

School of Engineering and Computer Science

Title of Programme: MEng / BEng Automotive and Mechanical Engineering

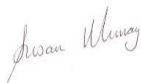
Programme Code: ENENGVM

Programme Specification

This programme specification is relevant to students entering:
21 September 2020

Associate Dean of School (Academic Quality Assurance):
Susan Murray

Signature



A programme specification is a collection of key information about a programme of study (or course). It identifies the aims and learning outcomes of the programme, lists the modules that make up each stage (or year) of the programme, and the teaching, learning and assessment methods used by teaching staff. It also describes the structure of the programme, its progression requirements and any programme-specific regulations. This information is therefore useful to potential students to help them choose the right programme of study, to current students on the programme, and to staff teaching and administering the programme.

Summary of amendments to the programme:

Section	Amendment

If you have any queries regarding the changes please email AQO@herts.ac.uk

Programme Specification

BEng Honours in Automotive Engineering
BEng Honours in Automotive Engineering with Motorsport
BEng Honours in Mechanical Engineering
MEng Honours in Automotive Engineering
MEng Honours in Automotive Engineering with Motorsport
MEng Honours in Mechanical Engineering

This programme specification (PS) is designed for prospective students, enrolled students, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content for each module can be found in Definitive Module Documents (DMDs) and Module Guides.

Section 1

Awarding Institution/Body	University of Hertfordshire
Teaching Institution	University of Hertfordshire
University/partner campuses	College Lane
Programme accredited by	<i>Subject to approval by</i> Institution of Mechanical Engineers
Final Qualification	BEng Honours / MEng Honours
All Final Award titles	Automotive Engineering
(Qualification and Subject)	Automotive Engineering with Motorsport Mechanical Engineering Automotive Engineering (Sandwich) Automotive Engineering with Motorsport (Sandwich) Mechanical Engineering (Sandwich) Automotive Engineering with Year Abroad Automotive Engineering with Motorsport with Year Abroad Mechanical Engineering with Year Abroad Automotive Engineering with Study Abroad Automotive Engineering with Motorsport with Study Abroad Mechanical Engineering with Study Abroad
	Automotive Studies ** Automotive Studies with Motorsport ** Mechanical Engineering Studies **
	** (Minimum Engineering Council compensation requirements have not been achieved) ** (Direct entrant L6)
FHEQ level of award	6/7
UCAS code(s)	H330, H335, H300 / H341, H336, H301
Language of Delivery	English

A. Programme Rationale

The School of Engineering and Computer Science offers a variety of MEng/BEng degrees. This programme specification covers those under the general category of Mechanical Engineering which includes Automotive disciplines. The programme has been developed to (i) satisfy the QAA Engineering Benchmark requirements (ii) to fulfil the initial partial academic requirements of UK-SPEC for CEng status and (iii) meet the professional employment needs of industry.

Initially students study a relatively common portfolio of modules covering a broad range of topics necessary for professional Engineering allowing flexibility for students to change their award/pathway as they become more familiar with the opportunities available. The differentiating features of the various awards are progressively introduced as the students' progress.

The current curriculum is accredited until 2020 and the School is in discussion with the IMechE to ascertain if there can be a submission for a review and accreditation without a visit or if the changes to the curriculum are such that a visit is required. Accreditation is subject to approval by the IMechE.

BEng students with a sufficient level of achievement during levels 4 and 5 are encouraged to consider transfer to the MEng programme. Progression to the MEng programme requires eligibility for at least an upper second-class BEng Honours exit award as defined in UPR AS14 and including the MEng Individual Project at level 6 in the calculation of degree classification.

The School has close contacts with a wide range of engineering companies and students are encouraged to take the sandwich option spending at least 36 weeks on industrial placement between levels 5 and 6. Alternatively, they may consider Study Abroad options.

Graduates can expect to gain employment either within the industries directly associated with their named award or in industries associated with Mechanical Engineering in general. These industries include small and large scale manufacturing, automotive and motorsport industries. Alternatively graduates may continue their education to a post-graduate level and the University of Hertfordshire has a range of taught MSc awards or research awards that graduates may consider.

B. Educational Aims of the Programme

The programme has been devised in accordance with the University's graduate attributes of programmes of study as set out in [UPR TL03](#).

Additionally this programme aims to:

- provide a high quality education in engineering;
- provide an education for the individual which enhances his/her prospects of professional employment in engineering and business both in national and international industries;
- provide studies which are accredited by one or more of the Professional Engineering institutions;
- provide studies which develop an awareness of, and underpinning knowledge and understanding of a broad range of Mechanical Engineering areas of expertise;
- provide studies which enable the student to attain a high level of expertise in a range of topics specific to their named award.
 - Mechanical Engineering students will particularly study how to control mechanical systems using analogue and digital electronics.
 - Automotive Engineering students will particularly focus on vehicle design and manufacturing methods/strategies.
 - Automotive Engineering with Motorsport students will particularly study how to enhance high performance vehicles particularly through aerodynamics and powertrain design.

C. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are defined by the Engineering Council and recommended in the QAA benchmark statements for Engineering and the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2019). The outcomes

relate to the typical student. In addition, the SEEC Credit Level Descriptors for Higher Education (2016) have been used to provide guidance for curriculum design at each level of the programme to reflect student development. The curriculum design has also taken into account UH Graduate Attributes.

	A. Knowledge & Understanding		Teaching/learning methods & strategies	Assessment strategy
	BEng	MEng		
A1	SM1b- Knowledge and understanding of the scientific principles and methodology underpinning mechanical / automotive engineering, and an understanding, to enable appreciation of the scientific and engineering context, and to support their understanding of relevant historical, current and future developments and technologies.	SM1m- A comprehensive knowledge and understanding of the scientific principles and methodology underpinning mechanical / automotive engineering, and an understanding and know-how of the scientific principles of related disciplines, to enable appreciation of the scientific and engineering context, and to support their understanding of relevant historical, current and future developments and technologies.	Acquisition of knowledge and understanding is through the following approaches: Acquisition of A1 and A2 is through a combination of lectures, small group tutorials, coursework and laboratory work at levels 4 and 5 of the programme. Additional support is provided through the Study Success Hubs which includes the Maths Support Service. Specialist aspects of A2 are further developed at level 6.	Knowledge and understanding are assessed through combination of unseen examinations and in-course assessments in the form of laboratory reports, essays and phase tests. Some aspects of knowledge and understanding are assessed by design exercises and project reports and presentations. At level 6 some aspects of A3 are assessed by case study reports.
A2	SM2b- Knowledge and understanding of mathematical and statistical methods underpinning mechanical / automotive engineering, and to enable the application of a range of mathematical and statistical methods, tools and notations proficiently in the analysis and solution of engineering problems.	SM2m- Knowledge and understanding of mathematical and statistical methods underpinning mechanical / automotive engineering, and to enable the application of a range of mathematical and statistical methods, tools and notations proficiently and critically in the analysis and solution of engineering problems.	Acquisition of A3 is through a combination of lectures, projects and coursework throughout the programme.	
A3	SM3b- Ability to apply and integrate knowledge and understanding of other engineering disciplines to support a study of mechanical / automotive engineering.	SM3m- Ability to apply and integrate knowledge and understanding of other engineering disciplines to support a study of mechanical / automotive engineering and the ability to evaluate them critically and to apply them effectively.	Staff deploy a range of teaching and learning strategies in the most appropriate way for each individual module. This will vary depending on the subject nature of a particular module and the level of study. A more didactic approach will tend to be adopted at lower levels, in particular for A1 and A2. An increasingly self-directed and interactive approach will be adopted at higher levels, particularly for A3.	
A4		SM4m – Awareness of developing technologies related to mechanical / automotive engineering		
A5				

A6		<p>SM5m - A comprehensive knowledge and understanding of mathematical and computational models relevant to mechanical / automotive engineering, and an appreciation of their limitations.</p> <p>SM6m – Understanding the range of concepts from a range of areas, including some outside engineering, and the ability to evaluate them critically and to apply them in engineering projects.</p>	<p>Throughout, the learner is encouraged to undertake independent study both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.</p>	
	B. Intellectual Skills for Analysis		Teaching/learning methods & strategies	Assessment strategy
	BEng	MEng		
B1	<p>EA1b- Understanding of engineering principles and the ability to apply them to analyse of key engineering processes.</p>	<p>EA1m- Understanding of engineering principles and the ability to apply them to undertake critical analysis of key engineering processes.</p>	<p>Engineering analysis skills are developed throughout the programme by the methods and strategies outlined for section A of the intended learning outcomes above, again moving from a more didactic approach to an increasingly self-directed and interactive approach at higher levels, particularly for B2, B3 and B4.</p>	<p>Engineering analysis skills B1, B2 and B4 are assessed through unseen examination papers, laboratory reports and coursework related to in-course exercises.</p>
B2	<p>EA2- Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.</p>	<p>EA2- Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.</p>	<p>Analysis, problem solving and modelling skills are further developed through tutorial work, laboratory work, in-course exercises and project work.</p>	<p>Engineering analysis skills B3 are assessed through project reports and presentations.</p>
B3	<p>EA3b- Ability to apply quantitative and computational methods in order to solve engineering problems and implement appropriate action.</p>	<p>EA3m- Ability to apply quantitative and computational methods, using alternative approaches, and understanding their limitations, in order to solve engineering problems and implement action.</p>		
B4	<p>EA4b- Understanding of, and the ability to apply, an integrated or systems approach to solving engineering problems.</p>	<p>EA4m- Understanding of, and the ability to apply, an integrated or systems approach to solving complex engineering problems.</p>		
B5		<p>EA5m – Ability to use fundamental knowledge to investigate new and emerging technologies.</p>		

B6		EA6m – Ability to extract and evaluate pertinent data and to apply engineering analysis techniques in the solution of unfamiliar problems.		
	C. Intellectual Skills for Design		Teaching/learning methods & strategies	Assessment strategy
	BEng	MEng		
C1	D1- Understand and evaluate business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics.	D1- Understand and evaluate business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics.	Intellectual skills for design are developed throughout the programme by the methods and strategies outlined above, again moving from a more didactic approach to an increasingly self-directed and interactive approach at higher levels, particularly for C3 and C4. Feedback is given to all students on all coursework produced. Throughout, the learner is encouraged to develop intellectual skills further by independent study.	C1, C2, C5 and C6 are assessed through unseen examination, coursework, project reports, technical reports and oral presentations. C3, C4 is assessed by review of group project work.
C2	D2- Investigate and define the problem, identifying any constraints including environmental and sustainability limitations; ethical health, safety, security and risk issues; intellectual property; codes of practice and standards.	D2- Investigate and define the problem, identifying any constraints including environmental and sustainability limitations; ethical health, safety, security and risk issues; intellectual property; codes of practice and standards.		
C3	D3b- Work with information that may be incomplete or uncertain, and quantify the effect of this on the design.	D3m- Work with information that may be incomplete or uncertain, quantify the effect of this on the design and, where appropriate, use theory or experimental research to mitigate deficiencies.		
C4	D4- Apply advanced problem solving skills, technical knowledge and understanding, to establish rigorous and creative solutions that are fit for purpose for all aspects of the problem including production, operation, maintenance and disposal.	D4- Apply advanced problem solving skills, technical knowledge and understanding, to establish rigorous and creative solutions that are fit for purpose for all aspects of the problem including production, operation, maintenance and disposal.		
C5	D5- Plan and manage the design process, including cost drivers, and evaluate outcomes.	D5- Plan and manage the design process, including cost drivers, and evaluate outcomes.		

C6	D6- Communicate their work to technical and non-technical audiences.	D6- Communicate their work to technical and non-technical audiences.		
C7		D7m – Demonstrate wide knowledge and comprehensive understanding of design processes and methodologies and the ability to apply and adapt them in unfamiliar situations.		
C8		D8m – Demonstrate the ability to generate an innovative design for products, systems, components or processes to fulfil new needs.		
	D. Economic, Legal, Social, Ethical & Environmental Context		Teaching/learning methods & strategies	Assessment strategy
	BEng	MEng		
D1	EL1b- Understanding of the need for a high level of professional and ethical production in engineering and a knowledge of professional codes of conduct.	EL1m- Understanding of the need for a high level of professional and ethical production in engineering, a knowledge of professional codes of conduct, and how ethical dilemmas can arise.	The economic, legal, social, ethical and environmental context of the role of engineers is developed in a series of project based exercises through the programme, and reinforced by a taught module at the start of the programme.	D1 to D6 are assessed by coursework, project reports, technical reports and presentations.
D2	EL2- Knowledge and understanding of the commercial, economic and social context of engineering processes.	EL2- Knowledge and understanding of the commercial, economic and social context of engineering processes.		
D3	EL3b- Knowledge and understanding of management techniques, including project management, that may be used to achieve engineering objectives.	EL3m- Knowledge and understanding of management techniques, including project and change management, that may be used to achieve engineering objectives, their limitations, and how they be applied appropriately.		
D4	EL4- Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate.	EL4- Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate.		

D5	EL5b- Awareness of the relevant legal requirements governing engineering activities, including personnel, health and safety, contracts, intellectual property rights, product safety and liability issues.	EL5m- Awareness of the relevant legal requirements governing engineering activities, including personnel, health and safety, contracts, intellectual property rights, product safety and liability issues, and an awareness that these may differ internationally.		
D6	EL6b- Knowledge and understanding of risk issues, including health and safety, environmental and commercial risk, risk assessment and risk management techniques.	EL6m- Knowledge and understanding of risk issues, including health and safety, environmental and commercial risk, risk assessment and risk management techniques, and an ability to evaluate commercial risk.		
D7		EL7m- Understanding of the key drivers for business success, including innovation, calculated commercial risks and customer satisfaction		
E. Engineering Practice			Teaching/learning methods & strategies	Assessment strategy
BEng		MEng		
E1	P1- Understanding of contexts in which engineering knowledge can be applied (e.g. operations and management, application and development of technology, etc.)	P1- Understanding of contexts in which engineering knowledge can be applied (e.g. operations and management, application and development of technology, etc.)	Staff deploy a range of teaching and learning strategies in the most appropriate way for each individual module. This will vary depending on the subject nature of a particular module and the level of study. A more didactic approach will tend to be adopted at lower levels, in particular for E1, E2, E3, E4 and E11. Acquisition of skills for E5, E6 and E7 are through a combination of formal lectures and tutorials, as well as project based work.	Engineering practice is assessed through combination of unseen examinations and in-course assessments. Assessments take many forms as appropriate, and include laboratory reports, demonstrations, essays and phase tests.
E2	P2b- Knowledge of characteristics of particular materials, equipment, processes or products.	P2m- Knowledge of characteristics of particular materials, equipment, processes or products, with extensive knowledge and understanding of a wide range of engineering materials and components.		
E3	P3- Ability to apply relevant practical and laboratory skills.	P3- Ability to apply relevant practical and laboratory skills.		
E4				

E5	P4- Understanding use of technical literature and other information sources.	P4- Understanding use of technical literature and other information sources.	An increasingly self-directed and interactive approach will be adopted at higher levels, particularly for E6, E7 and E8.			
E6	P5- Knowledge of relevant legal and contractual issues.	P5- Knowledge of relevant legal and contractual issues.				
E7	P6- Understanding of appropriate codes of practice and industry standards.	P6- Understanding of appropriate codes of practice and industry standards.				
E8	P7- Awareness of quality issues and their application to continuous improvement.	P7- Awareness of quality issues and their application to continuous improvement.				
E9	P8- Ability to work with technical uncertainty.	P8- Ability to work with technical uncertainty.				
E10		P9m – A thorough understanding of current practice and its limitations, and some appreciation of likely new developments.				
E11		P10m – Ability to apply engineering techniques taking account of a range of commercial and industrial constraints.				
	P11b- Understanding of, and the ability to work in, different roles within an engineering team.	P11m- Understanding of, and the ability to work in, different roles within an engineering team, and the ability to exercise initiative and personal responsibility, which may be as a team member or leader.				
	F. Transferable Skills				Teaching/learning methods & strategies	Assessment strategy
	BEng	MEng				
F1	G1- Apply their skills in problem solving, communication, information retrieval, working with others and the effective use of general IT facilities.	G1- Apply their skills in problem solving, communication, information retrieval, working with others and the effective use of general IT facilities.			Additional general skills are developed throughout the programme by the methods and strategies outlined in above. F1 is developed through feedback on coursework reports, oral presentations and project reports.	Additional general skills are assessed through the following approaches: F1, and F2 are assessed through coursework, individual project and technical reports and oral presentations.
F2	G2- Plan self-learning and improve performance, as the	G2- Plan self-learning and improve performance, as the foundation for lifelong learning/CPD.				

<p>F3</p> <p>F4</p>	<p>foundation for lifelong learning/CPD.</p> <p>G3b- Plan and carry out a personal programmes of work, adjusting where appropriate.</p> <p>G4- Exercise initiative and personal responsibility, which may be as a team member or leader.</p>	<p>G3m- Monitor and adjust a personal programme of work on an ongoing basis.</p> <p>G4- Exercise initiative and personal responsibility, which may be as a team member or leader.</p>	<p>F2 is developed in a dedicated module that emphasises the role of such practice.</p> <p>F3 is developed through project work planning and throughout the programme.</p> <p>F4 is developed through group project and assignment work. Throughout, the learner is encouraged to develop transferable skills by maintaining a record of evidence and completing a personal development plan.</p>	<p>F3 and F4 are assessed by review of an individual's progress during individual project work.</p>
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D. Programme Structures, Features, Levels, Modules, and Credits

The programme is normally offered in full-time (3 years), sandwich (4 years) or part-time (6 years) modes, and leads to the award of a BEng Degree with Honours in the student's chosen engineering discipline. If students' progress or enter on the MEng route then this will be for an additional time full-time (4 years), sandwich (5 years) or part-time (8 years).

Entry is normally at level 4 (with A-Level, or equivalent qualifications) but is possible at level 5 with suitable qualifications (e.g. an Edexcel HND in Engineering with appropriate subjects studied). Direct entry into level 6 is also possible, for example following successful completion of two years of a similar BEng or MEng degree programme at another HE institution. In this case, the final award will not be accredited. Intake is normally Semester A (September).

Professional and Statutory Regulatory Bodies

The following Bachelor's degrees are subject to approval and will be proposed for accreditation by IMechE as meeting the academic requirement, in part, for Chartered Engineer registration for the cohort intakes from 2020:

BEng (Hons) Automotive Engineering (Full Time - 3 years duration; Sandwich - 4 years duration; Part Time 6 years duration)

BEng (Hons) Mechanical Engineering (Full Time - 3 years duration; Sandwich – 4 years duration; Part Time 6 years duration)

BEng (Hons) Automotive Engineering with Motorsport (Full Time - 3 years duration; Sandwich - 4 years duration; Part Time 6 years duration)

MEng (Hons) Automotive Engineering (Full Time - 4 years duration; Sandwich - 5 years duration; Part Time 8 years duration)

MEng (Hons) Automotive Engineering with Motorsport (Full Time - 4 years duration; Sandwich - 5 years duration; Part Time 8 years duration)

MEng (Hons) Mechanical Engineering (Full Time - 4 years duration; Sandwich – 5 years duration; Part Time 8 years duration)

Work-Based Learning, including Sandwich Programmes

A designated sandwich programme leads to a University award in the sandwich mode and the word "sandwich" appears on the award certificate. In order for the MEng/BEng to lead to an award in the sandwich mode, the student must undertake a period of approved work experience (industrial placement) of not less than 36 weeks, excluding holidays, normally during year 3. A maximum of two (2) separate placements can be taken neither of which should normally be less than 12 weeks in duration. As defined in UPR AS11.

The work experience will normally be completed within the United Kingdom but with approval may be completed within other countries. Progress of the student's training is monitored by visits from University academic staff. Students will be required to document this period of work in accordance with the guidelines produced by the School. Students on industrial placement will be registered on the Placement Year Module (6AAD0015)

Students who have not achieved the minimum progression requirements at the end of level 5 may be prevented from undertaking a sandwich placement. The policy relating to progression onto the placement year from level 5 is given in the School Guidelines on Industrial Placements. Additionally, students on industrial placement but who have level 4 or 5 modules to repeat, will not normally be allowed to re-enrol on these

modules until they return from industrial placement. This is to avoid a conflict between UH attendance requirements and the student's commitment to their employer.

Students who do not take the sandwich option, progressing directly to level 6, are automatically transferred to the full-time mode.

All students are required to complete a level 4 15-credit module titled "Professional Engineering" giving them information to prepare for industrial experience and work based learning. Sustainability, recyclability and advances in technology and their impact on engineers and specifically the automotive, motorsport and general engineering industry sectors will be covered in the materials, design, design and build CDIO modules at all levels and explicitly researched in the project modules.

Erasmus Exchange programme (subject to government regulations)

Students may opt to study all, or a single semester, of level 5 abroad as part of a reciprocal agreement with a partner university. To be eligible for an exchange option, students must have passed 120 credits at level 4 with an average of at least 60%. The remaining requirements and details are as set out in Study Abroad Options below.

Study Abroad Options

Students may also opt to take additional studies through the Year Abroad or Semester Abroad options at a partner institution in place of all or part of the sandwich placement year, i.e. between Levels 5 and 6. To be eligible for these options students will be expected to have passed 120 credits at level 4 and 120 credits at level 5 with an average of at least 60%. In order to maintain registration with UH, students studying abroad for a full year will be registered on 6ENT0001 whilst students studying abroad for a single semester will be enrolled on 6ENT1051. In recognition of the extra study, provided a full transcript of their achievement in the host academic institution is submitted to the Board of Examiners, this will lead to an award of a BEng Degree with Honours in one of the named awards as listed in Section 1 (page 2) "with Year Abroad" or "with Study Abroad" on the award.

Further Features

In order to recognise the significant programme-related extra-curricular commitment and experience that can be gained by students who participate in Formula Student, the BMFA Heavy/Electric Lift Challenge, IMechE UAS Challenge, Imagine Cup or other similar competitions, there are three zero-credit-rated elective modules that students may take. These are:

Formula Student (6ENT1043)

UAV Projects (6ENT1042)

Smart Systems Integration (6ENT1044)

They are assessed on a Pass/Fail basis. If taken, they do not contribute to degree classification, but will appear on a student's results transcript.

Programme Structure

The programme structure and progression information below (Table 1a and 1b) is provided for the Honours award. Any interim awards are identified in Table 1b. The Programme Learning Outcomes detailed above are developed and assessed through the constituent modules. Table 2 identifies where each learning outcome is assessed.

Table 1a Outline Programme Structure

Mode of study BEng Full Time: 3 years; Sandwich: 4 years and Part-time: 6 years
MEng Full time: 4 years; Sandwich: 5 years and Part-time: 8 years

Entry point Semester A

The following notations should be read in conjunction with table below:

V = Automotive Engineering (BEng)

VMS = Automotive Engineering with Motorsport (BEng)

M = Mechanical Engineering (BEng)
MENGV = Automotive Engineering (MEng)
MENGVMS = Automotive Engineering with Motorsport (MEng)
MENGM = Mechanical Engineering (MEng)

Level 4

C = compulsory module

O = optional module.

Module Title	Module Code	Award			Credit Points	Language of Delivery	% Examination	% Coursework	% Practical	Semester	Year of Study	
		V/ MENG V	VMS/ MENG VMS	M/ MENG M							Full Time Mode	Part Time Mode
Engineering Mathematics	4ENT1160	C	C	C	15	English	60	40	-	A	1	1
Statics and Dynamics	4ENT1161	C	C	C	15	English	60	40	-	A	1	1
Engineering Fundamentals	4ENT1098	-	-	C	15	English	-	100	-	A	1	2
Automotive Engineering Fundamentals	4ENT1162	C	C	-	15	English	-	100	-	A	1	2
Applied Design	4ENT1163	C	C	C	15	English	-	60	40	A	1	2
Electrical Science	4ENT1164	C	C	C	15	English	50	50	-	B	1	1
Programming for Engineers	4ENT1165	C	C	C	15	English	-	100	-	B	1	1
Engineering Professionalism	4ENT1166	C	C	C	15	English	-	100	-	B	1	2
Introduction to Mechatronic Systems	4ENT1167	C	C	C	15	English	-		40	B	1	2

Progression to level 5 requires a minimum of 90 credits to remain on Honours award.

Progression to non-honours level 5 with 75 credits may be permissible. The maximum study rate in such an instance would normally be 120 credits but students would be expected to remedy any failed modules from level4 in the first instance.

Level 5

C = compulsory module

O = optional module.

Module Title	Module Code	Award			Credit Points	Language of Delivery	% Examination	% Coursework	% Practical	Semester	Year of Study	
		V/ MENG V	VMS/ MENG VMS	M/ MENG M							Full Time Mode	Part Time Mode
Fluid Mechanics	5ENT1116	C	C	C	15	English	60	40	-	A	2	3
Thermodynamics	5ENT1117	C	C	C	15	English	-	100	-	A	2	3
Materials in Engineering	5ENT1118	C	C	C	15	English	60	40	-	A	2	4
Sustainable Design	5ENT1119	-	-	C	15	English	-	60	40	A	2	4
Automotive Sustainable Design	5ENT1120	C	C	-	15	English	-	60	40	A	2	4
Dynamics & Vibrations	5ENT1121	C	C	C	15	English	60	40	-	B	2	3
Structural Mechanics	5ENT1122	-	-	C	15	English	60	40	-	B	2	3
Automotive Structures	5ENT1123	C	C	-	15	English	60	40	-	B	2	4
Introduction and Application of Control Systems	5ENT1124	-	-	C	15	English	-	100	-	B	2	4
Automotive Electronics and Control Systems	5ENT1011	C	C	-	15	English	-	100	-	B	2	4
Industrial Mechanics	5ENT1125	-	-	C	15	English	-	60	40	B	2	4
Automotive Design	5ENT1126	C	-	-	15	English	-	60	40	B	2	4
Motorsport Design	5ENT1127	-	C	-	15	English	-	60	40	B	2	4

Progression to level 5 requires 210 credit points and above to remain on Honours award.

Progression to non-honours level 6 with 180 credits may be permissible. The maximum study rate in such an instance would normally be 120 credits but students would be expected to remedy any failed modules from level 5 in the first instance.

Level 6

C = compulsory module

O = optional module.

See page 8 for details of the Study Abroad options.

Module Title	Module Code	Award			Credit Points	Language of Delivery	% Examination	% Coursework	% Practical	Semester	Year of Study	
		V/ MENG V	VMS/ MENG VMS	M/ MENG M							Full Time Mode	Part Time Mode
Placement Year	6AAD0015	O	O	O	0	English	-	100	-	ABC	3	-
Year Abroad	6ENT0001	O	O	O	0	English	-	-	-	AB	3	-
Semester Abroad	6ENT1051	O	O	O	0	English	-	-	-	A/B	3	-
Lean Manufacturing and Services	6ENT1148	C	C	C	15	English	30	70	-	A	4	5
Advanced Mechanics	6ENT1174	-	-	C	15	English	60	40	-	A	4	5
Vehicle Design and Body Engineering	6ENT1175	C	C	-	15	English	50	50	-	A	4	5
Connected Autonomous Vehicles	6ENT1152	C	-	-	15	English	60	40	-	A	4	6
Motorsport Engineering	6ENT1053	-	C	-	15	English	-	100	-	A	4	6
Orthopaedic Biomechanics	6ENT1153	-	-	O	15	English	-	100	-	A	4	6
Medical Image Processing	6ENT1154	-	-		15	English	-	100	-	B	4	6
Plant Engineering	6ENT1155	-	-	O	15	English	60	40	-	A	4	6
Thermal Power Systems	6ENT1156	-	-		15	English	60	40	-	B	4	6
Analysis of Applied Control Systems	6ENT1158	-	-	O	15	English	-	100	-	A	4	6
Advanced Controller Design and Stability	6ENT1157	-	-		15	English	-	100	-	B	4	6
Acoustics	6ENT1159	-	-	C	15	English	60	40	-	B	4	5
Renewable Energy and the Environment	6ENT1160	C	C	C	15	English	-	100	-	B	4	5
Vibration, Noise & Vehicle Dynamics	6ENT1066	C	C	-	15	English	60	40	-	B	4	6
Automotive Powertrain Technology	6ENT1161	C	-	-	15	English	-	100	-	B	4	6
High Performance Powertrain Design	6ENT1054	-	C	-	15	English	60	40	-	B	4	5
MEng Individual Project (Mechanical)	6ENT1114	-	-	C	30	English	-	100	-	AB	4	6
MEng Individual Project (Automotive)	6ENT1124	C	C	-	30	English	-	100	-	AB	4	6
BEng Individual Project (Mechanical)	6ENT1092	-	-	C	30	English	-	100	-	AB	4	6
BEng Individual Project (Automotive)	6ENT1094	C	C	-	30	English	-	100	-	AB	4	6

If any of the progression requirements stated above are not met then the Board of Examiners is empowered to require the student to transfer to the BEng (non-Honours). The study pattern for students transferring onto the BEng (non-Honours) route shall be agreed on a case-by-case basis with the BEng Programme Tutor or Associate Dean of School.

Level 7

C = compulsory module

O = optional module.

Module Title	Module Code	Award			Credit Points	Language of Delivery	% Examination	% Coursework	% Practical	Semester	Year of Study	
		MENGV	MENGVMS	MENGM							Full Time Mode	Part Time Mode
MEng Team Project	7ENT1073	C	C	C	45	English	-	100	-	AB	5	8
Human Resource Management	7AAD0062	C	C	C	15	English	60	40	-	A	5	8
CFD Techniques	7ENT1007	-	-	C	15	English	60	40	-	A	5	7
Data Analytics and Artificial Intelligence	7ENT1145	C	-	C	15	English	60	40	-	A	5	7
Advanced Materials and Manufacturing	7ENT1146	C	C	C	15	English	60	40	-	A	5	7
Advanced FEA and Crashworthiness	7ENT1147	C	C	-	15	English	50	50	-	A	5	7
Data Acquisition	7ENT1148	-	C	-	15	English	-	100	-	A	5	7
FEA and Applications	7ENT1059	-	-	C	15	English	60	40	-	B	5	7
Advanced Powertrain Technology	7ENT1149	C	-	-	15	English	60	40	-	B	5	7
Advanced Aerodynamics	7ENT1150	-	C	-	15	English	50	50	-	B	5	7

Honours classification

The University has approved structure and assessment regulations common to all programmes. Full details are provided in [UPR AS14](#), Section D.

Table 1b Final and interim awards available

The programme provides the following final and interim awards:

Final Award	Award Title	Minimum requirements	Available at end of Level	Programme Learning Outcomes developed (see above)
MEng (Hons) in the named award	Mechanical Engineering Automotive Engineering Automotive Engineering with	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must satisfactorily complete an individual project and the MEng Team Project.	7	All programme learning outcomes for the specified named award (see Table 2)
MEng (Hons) in the named award (Sandwich)	Motorsport	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must satisfactorily complete an individual project, the MEng Team Project and the Placement Year module	7	All programme learning outcomes for the specified named award (see Table 2)
MEng (Hons) in the named award with Study Abroad		480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must satisfactorily complete an individual project and the MEng Team Project and pass the Semester Abroad modules	7	All programme learning outcomes for the specified named award (see Table 2)
MEng (Hons) in the named award with Year Abroad		480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must satisfactorily complete an individual project and the MEng Team Project and pass the Year Abroad modules.	7	All programme learning outcomes for the specified named award (see Table 2)

Final Award	Award Title	Minimum requirements	Available at end of Level	Programme Learning Outcomes developed (see above)
BEng (Hons) in the named award	Automotive Engineering	360 credit points including 240 at level 6/5 of which 120 must be at level 6	6	All programme learning outcomes for the specified named award (see Table 2)
BEng (Hons) in the named award (Sandwich)	Automotive Engineering with Motorsport Mechanical Engineering	360 credit points including 240 at level 6/5 of which 120 must be at level 6. Additionally, students must satisfactorily complete the Placement Year module.	6	All programme learning outcomes for the specified named award (see Table 2)
BEng (Hons) in the named award with Study Abroad		360 credit points including 240 at level 6/5 of which 120 must be at level 6. Additionally, students must satisfactorily complete the Semester Abroad modules.	6	All programme learning outcomes for the specified named award (see Table 2)
BEng (Hons) in the named award with Year Abroad		360 credit points including 240 at level 6/5 of which 120 must be at level 6. Additionally, students must satisfactorily complete the Year Abroad modules.	6	All programme learning outcomes for the specified named award (see Table 2)

Interim Award	Award Title	Minimum requirements	Available at end of Level	Programme Learning Outcomes developed (see above)
University Certificate		45 credit points at level 4	4	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
Certificate of Higher Education		120 credit points at level 4	4, 5	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
Diploma of Higher Education		240 credit points including at least 120 at level 5	5, 6	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
BEng in the named award	Automotive Studies Automotive Studies with Motorsport Mechanical Engineering Studies **	For students entering directly at level 6 only, 75 UH specified credits must be at level 6 excluding the individual major project (*).	6	A1, A2, A3, B1, B2, B3, B4, C1, C2, C3, C4, C5, C6, D1, D2, D3, D4, D5, D6, E1, E2, E3, E4, E5, E6, E7, E8, E11, F1, F2, F3, F4
BEng in the named award	Automotive Engineering	300 credit points including 180 at level 6/5 of which 60 must be at level 6. (**)	6	A1, A2, A3, A4, A5, B1, B2, B3, B4, C1, C2, C3, C4, C5, C6, D1, D2, D3, D4, D5, D6, E1, E2, E3, E4, E5, E6, E7, F1, F2, F3
BEng in the named award (Sandwich)	Automotive Engineering	300 credit points including 180 at level 6/5 of which 60 must be at	6	A1, A2, A3, A4, A5, B1, B2, B3, B4, C1, C2, C3, C4, C5, C6, D1, D2, D3,

	with Motorsport	level 6. Additionally, students must satisfactorily complete the Placement Year.(**)		D4, D5, D6, E1, E2, E3, E4, E5, E6, E7, F1, F2, F3
BEng in the named award with Study Abroad	Mechanical Engineering	300 credit points including 180 at level 6/5 of which 60 must be at level 6. Additionally, students must satisfactorily complete the Semester Abroad modules. (**)	6	A1, A2, A3, A4, A5, B1, B2, B3, B4, C1, C2, C3, C4, C5, C6, D1, D2, D3, D4, D5, D6, E1, E2, E3, E4, E5, E6, E7, F1, F2, F3
BEng in the named award with Year Abroad		300 credit points including 180 at level 6/5 of which 60 must be at level 6. Additionally, students must satisfactorily complete the Year Abroad modules. (**)	6	A1, A2, A3, A4, A5, B1, B2, B3, B4, C1, C2, C3, C4, C5, C6, D1, D2, D3, D4, D5, D6, E1, E2, E3, E4, E5, E6, E7, F1, F2, F3
BEng (Hons) in the named award	Automotive Studies Automotive Studies with Motorsport Mechanical Engineering Studies **	360 credit points including 240 at level 6/5 of which 120 must be at level 6 (Minimum Engineering Council compensation requirements have not been achieved).	6	All programme learning outcomes for the specified named award (see Table 2)
BEng(Hons) in the named award (Sandwich)	Automotive Studies Automotive Studies with Motorsport Mechanical Engineering Studies **	360 credit points including 2S40 at level 6/5 of which 120 must be at level 6 (Minimum Engineering Council compensation requirements have not been achieved). Additionally, students must satisfactorily complete the individual project and the Placement Year module.	6	All programme learning outcomes for the specified named award (see Table 2)
BEng(Hons) in the named award with Study Abroad	Automotive Studies Automotive Studies with Motorsport Mechanical Engineering Studies **	360 credit points including 240 at level 6/5 of which 120 must be at level 6 (Minimum Engineering Council compensation requirements have not been achieved). Additionally, students must satisfactorily complete the individual project and the Semester Abroad modules.	6	All programme learning outcomes for the specified named award (see Table 2)
BEng(Hons) in the named award with Year Abroad	Automotive Studies Automotive Studies with Motorsport	360 credit points including 240 at level 6/5 of which 120 must be at level 6 (minimum Engineering Council compensation	6	All programme learning outcomes for the specified named award (see Table 2)

	Mechanical Engineering Studies **	requirements have not been achieved). Additionally, students must satisfactorily complete the individual project and the Year Abroad modules.		
MEng (Hons) in the named award	Automotive Studies Automotive Studies with Motorsport Mechanical Engineering Studies **	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. (Minimum Engineering Council compensation requirements have not been achieved). Additionally, students must satisfactorily complete a MEng Individual Project and the MEng Team Project. Compliant with UH compensation requirements	7	All programme learning outcomes for the named award (see Table 2)
MEng (Hons) in the named award (Sandwich)	Automotive Studies Automotive Studies with Motorsport Mechanical Engineering Studies **	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. (Minimum Engineering Council compensation requirements have not been achieved). Additionally, students must satisfactorily complete a MEng Individual Project, the MEng Team Project and the Placement Year module. Compliant with UH compensation requirements	7	All programme learning outcomes for the named award (see Table 2)
MEng (Hons) in the named award with Study Abroad	Automotive Studies Automotive Studies with Motorsport Mechanical Engineering Studies **	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. (Minimum Engineering Council compensation requirements have not been achieved). Additionally, students must satisfactorily complete a MEng Individual Project, the MEng Team Project and pass the Semester Abroad modules. Compliant with UH compensation requirements.	7	All programme learning outcomes for the named award (see Table 2)
MEng (Hons) in the named	Automotive Studies	480 credit points including 360 at levels 7/6/5 of which 120 must	7	All programme learning outcomes for the named award (see Table 2)

award with Year Abroad	Automotive Studies with Motorsport Mechanical Engineering Studies **	be at level 7. (Minimum Engineering Council compensation requirements have not been achieved). Additionally, students must satisfactorily complete a MEng Individual Project, the MEng Team Project and pass the Year Abroad modules. Compliant with UH compensation requirements		
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Notes:

(*) in accordance with UPR AS11, the maximum APL permitted towards this interim award is 225 points at levels 4/5.

(**) this interim award is not accredited by the Professional Bodies

Programme-specific assessment regulations

The programme complies with the University's academic regulations (in particular, [UPR AS11](#), [UPR AS12](#) and [UPR AS14](#)) with the exception of those listed below, which have been approved by the University:

A maximum of 30 credit points can be compensated across the programme, in line with University regulations. Compensation is not permitted for individual modules worth 30 or more credit points at any level of study.

For non-honours awards, the standard University regulations on progression and compensation shall apply, and the Programme Board of Examiners shall have discretion to transfer a student onto a non-honours award where it is to the advantage of the student to do so (for example, where the criteria for progression on an accredited award have not been met).

Major projects (group and individual) i.e. BEng Individual Project, MEng Individual Project and MEng Team Project cannot be compensated. Students who do not succeed in the Individual Major Project may be eligible to repeat, and will be allocated an entirely different project.

Students exiting with a BEng Award (non Honours) shall have their degree classification determined in accordance with UPR AS14 and include the Individual Project, if completed, in the calculation of degree.

Professional Statutory Regulatory Bodies thresholds will apply for accredited awards as per the Engineering Council Compensation and Condonement notice November 2018.

BEng (Hons) accredited awards

- To comply with professional body regulations students must achieve in all 15 credit point modules, after all available attempts under the University regulations, a minimum of 30% (in any allowable attempt) at levels 4, 5 and 6, before the board of examiners will be able to consider compensation for an accredited honours degree. A maximum of 30 credit points can be compensated across the programme, in line with University regulations. Compensation is not permitted for individual modules worth 30 or more credit points at level 4, 5 and 6.

MEng (Hons) accredited awards

- To comply with professional body regulations students must achieve in all 15 credit point modules, after all available attempts under the University regulations, a minimum of 30% (in any allowable attempt) at levels 4, 5 and 6, and 40% (in any allowable attempt) at level 7, before the board of examiners will be

able to consider compensation for an accredited honours degree. A maximum of 30 credit points can be compensated across the programme, in line with University regulations. Compensation is not permitted for individual modules worth 30 or more credit points at level 4, 5, 6 and 7.

Further programme-specific regulations (requiring School-level approval) are given below:

- BEng students achieving an award classification of 2:1 or above are eligible to progress to level 7 to accomplish a MEng qualification on their chosen pathway provided they completed the MEng Undergraduate Individual Project instead of BEng Undergraduate Individual Project to satisfy the learning outcomes required for the MEng course. Students will be able to indicate this preference by discussion with their Programme Leader and completing a Study Agreement form by the end of first teaching week at the start of level 6.

As specified by the accrediting bodies, a compensated pass cannot be awarded for the Individual Major Project, which must be included in the calculation of degree classification.

- Students who do not succeed in the Individual Major Project may be eligible to repeat, and will be allocated an entirely different project.

E. Management of Programme & Support for student learning.

Management

The programme is managed and administered through:

- Dean of School;
- Associate Dean of School (AQA) who has overall responsibility for Quality Assurance;
- Associate Dean of School (L&T) who has overall responsibility for Learning & Teaching;
- Associate Dean of School (SE & P) who has overall responsibility for Student Experience and professional body accreditation.
- the Programme Leader who is responsible for chairing the programme committee and advising students on the programme as a whole;
- Programme Leaders who are responsible for the day to day management;
- an Admissions Tutor, with specific responsibility for selection;
- a programme committee that includes the above plus student representation;
- module leaders who are responsible for individual modules.

Support

Students are supported by:

- an induction week at the beginning of each new academic session;
- an extensive Learning Resources Centre, incorporating a library and computer centre;
- guided student-centred learning through the use of StudyNet;
- a student handbook that is specific to the programme;
- a Programme Leader who can advise on programme issues;
- Module teaching teams who provide academic support;
- Computer and technical laboratories facilities and technical support staff;
- a project supervisor;
- student representatives on the programme committee;
- the Study Success Hubs, includes Maths Support Service;
- the Careers, Employment and Enterprise Service that support students looking for either graduate employment or an industrial placement.
- a substantial Student Centre that provides advice on issues such as finance, University regulations, legal matters etc.;
- the Medical Centre;
- the Accommodation Office;

- the International Students Centre who organise an Overseas Student Orientation induction programme;
- printing, photocopying, laminating and document binding facilities;
- Nightline – a confidential student listening and information service in the evening when other services are not available;
- a confidential counselling service;
- University Disability Advisors;
- an Equal Opportunities Officer;
- the Students' Union.

F. Other sources of information

In addition to this Programme Specification, the University publishes guidance to registered students on the programme and its constituent modules:

- A Programme (or Student) Handbook;
- A Definitive Module Document (DMD) for each constituent module;
- A Module Guide for each constituent module.

The [Ask Herts](#) website provides information on a wide range of resources and services available at the University of Hertfordshire including academic support, accommodation, fees, funding, visas, wellbeing services and student societies.

As a condition of registration, all students of the University of Hertfordshire are required to comply with the University's rules, regulations and procedures. These are published in a series of documents called 'University Policies and Regulations' (UPRs). The University requires that all students consult these documents which are available on-line, on the UPR web site, at: <http://www.herts.ac.uk/secreg/upr/>. In particular, [UPR SA07](#) 'Regulations and Advice for Students' Particular Attention - Index' provides information on the UPRs that contain the academic regulations of particular relevance for undergraduate and taught postgraduate students.

In accordance with section 4(5) of the Higher Education and Research Act 2017 (HERA), the UK Office for Students (OfS) has registered the University of Hertfordshire in the register of English higher education providers. The Register can be viewed at: <https://www.officeforstudents.org.uk/advice-and-guidance/the-register/the-ofs-register/>. Furthermore, the OfS has judged that the University of Hertfordshire delivers consistently outstanding teaching, learning and outcomes for its students. It is of the highest quality found in the UK. Consequently, the University received a Gold award in the 2018 Teaching Excellence and Student Outcomes (TEF) exercise. This award was made in June 2018 and is valid for up to 3 years. The TEF panel's report and conclusions can be accessed at: <https://www.officeforstudents.org.uk/advice-and-guidance/teaching/tef-outcomes/#/provider/10007147>

G. Entry requirements

The normal entry requirements for the programmes are:

For current entry tariff point requirements, please refer to the relevant page for the Course on the University website or on the online prospectus.

The programme is subject to the University's Principles, Policies and Regulations for the Admission of Students to Undergraduate and Taught Postgraduate Programmes (in [UPR SA03](#)), along with associated procedures. These will take account of University policy and guidelines for assessing accredited prior certificated learning (APCL) and accredited prior experiential learning (APEL).

If you wish to receive a copy of the latest Programme Annual Monitoring and Evaluation Report (AMER) and/or the External Examiner's Report for the programme, please email a request to aqo@herts.ac.uk

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

The following maps identify where the programme learning outcomes are assessed in the constituent modules. They provide;

- i) an aid to academic staff in understanding how individual modules contribute to the programme aims,
- ii) a checklist for quality control purposes and
- iii) a means to help students monitor their own learning, personal and professional development as the programme progresses.

The key to the learning outcomes are as listed in Section 1.C. The modules include;

MEng / BEng with Honours in Automotive Engineering

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

			Programme Learning Outcomes (as identified in section 1 and the following page)																																																	
			Knowledge and Understanding						Intellectual Skills for Analysis						Intellectual Skills for Design								Economic, Legal, Social, Ethical and Environmental						Engineering Practice						Transferable Skills																	
			A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7m	D8m	EL1	EL2	EL3	EL4	EL5	EL6	EL7m	P1	P2	P3	P4	P5	P6	P7	P8	P9m	P10m	P11	G1	G2	G3	G4
			BEng			MEng			BEng			MEng			BEng				MEng				BEng						MEng		BEng																					
	Module Title	Module Code	SM1	SM2	SM3	SM4m	SM5m	SM6m	EA1	EA2	EA3	EA4	EA5m	EA6m	D1	D2	D3	D4	D5	D6	D7m	D8m	EL1	EL2	EL3	EL4	EL5	EL6	EL7m	P1	P2	P3	P4	P5	P6	P7	P8	P9m	P10m	P11	G1	G2	G3	G4								
Level 4	Engineering Mathematics	4ENT1160	x							x																																										
	Statics and Dynamics	4ENT1161							x	x	x																																									
	Automotive Engineering Fundamentals	4ENT1162	x																				x																													
	Applied Design	4ENT1163											x															x																		x x						
	Electrical Science	4ENT1164	x		x				x	x																	x																			x						
	Programming for Engineers	4ENT1165									x																																									
	Engineering Professionalism	4ENT1166																																																		
	Introduction to Mechatronic Systems	4ENT1167		x					x	x	x				x	x	x	x	x	x			x	x																												
Level 5	Fluid Mechanics	5ENT1116	x					x	x																																											
	Thermodynamics	5ENT1117	x					x	x																																											
	Materials in Engineering	5ENT1118						x																																												
	Automotive Sustainable Design	5ENT1120		x				x	x	x				x	x	x	x	x																																		
	Dynamics & Vibrations	5ENT1121	x					x	x																																											
	Automotive Structures	5ENT1123	x					x	x																																											
	Automotive Electronics and Control Systems	5ENT1011						x	x	x																																										
	Automotive Design	5ENT1126		x				x	x	x				x	x	x	x	x								x	x																									
Placement Year	6AAD0015																																																			
Level 6	Lean Manufacturing and Services	6ENT1148																																																		
	Vehicle Design and Body Engineering	6ENT1175	x	x	x	x	x	x	x	x	x	x																																								
	Connected Autonomous Vehicles	6ENT1152	x	x		x				x					x		x																																			
	Renewable Energy and Environment	6ENT1160	x	x	x	x						x			x																																					
	Vibration, Noise and Vehicle Dynamics	6ENT1066	x	x	x	x	x	x	x	x	x	x	x																																							
	Automotive Powertrain Technology	6ENT1161	x		x					x																																										
	Individual Major Project (BEng Automotive)	6ENT1094	x							x				x	x	x	x	x	x	x	x	x	x	x	x	x	x																									
Individual Major Project (MEng Automotive)	6ENT1124	x							x				x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
Level 7	MEng Team Project	7ENT1073	x		x			x	x	x			x		x	x	x	x	x	x	x	x	x	x	x	x	x																									
	Human Resource Management	7AAD0062													x	x	x	x																																		
	Data Analytics and Artificial Intelligence	7ENT1145	x			x	x						x	x												x																										
	Advanced Materials and Manufacturing	7ENT1146	x							x																																										
	Advanced FEA and Crashworthiness	7ENT1147						x	x	x	x	x	x																																							
Advanced Powertrain Technology	7ENT1149						x			x																																										

MEng / BEng with Honours in Automotive Engineering with Motorsport

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

		Programme Learning Outcomes (as identified in section 1 and the following page)																																														
		Knowledge and Understanding						Intellectual Skills for Analysis						Intellectual Skills for Design						Economic, Legal, Social, Ethical and Environmental						Engineering Practice						Transferable Skills																
		A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7	D8	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	F1	F2	F3	F4				
		BEng			MEng			BEng			MEng			BEng			MEng			BEng			MEP	BEng						MEng	BE	BEng																
Module Title	Module Code	SM1	SM2	SM3	SM4m	SM5m	SM6m	EA1	EA2	EA3	EA4	EA5m	EA6m	D1	D2	D3	D4	D5	D6	D7m	D8m	EL1	EL2	EL3	EL4	EL5	EL6	EL7m	MEP	P1	P2	P3	P4	P5	P6	P7	P8	P9m	P10m	P11	G1	G2	G3	G4				
Level 4	Engineering Mathematics		x						x																																							
	Statics and Dynamics							x	x	x																																						
	Automotive Engineering Fundamentals	x																				x																										
	Applied Design											x																																		x	x	
	Electrical Science	x	x					x	x																											x	x									x		
	Programming for Engineers											x																										x										
	Engineering Professionalism																																															
	Introduction to Mechatronic Systems			x				x		x	x					x	x	x	x	x	x																											
Level 5	Fluid Mechanics	x						x	x																																							
	Thermodynamics	x						x	x																																							
	Materials in Engineering							x																																								
	Automotive Sustainable Design			x				x		x	x					x	x	x	x	x	x																											
	Dynamics & Vibrations	x						x	x																																							
	Automotive Structures	x						x	x																																							
	Automotive Electronics and Control Systems							x	x	x																																						
	Motorsport Design			x				x		x	x					x	x	x	x	x	x																											
Placement Year	6AAD0015																																															
Level 6	Lean Manufacturing and Services																																															
	Vehicle Design and Body Engineering	x	x	x	x	x	x			x	x	x	x	x																																		
	Motorsport Engineering	x	x	x												x	x	x	x	x	x																											
	Renewable Energy and Environment	x	x	x	x																																											
	Vibration, Noise and Vehicle Dynamics	x	x	x	x	x	x	x	x	x	x																																					
	High Performance Powertrain Design							x	x	x	x																																					
	Individual Project (BEng Automotive)	x														x	x																															
	Individual Project (MEng Automotive)	x														x		x																														
Level 7	MEng Team Project		x		x			x		x	x				x		x	x	x	x	x																											
	Human Resource Management															x		x																														
	Data Acquisition							x	x	x																																						
	Advanced Materials and Manufacturing		x							x																																						
	Advanced FEA and Crashworthiness							x	x	x	x	x	x																																			
Advanced Aerodynamics							x			x	x																																					

Section 2

Programme management

Relevant QAA subject benchmarking statements

Type of programme

Date of validation/last periodic review

Date of production/ last revision of PS

Relevant to level/cohort

Administrative School

Mechanical Engineering

Undergraduate

November 19

April 2020

Level 4 entering September 2020

School of Engineering and Computer Science

Table 3 Course structure

Course details		
Course Code	Course Description	HECOS
EIBENGAU	BEng (Hons) Automotive Engineering	100201
EIMENGAU	MEng (Hons) Automotive Engineering	100201
EIBENGAME	BEng (Hons) Mechanical Engineering	100190
EIMENGME	MEng (Hons) Mechanical Engineering	100190