



APPENDIX 3

CURRICULUM

Competency profile – Building Carpentry

Level – GIII

No.	Module	Competency Area	Competencies								
1	Safety at work	Work safely on site and prevent hazards	Perform selection of personal protective cloths and equipment	Carry out basic first aid treatment	Conduct work environment cleansing	Conduct safe manual handling operations	Carry out risk assessment on a task to identify potential hazards	Prepare risk assessment report			
2	Mathematics and drawing	Make simple calculations and geometric drawings	Recognize units of measurement	Perform basic calculations	Perform calculations relevant to geometrical work	Perform calculations on timber	Measure timber using the basic linear measuring tools	Draw geometric shapes			
3	Use and maintenance of hand tools	Use and protect hand tools	Observe safety procedures in the workshop	Carry out measurement and marking	Cut/saw timber using hand saw	Plane timber using hand planes	Cut/chisel timber using chisels	Drive nails and screws using hammer and screwdrivers	Bore holes using hand braces and bits		
4	Properties and types of locally manufactured timber	Determine properties and types of locally manufactured timber	Determine the proper use of common woods in Pakistan	Select a piece of timber free from defect	Determine the moisture content of a timber	Preserve timber to be used in structural work					
5	Handle carpentry materials and safe disposal of waste	Handle carpentry materials properly and dispose waste safely	Conduct a risk assessment	Prepare a health and safety plan to handle and dispose materials	Apply environmental protection requirements in accordance with regulatory obligations						
6	Set out simple rods and prepare cutting lists	Set out a simple rod and prepare a cutting list	Construct a full-size dimensioned drawing	Prepare a cutting list based on the drawing							
7	Making Joints using solid timber	Make tight and accurate joints using solid timber	Construct a Scarf joint	Construct a tusk joint	Construct a housing mortise and tenon	Construct bevelled shoulder mortise and tenon	Construct tabled housing mortise and tenon	Construct fished joint	Construct tongue and Groove	Construct feather joint	Strengthen the joints

	for tension and compression loads										
8	Construct wooden band for low strength masonry earthen buildings	Construct wooden band for low strength masonry earthen buildings	Select well seasoned and preserved timber	Construct a scarf joint for lengthening of the long members	Construct beveled shoulder mortise and tenon	Assemble and secure frame square					

Level – GII

No.	Module	Competency Area	Competencies													
1	Plan and organize work	Plan and organize work on site	Design a plan	Prepare cutting list	Calculate labour costs	Calculate overheads and profits	Keep clean work site	Select and locate tools and equipment safely								
2	Assemble simple partition frames	Assemble a simple partition frame	Select well seasoned and preserved timber	Construct a Scarf joint for lengthening of the long members	Construct bevelled shoulder mortise and tenon for the studs	Construct housing joint for the noggins	Assemble and secure frame square	Strengthen the connection between the main frame and other members								
3	Construct components for doors and window frames	Construct and assemble door and window frames	Select well seasoned and preserved timber	Construct long and short shoulder mortise and tenon	Assemble and secure frame square											
4	Use and maintenance of portable power tools	Use and protect portable power tools	Observe safety procedures in the workshop	Carry out measurement and marking	Cut/saw timber using circular saw/reciprocating saw	Plane timber using planer	Cut/saw curves on timber using jig saw	Drill holes on timber using portable power drill	Sand the surfaces of the timber using the belt/orbit sander							
5	Setting up a business	Set up a business	Confirm business and personal goals	Write a business plan	Set up a legal business structure	Satisfy business licensing requirements	Establish a proper accounting procedures	Keep record of tools and equipment								
6	Construct and erect timber wall frame	Construct and erect timber wall frame	Identify and select wall frame components	Set out location of walls on a slab	Set out and cut base plates and roof beams to length	Mark base plates and roof beams to accommodate studs	Cut studs, trimmers and noggins to length	Fabricate wall frames including bracing	Erect wall frames and fixed into place and align	Brace temporarily erected walls	Straighten, plumb and align walls					

						and /or cladding and lining										
7	Fixing floor joists and laying flooring	Fixing Floor Joists and Laying Flooring	Identify and select floor frame components	Set out location of floor on wall	Set out and cut joist to length	Mark joist to accommodate trimmers, trimming, trimmed joists and herringbone struts	Cut joist, trimmers, trimming, trimmed joists and herringbone struts to length	Construct joints	Fix joist to wall , provide locks/ keys, anchorage wall	Straighten , plumb and align						
8	Use and maintain static machines	Use, maintain and adjust static machines	Set and operate circular saw to cut material	Select and change blades for the material being cut	Set and operate planing machines (surfacers and thicknessers) to prepare timber	Select and change blades for the material being plane	Set and operate band saw to cut material	Select and change blades for the material being cut	Set and operate drilling machine to bore hole on material	Select and change blades for the material being bored	Set and operate mortiser machine to mortise material	Select and change blades for the material being mortised	Set and operate radial arm saw to cut material	Select and change blades for the material being cut	Sharp machine blades	Clean machines

Level – G1

No.	Module	Competency Area	Competencies												
1	Erect, use and dismantle access equipment	Erect, use and dismantle access equipment	Select tools, equipment, and materials	Level area where scaffolding/ ladder is to be erected	Put safety signs to acceptable procedures	Tie ladder to supports at the bottom and top	Position adjustable jacks	Level horizontal components	Position all scaffold boards on supports	Tighten all couplings	Fix toe boards and hand rails	Inspect all components	Dismantle components in the correct order	Stack components when dismantled	
2	Construct timber Pitch roof – Hip and Gable roofs	Construct a timber gable and hip roof	Identify and select roofing components	Set out and cut rafters to length allowing for overhang	Make joints of timber components	Lay continuous wall plate and tie all trusses/ rafters together and fix roof to the wall (rafters to rest and tie to columns), anchor properly	Square roof plane	Fix battens and braces, joint anchorage	Fix fascia and batten boards	Lay covering material, clamp J hooks					
3	Carry out ceiling work	Construct a ceiling	Identify and select ceiling components	Set out and cut joist to length	Make joints of timber components	Transfer ceiling levels correctly in accordance with drawing specifications	Select scaffolding and erect as per defined safety procedures	Mark Joists and place to specific locations and level the bottom, Ceiling material anchored properly to structure	Fix secondary joists to primary joints using collars	Check measurements and levels of the ceiling frame	Fix covering material	Fix mouldings			

								al member (roof or slab)							
4	Prepare order lists for carpentry work on site	Prepare an order list for carpentry work on site	Identify the type and amount of work to be carried out from drawing.	Determine quality, quantities and types of materials from site documents	Prepare order list of the required quantities, type and quality of materials prepared.	Check and confirm supply of delivered materials on site	Record delivered material								
5	leadership, citizenship, and teamwork skills	Be a good leader, good citizen of Pakistan and good member of a team	Take full responsibility of task/role given	Determine root causes of conflicts or problems	Mediate disputes between parties.	Lead a team to carry out a task given.	Organize and participate in a meeting	Write minutes of meeting							
6	Support innovative ideas and adopt change	Support innovative ideas and adopt change	Implement new work practices	Communicate innovative practices of Building Carpentry on seismic resistance	Communicate indigenous techniques of building carpentry for seismic resistance										
7	Erect and dismantle shoring	Erect and dismantle shoring in any condition where timber shoring is applicable, ensuring safety.	Select tools, equipment, and materials	Level area and prepare base where shoring is to be erected	Put safety signs to acceptable procedures	Cut timber to required sizes	Set out shoring lines	Mark out required/possible penetration depth/level	Fix vertical members, props and wedges	Dismantle components in the correct order	Clean and stack components when dismantled				
8	Erect and strip formwork for concrete work	Erect and strip formwork	Select tools, equipment, and materials	Level area and prepare base of props where applicable	Put safety signs to acceptable procedures	Cut timber to required sizes	Set out location of formwork	Assemble component members of the formwork	Apply releasing agent	Erect formwork, plumb and tight sides	Erect formwork support system	Brace formwork	Fix stop boards at appropriate locations/positions	Dismantle components in the correct order	Clean and stack components when dismantled
9	Plan and carry	Plan and carry	Identify and	Prepare	Select	Support	Carry out	Dispos	Store/stack	Clean,					

	out demolition work on site	out demolition work	inspect demolition work	demolition plan	tools, equipment, and materials	t existing structural components before demolition work starts	demolition work according to the demolition plan	e debris and waste according to the demolition plan and Building Authority requirements	unused materials	maintain and store tools and equipment					
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Module No.: 01 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Work safely on site and prevent hazards

Module Title: Safety at work

Performance objective: After successful completion of this module the trainee will be able to work safely within own area and prevent hazards.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Perform selection of personal protective cloths and equipment	<ul style="list-style-type: none"> Personal safety observed
2.	Carry out basic first aid treatment	<ul style="list-style-type: none"> Environmental safety observed
3.	Conduct work environment cleansing	<ul style="list-style-type: none"> Technique safety observed
4.	Conduct safe manual handling operations	<ul style="list-style-type: none"> Basic first performed
5.	Carry out risk assessment on a task to identify potential hazards	
6.	Prepare risk assessment report	

Knowledge required for the module

1. The responsibilities of employers and employees for creating and maintaining a safe working environment.
2. Basic first aid treatments.
3. The reasons for carrying out good housekeeping practices.
4. The procedures for the safe storage of materials and fixings.
5. The methods used for the safe handling of tools and materials.
6. The various types of protective clothing/equipment and their uses.

Prerequisites

- Basic literacy and numeracy and/ the 3 months TEVTA/ILO carpentry programme

List of tools and equipment required

- First aid box with kits
- Overalls, ear defenders/plugs, safety boots, knee pads, gloves, safety helmet, particle masks, goggles

- Machine guards
- Hand tools

List of teaching/learning materials required

- Manual
- Posters
- Models
- Film
- Health and Safety Manual

Target time

- 4 credits/40 hours

Module No. 02 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Make simple calculations and geometric drawings

Module Title: Mathematics and Drawing

Performance objective: After successful completion of this module the trainee will be able to calculate simple geometric problem, drawing and use of basic linear measuring equipment.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Recognize units of measurement	<ul style="list-style-type: none"> • Metric and imperial units (Standards units of measurement) • Basic calculations performed relevant to given shapes • Calculations performed relevant to provided shapes • Calculations performed according to provided plans • Clean and accurate shapes
2.	Perform basic calculations	
3.	Perform calculations relevant to geometrical work	
4.	Perform calculations on timber	
5.	Measure timber using the basic linear measuring tools	
6.	Draw geometric shapes	

Knowledge required for the module

1. Calculations applied to whole and decimal numbers.
2. Calculation, involving the use of an electronic calculator, applied to whole and decimal numbers.
3. Calculations involving the areas and perimeters of various shapes.
4. Calculations involving percentage increases and decreases.
5. Calculations involving division of a material into equal parts.
6. Various types of basic linear measuring equipment.
7. Various types of tools and equipment used in drawing.
8. Symbols and abbreviations used in construction.
9. The use of scale ratio used in drawing.

10. Various elements of a circle.

Prerequisites

- Completion of module 01 - GIII

List of tools and equipment required

- Drawing sets: Rule, tee square, set square, protractor, scale rule, compasses, French curves, drawing boards tape Manual

List of teaching/learning materials required

- Manual
- Posters
- Models
- Ply wood, hard board, chip board, paper

Target time

- 4 credits/40 hours

Module No. 03 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Use and protect hand tools

Module Title: Use and maintenance of hand tools

Performance objective: After successful completion of this module the trainee will be able to use and maintain hand tools taking into consideration health and safety at all times.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Observe safety procedures in the workshop	<ul style="list-style-type: none"> • Safe operation of using hand tools • Sharp blades • Cut and saw straight along a line marked according to the working rod • Face side and edge of timber without twist and leveled • Face edge at 90° to face side of timber • Thickness and width of timber according to cutting list • Drilled according to the working rod • Piece of wood not cracked • Nail/screw head not above the surface of the product
2.	Carry out measurement and marking	
3.	Cut/saw timber using hand saw	
4.	Plane timber using hand planes	
5.	Cut/chisel timber using chisels	
6.	Drive nails and screws using hammer and screwdrivers	
7.	Bore holes using hand braces and bits	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. The use of hand tools – measuring and marking, holding tools, saws, chisels, planes, boring tools, hammers, screwdrivers, files and rasps, sharpening tools

5. The use of oil stone and different types and grades
6. The method of cleaning and storing basic hand tools.
7. The method of sharpening and adjusting blades of hand tools.
8. The use of setting pliers, files and gauges for saw maintenance
9. Effects of heat on tool maintenance
10. The method of cleaning and storing basic hand tools

Prerequisites

- Completion of module 02 - GIII

List of tools and equipment required

- Woodworking bench, bench vise, bench holdfast, bench hook, G-cramp, bar cramp
- Measuring tapes, box wood rule, drawing instruments, sliding bevel, try square
- Rip saw, cross-cut saw, tenon saw, dovetail saw, bow saw, key hole saw, coping
- Jack plane, smoothing plane, block plane, spokeshave
- Bevel edge chisel, firmer chisel, mortice chisel
- Try square, Marking gauge
- Hammer, mallet, screwdrivers, nail punch
- Wheelbrace, twist bits, countersink bit, bradawl
- Oil stone, oil
- Bench well, tool box, tool cupboard

List of teaching/learning materials required

- Manual
- Posters
- Models
- Film

Target time

- 6 credits/60 hours

Module No. 04 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Determine properties and types of locally manufactured timber

Module Title: Properties and types of locally manufactured timber

Performance objective: After successful completion of this module the trainee will be able to know how timber is obtained and the best timber to use in a building structure to support in resisting seismic.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Determine the proper use of common woods in Pakistan	<ul style="list-style-type: none"> • Pakistani Standard Timber Grading Rules used
2.	Select a piece of timber free from defect	<ul style="list-style-type: none"> • Timber free from defect used
3.	Determine the moisture content of a timber	<ul style="list-style-type: none"> • Properly seasoned timber used • Calculation of moisture content of a piece of timber
4.	Preserve timber to be used in structural work	<ul style="list-style-type: none"> • Protection of timber to avoid deteriorating appearance and structural performance of timber

Knowledge required for the module

1. Identification and description of timber in terms of their species, characteristics, common usage and resource sustainability.
2. Conversion of timber
3. Description of timber in terms of its length, size and finish.
4. Grades of indigenous and exotic timber in terms of Pakistan Standard Timber Grading Rules, and their application in the building industry.
5. Common defects in indigenous, exotic and imported timbers and how these affect the use of timber during earthquake incident.
6. Description of two methods of seasoning in used.
7. Calculation of moisture content of a timber and description the method used in obtaining wet weight and dry weight of a piece of timber
8. The effects of an improper seasoned timber when used in a construction structure
9. Common forms of insect attack and effect on appearance and structural performance of timber.

10. Preservation of timber and health and safety requirements on handling and disposal

Prerequisites

- Completion of module 03 - GIII

List of tools and equipment required

- Moisture meter

List of teaching/learning materials required

- Manual
- Posters
- Models
- Film
- Samples of timber - Indigenous, imported timber
- Rough sawn, machine stress graded

Target time

1. 4 credits/40 hours

Module No. 05 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Handle carpentry materials properly and dispose waste safely

Module Title: Handling of carpentry materials and safe disposal of waste

Performance objective: After successful completion of this module the trainee will be able to handle carpentry materials and components, and use safe measures to dispose waste.

Tasks to be performed:

S.N	Task	Performance Standards
1.	Conduct a risk assessment	<ul style="list-style-type: none"> • According to regulations
2.	Prepare a health and safety plan to handle and dispose materials	
3.	Apply environmental protection requirements in accordance with regulatory obligations	

Knowledge required for the module

1. Workplace and equipment safety requirements
2. Processes for the calculation of material requirements
3. Organizational policies and procedures including quality requirements
4. National regulation on lifting operation and environmental protection
5. Work method statement
6. Hazardous materials

Prerequisites

- Completion of module 04 - GIII

List of tools and equipment required

- Personal protective equipment

- Tools – hammer, pallet, wheelbarrows, brooms, hose, shovel rake, wet and dry industrial vacuum cleaners, pallet trolley, material hoist, forklift

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audio-visuals
- Material – Timber, bricks and concrete masonry units, joinery units, structural steel components, concrete components, mortar, scaffolding components, pipe sections, plywood and particle boards, metal sheeting, steel reinforcement, insulation, glass, paint and sealants, plaster sheeting
- Hazardous materials – solvent, glues, coatings, inflammable materials

Target time

- 3 credits/30 hours

Module No. 06 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Set out a simple rod and prepare a cutting list

Module Title: Set out simple rod and prepare cutting lists

Performance objective: After successful completion of this module the trainee will be able to set out a simple rod and prepare a cutting list to construct an item.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Construct a full-size dimensioned drawing	<ul style="list-style-type: none"> • Standard symbols used • Projections of edges drawn accordingly • Comprehensive cutting list
2.	Prepare a cutting list based on the drawing	

Knowledge required for the module

1. Quality assurance standards
2. The use of setting out rod
3. Different types of lines used in drawing
4. The basic types of joints applied on solid timber to improve seismic resistance to be applied on the next module.
5. The measurements and calculations involved
6. The particular attention needed to be shown on accuracy of lines and dimensions
7. The use of cutting list

Prerequisites

- Completion of module 05 - GIII

List of tools and equipment required

- Tools and equipment – drawing board, measuring tape/rule, squares, scribes, dividers/steel wing compasses, straight edge, curved templates, set squares, T-squares, compass, rubber, pencil
- Tools – wheelbarrows, brooms, vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Material – A3 paper

Target time

- 6 credits/60 hours

Module No. 07 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Make tight and accurate joints using solid timber

Module Title: Making joints using solid timber for tension and compression loads

Performance objective: After successful completion of this module the trainee will be able to construct joints on solid timber to support structures to resist tension and compression loads.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Construct a Scarf joint	<ul style="list-style-type: none"> • Tight joints and anchored properly • Flush surfaces • Accurate joints at angles
2.	Construct a tusk joint	
3.	Construct a housing mortise and tenon	
4.	Construct bevelled shoulder mortise and tenon	
5.	Construct tabled housing mortise and tenon	
6.	Construct fished joint	
7.	Construct tongue and Groove	
8.	Construct feather joint	
9.	Fasten/ strengthen the joints using necessary materials (Clamps, bolts, strips, angles etc)	

Knowledge required for the module

1. Quality assurance standards
2. Different types of woodworking joints
3. Joints used to resist tension and compression loads
4. Joints appropriate for seismic as well as other natural hazard resistance
5. The importance of using correctly fitted personal protective equipment
6. Safe and effective operational use of tools, plant and equipment

7. The measurements and calculations involved
8. The use of cutting list
9. The particular attention to be shown on accuracy of marking units
10. The correct procedures to be adopted and carried out prior to and during marking out
11. The faults and problems that may occur and necessary actions to be taken

Prerequisites

- Completion of module 06 - GIII

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – measuring tape/rule, squares, scribes, dividers/steel wing compasses, straight edge, curved templates, set squares, T-squares, saw, plane, chisels, pencil, mallet
- Cleaning tools – wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Solid timber
- Fittings/fasteners – Nails, screws, clamps, bolts, angles, strips

Target time

- 8 credits/80 hours

Module No. 08 - GIII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Construct wooden band for low strength masonry earthen buildings

Module Title: Construct wooden band for low strength masonry earthen buildings

Performance objective: After successful completion of this module the trainee will be able to construct wooden ladder band for low strength masonry earthen building to increase the strength of the building for resistance to seismic.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Select well seasoned and preserved timber	<ul style="list-style-type: none"> • Tight joints • Flush surfaces • Accurate joints at 90°
2.	Construct a scarf joint for lengthening of the long members	
3.	Construct beveled shoulder mortise and tenon	
4.	Assemble and secure frame square	
5.	Locate the places where the bands are provided	

Knowledge required for the module

1. The importance of the wooden band in increasing the strength of the low strength masonry earthen building to seismic resistance
2. Location of the bands – Plinth (Could be a continuous timber plate of width equal to masonry unit) sill, lintel,
3. Gable bands
4. The workplace and equipment safety requirement
5. The quality assurance standards
6. Suitable timber for this task
7. Type of joints used
8. The importance of using correctly fitted personal protective equipment
9. The measurements and calculations involved
10. The use of material schedule
11. The particular attention shown on accuracy of marking, cutting and assembling members
12. the correct procedures to be adopted and carried out prior to and during application of assembling processes

13. The importance of communicating to others to ensure safe and effective work operations

Prerequisites

- Completion of module 07 - GIII

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – Measuring tape/rule, hammer, saw, jigs/stops, power drills/screwdrivers, saw stools, clamps, squares, nail guns, plane, chisels, pincer, mallet
- Cleaning tools – wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Timber
- Fittings/fasteners – Nails, screws, self tapping screws, pop rivets, bolts and nuts, anchor bolts, braces

Target time

1. 8 credits/80 hours

Module No. 01 - GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Plan and organize work on site

Module Title: Plan and organize work

Performance objective: After successful completion of this module the trainee will be able to plan and organize work on site.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Design a plan	<ul style="list-style-type: none"> • Plan/design easily comprehensible • Dimensions and quantities included correctly • Material and correct quantity relevant to the project calculated • Labor cost for constructing the project calculated in terms of skilled, semi skilled and unskilled workers • Overhead cost and profit determined
2.	Prepare cutting list	
3.	Calculate labor costs	
4.	Calculate overheads and profits	
5.	Keep clean work site	
6.	Select and locate tools and equipment safely	

Knowledge required for the module

1. Instructions for work schedule and performance and quality assurance requirements.
2. Drawing/designing projects
3. Work identification, priorities and sequencing to achieve effective completion of work.
4. Valuation of projects
5. The importance of selecting correct personal protective equipment to suit job requirement.
6. The benefits in selecting tools, equipment and materials to suit job requirement.
7. The key functions of tools and equipment
8. Safe, logical and efficient methods of carrying out work.
9. The importance of keeping work site clean and clear of debris.
10. The need to locate tools and equipment safely when not in immediate use.
11. How work plans are modified to overcome unforeseen developments that occur as work progresses.

12. How to identify and incorporate modifications into successive work activities.
13. The sequence of verbal reporting on completed work.
14. How to stack unused materials safely for removal.
15. The importance of leaving work site clean, safe and secure on completion of work.
16. The need to clean, maintain and store tools and equipment

Prerequisites

- Completion of GIII

List of tools and equipment required

- Drawing tools, work plan, report format, estimate, Protective clothing: Overalls, safety boots, knee pads, gloves

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid

Target time

- 4 credits/40 hours

Module No. 02 - GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Assemble a simple partition frame

Module Title: Assemble simple partition frames

Performance objective: After successful completion of this module the trainee will be able to assemble and fix a simple partition frame.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Select well seasoned and preserved timber	<ul style="list-style-type: none"> • Tight joints • Flush surfaces • Plumbed structure • Frame at 90° • Metal strips/bolts/angles used for better anchorage
2.	Construct a Scarf joint for lengthening of the long members	
3.	Construct bevelled shoulder mortise and tenon for the studs	
4.	Construct housing joint for the noggins	
5.	Assemble and secure frame square	
6.	Strengthen the joints between main frame and other members for seismic safety	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. Safe and effective operational use of tools, plant and equipment
5. Locking mechanisms and other iron mongeries
6. Joint strengthening techniques
7. Different types of joints used in partitions
8. The measurements and calculations involved
9. The use of material schedule
10. The particular attention shown on accuracy of marking, cutting and assembling members

11. The correct procedures to be adopted and carried out prior to and during application of assembling processes
12. The importance of communicating to others to ensure safe and effective work operations
13. The procedure to stack/store materials
14. Hazardous materials

Prerequisites

- Completion of unit 1 – level G II

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – Measuring tape/rule, hammer, pincer, saw, jigs/stops, power drills/screwdrivers, saw stools, clamps, squares, nail guns, chisels, mallet, spirit level, planer
- Cleaning tools – wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Materials – timber, covering sheet
- Fittings/fasteners – Nails, screws, self tapping screws, pop rivets, bolts and nuts, anchor bolts, braces, metal strips, angles

Target time

- 6 credits/60 hours

Module No. 03 - GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Construct and assemble door and window frames

Module Title: Construct components of door and window frames

Performance objective: After successful completion of this module the trainee will be able to construct and assemble door and window frames.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Select well seasoned and preserved timber	<ul style="list-style-type: none"> • Tight joints • Flush surfaces • Accurate joints at 90° • Proper location of door and window frame
2.	Construct long and short shoulder mortise and tenon	
3.	Locate the opening spaces in the wall	
4.	Assemble and secure frame square	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. Safe and effective operational use of tools, plant and equipment
5. Types of doors and their applications in buildings
6. Appropriate size and Locations of doors and windows
7. Suitable timber for doors and windows
8. Locking mechanisms and other iron mongeries
9. Simple estimation of a project
10. The measurements and calculations involved
11. The use of material schedule
12. The particular attention shown on accuracy of marking, cutting and assembling members
13. The correct procedures to be adopted and carried out prior to and during application of assembling processes
14. The importance of communicating to others to ensure safe and effective work operations

Prerequisites

- Completion of module 02 - GII

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – Measuring tape/rule, hammer, saw, jigs/stops, power drills/screwdrivers, saw stools, clamps, squares, nail guns, rebate plane, planning machine, spirit level
- Cleaning tools – wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Timber
- Fittings/fasteners – Nails, screws, plates

Target time

- 5 credits/50 hours

Module No. 04 - GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Use and protect portable power tools

Module Title: Use and maintenance of portable power tools

Performance objective: After successful completion of this module the trainee will be able to use, adjust blade and speed, and maintain portable power tools.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Observe safety procedures in the workshop	<ul style="list-style-type: none"> • Safe operation of portable power tools • Sharp blades • Cut straight along a line marked according to the working rod • Face side and edge of timber without twist and leveled • Cut curves along a line marked according to the working rod • Straight holes drilled according to the working rod • Piece of wood not cracked • Flat and smooth surface of wood
2.	Carry out measurement and marking	
3.	Cut/saw timber using circular saw/reciprocating saw	
4.	Plane timber using planer	
5.	Cut/saw curves on timber using jig saw	
6.	Drill holes on timber using portable power drill	
7.	Sand the surfaces of the timber using the belt/obit sander	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. The use of portable power tools
5. Health and safety in the use of portable power tools
6. Care and maintenance of portable power tools
7. The method of adjusting certain portable power tools.
8. Effects of heat on tool maintenance

Prerequisites

- Completion of module 03 - GII

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- circular saw, jig-saw, reciprocating saw, planer, drill, screw driver, hammer, belt sander, orbital sander, router, disc grinder, compressed air nail gun, powder-actuated fastening tool, gas powered nail gun, bench grinder
- blades, knives, bits, cutting edges, adjustment, cleaning, power source, guards
- Oil, bench well, tool box, tool cupboard

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid

Target time

1. 4 credits/40 hours

Module No. 05 - GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Set up a business

Module Title: Setting up a business

Performance objective: After successful completion of this module the trainee will know the concepts involve in setting up a business, the self development in terms of attitude to work, improvement on personal performance, organization of ones self and communicating with others.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Confirm business and personal goals	<ul style="list-style-type: none"> • Compliance to legal structures • Knowing customer needs • On time delivery of services • Perceived image • Perceived quality • Perceived value for price paid
2.	Write a business plan	
3.	Set up a legal business structure	
4.	Satisfy business licensing requirements	
5.	Establish a proper accounting procedures	
6.	Keep record of tools and equipment	

Knowledge required for the module

1. What is referred to as customer
2. The fundamentals of customer satisfaction.
3. How costs and selling price affect a business.
4. The importance of protecting Items belong to the organisation or its customers
5. The importance of maintaining and sustaining the environment for future generations.
6. The importance of timeliness to the business in terms of time, money, first impressions, professionalisms,
7. Conduct that may lead to disciplinary action including dismissal.
8. Own responsibility for self-learning to develop own skills.
9. Appropriate techniques for developing a business plan.

Prerequisites

- Completion of module 04 - GII

List of tools and equipment required

- Workshop tools and equipment
- Business plan
- Meeting with a young successful Pakistani entrepreneur
- UNESCO course - *entitled Starting My Own Small Business*

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid

Target time

- 3 credits/30 hours

Module No. 06 – GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Construct and erect timber wall frame

Module Title: Construct and erect timber wall frame

Performance objective: After successful completion of this module the trainee will be able to construct and erect a timber wall frame

Tasks to be performed:

S. N	Task	Performance Standards
1.	Identify and select wall frame components	<ul style="list-style-type: none"> • Good quality and well seasoned timber used • Wall frame on properly built substructure • Plinth atleast 300mm from ground level and structure protected from moisture and termites • Bracing balanced in both directions making small even-sized panels • Tight joints • Wall elements and structural elements anchored properly • Roof truss rest on studs • Base plate and roof beam continuous
2.	Set out location of walls on a slab	
3.	Set out and cut base plates and roof beams to length	
4.	Mark base plates and roof beams to accommodate studs and /or cladding and lining	
5.	Cut studs, trimmers and noggins to length	
6.	Fabricate wall frames including bracing	
7.	Erect wall frames and fixed into place and align	
8.	Brace temporarily erected walls	
9.	Straighten, plumb and align walls	
10.	Anchor wall elements with the base plate, beam and studs with the help of clamps, bolts, strips locks for seismic safety	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. Quality assurance standards

3. The importance of using quality and well seasoned timber
4. The importance of using correctly fitted personal protective equipment
5. The measurements and calculations involved
6. The use of material schedule
7. The particular attention shown on accuracy of marking, cutting and assembling members
8. Procedure of joint Connections and types of fixtures required for seismic safety at particular location
9. The correct procedures to be adopted and carried out prior to and during setting out
10. The faults and problems that may occur and necessary actions to be taken
11. The importance of communicating to others to ensure safe and effective work operations
12. The joints used in the wall frame
13. The use of braces to walls
14. Plumbing of wall framing

Prerequisites

- Completion of module 05 - GII

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – measuring tape/rule, hammers, pincer, saws, saw stools, clamps, squares, spirit level, chisels, nail bag, power saw, air compressor and hoses, power lead, planer

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Fittings/fasteners – Nails, screws, self tapping screws, pop rivets, wall plugs, masonry anchors, coach screws, bolts, clamps, metal strips
- Wall plates – halving, lapping, metal connections
- Wall bracing materials – timber, metal tension straps, metal angle sections, plywood, fibre cement sheet, hardboard

Target time

- 8 credits/80 hours

Module No. 07 - GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Fixing Floor Joists and Laying Flooring

Module Title: Fixing Floor Joists and Laying Floor

Performance objective: After successful completion of this module the trainee will be able to fix floor joists and lay floor boards

Tasks to be performed:

S. N	Task	Performance Standards
1.	Identify and select floor frame components	<ul style="list-style-type: none"> • Good quality and well seasoned timber • Straight and flat floor within + or – 1mm per 2.5 meters • Structure protected from moisture and excessive heat • Tight and strong joints • Anchored properly with the structural elements
2.	Set out location of floor on wall	
3.	Set out and cut joist to length	
4.	Mark joist to accommodate trimmers, trimming, trimmed joists and herringborn struts	
5.	Cut joist, trimmers, trimming, trimmed joists and herringborn struts to length	
6.	Construct joints	
7.	Fix joist to wall	
8.	Provide bracing for rigidity	
9.	Use joint strengthening fixtures/ fastenings, ensure anchorage the floor with structural walls	
10.	Straighten, plumb and align	

Knowledge required for the module

1. The workplace and equipment safety requirement

2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. Safe and effective operational use of tools, plant and equipment
5. Types of flooring
6. Suitable type of timber
7. The measurements and calculations involved
8. The use of material schedule
9. The particular attention shown on accuracy of marking, cutting and assembling members
10. The correct procedures to be adopted and carried out prior to and during application of assembling processes
11. The importance of communicating to others to ensure safe and effective work operations
12. The appropriate tools and equipment
13. Tight joints
14. Bracing for seismic safety
15. Locking the joints properly, use of additional strengthening fixtures
16. Connection between structural members and flooring elements
17. Faults and problems that occur and necessary actions to be taken
18. The level the clamp should be tighten on floor boards

Prerequisites

- Completion of module 06 - GII

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – Measuring tape/rule, hammer, saw, jigs/stops, power drills/screwdrivers, saw stools, clamps, squares, nail guns, plane, pincer, spirit level
- Cleaning tools – wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Materials – timber, plywood, particle board, clamps, strips, anchorage bolts, locks, keys, bracing material (timber or steel rod/ plate, angles)
- Board fixing – Nails, screws, self tapping screws, hinge
- Sheet fixing – Screws, nails and adhesives

Target time

- 8 credits/80 hours

Module No. 08 - GII

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Use, maintain and adjust static machines

Module Title: Use and maintenance of static machines

Performance objective: After successful completion of this module the trainee will be able to use and maintain static machines.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Set and operate circular saw to cut material	<ul style="list-style-type: none"> • No unusual sounds when started • No unevenness in work (cut, plane, drilling, mortise) • Sharpened on grinding wheel/emery stone at an angle 20°-25° • Sharpened on oil stone at an angle of 20°-30° • Saw sharpening angle 60o (ripping) • Saw sharpening angle 60o-70o • Shape of saw tooth 60o • No difference at the brazing point after twisting the band saw • No unusual sounds after maintenance • Clean machine • Able to adjust machine parts easily • Drill bits with correct centre points • Drill bits very sharp
2.	Select and change blades for the material being cut	
3.	Set and operate planing machines (surfacers and thicknesser) to prepare timber	
4.	Select and change blades for the material being plane	
5.	Set and operate band saw to cut material	
6.	Select and change blades for the material being cut	
7.	Set and operate drilling machine to bore hole on material	
8.	Select and change blades for the material being bored	
9.	Set and operate mortiser machine to mortise material	
10.	Select and change blades for the material being mortised	

11.	Set and operate radial arm saw to cut material	
12.	Select and change blades for the material being cut	
13.	Sharp machine blades	
14.	Clean machines	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. The use of wood working machines
5. Health and safety in using the machines
6. Care and maintenance of the machines
7. The method of cleaning and protecting machines.
8. The method of adjusting the machines.
9. Effects of heat on tool maintenance
10. Servicing schedule
11. Hazards and measures to control them

Prerequisites

- Completion of module 07 - GII

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Static machines – Circular saw, surface and thicknesser, band saw, drilling machine, Mortiser, radial arm saw
- blades, knives, bits, cutting edges, adjustment, cleaning, power source, guards
- Oil, and tool box and tool cupboard for parts and accessories
- Signage
- Bench grinding machine, sharpening machine for circular and band saw, smooth flat files – length 6, 8, 10 inches, smooth round files – round ¼” length 6”, 8”; ¾” length 8”, 10”, 12”; ½” length 12”, 14”, smooth half round files – length 6”, 8”, 10”, triangular files – length 3”, 3½”, 4”, 6”, 8”,
- Setting pliers for circular and band saws, saw vice, brazing machine for band saw blades, spanners to remove blades, blower machine (air spraying)

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Timber, coconut oil, engine oil, diesel, kerosene, grease

Target time

- 8 credits/80 hours

Module No. 01 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Erect, use and dismantle access equipment

Module Title: Erect, use and dismantle access equipment

Performance objective: After successful completion of this module the trainee will be able to erect, use and dismantle access equipment.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Select tools, equipment, and materials	<ul style="list-style-type: none"> • Work instruction, plans, specifications, quality requirements and operational details applied • Environmental protection requirements applied • Regulatory obligations applied • Communicate and work effectively and safely with others
2.	Level area where scaffolding/ladder is to be erected	
3.	Put safety signs to acceptable procedures	
4.	Tie ladder to supports at the bottom and top	
5.	Position adjustable jacks	
6.	Level horizontal components	
7.	Position all scaffold boards on supports	
8.	Tighten all couplings	
9.	Fix toe boards and hand rails	
10.	Inspect all components	
11.	Dismantle components in the correct order	
12.	Stack components when dismantled	

Knowledge required for the module

1. The workplace and equipment safety requirement

2. Work at height regulations
3. The quality assurance standards on design and construction practice
4. The importance of using correctly fitted personal protective equipment
5. The typical faults and problems that may occur and necessary action to be taken
6. Methods of handling and lifting component parts of access equipment
7. Different types of access equipment
8. Inspection, maintenance and storage of material used in access equipment
9. Types of knots and hitches used
10. Tools and equipment and material required to carryout necessary tasks
11. Dangers in working on access equipment and the need to protect surrounding areas
12. Identification of different ground conditions for access equipment

Prerequisites

- Completion of G II

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, hard hat/cap, jacket
- Tools – Scaffolder’s spanners, hack saw, plumb bob, wheel barrow, adjusted spanner and wrench, measuring tape, hammer, shovel, crow bar, knife
- Material/equipment – Galvanized steel tubes 50mm and 75mm diameter, base plates, swivel couplers, toe board and clips, putlog end, joint pins, reveal pin, key clamps, coir strings, frame scaffolding components, castor wheels with locks, sole board, right angle couplers, parallel couplers, final couplers pulley system, putlog couplers, universal couplers, fork head, ropes, sleeve couplers, ladders, bamboo

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid

Target time

- 6 credits/60 hours

Module No. 02 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Construct a timber gable and hip roof

Module Title: Construct timber gable and hip roof

Performance objective: After successful completion of this module the trainee will be able to construct a timber gable and hip roof.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Identify and select roofing components	<ul style="list-style-type: none"> • Good quality and well seasoned timber
2.	Set out and cut rafters to length allowing for overhang	<ul style="list-style-type: none"> • Length of rafters within + or – 2mm and plumb cut to + or – 1mm
3.	Make joints of timber components	<ul style="list-style-type: none"> • Square roof plane
4.	Lay continues wall plate and tie all trusses/rafters together and fix roof to the wall (rafters to rest and tie to columns)	<ul style="list-style-type: none"> • Tight joints strengthened with appropriate fixtures
5.	Provide bracing for rafters	<ul style="list-style-type: none"> • Rafters braced
6.	Strengthen the joints with bolts, plates, clamps or strips as required	<ul style="list-style-type: none"> • Barge board finished on gable ends line + or – 2mm over any 3m length
7.	Square roof plane	<ul style="list-style-type: none"> • Fascia to overhang line for – 2mm over any 3m length
8.	Provide roof bands	
9.	Fix battens and braces	
10.	Fix fascia and badges boards	
11.	Lay covering material	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The different types of pitched roofs
3. Quality assurance standards
4. The importance of using correctly fitted personal protective equipment
5. Safe and effective operational use of tools, plant and equipment
6. The measurements and calculations involved
7. The use of material schedule
8. Joints used in roofing
9. Joint strengthening techniques for roofing elements
10. Importance of proper connection of roofing elements with the structural elements for seismic safety and potential weather related hazards such as high wind
11. Different types of roof covering materials and their advantages and disadvantages
12. How plumb cuts, seat and pitch cuts are marked and cut
13. The particular attention to be shown on accuracy of marking, cutting and assembling members
14. The correct procedures to be adopted and carried out prior to and during application of assembling processes
15. Faults and problems that occur and necessary actions to be taken
16. The erection and dismantling of scaffoldings
17. The importance of communicating to others to ensure safe and effective work operations
18. The appropriate tools and equipment
19. Tight joints
20. The method to use to trim gable ends
21. Fascia and soffit boards
22. The importance of using light roof covering material to support roof structure for increasing seismic safety
23. The procedure to stack/store materials
24. Hazardous materials

Prerequisites

- Completion of module 01 - GI

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – measuring tape/rule, hammers, spirit level, squares, power saw, hand saw, nail bag, chisels, power drills/screwdrivers, saw stools, clamps, nail guns, air compressor and hoses, power leads, scaffolding, string lines, plane, pincer
- Cleaning tools – wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Materials – timber, gang nail plate, gusset, bolts, clamps, strips, angles
- Materials – corrugated aluminum sheets, trapezoidal metal sheet, galvanized iron sheets, PVC sheets

Target time

- 8 credits/80 hours

Module No. 03 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Construct a ceiling

Module Title: Carry out ceiling work

Performance objective: After successful completion of this module the trainee will be able to construct a ceiling.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Identify and select ceiling components	<ul style="list-style-type: none"> • Good quality and well seasoned timber used • Plumb ceiling level • Tight joints • Light ceiling • Adequately framed • Securely connected • Anchored with the roofing/ flooring structure
2.	Set out and cut joist to length	
3.	Make joints of timber components	
4.	Transfer ceiling levels correctly in accordance with drawing specifications	
5.	Select scaffoldings and erect as per defined safety procedures	
9.	Select anchorage materials, fixtures and fix to the roofing/ flooring structure properly	
10.	Mark Joists and place to specific locations and level the bottom.	
11.	Fix secondary joists to primary joists using collars	
12.	Check measurements and levels of the ceiling frame	
13.	Fix covering material	
14.	Fix mouldings	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. Safe and effective operational use of tools, plant and equipment
5. The measurements and calculations involved
6. The use of material schedule
7. The use of cutting list
8. Ceiling plan and specifications
9. The particular attention to be shown on accuracy of marking, cutting and assembling members
10. Procedures and materials required for anchoring ceiling elements with the roofing/flooring structures
11. The correct procedures to be adopted and carried out prior to and during application of assembling processes
12. Faults and problems that occur and necessary actions to be taken
13. The procedure to stack/store materials
14. Workplace and equipment safety requirements
15. The quality requirements in cleaning workplaces
16. hazardous materials

Prerequisites

- Completion of module 02 -GI

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools and equipment – Measuring tape/rule, hammer, pincer, saw, jigs/stops, power drills/screwdrivers, saw stools, clamps, squares, nail guns, spirit level, planer
- Tools – wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners
- Working platform

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Materials – timber, plywood, particle board, mouldings
- Fittings/fasteners – Nails, screws, bolts, straps, steel rods, clamps, strips
- Legislations, safety policies

Target time

- 8 credits/80 hours

Module No. 04 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Prepare an order list for carpentry work on site

Module Title: Prepare order lists for carpentry work on site

Performance objective: After successful completion of this module the trainee will be able to prepare an order list for carpentry work to be carried out on site.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Identify the type and amount of work to be carried out from drawing	<ul style="list-style-type: none"> • Comprehend work to be carried out • Dimensions, quantity and quality of material relevant to work included correctly
2.	Determine quality, quantities and types of materials from site documents	
3.	Prepare order list of the required quantities, type and quality of materials prepared	
4.	Check and confirm supply of delivered materials on site Record delivered material	

Knowledge required for the module

1. Classification of building site documents
2. Abbreviations and symbols use in building documents
3. The plan and specifications of the work to be carried out
4. The quality, quantities and type of materials to be used
5. Item stocked, their specifications and standard symbols and markings used
6. Store manuals, item code numbers, stock levels
7. Units of measurements stock items
8. Stores procedures
9. Purchase requisitions and forms
10. Store manuals, indicating item code numbers, stock levels
11. Fast moving items
12. Safety Procedures and material Safety Data Sheet (MSDS)

13. Equipment safety requirements

Prerequisites

- Completion of module 03 - GI

List of tools and equipment required

- Faxes, telephone, racks/cupboard, calculators, photocopy machine, measuring equipment,

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Regulations
- Files, order list, plan, schedules, specifications, stores manuals, circulars, catalogues, stock cards

Target time

- 3 credits/30 hours

Module No. 05 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Be a good leader, good member of a team and good citizen of Pakistan

Module Title: leadership, teamwork skills and citizenship

Performance objective: After successful completion of this module the trainee will be able to work as a good leader, concern citizen of Pakistan and good member of a team.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Take full responsibility of task/role given	<ul style="list-style-type: none"> • Willingness to take responsibility • Think critically • Show integrity and pride as expected of a good citizen of Pakistan • Aspiration to become a productive Pakistani
2.	Determine root causes of conflicts or problems	
3.	Mediate disputes between parties	
4.	Lead a team to carry out a task given	
5.	Organize and participate in a meeting	
6.	Write minutes of meeting	

Knowledge required for the module

1. The leadership skills required
2. Problem-solving techniques used to address problems and propose solutions to community and workplace problems.
3. The ability to work professionally with others.
4. The integrity and pride to be exhibited by a Tradesman and concern Pakistani for development
5. What it takes to be a successful Pakistani entrepreneur
6. Mediation skills

Prerequisites

- Completion of module 04 - GI

List of tools and equipment required

- Nationalism, meeting with young successful Pakistani entrepreneur, professionalism, national anthem

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid

Target time

- 2 credits/20 hours

Module No. 06 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Support innovative ideas and adopt change

Module Title: Support innovative ideas and adopt change

Performance objective: After successful completion of this module the trainee will be able to support innovative ideas and change to construct structures that will be stronger and resist seismic forces.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Implement new work practices	<ul style="list-style-type: none"> Implementation of innovative ideas and best work practices
2.	Communicate innovative practices of Building Carpentry on seismic resistance	

Knowledge required for the module

1. The seismic resistant concepts in building carpentry
2. Indigenous techniques of making timber buildings earthquake resistance
3. Good communication skills
4. Method of approach to apply to effect positive change in the industry
5. Monitoring skills of facilitating change
6. Learning as a key to innovation and change
7. The issues underpinning the innovative ideas and how they relate to development

Prerequisites

- Completion of Unit 5 – Level GI

List of tools and equipment required

- Technology – computers, computer applications, fax, e-mail, internet/extranet/intranet

List of teaching/learning materials required

- Manual
- Posters

- Models
- Audiovisual aid

Target time

1. 2 credits/20 hours

Module No. 07 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Erect and dismantle shoring in any condition where timber shoring is applicable, ensuring safety.

Module Title: Erect and dismantle shoring

Performance objective: After successful completion of this module the trainee will be able to erect and dismantle shoring under any condition where timber shoring is applicable, ensuring safety.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Select tools, equipment, and materials	<ul style="list-style-type: none"> • Work instruction, plans, specifications, quality requirements and operational details applied • Bearing capacity – bracing, triangulation and stability strength of timber joints considered • Environmental protection requirements applied • Regulatory obligations applied • Communicate and work effectively and safely with others
2.	Level area and prepare base where shoring is to be erected	
3.	Put safety signs to acceptable procedures	
4.	Cut timber to required sizes	
5.	Set out shoring lines	
6.	Mark out required/possible penetration depth/level	
7.	Fix vertical members, props and wedges	
8.	Dismantle components in the correct order	
10.	Clean and stack components when dismantled	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards

3. Methods of shoring used
4. The importance of using correctly fitted personal protective equipment
5. Safe and effective operational use of tools, plant and equipment
6. The measurements and calculations involved
7. The use of material schedule
8. The particular attention shown on accuracy of marking, cutting and assembling members
9. The correct procedures to be adopted and carried out prior to and during application of assembling processes
10. The importance of communicating to others to ensure safe and effective work operations
11. The appropriate tools and equipment
12. Tight joints
13. Faults and problems that occur and necessary actions to be taken
14. Alternative support to structure
15. The procedure to stack/store materials
16. Hazardous materials
17. Regulations on the installation of timber shoring

Prerequisites

- Completion of module 06 - GI

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools – Measuring tape/rule, hammer, saw, jigs/stops, power drills/screwdrivers, saw stools, clamps, squares, nail guns, handsaws, claw hammer, sledge hammer, claw-bars, coir string, adjustable screw jacks, mallet, chisels, pincer
- Cleaning tools - Wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid
- Timber, plywood,
- Fittings/fasteners – Nails, screws

Target time

- 8 credits/80 hours

Module No. 08 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Erect and strip formwork

Module Title: Erect and strip formwork for concrete

Performance objective: After successful completion of this module the trainee will be able to erect and strip formwork.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Select tools, equipment, and materials	<ul style="list-style-type: none"> • Work instruction, plans, specifications, quality requirements and operational details applied • Bearing capacity – bracing and stability strength of props considered • Environmental protection requirements applied • Regulatory obligations applied • Communicate and work effectively and safely with others
2.	Level area and prepare base of props where applicable	
3.	Put safety signs to acceptable procedures	
4.	Cut timber to required sizes	
5.	Set out location of formwork	
6.	Assemble component members of the formwork	
7.	Apply releasing agent	
8.	Erect formwork, plumb and tight sides	
9.	Erect formwork support system	
10.	Brace formwork	
11.	Fix stop boards at appropriate locations/positions	
12.	Dismantle components in the correct order	
13.	Clean and stack components when dismantled	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. Safe and effective operational use of tools, plant and equipment
5. The importance of environmental protection
6. The different types of indigenous, exotic and imported timber that is suitable for formwork
7. Preparation of estimates
8. Preparation of cutting list
9. Type of timber to use and props
10. Bracing and loading
11. The off cuts that are suitable for use
12. The procedures for the construction and erection of formwork
13. Health and safety requirements
14. The treatments needed for sheathing
15. The construction of a plumb formwork
16. The need to tight joints of formworks
17. How formworks are tied and braced
18. The parts of the formwork to be inspected
19. The importance of considering the health and safety of those that work on site and people visiting the site
20. Releasing agent of formworks
21. The benefits in cleaning and repairing of formworks for reuse
22. The procedure to stack/store materials
23. Hazardous materials

Prerequisites

- Completion of module 07 - GI

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Tools - Rule, tape, pencil, claw hammer, nail punch, squares, tenon, panel, crosscut and rip saws, sliding bevel, chisels, smoothing planes, hand drill and drill bits, screwdrivers, spirit level, string line, sanding block, hacksaw, pliers, adjustable spanner, plane, pincer
- Cleaning tools - Wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters

- Models
- Audiovisual aid
- Timber, plywood, releasing agent, props
- Fittings/fasteners – Nails, screws

Target time

- 6 credits/60 hours

Module No. 09 - GI

Endorsement Date: _____

Field: Building Construction

Revision Date: _____

Occupation: Building Carpenter

Competency area: Plan and carry out demolition work

Module Title: Plan and carry out demolition work on site

Performance objective: After successful completion of this module the trainee will be able to plan and carry out demolition work on site.

Tasks to be performed:

S. N	Task	Performance Standards
1.	Identify and inspect demolition work	<ul style="list-style-type: none"> • Work instruction, plans, specifications, quality requirements and operational details applied • Bracing and stability strength of supports • Environmental protection requirements applied • Regulatory obligations applied • Communicate and work effectively and safely with others
2.	Prepare demolition plan	
3.	Select tools, equipment, and materials	
4.	Support existing structural components before demolition work starts	
5.	Carry out demolition work according to the demolition plan	
6.	Dispose debris and waste according to the demolition plan and Building Authority requirements.	
7.	Store/stack unused materials	
8.	Clean, maintain and store tools and equipment	

Knowledge required for the module

1. The workplace and equipment safety requirement
2. The quality assurance standards
3. The importance of using correctly fitted personal protective equipment
4. All issues to look for during the inspection
5. The preparation of a demolition plan

6. Safe and effective operational use of tools, plant and equipment
7. The measurements and calculations involved
8. The particular attention to be shown on accuracy of marking, cutting and assembling of structural supports
9. The correct procedures to be adopted and carried out prior to and during application of structural support and demolition work
10. The faults and problems that may occur and necessary actions to be taken
11. The procedure to stack/store materials
12. Hazardous materials

Prerequisites

- Completion of module 08 - GI

List of tools and equipment required

- Personal Protective Equipment – Overall, boots, gloves, safety goggles/glasses, ear plugs/muffs, dust masks/respirators, hard hat/cap, jacket
- Demolition plan
- Hammer, moil point, chisel, blunt, wheelbarrows, brooms, hose, shovel, rake, industrial vacuum cleaners

List of teaching/learning materials required

- Manual
- Posters
- Models
- Audiovisual aid

Target time

- 6 credits/60 hours