Joinery Techniques         1. Nails         2. Screws         3. Dowels         4. Bolts and Nuts         5. Clamps         6. Wood glue         7. Rivets   4. Structurally sound assembly.      1. Squareness      2. Levelness      3. Plumbness      4. Rigidity      5. Accuracy   5. Pre-drill holes for hardware, handles, and fittings.      1. Drilling      2. Cutting   6. Background preparation materials      1. Sponges      2. Clean cloths      3. Medium-grit sandpaper      4. Fine-grit sandpaper      5. Sanding block or orbital sander      6. Sanding sponges      7. Dust mask or respirator      8. High-quality primer      9. Cabinet paint      10. Paintbrushes      11. Paint rollers      12. Paint tray and liners      13. Painter's tape   7. Setting out of cabinetry background   8. Templating of cabinetry background      1. Pilot hole drilling      2. Plugging      3. Tracing   9. Housekeeping practices | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports |
| 1. Install Built-in Cabinets, Kitchen Cabinets, and Wardrobes | * 1. Tools, equipment and materials   2. Construction of cabinetry frame   3. Positioning of cabinets according to layout.      1. Fix base      2. Fix wall      3. Fix top   4. Supporting structures for cabinets using appropriate fasteners.      1. Supporting structures         1. walls         2. floors      2. Fasteners         1. Nails         2. Screws   5. Alignment, leveling, and spacing between units.      1. Alignment      2. Spacing      3. Levels   6. Housekeeping activities      1. Clearing the working area      2. Sweeping the working area      3. Tools cleaning      4. Tools organization      5. Proper material storage      6. Proper waste disposal | * Practical * Projects * Written tests * Portfolio of evidence * Third party reports |

**Suggested Methods of Instruction**

1. Practical
2. Demonstration
3. Project based learning
4. Group discussion Hands on practice

**Recommended Resources for 25 Trainees**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | |
|  | Textbooks | * Modern cabinet making * Hand crafted cabinetry | 5  5 | 1:5 |
|  | Manuals | Manual on cabinetry works | 5 | 1:5 |
|  | Charts | * Flip Charts * Rules and Regulations | 5  5 | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | |
|  | Lecture/theory room | 1 (30\* 40 sq. feet) | 1 | 1:25 |
|  | Workshop | 1 (35\* 50 sq. feet) | 1 | 1:25 |
| **C** | **Consumable materials** | | | |
|  | Timber | Plank (4\*2) 7ft long  Battens (2\*1-long 7ft) | 3pcs  10pcs | 1:25 |
|  | Manufactured boards | * Plywood * Fibreboard * Block board * Soft board | 5pcs each | 1:5 |
|  | Sand paper | Rolls/ pieces | 4 rolls/25 pcs | 1:1 |
|  | Brushes | Sizes 2,3,4 and 5 inches | 25 sets | 1:1 |
|  | Varnish | Litres | 10 | 1:25 |
|  | wood glue | Kilograms | 20 | 1:25 |
|  | Nails | Ordinary nails 1.5 inches  Lost head nails 1.5 inches  Panel pins | 5kg  10kgs  5 kgs | 1:25 |
| **D** | **Tools and Equipment** | | | |
|  | Planes | assorted | 25 pcs | 1:1 |
|  | Saw | Assorted | 25 pcs | 1:1 |
|  | Squares | Assorted | 25 pcs | 1:1 |
|  | Benches with two vices | Pieces | 13 pcs | 1:1 |
|  | Tape measure | Pieces | 25 pcs | 1:1 |
|  | Spirit levels | Pieces | 5 pcs | 1:5 |
|  | Bevel squares | Pieces | 13 pcs | 1:2 |
|  | Mortise gauges | Pieces | 5 pcs | 1:5 |
|  | Claw hammers | Pieces | 25 pcs | 1:1 |
|  | Chisels | Pieces | 25pcs | 1:1 |
|  | Wooden mallets | Pieces | 25pcs | 1:1 |
|  | Sash clamps | Pieces | 5 | 1:5 |
|  | G-clamps | Pieces | 13 | 1:2 |
|  | Plumb bobs | Pieces | 10 | 1:2 |
|  | Drilling machine | Pieces | 5 | 1:5 |