2021 Annual Teaching Plan Term 1: Mechanical Technology: Automotive Grade 10

	TERM 1 (45 days)	Week 1 27 - 29 January (3 days)	Week 2 1 - 5 February	Week 3 8 - 12 February	Week 4 15 - 19 February	Week 5 22 - 26 February	Week 6 1 - 5 March	Week 7 8 - 12 March	Week 8 15 - 19 March	Week 9 23 - 26 March (4 days)	Week 10 29 - 31 March (3 days)
CAF	S Topics	Safety (Generic)	Safety (Generic)	Tools (Generic)	ic) Tools (Generic) Engines (Generic) Engines (Generic) Engines (Specific) Engines (Specific)			PAT Consolidation Revision Assignment			
Topics /Concepts, Skills and Values		First Aid HIV/Aids Awareness Understand the OHS Act Learners must be fully aware of all the safety precautions when using the following tools: • Hand tools • pedestal drill • Bench grinder	First Aid HIV/Aids Awareness Understand the OHS Act Learners must be fully aware of all the safety precautions when using the following tools: • Compressors • Fire extinguisher • Lifts, jacks & trestles.	Basic tools and equipment: • Spanners: ring-, flat- and combination- • Sockets and accessories • Pliers: • Hammers • Chisels, hacksaws, • Screwdrivers • Allen keys • Files • Stocks & dies.	Application of measuring and marking-off instruments: • Steel Rule • Square • Scriber • Tape measure • Combination set ➤ Punches	Operating principles of 2 and 4 stroke internal combustion engines. (Single cylinder spark ignition engines only): • Stroke • Dead centre • Cycle	Operating principles of 2 and 4 stroke internal combustion engines. (Single cylinder spark ignition engines only): • Stroke • Dead centre • Cycle	Identification and function of engine components: Pistons, piston rings, crankshaft, connecting rod, bearings, gudgeon pin, camshaft, valves, flywheel, cylinder head, engine block, oil pump, manifolds, carburettors, etc.	Conventional layouts: • Engine in front with front- and rear-wheel drives • Engine at rear with rear-wheel drive • Advantages and disadvantages of each position		
	uisite pre- vledge	HIV/Aids Safety in G	eneral and Basic Hand	Tools					·		
than	ources (other textbook) to ance learning	OHS act, Safety signs in workshop, First aid manuals & Hand tools & Equipment	OHS act, Safety signs in workshop, First aid manuals & Hand tools & Equipment	Tools and equipment as mentioned above.	Tools and equipment as mentioned above.	Engines assemblies, You-tube videos, etc	Engines assemblies, You-tube videos, etc.	Engines with the above mentioned components, You- tube videos, etc.	Vehicles with different layouts, You-tube videos		
	Informal Assessment: Remediation	Classwork/case studies/worksheets/homework/class tests (Theory and practical work)									
Assessment	SBA & PAT (Formal)	Assignment PAT The legislation governing workplaces in relation to COVID – 19 is the Occupational Health and Safety Act, Act 85 of 1993, as amended, read with the Hazardous Biological Agents Regulations. S Health and Safety (OHS) Act, Act 85 of 1993, Safe work practices are types of administrative controls that include procedures for safe and proper work used to reduce the duration, frequency, or intensity of exposure to a hazard. Examples of sa include. Requiring regular hand washing or using of alcohol-based hand rubs. Learners and teachers should always wash hands when they are visibly soiled and after removing any PPE. Keep safe times. See the document on the workshop safety measures									



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2021 Annual Teaching Plan Term 2: Mechanical Technology: Automotive Grade 10

TERM 2 (51 days)	Week 1 13 – 16 April	Week 2	Week 3	Week 4							
(51 days)		19 – 23 April	28 – 30 April	3 – 7 May	Week 5 10 – 14 May	Week 6 17 – 21 May	Week 7 24 -28 May	Week 8 31May - 4 June	Week 9 7 – 11 June	Week 10 14 – 18 June	Week 11 21 – 25 June
or augo,	(4 days)	(5 days)	(3 days)	(5 days)	(5 days)	(5 days)	(5 days)	(5 days)	(5 days)	(4 days)	(5 days)
Topics	Joining methods (Generic)	Joining methods (Generic)	Forces (Generic)	Forces (Generic)	Maintenance (Generic)	Maintenance (Generic)	· · · · ·	ce (Generic)		I PAT Consolida	
s /Concepts, and Values	Calculations on the size of drills and key dimensions: • Drill sizes for screw cutting • Width, thickness and length of keys Semi-permanent joining methods: • Bolts • Studs • Locking devices • Nuts • Split pins • Rivets	 Semi-permanent joining methods: Keys – Identification, fitting and uses of the following types: Parallel key Taper key, Gib-head key Woodruff key 	Forces: Different types of forces found in engineering components: • Pulling force (Tensile) • Compressive force • Shearing force	Moments: Moments found in engineering components (basic calculations). Definition: Moment = force x perpendicular distance (Spanner used to tighten a nut or bolt)	Properties of lubricants: • Viscosity • Pour point, etc. Grading of oil according to viscosity: (SAE standards) • Transmission oil • Engine oil • Differential oil • Cutting fluid • Grease	Friction: • Characteristics Application Define the following types of maintenance: • Preventive • Predictive • Reliability centred maintenance	Lack of maintenance on equipment • Excessive wear • Overheating/seizing; and distortion • Failure				
isite pre- ledge	Grade 9 Force										
urces (other extbook) to nce learning	Bolt, nuts, etc. as mentioned above. Instructional videos, You-tube videos, etc.	Bolt, nuts, etc. as mentioned above. Instructional videos, You-tube videos, etc.	Testing equipment to demonstrate different types of forces. Calculators	Testing equipment to demonstrate different types of forces. Calculators	Different types of oils Instructional videos, You-tube videos, etc.	Instructional videos, You-tube videos, etc. Old question papers	Instructional videos, You- tube videos, etc. Old question papers				
Informal Assessment: Remediation											
SBA & PAT (Formal)	Assignment PAT Any maintenance task (e.g. changing disc pads or any oil change) and radiator pressure test (Any ONE) The legislation governing workplaces in relation to COVID – 19 is the Occupational Health and Safety Act, Act 85 of 1993, as amended, read with the Hazardous Biological Agents Regulations. Section 8 (1) of the Occupational Health and Safety (OHS) Act, Act 85 of 1993, Safe work practices are types of administrative controls that include procedures for safe and proper work used to reduce the duration, frequency, or intensity of exposure to a hazard. Examples of safe work practices for SARS-CoV 2 include. Requiring regular hand washing or using of alcohol-based hand rubs. Learners and teachers should always wash hands when they are visibly soiled and after removing any PPE. Keep safe distances and wear a mask a all times										
	and Values site pre- edge arces (other extbook) to ce learning nformal Assessment: Remediation	 the size of drills and key dimensions: Drill sizes for screw cutting Width, thickness and length of keys Semi-permanent joining methods: Bolts Studs Locking devices Nuts Split pins Rivets Solt, nuts, etc. as mentioned above. Instructional videos, You-tube videos, etc. The legislation go Safe work practices Safe work practices 	the size of drills and key dimensions: • Drill sizes for screw cutting • Width, thickness and length of keysmethods: • Keys – Identification, fitting and uses of the following types: > Parallel key > Taper key, > Gib-head key > Woodruff keysite pre- edgeGrade 9 Forcesite pre- edgeGrade 9 Forcesite pre- edgeGrade 9 ForceBolt, nuts, etc. as mentioned above. Instructional videos, You-tube videos, etc.Bolt, nuts, etc. as mentioned above. Instructional videos, etc.stasessment: RemediationThe legislation governing workplaces in relationsSBA & PAT Formal)The legislation governing workplaces in relations	and key dimensions: • Drill sizes for screw cutting • Width, thickness and length of keys methods: • Keys – Identification, fitting and uses of the following types: • Parallel key • Taper key, • Gib-head key Different types of forces found in engineering components: • Pulling force (Tensile) • Compressive force • Shearing force site pre- edge Grade 9 Force Bolt, nuts, etc. as mentioned above. Instructional videos, You-tube videos, etc. Bolt, nuts, etc. as mentioned above. Instructional videos, etc. Testing equipment to demostrate different types of force normal Assessment: Remediation Bolt, nuts, etc. as mentioned above. Instructional videos, etc. Bolt, nuts, etc. as mentioned above. Instructional videos, etc. Testing equipment to demostrate different types of forces. Calculators SBA & PAT Formal) The legislation governing workplaces in relation to COVID – Safe work practices are types of administrative controls that in	and key dimensions: • Drill sizes for screw cutting • Width, thickness and length of keys and Values methods: • Keys - Identification, fitting and uses of the following types: • Parallel key • Taper key, • Gib-head key • Woodruff key Different types of forces found in engineering components (basic calculations). Moments found in engineering components (basic calculations). s (Concepts, and Values • Width, thickness and length of keys • Gib-head key • Woodruff key • Different types of force • Shearing force Definition: Moment = force x perpendicular distance (Spanner used to tighten a nut or bolt) site pre- edge Grade 9 Force Bolt, nuts, etc. as mentioned above. Instructional videos, You-tube videos, etc. Bolt, nuts, etc. as mentioned above. Instructional videos, etc. Testing equipment to different types of forces. Calculators Testing equipment different types of forces. Calculators nformal Assessment: Remediation Classwork/case studies/worksh SBA & PAT Formal) The legislation governing workplaces in relation to COVID – 19 is the Occupational Safe work practices are types of administrative controls that include procedures for s	and Values the size of drills and key dimensions: • Drill sizes for screw cutting • Width, thickness and length of keys methods: • Keys – Identification, fulling and uses of the following types: • Parallel key • Cib-head key • Cib-head key • Oib-head key • Bolts Different types of forces found in • Compressive force • Bolts Moments found in engineering • Cib-head key • Woodruff key Moments found in engineering • Compressive • Studs • Locking devices • Nuts Moments found in engineering • Compressive • Shearing force Definition: Moment = force x perpendicular used to tighten a nut or bolt) Ibiferent viscosity: (SAE standards) • Transmission oil • Engine oil • Different types of force site pre- edge Grade 9 Force Grade 9 Force force, Instructional videos, etc. Bolt, nuts, etc. as mentioned above. Instructional videos, etc. Testing equipment to different types of forces. Calculators Different types of forces. Calculators	s/Concepts, and Values the size of drills and key bit mensions: methods: (Keys = Identification, fifting and uses of the parent in the sizes for screw cutting Width, thickness and length of keys methods: (Keys = Identification, fifting and uses of the parent is components; and Values Moments found in engineering components; engineering components; Parent key Moments found in engineering components; Parent key • Characteristics Application s/Concepts, and Values Fifting and uses of the parent key • Fifting components; • Site pre- force Moments found in engineering components; • Pulling force Moment = force x perpendicuter is the size of trills • Characteristics Application s/Concepts, and Values Semi-permanent poining methods: • Studs • Locking devices • Nuts • Split pins • Rivets Model (Finsile) • Site pre- edge Definition: Moment = force x perpendicuter • Stearing force Definition: Moment = force x perpendicuter • Stearing force • Fine the force • Shearing force • Fine the force • Shearing force • Fine the force • Shearing force • Fine the force • Shearing force • Fine the force forces. Calculators • Fine the force s. Calculators • Fine the folls instructional videos, You-tube videos, etc. Instructional videos, You-tube videos,	In size of drills and key dimensions: • Keys - Identification, fitting and uses of the screw cutting * Vidth, and Values • Keys - Identification, fitting and uses of the screw cutting * Vidth, screw cutting * Parale key * Dear beky * Gib-head key * Gib-head key * Gib-head key * Gib-head key * Our phart key * Gib-head key * Our phart key * Gib-head key * Woodruff key • Our phart screw proponents (Data corong to viscosity; (SAE standards) * Transmission oil * Preventive * Prevent	the size of dills dimensions: - Drill sizes for - Dri	s/Concepts, s	In the size of drifts methods: Definition: Moments found in upper former in engineering components (basic):



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2021 Annual Teaching Plan Term 3 Mechanical Technology: Automotive Grade 10

	TERM 3 (52 days)	Week 1 13 – 16 July (4 days)	Week 2 19 – 23 July (5 days)	Week 3 26 – 30 July (5 days)	Week 4 2 - 6 Aug (5 days)	Week 5 10 - 13 Aug (4 days)	Week 6 16 – 20 August (5 days)	Week 7 23 – 27 August (5 days)	Week 8 30 Aug - 3 Sept (5 days)	Week 9 6 - 10 Sept (5 days)	Week 10 13 - 17 Sept (5 days)	Week 11 20 - 23 Sept (4 days)
CAF	PS Topics	Termin	ology (Specific) Drive	e trains	Maintenance (Specific)			Systems & Control (Specific)		Revision Consolidation of PAT	Controlled Test	
	oics /Concepts, lls and Values	Function, construction and operation of the single-plate clutch assembly: • Flywheel • Diaphragm pressure plate • Clutch Plate • Clutch Plate • Clutch couplings, etc. • Hydraulic: Master & slave cylinders, pipes • Fault finding	Identify and investigate the various components of the constant mesh manual gearbox and define the construction, function, operation and power flow of: • Gears • Shafts • Synchronising unit, • Selector mechanism.	Function, construction and operation of drive shafts: • The Slip Joint • Universal Joint • Constant Velocity Joint • Flexible coupling	Lubrication Systems: • Splash feed, Pressure Feed and Full pressure feed Oil: • Oil purity, oil dilution, Crankcase ventilation • Oil Filtration systems: Full-flow and by-pass systems	Temperature Control: • Factors generating heat Cooling systems: • Direct air • Indirect air cooling Components: • Radiators, Radiator pressure cap, Water pumps, thermostat, by-pass system, etc.	Practical: • Do a visual inspection on a cooling system • Do a pressure test Check and maintain all fluid levels: • Water • Oil • Brake fluid	Basic carburetion: • Function of a carburettor • Basic principle of operation, etc. Air filters: Purpose and types.	Hydraulic brake system: • Master Cylinder (function) • Wheel Cylinders Hydraulic brake system: • Disc brake assembly • Brake shoe assembly • Hand brake assembly.			
	uisite pre- wledge											
Res than	ources (other in textbook) to ance learning	Clutch components: (as above). You-tube, CDX educational videos, etc.	Manual gearboxes and components: (as above) You-tube, CDX educational videos, etc.	Drive shafts and components (as above) with relative specifications.	Engines with different lubrication systems, Hand tools. You- tube, CDX educational videos, etc.	Vehicle or running engines, You-tube, CDX educational videos	Vehicle or running engines to do pressure testing and for servicing.	Carburettors, air filters, hand tools & educational videos.	Braking systems components, hand tools & educational videos.			
	Informal Assessment: Remediation											
Assessment	SBA & PAT (Formal)	Controlled Test Any maintenance task (e.g. changing disc pads or any oil change) and radiator pressure test (Any ONE) The legislation governing workplaces in relation to COVID – 19 is the Occupational Health and Safety Act, Act 85 of 1993, as amended, read with the Hazardous Bi the Occupational Health and Safety (OHS) Act, Act 85 of 1993, Safe work practices are types of administrative controls that include procedures for safe and proper work used to reduce the duration, frequency, or intensity of ex practices for SARS-CoV-2 include. Requiring regular hand washing or using of alcohol-based hand rubs. Learners and teachers should always wash hands when the PPE. Keep safe distances and wear a mask at all times. See the document on the workshop safety measures										mples of safe work



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2021 Annual Teaching Plan Term 4: Mechanical Technology: Automotive Grade 10

	TERM 4 (47 days)	Week 1 5 - 8 Oct (4 days)	Week 2 11 – 15 Oct (5 days)	Week 3 18 – 22 Oct (5 days)	Week 4 25 – 29 Oct (5 days)	Week 5 26 - 30 Oct (5 days)	Week 6 1 - 5 Nov (5 days)	Week 7 8 - 12 Nov (5 days)	Week 8 15 - 19 Nov (5 days)		
CAP	'S Topics	Systems & Co	ntrol (Specific)	P	AT: Maintenance		Revision and Consolidation of PAT and moderation				
	ics /Concepts, ls and Values	Electricity:• Ohm's Law• Electron theory – basic electrical principles:• Electrical units and measurements:> Electron movement> Volts> Electrons and conductors> Ohms> Pulse with modulation• Use of the Multi- meter> Digital & analogue signal• Basics series and parallel circuits> Effects of electricity• Battery – lead acid type• Electromagnetism • Electromagnets• Ohm's Law		Changing disc pads or any oil change or radiator pressure test							
	uisite pre- wledge										
than	ources (other textbook) to ance learning	Instructional videos, You-tube videos, etc.	Multi-meters, Batteries, Instructional videos, You-tube videos, etc.								
Assessment	Informal Assessment: Remediation	Classwork/case studies/worksheets/homework/class tests (Theory and practical work)									
Asse	SBA (Formal)	FINAL EXAMINATION									



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Week 9 - 11 22 Nov – 8 Dec (15 days)								
Examination								