

2023/24 ANNUAL TEACHING PLANS: CIVIL TECHNOLOGY (CIVIL SERVICES): GRADE 10 (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)	OCCUPATIONAL HEALTH AND SAFETY ACT 85 of 1993 (OHS) (Generic)	OCCUPATIONAL HEALTH AND SAFETY ACT 85 of 1993 (OHS) (Subject specific)	MATERIALS (Generic)	MATERIALS (Generic)	MATERIALS (Generic)	MATERIALS (Generic and specific)	EQUIPMENT AND TOOLS (Generic)	EQUIPMENT AND TOOLS (Generic)	COMPLETION OF ASSIGNMENT/1ST PHASE OF PAT	
TOPICS /CONCEPTS, SKILLS AND VALUES	Introduction and orientation to the subject and the THREE specialisation areas in Civil Technology. Requirements of the OHS Act pertaining to: Personal safety: <ul style="list-style-type: none"> Clothing Head protection Eye and ear protection Footwear General safety: Hand tools Power tools Excavations 	Requirements of the OHS Act pertaining to: General safety: <ul style="list-style-type: none"> Safe site planning and organisation Safe site working methods Fire prevention and protection Types of fires Fire extinguishers for specific types of fires Fire triangle (Oxygen, heat and fuel) Main causes of fire Safety and health aspects associated with storage of materials <ul style="list-style-type: none"> On site In workshops Hazardous materials in the workplace. E.g., solids, liquids, gases and radioactive material HIV/Aids Awareness Awareness of substance abuse: <ul style="list-style-type: none"> Drugs Alcohol 	Requirements of the OHS Act pertaining to: General safety: <ul style="list-style-type: none"> Safety risks associated with excavations Safe manual handling of heavy loads Introduction to PAT (Phase 1 and part 1 of Phase 2)	Basic properties of materials: <ul style="list-style-type: none"> Concrete Screed Mortar Coarse aggregates Fine aggregates Cement Lime Water Timber: Hard wood, soft wood and board products: <ul style="list-style-type: none"> Saligna Meranti SA Pine Shutter board Plywood Block board Tempered and standard Masonite (hard board) 	Basic properties of materials: Bricks and Blocks: <ul style="list-style-type: none"> Clay and Cement 	Basic properties of materials: Metals: Ferrous metals: <ul style="list-style-type: none"> Grey cast iron Ductile cast iron Wrought iron Malleable iron Low carbon steel Stainless steel Non-ferrous metals: <ul style="list-style-type: none"> Aluminium Bronze Copper Lead Tin Zinc 	Basic properties of materials: Adhesives: <ul style="list-style-type: none"> PVC adhesives Silicone Mastic sealants Synthetic materials: <ul style="list-style-type: none"> Thermoplastics Thermosetting plastics Polythene Polypropylene Polyvinyl Chloride Specific: Knowledge of the different classes of copper and high-density polythene pipes	Identification and proper use of the following: Basic site equipment: <ul style="list-style-type: none"> Round shovel Square shovel Spade Pick Wheelbarrow Metal pegs Bricklaying tools: <ul style="list-style-type: none"> Brick trowel Line block / corner block Gauge rod Tingle Pipe level Setting out tools: <ul style="list-style-type: none"> Line and pins Steel square Steel tape measure Folding rule (1 metre in length) Wooden or metal pegs Straight edge Spirit level 	Identification and proper use of the following: Jointing Tools: <ul style="list-style-type: none"> Long jointer Short jointer Pointing trowel Mastic trowel Woodworking tools: <ul style="list-style-type: none"> Wooden mallet Try square Marking gauge Tenon saw Mortise chisel Files Plumbing tools: <ul style="list-style-type: none"> Pipe vice Hack saw Pipe cutters (Copper tube) Reamers Pipe wrenches (Stilson wrench) Gas torch Plumb bob Adjustable spanner or shifting spanner 		<i>School holiday</i>
REQUISITE PRE-KNOWLEDGE	Learners to know and understand the importance of safety	Learners to know and understand the importance of safety and the danger of fire and how to prevent or contain a fire	Learners to know and understand the importance of safety	Properties of different materials	Properties of different materials	Properties of different materials	Properties of different materials	Tasks that can be performed and the tools required for the task at hand	Tasks that can be performed and the tools required for the task at hand		
RESOURCES (OTHER THAN TEXTBOOK) TO ENHANCE LEARNING	Safety equipment	Power point presentation You Tube videos	Power point presentation You Tube videos	Examples of listed materials	Examples of listed materials	Examples of listed materials	Examples of listed materials	Examples of listed tools	Examples of listed tools		

TERM 1		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	
ASSESSMENT	INFORMAL ASSESSMENT: REMEDIATION	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments	Informal class test Work sheets Assignments		
	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 PANS: CIVIL TECHNOLOGY (CIVIL SERVICES): GRADE 10 (TERM 2)

TERM 2	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	School Holiday	
CAPS TOPICS	EQUIPMENT AND TOOLS (SPECIFIC)	GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)	GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)	GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)	GRAPHICS AS MEANS OF COMMUNICATION (SPECIFIC)	GRAPHICS AS MEANS OF COMMUNICATION (SPECIFIC)	QUANTITIES (GENERIC)	Controlled test				
TOPICS /CONCEPTS, SKILLS AND VALUES	Identification and proper use of the following: Cutting tools: • Pipe cutters (steel pipe and link pipe cutter for cast iron pipes) Marking off tools: • Punches (Centre punch, prick punch) • Scriber • Dividers Heating tools: • Soldering iron	Introduction to graphics as a means of communication: • Application of SANS 0143 Building regulations in all drawings • Types of lines; dimensioning and labelling (Code of Practice – SANS) • Basic freehand sketching (related to building industry)	Make basic drawings by applying various scales: • Orthographic projection • Isometric views applicable to construction • Instruments and instrument drawings	Make basic drawings by applying various scales: • Floor plan only of a two-room rectangular building • Introduction to computer-aided drawings	Pattern development: • Parallel line method • Basic geometrical constructions relevant to pattern development • Square shapes (Square pipe) • Round shapes (Cylindrical pipe)	Pattern development: • Parallel line method • Basic geometrical constructions relevant to pattern development • Square shapes (Square pipe) • Round shapes (Cylindrical pipe)	Calculate the following: • Volume of concrete for a straight trench • Square meter of materials such as tiles and brick walls • Length of skirting and quarter round moulding					
REQUISITE PRE-KNOWLEDGE	Tasks to be done using tools Identification of tools	Basic drawing skills	Basic drawing skills	Basic drawing skills	Basic drawing skills	Basic drawing skills	Basic mathematical skills					
RESOURCES (OTHER THAN TEXTBOOK) TO ENHANCE LEARNING	Examples of listed tools	Drawing equipment	Drawing equipment	Drawing equipment	Drawing equipment	Drawing equipment	Calculator Power Point presentations					
ASSESSMENT	INFORMAL ASSESSMENT: REMEDIATION	Work sheets	Informal class test/drawings Work sheets	Informal class test/drawings Work sheets	Informal class test/drawings Work sheets	Informal class test/drawings Work sheets	Informal class test/drawings Work sheets	Work sheets Class and homework activities Informal class tests				
	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 10 (TERM 3)

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	School Holiday
CAPS TOPICS	QUANTITIES (SPECIFIC)	QUANTITIES (SPECIFIC)	JOINING (GENERIC)	JOINING (SPECIFIC)	JOINING (SPECIFIC)	CONSTRUCTION ASSOCIATED WITH CS (SPECIFIC)	CONSTRUCTION ASSOCIATED WITH CS (SPECIFIC)	COLD WATER SUPPLY (SPECIFIC)	STORM WATER (SPECIFIC)	COMPLETION OF CONTROLLED TEST/PAT	
TOPICS /CONCEPTS, SKILLS AND VALUES	Quantities: Determine from given drawings the quantities of elementary plumbing installations for the following: • Hot and cold water installation • Areas of surfaces • Use of SI units of measurements	Quantities: Determine from given drawings the quantities of elementary plumbing installations for the following: • Hot and cold water installation • Areas of surfaces • Use of SI units of measurements	Identify and explain the uses of: Screws: • Countersunk head • Round head • Raised head • Jetting screw • Drywall screw • Self-cutting bolt head screw • Drill tip bolt head screw • Coach screw • Advantages of using screws over nails Nails: • Round wire nail • Masonry nail • Clout nail • Steel cut nail • Oval nail • Panel pin nail • Brad nails • Advantages of using nails over screws	Joining of pipes: Identify and label from drawings, sketches and sectional views the various methods of joining: • Copper • Galvanized pipes • High- and low-pressure polythene pipes Advantages and disadvantages of each type. Soft solder: • Knowledge of the process and apparatus • Types of solder • Properties of solder • Soldering irons • Tinning a soldering iron • Flux (types and purpose)	Identify the following fixing agents: • Chemical anchors • Sleeve anchors • Spring toggle fixing Sheet metal Drawing sectional views of: • Grooved seamed joint • Overlap joints • Pop rivet joints • Solder joints	Concrete: Mixing and mix proportions of concrete plaster and mortar (low, medium and high strength) Brickwork: Drawings of front views, sectional views and consecutive layers as seen from above Corners (L shaped) of half brick wall and one brick wall in stretcher bond four courses high	Brickwork: Drawings of front views, sectional views and consecutive layers as seen from above Corners (L shaped) of half brick wall and one brick wall in stretcher bond four courses high Setting out square angles: 3-4-5 method	Properties of water: • Smell • Taste • Colour • Boiling and freezing point • Expansion and contraction • Density • Hardness Explanation of the natural water cycle, run-offs to dams and catchment areas Sources of water: (Advantages and disadvantages) • Wells • Boreholes • Fountains • Rivers • Upland and lowland regions Protection of pipes against frost A brief explanation of a typical water purification process	Storm water: The safe disposal of storm water in the following ways: Roof gutters to water tanks, surface channels, hard surfaces, manholes, onto road kerbs, methods of channelling storm water to catchments areas. Responsibilities of municipalities with regard to storm water disposal. Regulations governing storm water disposal.		
REQUISITE PRE-KNOWLEDGE	Basic mathematical skills	Basic mathematical skills	Understanding of the need for joining fixtures	Understanding of the need for joining fixtures	Understanding of the need for joining fixtures	Basic drawing skills Purpose and advantage of brick bonds	Basic measuring and mathematical skills	Knowledge of where water comes from	Basic methods of containing and channelling of storm water		
RESOURCES (OTHER THAN TEXTBOOK) TO ENHANCE LEARNING	Calculator Power Point presentations	Calculator Power Point presentations	Examples of each type of screw and nail for demonstration Power Point presentations You Tube video clips	Examples of each type of Copper, Galvanised and HDPE joining fittings, soldering equipment, fluxes and joining fixtures	Examples of different sheet metal joints. Power Point presentations	Drawing equipment Bricks for dry packing of different brick bonds Power Point presentations You Tube video clips	Metal pegs, building line and steel tape measure Power Point presentations You Tube video clips	Water Power Point presentations You Tube video clips	Water 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	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	Practical activity making of joints and drawing each joint	Work sheets Class and homework activities Informal class tests	Practical activity in setting out square angles 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 10 (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		HOT WATER SUPPLY (SPECIFIC)	HOT WATER SUPPLY (SPECIFIC)	HOT WATER SUPPLY (SPECIFIC)	ROOF WORK (SPECIFIC)	SANITARY FITMENTS (SPECIFIC)	SANITARY FITMENTS (SPECIFIC)	CONSOLIDATION, FINAL EXAM AND ASSESSMENT OF PAT				
TOPICS /CONCEPTS, SKILLS AND VALUES		Introduction to hot water supply Cold water supply to hot water systems Purpose, type, positioning and regulations of: • Pressure reducing valves • Pressure control valves • Relief valve • Safety valves related to hot water installations	Brief explanation of heat transfer in hot water installations: • Radiation • Conduction • Convection	Describe different hot water systems: • Balanced and unbalanced systems • High and low pressure systems	Gutters (galvanised sheet metal gutters only): Knowledge of the purpose, identification, fall, material and methods of fixing and supporting rectangular gutters	Sanitary fitments: Identification of the following sanitary fitments along with their symbols: • W.C.-pans • Wash hand basin • Bath • Shower • Sink • Bidets • Urinals	Sanitary fitments: Identification of the following sanitary fitments along with their symbols: • W.C.-pans • Wash hand basin • Bath • Shower • Sink • Bidets • Urinals					
REQUISITE PRE-KNOWLEDGE		Basic methods of heating water	Basic knowledge of heat transfer	Basic knowledge of pressure and the effect thereof	Purpose and types of gutters	Basic knowledge of available sanitary fitments and what it is used for	Basic knowledge of available sanitary fitments and what it is used for					
RESOURCES (OTHER THAN TEXTBOOK) TO ENHANCE LEARNING		Water supply pipe, old electric geyser Power point presentation You Tube videos	Soldering torch, steel bar, kettle with open element Power point presentation You Tube videos	Hosepipe and tap with hose connections Power point presentation You Tube videos	Gutter brackets and length of gutter with two stop ends and gutter outlet and down pipe	Examples of different sanitary fitments	Examples of different sanitary fitments					
ASSESSMENT	INFORMAL ASSESSMENT: REMEDIATION	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	Practical activity on installation of a gutter and down pipe 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.										

School holiday