



merSETA
MANUFACTURING, ENGINEERING
AND RELATED SERVICES SETA

TRAINING SCHEDULE FOR TIMEBASED APPRENTICES

AUTOMOTIVE ENGINE FITTER

Introduction to the Industry:	Responsibilities, appearance and attitude in work situation.	28
Safety:	Basic safety precautions applicable in the trade to be practised throughout apprenticeship, with special reference to safe handling and care of hand tools, noxious and flammable gases, liquids and gases under pressure, electrical installations, machine protection, machine and pneumatic tools, grinding wheels, moving and overhead machinery and use of portable fire extinguishers. Theory and practice of first aid.	50
Knowledge of: Hand and workshop tools:	Care and use of tools. Making of work pieces and/or parts using the techniques of chipping, drilling, filing, reaming, sawing, scraping, screwing and tapping. Sharpening of cutting tools. Use of pullers and presses. Dressing, trueing, checking and mounting of wheels on grinding machines. Annealing of materials. Use of securing, locking and sealing devices and of measuring tools. Making gaskets.	100
Brazing, soldering and welding:	Knowledge and use of gas and electric welding and soldering processes.	90
Drawings:	Reading and interpretation of drawings from workshop manuals and bulletins.	100
Power unit:	Knowledge of function and different forms of energy and the workings of petrol and diesel engines.	150
Systems:	Knowledge of function and composition of the following systems: Fuel, exhaust, turbo-charger, cooling, lubrication, injector, injection pump, compressor, vacuum pump, exhaust brake.	150

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Document Number	LPM-TS-005	Date Compiled	01 August 2009
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Review: Learning Programme Manager		Approved: CEO	

Electrical principles:	Knowledge of battery, volts, amps, ohms, watts. Magnetism and the working of parallel switches. Knowledge of function of distributor, coil and spark plugs. Elementary knowledge of starter motors, alternators, generators, regulators, pre-heating and other cold starting systems.	100
Ball, roller and babbitt metal bearings:	Knowledge of types of bearings used in the motor industry. Making of simple calculations and identification of worn and defective bearings.	100
Clutches:	Knowledge of all types of clutches used in the motor industry.	100
Engine tuning:	Running speed and minor tuning adjustment, eg: carburettors, ignition, plugs, points and adjustment of idling systems and spill cut off timing.	300
Advanced practical training:	Dismantling and assembling of petrol and diesel engines, including overhauling and fitting of the following parts: Pistons, rings and gudgeon pins, main and big end bearings, cylinder heads, valve trains, turbo-chargers and engine auxiliaries excluding injector pumps.	1 222
Inspection and assessment of wear:	Location and identification of faults in cylinders, on crankshafts, main and big end journals, camshaft journals, valve trains, cylinder heads, turbo-chargers and other engine auxiliaries excluding injector pumps..	380
Testing equipment and gauges:	Correct use of vacuum gauge, compression tester, amp, volt, tacho and dwell angle meters, fuel pump, timing lights, exhaust gas analysers, condenser and coil testers, spark-plug cleaners and testers.	180
Major service:	Carrying out major tune-ups including the overhauling of fuel pumps, carburettors and ignition systems. Dynamometer testing of engines.	350
Revision and independent work:		

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