2022 Revised Annual Teaching Plan Term 1: Mechanical Technology: Automotive Grade 11

TERM 1 (47 days)	Week 1 (5 days)	Week 2 (5 days)	Week 3 (5 days)	Week 4 (5 days)	Week 5 (5 days)	Week 6 (4 days)	Week 7 (4 days)	Week 8 (4 days)	Week 9 (5 days)	Week 10 (5 days)
CAPS Topics	**Safety (Generic)**		**Tools (Generic)**	**Tools (Specific)**	**Engines (Specific)**			**PAT Consolidation**	**Revision**	**Assignment**
Topics /Concepts, Skills and Values	**First Aid** HIV/Aids Awareness **OHS Act** Machine specific safety measures when dealing with: • Grinding machines • Cutting machines	Machine specific safety measures when dealing with: • Press machines • Hydraulic operated equipment	The principles and functions of the following: • Stocks and dies (characteristics and drill sizes) • Grinding machines • Cutting machines (drilling machines) • Press machines	The principles and functions of the following: • Dial indicators • Telescopic gauges • Torque wrenches • Outside, Inside micrometers and vernier calliper	**C.I. Engines**: Combustion chamber designs for direct and indirect injection **Injector:** Function, construction, operation and types of nozzles	**Valve assemblies**: • Identify various overhead valve arrangements • Identify various camshafts arrangements: SOHC and DOHC • Cam followers – mechanical and hydraulic	Valve timing diagram – • Continuously variable valve timing (CVVT) system • Purpose and importance of valve clearance • Timing gears, chains, belt drives and tensioners			
Requisite pre-knowledge	HIV/Aids Awareness	HIV/Aids Awareness	Hand tools and Measuring tools	Hand tools and Measuring tools	Operating principles of 2 & 4 stroke internal combustion engines	Operating principles of 2 & 4 stroke internal combustion engines	Operating principles of 2 & 4 stroke internal combustion engines			
Resources (other than textbook) **to enhance learning**	OHS act, Safety signs in workshop, First aid manuals & Tools & Equipment	OHS act, Safety signs in workshop, First aid manuals & Tools & Equipment	Tools and equipment as mentioned above.	Tools and equipment as mentioned above.	Direct and Indirect injection C.I. engines, different types of injectors.	Engines with various OHV assemblies, You-tube videos	Engines with various OHV assemblies, You-tube videos			
Assessment **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. 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 at all times. See the document on the workshop safety measures									

2022 Revised Annual Teaching Plan Term 2: Mechanical Technology: Automotive Grade 11

TERM 2 (53 days)	Week 1 (4 days)	Week 2 (4 days)	Week 3 (4 days)	Week 4 (4 days)	Week 5 (4 days)	Week 6 – 7 (10 days)	Week 8 – 9 (10 days)	Week 10 - 11 (10 days)	Week 12 (5 days)
CAPS Topics	**Systems & Control (Specific)**			**System & Control (specific)**			**Consolidation of PAT**	**Revision**	**Controlled test**
Topics /Concepts, Skills and Values	**Basic function, construction and operation of final drives:** • Spiral bevel type • Hypoid type • Conventional differential • Limited slip differential	**Identify the layout and purpose of different drive systems:** • Four-wheel drive • All-wheel drive	**Hydraulic brakes:** • Master Cylinder (Parts & Operation)	**Hydraulic brakes**: • Vacuum servo unit (purpose and operation) • ABS braking system (basic lay-out and operation)	**Define the difference in construction between:** • Front axles • Rear axles: ➢ Semi-floating ➢ Full-floating	**Steering systems, layout & operation:** • Types of steering boxes • Power steering • Electric p/steering Identify the function & purpose of the following steering control components: • Drag links • Tie rod ends Ball joints			
Requisite pre-knowledge			Hydraulic brake systems	Hydraulic brake systems					
Resources (other than textbook) **to enhance learning**	Different types of final drives, hand tools, You-tube, educational videos, etc.	Different types of final drives and layouts, hand tools, etc.	Hydraulic brakes components and operational system, hand tools, etc.	Vacuum servo units, hand tools.	steering control components: (as above). Educational videos, etc.				
Assessment **Informal Assessment:** Remediation	Classwork/case studies/worksheets/homework/class tests (Theory and practical work)								
SBA & PAT (Formal)		**Term test** **PAT - Any maintenance task (e.g. changing disc pads or any oil change or engine timing) and setting of engine valves. (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 at all times. See the document on the workshop safety measures							

2022 Revised Annual Teaching Plan Term 3: Mechanical Technology: Automotive Grade 11

TERM 3 (52 days)	Week 1 (4 days)	Week 2 (5 days)	Week 3 (5 days)	Week 4 (3 days)	Week 5 (5 days)	Week 6 – 7 (10 days)	Week 8 - 9 (10 days)	Week 10 (5 days)	Week 11 (5 days)
CAPS Topics	**Systems & Control**			**Maintenance (Generic)**	**Maintenance (Specific)**	**Forces (Specific)**	**Consolidation of PAT**	**Revision**	**Control Test**
Topics /Concepts, Skills and Values	**Suspension layout and operation**: • Define sprung and un-sprung mass • Semi-elliptic leaf • Coil springs • Torsion bars • Control ➢ Telescopic shock absorbers (gas and hydraulic) ➢ Anti-roll bars ➢ Stabilisers	ELECTRICITY Identify the functions and describe the operation of the conventional ignition system with reference to: • Firing order • Ignition timing • Spark plugs • Purpose of mechanical and vacuum regulators	Starting circuit: Show an understanding of the basic starting circuit Supplemental systems (purpose and operation): • Traction control • Air bag control	Engine Lubrication Oil pumps (purpose and operation): • Gear • Vane • Rotor	Demonstrate an understanding of oil control methods referring to: • Oil filtration systems • Pressure relief valve • Seals Servicing of vehicles: • Importance of regular servicing	Automotive calculations and application: • Work • Power • Torque • Compression Ratio			
Requisite pre-knowledge		Identification and function of engine components	Identification and function of engine components	Properties of lubricants Friction, Lack of maintenance	Lubrication systems	Types of forces Basic calculations			
Resources (other than textbook) **to enhance learning**	Steering control components: (as above). Educational videos, etc.	Ignition system components (as above) with relative specifications.	Batteries, starters, hand tools, You-tube, CDX educational videos, etc.	Different types of oil pumps.	Oil filtration systems, vehicle or running engines for servicing.	Engines, measuring instruments and specifications. Calculators			
Assessment — **Informal Assessment:** Remediation	Classwork/case studies/worksheets/homework/class tests (Theory and practical work)								
Assessment — **SBA & PAT (Formal)**		**Term Test** **PAT - Any maintenance task (e.g. changing disc pads or any oil change or engine timing) and setting of engine valves. (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 at all times. See the document on the workshop safety measures							

2022 Revised Annual Teaching Plan Term 4: Mechanical Technology: Automotive Grade 11

TERM 4 (47 days)	Week 1 (4 days)	Week 2 (5 days)	Week 3 - 5 (15 days)	Week 6 (5 days)	Week 7 - 10 (13 days)	
CAPS Topics	**Terminology (Specific)**		**Practical: Maintenance**	**Revision, Consolidation and Moderation of PAT**	**Examination**	
Topics /Concepts, Skills and Values	Work shop administration ➢ Read and interpret job instructions	Read & interpret & adhere manufacturers *specifications*	Changing disc pads or oil change or engine timing or setting of engine valves			
Requisite pre-knowledge	Work Shop Administration		Maintenance			
Resources (other than textbook) **to enhance learning**	Sample job cards	Workshop manuals You-tube videos				
Assessment — **Informal Assessment:** Remediation	Classwork/case studies/worksheets/homework/class tests(Theory and practical work)					
Assessment — **SBA & PAT (Formal)**	**Final Examination** **PAT - Any maintenance task (e.g. changing disc pads or any oil change or engine timing) and setting of engine valves.**					