



Course Information Form

This Course Information Form provides the definitive record of the designated course

Section A: General Course Information

Course Title	Automotive Engineering for Electric Vehicles
Final Award	MSc
Route Code	MSAENAAF
Intermediate Qualification(s)	
FHEQ Level	7
Location of Delivery	University Square Campus, Luton
Mode(s) and length of study	FT 12 months (PTD 36 months)
Standard intake points (months)	BLK1 OCT - BLK2 NOV - BLK3 FEB - BLK4 APR - BLK5 JUN - BLK6 AUG
External Reference Points as applicable including Subject Benchmark	QAA Benchmark for Engineering 2015
Professional, Statutory or Regulatory Body (PSRB) accreditation or endorsement	None currently. Applications for IMEechE (Institution of Mechanical Engineers) and IET (Institution of Engineering and Technology) are in progress for this new course.
HECoS code(s)	100201
UCAS Course Code	N/A

Course Aims	<p>The MSc Automotive Engineering for Electric Vehicles is about educating and training senior vehicle developers and offering them in-depth technical training for R&D of next generation low carbon or non-carbon vehicles. The course focuses on new and emerging sustainable automotive technologies, such as hybrid electric vehicles, battery electric vehicles and fuel cell vehicles. Throughout the course, students will have the opportunity to use state-of-the-art design and advanced development and simulation tools, to vehicle development, design, calibration and optimisation. By closely collaborating with local automotive and motorsport companies, students will contribute to real world solutions to vehicle R&D.</p>		
Course Learning Outcomes	<p>Upon successful completion of your course you should meet the appropriate learning outcomes for your award shown in the table below</p>		
		Outcome	Award
	1	Demonstrate deep and systematic understanding of key principles, methodologies and tools used for Automotive Engineering, in particular for electric vehicles.	MSc Automotive Engineering for Electric Vehicles
	2	Undertake substantial investigations to address significant areas of theory and/or practice in the area of electric vehicles, selecting appropriate methodological processes and critically evaluating their effectiveness.	MSc Automotive Engineering for Electric Vehicles
	3	Propose and justify applications of appropriate forms of advanced problem solving along with creativity and innovation, then apply advanced methodologies and tools in the Automotive Engineering, in particular electric vehicles.	MSc Automotive Engineering for Electric Vehicles
	4	Incorporate an ethical dimension to students' practice, systematically understand employability, legal frameworks, economics and risks, and apply the standards and practices of professional bodies.	MSc Automotive Engineering for Electric Vehicles
	5	Consistently apply, develop and evaluate tools, techniques and methods with current research and/or professional practice at the forefront of specialist areas of Automotive Engineering with emphasis on electric vehicles.	MSc Automotive Engineering for Electric Vehicles
	6	Demonstrate comprehensive understanding and critical awareness of current and emerging methodologies, tools, standards, and research in the subject area.	MSc Automotive Engineering for Electric Vehicles
	7	Effective teamworking and evaluation of performance, process and outcomes in group projects	MSc Automotive Engineering for Electric Vehicles

Teaching, learning and assessment strategies	<p>A wide variety of teaching styles will be used throughout this course. The most important aspect will be that of a student-centred approach, and the University will encourage students through relevant guidance to become an independent thinker who can take responsibility for their own learning, and adapt to a wide variety of different situations within the context of Automotive Engineering.</p> <p>The Automotive Engineering Lab suite includes a range of experimental facilities, such as an engine test bed with full instrumentation, two advanced automotive engine demonstrators, various test rigs for vehicle aerodynamics, materials and engineering structure, machining workshop, etc. 3D printers and a CAE lab. These form an important part of the course, allowing the exploration of many practical aspects of automotive engineering, and to further developing hands-on skills</p> <p>The course will make use of traditional lectures and practical sessions as well as encouraging students to engage in various scenarios such as managing students own projects and achieving professional output through teamwork.</p> <p>Unit content such as lecture slides or practical sheets are made available electronically through the University's virtual learning environment.</p> <p>To aid curriculum and assessment design, the University uses the FHEQ credit level descriptors as points of reference for determining progression in terms of level of demand and complexity and the degree of learner autonomy involved in specific learning opportunities.</p>
Learning support	<p>The University's comprehensive student support service includes: Student Information Desk, a one-stop shop for any initial enquiries; Student Support team advising and supporting those with physical or learning needs or more general student well being; and the Study Hub team providing academic skills support.</p>
Admissions Criteria	<p>https://www.beds.ac.uk/entryrequirements</p> <p>Approved Variations and Additions to Standard Admission</p> <p>N/A</p>
Assessment Regulations	<p>https://www.beds.ac.uk/about-us/our-university/academic-information</p> <p>Note: Be aware that our regulations change every year</p> <p>Approved Variations and Additions to Standard Assessment Regulations'</p> <p>N/A</p>

Section B: Course Structure

The Units which make up the course are listed below. Each unit contributes to the achievement of the course learning outcomes either through teaching (T), general development of skills and knowledge (D) or in your assessments (A).

Unit	Unit Name	Level	Credits	Core or Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CIS120-6	Research Methodology and Project Management	7	30	Core		DA1 2	TA1 2	TA1 2	DA2	DA 2	A1 2								
CIS136-6	Applied Heat Transfer, Thermofluids and Computational Fluid Dynamics	7	30	Core	TA 12	TA1 2	TA2			DA 2	DA 2								
CIS137-6	MSc Project – Automotive Engineering for Electric Vehicles	7	60	Core	DA 12	DA1 2	DA2	DA2	A12	DA 2									
CIS138-6	Advanced Vehicle Dynamics and Sustainable Vehicle Powertrain	7	30	Core	TA 12	A12	DA2		DA2	TA 2	DA 2								
CIS139-6	Advanced Vehicle Electronics and Autonomous Driving Technology	7	30	Core	TA 12	TA1 2	DA2		A2	DA 2									

Section C: Assessment Plan

The course is assessed as follows :

- MSc Automotive Engineering for Electric Vehicles

Unit Code	Level	Period	Core/Option	Ass 1 Type code	Ass 1 Submit wk	Ass 2 Type code	Ass 2 Submit wk	Ass 3 Type code	Ass 3 Submit wk	Ass 4 Type code	Ass 4 Submit wk
CIS137-6	7	15	Core	CW-ESS	3	PJ-PRO	14	WR-PO	15		
CIS120-6	7	6	Core	CW-PO	6						
CIS136-6	7	6	Core	WR-I	4	EX	7				
CIS138-6	7	6	Core	CW-EPO	3	WR-I	6				
CIS139-6	7	6	Core	PR-OR	5	WR-I	6				

Glossary of Terms for Assessment Type Codes	
CW-EPO	Coursework - e-Portfolio
CW-ESS	Coursework - Essay
CW-PO	Coursework - Portfolio
EX	Exam (Invigilated)
PJ-PRO	Coursework - Project Report
PR-OR	Practical - Oral Presentation
WR-I	Coursework - Individual Report
WR-PO	Coursework - Poster

Administrative Information	
Faculty	Creative Arts Technologies and Science
School	School of Computer Science and Technology

Head of School/Department	Paul Sant
Course Coordinator	Jun Peng