HIGHER NITEC IN TECHNOLOGY – AUTOMOTIVE ENGINEERING

Course Code: HT2AT / Plan Code: HT2AT

COURSE OBJECTIVE

This course aims to equip students with the skills and knowledge to perform maintenance, inspection, repair, and diagnosis of systems in internal combustion engine vehicle, hybrid and electric vehicles. Work ranges from inspection and service to mechanical and electrical systems analysis using diagnostic equipment and related software.

COURSE STRUCTURE

Core / Specialisation Modules

S/N	Module Details	Module Code	Module Objectives
MSC: Chassis & Drivetrain			
C1	**Chassis & Drivetrain Technology** 40 hrs (T) 40 hrs (P) Credits: 3 Prerequisite: Nil	AT43002FP Equivalent Code Nil	On completion of the module, students should be able to service and replace automotive drivetrain and chassis components, including the manual transmission clutch and brakes, on a vehicle.
C2	**Chassis & Drivetrain Systems** 20 hrs (T) 60 hrs (P) Credits: 3 Prerequisite: Nil	AT43003FP Equivalent Code Nil	On completion of the module, students should be able to repair and rectify faults within automotive chassis and drivetrain systems
C3	**Automotive Body & Chassis Diagnosis** 40 hrs (T) 40 hrs (P) Credits: 3 Prerequisite: Nil	AT53002FP Equivalent Code Nil	On completion of the module, students should be able to interpret diagnostic results and rectify faults on vehicle steering include SRS Airbag braking and transmission systems on petrol or diesel powered vehicle as well as service alternative powered vehicle's powertrain.
MSC: Automotive Electrical & Electronic			
C4	**Automotive Electrical & Electronic Technology** 40 hrs (T) 40 hrs (P) Credits: 3 Prerequisite: Nil	AT43004FP Equivalent Code Nil	On completion of the module, students should be able to interpret, measure, and identify faults in vehicle auxiliary systems, including the starter, charging, and lighting systems.
C5	**Automotive Electrical & Electronic Systems** 30 hrs (T) 50 hrs (P) Credits: 3 Prerequisite: Nil	AT43005FP Equivalent Code Nil	On completion of the module, students Should be able to perform functional checks on engine electrical and auxiliary electrical systems by conducting diagnosis, troubleshooting and rectifying faults using manufacturer service manuals and accurately interpret electrical wiring diagrams.
C6	**High Voltage Vehicle System & Safety** 30 hrs (T) 5 0 hrs (P) Credits: 3 Prerequisite: Nil	AT43007FP Equivalent Code Nil	On completion of the module, students should be equipped with the knowledge and skills necessary to understand, work with, and ensure the safety of high voltage electrical systems in automotive engineering.
MSC: Automotive Powertrain			
C7	**Engine & Powertrain Management** 40 hrs (T) 40 hrs (P) Credits: 3 Prerequisite: Nil	AT43006FP Equivalent Code Nil	On completion of the module, students should be able to use systematic fault-finding techniques to identify faults in engine systems, as well as service engine mechanical components and the emission control system.
C8	**Automotive Powertrain Diagnosis** 20 hrs (T) 60 hrs (P) Credits: 3 Prerequisite: Nil	AT53004FP Equivalent Code Nil	On completion of the module, students should be able to use systematic fault-finding techniques to diagnose and identify issues in the engine drivetrain and electrical systems. They will be equipped with skills in using On-Board Diagnostic equipment to rectify faults in the vehicle's powertrain systems.

MSC: Automotive Intelligence			
C9	**Vehicle Telemetry Systems** 30 hrs (T) 5 0 hrs (P) Credits: 3 Prerequisite: Nil	AT53001FP Equivalent Code Nil	On completion of the module, students should be able to diagnose communication faults within the vehicle communication system using diagnostics tool and perform remote vehicle monitoring.
C10	**Control & Driver Assistance Systems** 30 hrs (T) 50 hrs (P) Credits: 3 Prerequisite: Nil	AT53003FP Equivalent Code Nil	On completion of this module, students should be able to perform fundamental assessment on the status and performance of the vehicle stabilisation control systems and advanced driver assistance systems. They will be equipped with the skills and knowledge to perform diagnosis and calibration of the systems using appropriate diagnostic tools and equipment.

Abbreviations: T - Theory, P - Practical

CREDITS FOR CERTIFICATION
Total of 30 credits from successful completion of 10 modules.

Applicants who do not meet the entry requirements for Core/Specialisation modules will need to complete 12 credits from 4 Foundation modules before taking Core/Specialisation modules.

Foundation Modules

S/N	Module Details	Module Code	Module Objectives
F1	**Workplace Safety, Health & Environment** 15 (T) 45 (P) Credits 3 Prerequisite: Nil	EG33001FP Equivalent Code Nil	On completion of the module, students should be able to apply Workplace Safety and Health (WSH) policies, Environmental Management System procedures and practices in the planning, preparation and execution of work activities to ensure a safe and reliable workplace environment.
F2	**Data & Digital Essentials** 21(T) 39 (P) Credits 3 Prerequisite: Nil	EG33002FP Equivalent Code Nil	On completion of the module, students should be able to prepare data for analysis, use online tools for collaborative work and maintain information security when online.
F3	**IoT for Engineering** 20 (T) 40 (P) Credits 3 Prerequisite: Nil	EG33004FP Equivalent Code Nil	On completion of the module, students should be able to set up an IoT, configure the controller to transmit sensor's collected data wirelessly to an IoT platform.
F4	**Engineering Drawing** 15 (T) 45 (P) Credits 3 Prerequisite: Nil	EG33007FP Equivalent Code Nil	On completion of the module, students should be able to interpret and create engineering drawings in accordance with ISO standards.

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Note:
1) Applicant must be free from colour appreciation deficiency.
2) The training schedule of lessons is subject to change.
3) Depending on the demand, not all the modules in the CET *Higher Nitec* in Technology courses will be offered in each intake. Where the modules are offered and there is insufficient enrolment, the classes will be cancelled and a full refund will be given to the affected students.