DMX5209 Automotive Electronics

Level	5
Course Code	DMX5209
Course Title	Automotive Electronics
Credit value	2
Core/Optional	Optional
Course Aim/s	Aim of this course is to provide a comprehensive overview of automotive electrical systems and electric motor drives.
Course Learning Outcomes (CLO):	At the completion of this course student will be able to: CLO1: Identify main sensors and actuators of an automotive system and explain the operating principles. CLO2: Demonstrate sound knowledge of automotive control systems and design related circuits. CLO3: Analyze automotive information display systems and design display units. CLO4: Demonstrate the knowledge of component of electric and hybrid vehicles and describe their operating principles.
Content	**Outline Syllabus:** Unit 01: Sensors and actuators Unit 02 : Control systems Unit 03 : Information display system ,Safety, Convenience, Entertainment, and Other Systems Unit 04 : Electric and hybrid vehicles **Laboratory work:** 1. Determination of the characterises of Displacement measurement 2. Determination of the characterises of Velocity and acceleration measurement 3. Determination of the characterises of Temperature measurement 4. Design interface circuit to connect sensor, actuators and display Unit to CAN bus 5. Perform speed control of low voltage DC Motor drive 6. Perform speed control of high voltage DC Motor drive