



REPUBLIC OF KENYA

COMPETENCY BASED CURRICULUM

FOR

CARPENTRY AND JOINERY

LEVEL 5

PROGRAMME CODE:0722 554B



TVET CDACC

**P.O BOX 15745-00100
NAIROBI**

CONSTRUCTION OF TIMBER STAIRS

UNIT CODE: CON/CU/CAJ/CR/07/5/B

Relationship to Occupational Standards

This unit addresses the unit of competency: Construct timber stairs

Duration of Unit: 100 hours

Unit Description

This unit describes the competences required to construct timber stairs. It entails designing timber stairs, selecting materials, tools and equipment, marking out joints, cutting out joints, performing trial and final assembly of staircase and performing finishing processes.

Summary of Learning Outcomes

1. Design timber stairs
2. Select materials, tools and equipment
3. Mark out joints
4. Cut out joints
5. Perform trial and final assembly of staircase.
6. Perform finishing processes

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Design timber stairs	<ul style="list-style-type: none">• Sketching of timber stairs• Classes of timber stairs<ul style="list-style-type: none">• Private• Public• Designing timber stairs<ul style="list-style-type: none">• Rise• Run• Type of building• Formula• Building code• Angle of pitch of the stair• Architectural drawing	<ul style="list-style-type: none">• Practical assignment• Oral Questioning• Written Tests

<p>2. Select materials, tools and equipment</p>	<ul style="list-style-type: none"> • Safety Practices <ul style="list-style-type: none"> • Handling of tools, materials and equipment • Good housekeeping • Interpretation of working drawing • Preparation of a cutting list • Types of construction materials <ul style="list-style-type: none"> • Timber • Nails and screws • Wood glue • Sand paper • Block board • Uses and specifications of materials, tools and equipment 	<ul style="list-style-type: none"> • Practical assignment • Oral Questioning • Written
<p>3. Mark out joints</p>	<ul style="list-style-type: none"> • Marking out tools <ul style="list-style-type: none"> • Tape measure • Try square • Marking gauge • Workshop rod • Compass • Bevel square • Bradawl • Cutting gauge • Marking out procedures <ul style="list-style-type: none"> • Mark mortise • Mark tenons • Mark grooves • Mark rebate • Mark chamfer • Mark curves and circles • Mark trenches 	<ul style="list-style-type: none"> • Practical assignment • Oral Questioning • Written Tests

<p>4. Cut out joints</p>	<ul style="list-style-type: none"> • Types of cutting out tools <ul style="list-style-type: none"> • Saws • Chisels • Mallet • Planes • Drills • Spoke shave • Wood file • Rebate plane • Plough plane • Cutting procedure <ul style="list-style-type: none"> • Cut out mortises • Cut out tenons • Cut out the grooves • Cut out trenches • Cut out rebates • Cut out chamfers 	<ul style="list-style-type: none"> • Practical assignment • Oral Questioning • Written Tests
<p>5. Perform trial and final assembly of staircase.</p>	<ul style="list-style-type: none"> • Types of fitting tools <ul style="list-style-type: none"> • Hammers • Screw drivers • Clamps • Mallet • Types of joints <ul style="list-style-type: none"> • Mortise and tenon • Tongue and grooves • Scribes joints • Rebate • Mitre • Procedure of fitting joints <ul style="list-style-type: none"> • Apply glue to tenons and mortises • Fit tenons to mortises • Dowels a • Clamp the staircase 	<ul style="list-style-type: none"> • Written Tests • Oral Questioning • practical assignment

	<ul style="list-style-type: none"> • Fix the joints • Fix risers and treads to stringer • Fix balusters to stringer and hand rail 	
6. Perform finishing processes	<ul style="list-style-type: none"> • Types of finishing processes <ul style="list-style-type: none"> • Wipe excessive glue • Apply filler to any dent • Sanding • apply coats of varnish • workplace housekeeping procedures 	<ul style="list-style-type: none"> • Oral Questioning • practical assignments • Written Tests

Suggested Methods of Instruction

- Demonstration by trainer
- Practical work by trainee
- Demonstration videos
- Group discussions

Recommended Resources

Tools and equipment

- Jack plane
- Saws
- Chisels
- Hammers
- Tape measure
- Mallet
- Screw drivers
- Drills
- Square
- Marking gauge
- Steel rule
- Sash and T clamps

- Bench hold fast
- Mitre box
- Brace
- pincers

Materials and supplies

- Sand paper
- Timber
- Manufactured boards
- Wood glue
- Formica
- Nuts and bolts
- Nails and screws
- Reference materials
- Occupational Safety and health manuals

Personal protective equipment (PPEs)

- Overalls
- Safety boots
- First aid kits
- Safety goggles
- Helmets
- Gloves
- Dust coats
- Ear muffs