

DMX5208 Automobile Engineering

Level	Level 5
Course Code	DMX5208
Course Title	Automobile Engineering
Credit value	2
Core/Optional	Optional
Course Aim/s	Aim of this course is to provide a thorough insight to automobile engineering and to introduce modern developments in the field of automobile engineering
Course Learning Outcomes (CLO):	<p>At the completion of this course student will be able to</p> <p>CLO1: Categorize and interpret the essential properties of fuels for gasoline and diesel engines.</p> <p>CLO2: Perform tests on SI and CI Engines.</p> <p>CLO3: Explain the need of alternate fuels and identify prospective alternate fuels.</p> <p>CLO4: Explain possible harmful emissions and the legislation standards.</p> <p>CLO5: Analyze aerodynamic forces acting on a vehicle and discuss the methods to minimize them.</p> <p>CLO6: Analyze automotive electro mechanical systems.</p> <p>CLO7: Analyze different automotive structural components for crash worthiness.</p> <p>CLO8: Analyze Hybrid power trains.</p>
Content	<p>Outline Syllabus:</p> <p>Unit 1: Session 01: Firing Interval, Number and Arrangement of Cylinders in Engines Session 02: Dynamics of Crank Mechanisms Session 03: Balancing of Engines Session 04: Combustion chamber design Session 05: Pollution & pollutants</p> <p>Unit 2: Session 06: Diesel Fuel injection systems Session 07: Properties of fuels Session 08: Alternative fuels Session 09: Electric and Fuel cell vehicles Session 10: Computer Controlled Fuel-Injection System[Diesel engine]: Session 11: Computer Controlled Fuel-Injection System[gasoline engine]:</p> <p>Unit 3: Session 12: Construction of systems used in a hybrid vehicle Session 13: Electro mechanical configuration of ABS systems Session 14: Electro mechanical configuration of traction control systems Session 15: Automatic gear shift control systems Session 16: Electronic power steering system</p> <p>Laboratory work:</p> <ol style="list-style-type: none"> 1. Testing of noise level of an automobile as per SAE standards 2. Dismantle, repair assemble and calibrate a diesel fuel injection pump