basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

2023/24 ANNUAL TEACHING PLANS: CIVIL TECHNOLOGY (CIVIL SERVICES): GRADE 11 (TERM 1)

TERM 1	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	
CAPS TOPICS	**OCCUPATIONAL HEALTH AND SAFETY ACT 85 of 1993 (OHS) (Generic)**	**MATERIALS (Generic)**	**MATERIALS (Generic)**	**MATERIALS (Generic)**	**EQUIPMENT AND TOOLS (Generic)**	**EQUIPMENT AND TOOLS (Generic)**	**EQUIPMENT AND TOOLS (Subject specific)**	**GRAPHICS AS MEANS OF COMMUNICATION (Generic)**	**GRAPHICS AS MEANS OF COMMUNICATION (Generic)**	**COMPLETION OF ASSIGNMENT/1ST PHASE OF PAT**	
TOPICS /CONCEPTS, SKILLS AND VALUES	Application of the OHS Act pertaining to: Personal safety: • Clothing • Head protection • Eye and ear protection • Footwear General safety: • Hand tools • Power tools • Small plant equipment • Construction methods in the workplace Safety and health aspects associated with storage of materials: • On site • In workshops • Hazardous materials in the workplace. E.g. solids, liquids and gases HIV/Aids: preventative measures Awareness of substance abuse: • Drugs • Alcohol Health risks associated with Infections and exposure to raw sewerage General safety rules to be observed when soldering	Application and uses of the following: • Concrete • Screed • Mortar • Coarse aggregates • Fine aggregates • Cement • Lime • Water Timber: Hard wood, soft wood and board products: • Saligna • Meranti • SA Pine • Shutter board • Plywood • Block board • Tempered and standard Masonite (hard board)	Bricks and Blocks: Clay and cement Ferrous metals: •Grey cast iron •Ductile cast iron •Wrought iron •Malleable iron •Low carbon steel •Stainless steel Non-ferrous metals: •Aluminium •Bronze •Copper •Lead •Tin •Zinc Alloys: •Brass •Bronze **Introduction to the PAT (Phase 1 and Part 1 of Phase 2)**	Glass: Properties and uses of: • Clear sheet glass • Translucent glass • Safety glass • Synthetic materials Plastics: • Thermo- plastics • Thermo- setting plastics • Polythene • Polypropylene • Polyvinyl chloride **Specific:** Application and uses of Solder and Ceramics	Identification, proper use and care of the following: Basic site equipment: • Round shovel • Wheelbarrow • Square shovel • Spade • Pick • Dumpy level Hand tools: Brick cutting tools: • Comb hammer • Club hammer • Cold chisel • Bolster • Brick hammer Plastering tools: • Float • Plastering trowel. • Hand hawk • Straight edge • Block brush • Corner trowels • Nose trowels • Spirit level	Identification, proper use and care of the following: Woodworking tools: • Roof square • Rip saw • Cross cut saw • Claw hammer • Crowbar/Claw bar • Mitre try square • Combination square • Sliding bevel • Cutting gauge • Smooth, jack and trying plane • Wood rasp • Cross pein hammer • Screwdrivers (flat and Phillips blades) Plumbing tools: • Universal pliers • Water pump pliers • Soldering iron • Basin wrench Power tools: • Electric drill • Bench grinder • Power screwdriver • Angle grinder • Portable circular saw • Radial arm saw Construction machinery: • Generator (electricity supply) • Concrete mixer • Plate compactor • Rammer	Identification, proper use and care of the following: Cutting tools: • Cold chisels • Tin snips (Bent, straight & universal) • Files (flat, round, square, triangular and half round) • Pipe threader (stocks and dies) Holding tools: • Pliers • Bench vice Fastening tools: • Spanners (ring, open ended and combination) • Pop rivet apparatus • Snapper or riveting tool • Groover or seaming tool Sheet metal work machines: • Guillotine • Sheet bending machine • Pan and box bending machine • Rolling machine	Make advanced drawings by applying various scales: • Instrument drawings (related to building industry) • Orthographic projection with sections • Different elevations of a building • Vertical sections indicating labelling and measurements in accordance with the SANS for building drawings • Isometric views applicable to construction	Freehand sketches relevant to the super structure of a building Basic computer-aided drawings Interpretation of drawings: • Site plan, floor plan and elevation of a basic single storey dwelling • Basic drawing symbols relating to the built environment in accordance with the SANS for building drawings		***School holiday***
REQUISITE PRE-KNOWLEDGE	Learners to know and understand the importance of safety	Learners to know and understand the different applications of material to select the best material to fit the purpose	Learners to know and understand the different applications of material to select the best material to fit the purpose	Learners to know and understand the different applications of material to select the best material to fit the purpose	Tasks to be done and tools needed to complete the task. Identification of tools	Tasks to be done and tools needed to complete the task. Identification of tools	Tasks to be done and tools needed to complete the task. Identification of tools	Knowledge of different drawings used in the built environment	Knowledge of different drawings used in the built environment		

TERM 1		**WEEK 1**	**WEEK 2**	**WEEK 3**	**WEEK 4**	**WEEK 5**	**WEEK 6**	**WEEK 7**	**WEEK 8**	**WEEK 9**	**WEEK 10**	
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**		Safety equipment	Samples of each material Power point presentation You Tube videos	Samples of each material Power point presentation You Tube videos	Samples of each material Power point presentation You Tube videos	Examples of listed tools	Examples of listed tools	Examples of listed tools	Building plans	Building plans		
ASSESSMENT	**INFORMAL ASSESSMENT:** REMEDIATION	Informal class test Work sheets Assignments	Practical activity in identification and explanation of materials Informal class test Work sheets Assignments	Practical activity in identification and explanation of materials Informal class test Work sheets Assignments	Practical activity in identification and explanation of materials Informal class test Work sheets Assignments	Practical activity in identification and explanation of use of tools Informal class test Work sheets Assignments	Practical activity in identification and explanation of use of tools Informal class test Work sheets Assignments	Practical activity in identification and explanation of use of tools Informal class test Work sheets Assignments	Informal class test/drawings Work sheets	Informal class test/drawings Work sheets		
	SBA **FORMAL ASSESSMENT**	Assignment PAT- Phase 1 and Part 1 of Phase 2 **Learners should be taught and be able to understand and apply principles and concepts of each topic and should not be limited to specific specifications in the CAPS.**										

2023/24 ANNUAL TEACHING PLANS: CIVIL TECHNOLOGY (CIVIL SERVICES): GRADE 11 (TERM 2)

TERM 2	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	
CAPS TOPICS	**GRAPHICS AS MEANS OF COMMUNICATION (Subject specific)**	**GRAPHICS AS MEANS OF COMMUNICATION (Subject specific)**	**QUANTITIES (Generic)**	**QUANTITIES (Specific)**	**JOINING (Generic)**	**JOINING (Specific)**	**JOINING (Specific)**	**Controlled test**			
TOPICS /CONCEPTS, SKILLS AND VALUES	Pattern development: Parallel line method Square shaped (square pipe, square elbow)	Pattern development: Parallel line method Round shaped (cylindrical pipe, cylindrical pipe elbow)	Calculate quantities of the following materials for a single room building up to wall plate level using dimension paper: • Bricks • Concrete (foundation and floor slab) • Skirtings • Quarter rounds	Calculate from given drawings the quantities of hot and cold-water supply, fittings, wastewater and soiled water drainage pipes for a small building (use of SI units of measurements)	Properties, use, precautions and application of the following adhesives: • Contact glue • PVC adhesives • Silicone • PVA wood glue • Epoxy • Mastic sealant	Joining of pipes Explain the various methods of cutting, joining, bending and securing pipe connections and fittings for copper, galvanized pipes and high- and low-pressure polythene pipes Label and explain the different parts of the joints from sectional sketches Explain the use of the following fixing agents: • Chemical anchors • Sleeve anchors • Spring toggle fixing	Soft solder: • Explain the process and apparatus • Types of solder • Properties of solder • Soldering irons • Tinning a soldering iron • Flux (types and purpose) Sheet metal: Drawing and explanation of stages of obtaining: • Grooved seamed joint • Overlap joints • Pop rivet joints • Solder joints • Calculating sheet metal allowance for joints taking into account preparation and where used. The student should be able to mark out and cut sheet metal.				***School holiday***
REQUISITE PRE-KNOWLEDGE	Basic drawing skills	Basic drawing skills	Basic mathematical skills Knowledge of the materials of which the quantities need to be calculated	Basic mathematical skills Knowledge of the materials of which the quantities need to be calculated	Learners need to understand the need and purpose of joining different materials	Learners need to understand the need and purpose of joining different materials	Learners need to understand the need and purpose of joining different materials				
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**	Drawing equipment	Drawing equipment	Calculator	Calculator	Examples of each of the listed adhesives	Examples of each of the listed fittings and fixing agents	Examples of soldering equipment, solder and flux				
ASSESSMENT **INFORMAL ASSESSMENT:** REMEDIATION	Informal class test/drawings Cutting and folding developed pipe parts to simulate the real object	Informal class test/drawings Cutting and folding developed pipe parts to simulate the real object	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Practical activity in identification and use of different adhesives Informal class test Work sheets Assignments	Practical activity in identification and use of different fittings and fixing agents Informal class test Work sheets Assignments	Practical activity in soldering and use of flux Informal class test Work sheets Assignments				
SBA FORMAL ASSESSMENT	**Controlled test** **Learners should be taught and be able to understand and apply principles and concepts of each topic and should not be limited to specific specifications in the CAPS.**										

2023/24 ANNUAL TEACHING PLANS: CIVIL TECHNOLOGY (CIVIL SERVICES): GRADE 11 (TERM 3)

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	
CAPS TOPICS	**CONSTRUCTION ASSOCIATED WITH CIVIL SERVICES (Subject specific)**	**CONSTRUCTION ASSOCIATED WITH CIVIL SERVICES (Subject specific)**	**COLD WATER SUPPLY (Subject specific)**	**COLD WATER SUPPLY (Subject specific)**	**COLD WATER SUPPLY (Subject specific)**	**HOT WATER SUPPLY (Subject specific)**	**HOT WATER SUPPLY (Subject specific)**	**ROOF WORK (Subject specific)**	**STORM WATER (Subject specific)**	**COMPLETION OF CONTROLLED TEST /PAT**	
TOPICS /CONCEPTS, SKILLS AND VALUES	Concrete: • Methods and purpose of curing of concrete • Simple floor slabs e.g., slab for manhole • Placing of concrete • Compacting of concrete • Levelling of concrete	Brickwork: Drawings of: • Front views • Sectional views • Consecutive layers as seen from above • T-junction of half brick wall and one brick wall in stretcher bond four courses high	Installation and types of pipes used for cold water supply: Uses, advantages, disadvantages, depths of water mains and service pipes and the reasons for this. • Copper pipes • Galvanized pipes • Steel pipes • Non-metallic pipes (different classes of high density polyethylene pipes that must be used for water supply)	Joints and fittings for: • Copper pipes • Galvanized pipes • Non-metallic pipes (high density polyethylene pipes) Valves: (Identify and label): • Water meter • Stop cock • Full way valve • Pillar tap • Bib cock • Ball valve • Non-return valve	Laying pipes Procedure and line diagrams showing all details of the installation of cold-water pipes underground. Explain the correct layout and installation of water supply to buildings as prescribed in the Code of Practice SABS 10252 Part 1. (Installation of water supply to buildings) Abbreviations and symbols used in cold water systems	Abbreviations and symbols: Explain abbreviations and symbols used in hot water systems Explain the working principles, installation, regulations, advantages and disadvantages of heating units: • High pressure geyser	Explain the working principles, installation, regulations, advantages and disadvantages of heating units: • Solar geyser (low and high pressure), latest technology e.g., evacuated tubes and flat plate collector solar system Hot water installation precautions	Gutters: Drawings (Development) of corners, outlets and stop ends for rectangular gutters	Storm water: The methods of disposing large quantities of water from a dwelling to the municipal storm water system		***School holiday***
REQUISITE PRE-KNOWLEDGE	Basic knowledge of concrete	Knowledge of purpose of a brick bond and what bonding is	Understanding of different types of pipes and its uses	Understanding of the need for pipe joints and valves	Understanding of the need for cold water supply to a building	Understanding of the need for hot water supply to a building	Understanding of the need for hot water supply to a building	Purpose and advantage of gutters and its different parts	Knowledge of containing and channelling of water		
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**	Materials used for mixing concrete Power Point presentations You Tube video clips	Bricks to dry pack different bonds	Examples of each type of pipe listed	Examples of each type of pipe fittings and valves for demonstration Power Point presentations You Tube video clips	Pipes and fittings Power Point presentations You Tube video clips	Old high-pressure geyser (Cut partly open to make inside visible Power Point presentations You Tube video clips	Old high-pressure geyser (Cut partly open to make inside visible Power Point presentations You Tube video clips	Gutters, stop ends, outlets and down pipes Power Point presentations You Tube video clips	Power Point presentations You Tube video clips		
ASSESSMENT	**INFORMAL ASSESSMENT:** REMEDIATION	Practical activity in mixing concrete Work sheets Class and homework activities Informal class tests	Work sheets, Drawings Class and homework activities Informal class tests	Work sheets Class and homework activities Informal class tests	Practical activity in identification and explaining of valves Work sheets Class and homework activities Informal class tests	Practical activity in laying pipes Work sheets Class and homework activities Informal class tests	Practical activity in installation of a geyser Work sheets Class and homework activities Informal class tests	Practical activity in installation of a geyser Work sheets Class and homework activities Informal class tests	Practical activity in drawing and developing gutter outlets and stop ends. Freehand drawings Work sheets Class and homework activities Informal class tests	Work sheets Class and homework activities Informal class tests	
	SBA **FORMAL ASSESSMENT**	Controlled test PAT (Part 2 of phase 2 to be in progress) **Learners should be taught and be able to understand and apply principles and concepts of each topic and should not be limited to specific specifications in the CAPS.**									

2023/24 ANNUAL TEACHING PLANS: CIVIL TECHNOLOGY (CIVIL SERVICES): GRADE 11 (TERM 4)

TERM 4		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	
CAPS TOPICS		**DRAINAGE (SEWERAGE) ABOVE AND BELOW GROUND (Subject specific)**	**DRAINAGE (SEWERAGE) ABOVE AND BELOW GROUND (Subject specific)**	**DRAINAGE (SEWERAGE) ABOVE AND BELOW GROUND (Subject specific)**	**DRAINAGE (SEWERAGE) ABOVE AND BELOW GROUND (Subject specific)**	**SANITARY FITMENTS (Subject specific)**	**SANITARY FITMENTS (Subject specific)**	**CONSOLIDATION, FINAL EXAM AND ASSESSMENT OF PAT**				***School holiday***
TOPICS /CONCEPTS, SKILLS AND VALUES		Explain regulations governing drainage. Identify and explain abbreviations and symbols used in drainage systems Terms and definitions of: • Wastewater • Wastewater pipe • Waste fixture • Soil water • Soil water pipe • Soil fixture • Sewage • Drain • Drainage installation	Pipe arrangements: Explanation of pipe arrangements of: Single stack and stub stack systems of plumbing, advantages and disadvantages.	Terms and uses of sanitary fitments: Waste Fixture: • Sink • Shower • Bath • Wash trough Soil fixtures: • Water closet • Urinal • Bidet	Flushing devices: Identify and label sectional sketches, location, purpose, advantages and disadvantages of: • Cistern • Flush valve Water traps: Explain the requirements for an efficient trap, identify and label sectional views and sketches, location and function as well as the loss of water seals of traps (causes and prevention): • P-Trap • S-trap • Re-sealing trap • Bottle trap • Gulley trap • Grease trap	Sanitary fitments: Identification of working parts, the working principles and labelling of sectional sketches and the uses of the following sanitary fitments	High- and low-level cisterns for water closets (advantages and disadvantages)				
REQUISITE PRE-KNOWLEDGE		Basic knowledge of sanitation infrastructure	Basic knowledge of ventilation	Basic knowledge of different sanitary fixtures	Basic knowledge of properties of methane gas and how to contain it	Basic knowledge of listed sanitary fitments and what it is used for	Basic knowledge of listed sanitary fitments and what it is used for					
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**		Power Point presentations You Tube video clips	Sewerage pipes and fittings Power Point presentations You Tube video clips	Examples of different sanitary fitments and valves Power Point presentations You Tube video clips	Examples of all listed traps Power Point presentations You Tube video clips	Examples of different sanitary fitments Power Point presentations You Tube video clips	Examples of different sanitary fitments Power Point presentations You Tube video clips					
ASSESSMENT	**INFORMAL ASSESSMENT:** REMEDIATION	Work sheets Class and homework activities Informal class tests	Work sheets Class and homework activities Informal class tests	Practical activity on flushing devices Work sheets Class and homework activities Informal class tests	Practical activity on the functioning of different water traps Work sheets Class and homework activities Informal class tests	Work sheets Class and homework activities Informal class tests	Work sheets Class and homework activities Informal class tests					
	SBA (FORMAL)	**Final examination** **Assessment of the PAT** **Learners should be taught and be able to understand and apply principles and concepts of each topic and should not be limited to specific specifications in the CAPS.**										