

Summary Information

Module Code	5507ICBTAE
Formal Module Title	Automotive System Design
Owning School	Engineering
Career	Undergraduate
Credits	15
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
International College of Business and Technology

Learning Methods

Learning Method Type	Hours
Lecture	45
Off Site	6
Tutorial	15

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
APR-PAR	PAR	April	12 Weeks

JAN-PAR	PAR	January	12 Weeks
SEP_NS-PAR	PAR	September (Non-standard start date)	12 Weeks

Aims and Outcomes

Aims	This unit aims at the technical and management aspects of vehicle systems design focusing a design of components and parts, design of the assembly process and related knowledge areas. In addition, it emphasizes of the design of engines and engine performance, design of other automotive systems and accessories. The unit also aims the strategic management function in automobile design and development process and expected to use standard management tools in decision making in the design process.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Identify knowledge on customer requirements in automobiles aiming at different strata of the society.
MLO2	2	Develop specifications through systematic product design and development approach on automobile systems including engines, drive systems, body and structures and other functional systems and features.
MLO3	3	Apply strategic management tools such as PESTEL, SWOT in designing and developing automobiles.
MLO4	4	Use design features such as weighted objectives methods and other scoring methods as a design initiative.

Module Content

Outline Syllabus	The customer expectation in vehicles in different usages and socio-economic sectors, development of vehicle specifications, including engine and transmission specifications, fuel systems and fuel economy, safety and other requirements such as maintainability and sustainability Strategic decision making, PESTEL analysis, SWOT analysis and scoring methods, weighted objective methods and other qualitative and quantitative methods in decision making in design and development on automobiles including the decisions on value adding. Technical aspects of engine, body and the construction and operation of other systems in automobiles, design features and innovations as per the market requirements, design and manufacturing feasibility. Use of materials, manufacturing processes with the emphasis of design and manufacture in a multi criteria decision making approach. Basics of Operations management concepts; forecasting, lean concepts, supply chain, location planning etc. in design and development approach. Use of computational tools including CAD in design of automotive systems.
Module Overview	
Additional Information	

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping

Presentation	Presentation and discussion	30	0	MLO1
Report	Coursework (2500 words)	70	0	MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Karl Jones	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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