

Title of Programme: MEng / BEng Automotive and Mechanical Engineering

Programme Code: ENENGVM

# Programme Specification

This programme specification is relevant to students entering:  
01 September 2023

Associate Dean of School (Academic Quality Assurance):  
Mariana Lilley



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.

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## Summary of amendments to the programme:

Section	Amendment
D - Table 1a	BEng Individual Project (Mechanical) 6ENT2047 replaces BEng Individual Project (Mechanical) 6ENT1092.
D - Table 1a	MEng Individual Project (Mechanical) 6ENT2054 replaces MEng Individual Project (Mechanical) 6ENT1114.
D – Table 1a	BEng Individual Project (Automotive) 6ENT2046 replaces BEng Individual Project (Automotive) 6ENT1094.
D – Table 1a	MEng Individual Project (Automotive) 6ENT2052 replaces MEng Individual Project (Automotive) 6ENT1124.
D – Table 1a	MEng Team Project 7ENT2044 replaces MEng Team Project 7ENT1073.

If you have any queries regarding the changes please email [AQO@herts.ac.uk](mailto:AQO@herts.ac.uk)

# Programme Specification MEng / BEng Automotive and 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).

## Section 1

<b>Awarding Institution/Body</b>	University of Hertfordshire
<b>Teaching Institution</b>	University of Hertfordshire
<b>University/partner campuses</b>	College Lane
<b>Programme accredited by</b>	Institution of Mechanical Engineers (IMechE) accreditation for the 2023 intake is being sought
<b>Final Qualification</b>	BEng Honours / MEng Honours
<b>All Final Award titles</b>	BEng (Hons) Automotive Engineering
<b>(Qualification and Subject)</b>	BEng (Hons) Automotive Engineering with Motorsport
	BEng (Hons) Mechanical Engineering
	BEng (Hons) Automotive Engineering (Sandwich)
	BEng (Hons) Automotive Engineering with Motorsport (Sandwich)
	BEng (Hons) Mechanical Engineering (Sandwich)
	BEng (Hons) Automotive Engineering with Year Abroad
	BEng (Hons) Automotive Engineering with Motorsport with Year Abroad
	BEng (Hons) Mechanical Engineering with Year Abroad
	BEng (Hons) Automotive Engineering with Study Abroad
	BEng (Hons) Automotive Engineering with Motorsport with Study Abroad
	BEng (Hons) Mechanical Engineering with Study Abroad
	MEng (Hons) Automotive Engineering
	MEng (Hons) Automotive Engineering with Motorsport
	MEng (Hons) Mechanical Engineering
	MEng (Hons) Automotive Engineering (Sandwich)
	MEng (Hons) Automotive Engineering with Motorsport (Sandwich)
	MEng (Hons) Mechanical Engineering (Sandwich)
	MEng (Hons) Automotive Engineering with Year Abroad
	MEng (Hons) Automotive Engineering with Motorsport with Year Abroad
	MEng (Hons) Mechanical Engineering with Year Abroad
	MEng (Hons) Automotive Engineering with Study Abroad
	MEng (Hons) Automotive Engineering with Motorsport with Study Abroad
	MEng (Hons) 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)
<b>FHEQ level of award</b>	6 (BEng), 7 (MEng)

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## A. Programme Rationale

The School of Physics, Engineering and Computer Science (SPECS) 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.

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. 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.

The School has close contacts with a wide range of engineering companies and students are encouraged to take the sandwich option spending at least 30 weeks on industrial placement between levels 5 and 6, as defined in [UPR AS11](#). 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.

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## 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.

### Graduate Attributes

Our graduates will be capable and professional, creative and enterprising, and will build their social and global awareness throughout. In addition to their subject expertise and proficiency, as a University of Hertfordshire graduate, they will be:

- Professionally focused
- Globally minded
- Sustainability driven
- Digitally capable and confident
- Inclusive and collaborative
- Evidence based and ethical

## **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 referenced to the QAA benchmark statements for Engineering and the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2014) and relate to the typical student. Additionally, the SEEC Credit Level Descriptors for Further and Higher Education (2021) have been used as a guiding framework for curriculum design.

	<b>Knowledge &amp; Understanding</b>		<b>Teaching and learning methods</b>	<b>Assessment strategy</b>
	BEng	MEng		
<b>A1</b>	<b>SM1b-</b> 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.	<b>SM1m-</b> 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.	<p>Acquisition of knowledge and understanding is through the following approaches:</p> <p>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.</p> <p>Additional support is provided through the Mathematics Support Service. Specialist aspects of A2 are further developed at level 6.</p> <p>Acquisition of A3 is through a combination of lectures, projects and coursework throughout the programme.</p> <p>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.</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>	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.
<b>A2</b>	<b>SM2b-</b> 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.	<b>SM2m-</b> 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.		
<b>A3</b>	<b>SM3b-</b> Ability to apply and integrate knowledge and understanding of other engineering disciplines to support a study of mechanical / automotive engineering.	<b>SM3m-</b> 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.		
<b>A4</b>		<b>SM4m</b> – Awareness of developing technologies related to mechanical / automotive engineering.		

A5		<b>SM5m</b> - A comprehensive knowledge and understanding of mathematical and computational models relevant to mechanical / automotive engineering, and an appreciation of their limitations.		
A6		<b>SM6m</b> – 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.		
<b>Intellectual Skills</b>			<b>Teaching and learning methods</b>	<b>Assessment strategy</b>
	BEng	MEng		
<b>B1</b>	<b>EA1b-</b> Understanding of engineering principles and the ability to apply them to analyse of key engineering processes.	<b>EA1m-</b> Understanding of engineering principles and the ability to apply them to undertake critical analysis of key engineering processes.	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.	Engineering analysis skills B1, B2 and B4 are assessed through unseen examination papers, laboratory reports and coursework related to in-course exercises.
<b>B2</b>	<b>EA2-</b> Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.	<b>EA2-</b> Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.	Analysis, problem solving and modelling skills are further developed through tutorial work, laboratory work, in-course exercises and project work.	Engineering analysis skills B3 are assessed through project reports and presentations.
<b>B3</b>	<b>EA3b-</b> Ability to apply quantitative and computational methods in order to solve engineering problems and implement appropriate action.	<b>EA3m-</b> Ability to apply quantitative and computational methods, using alternative approaches, and understanding their limitations, in order to solve engineering problems and implement action.	Throughout, the learner is encouraged to develop intellectual skills further by independent study.	
<b>B4</b>	<b>EA4b-</b> Understanding of, and the ability to apply, an integrated or	<b>EA4m-</b> Understanding of, and the ability to apply, an integrated or		

	systems approach to solving engineering problems.	systems approach to solving complex engineering problems.		
<b>B5</b>		<b>EA5m</b> – Ability to use fundamental knowledge to investigate new and emerging technologies.		
<b>B6</b>		<b>EA6m</b> – Ability to extract and evaluate pertinent data and to apply engineering analysis techniques in the solution of unfamiliar problems.		
	<b>Practical skills</b>		<b>Teaching and learning methods</b>	<b>Assessment strategy</b>
	BEng	MEng		
<b>C1</b>	<b>D1-</b> Understand and evaluate business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics.	<b>D1-</b> Understand and evaluate business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics.	Practical 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.	Practical skills C1, C2, C5 and C6 are assessed through unseen examination, coursework, project reports, technical reports and oral presentations.
<b>C2</b>	<b>D2-</b> 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.	<b>D2-</b> 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.	Feedback is given to all students on all coursework produced.  Throughout, the learner is encouraged to develop practical skills further by independent study.	C3, C4 is assessed by review of group project work.
<b>C3</b>	<b>D3b-</b> Work with information that may be incomplete or uncertain, and quantify the effect of this on the design.	<b>D3m-</b> 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.		
<b>C4</b>	<b>D4-</b> Apply advanced problem solving skills, technical knowledge and understanding, to establish	<b>D4-</b> Apply advanced problem solving skills, technical knowledge and		

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.

**C6** **D6-** Communicate their work to technical and non-technical audiences.

**C7**

**C8**

understanding, to establish rigorous and creative solutions that are fit for purpose for all aspects of the problem including production, operation, maintenance and disposal.

**D5-** Plan and manage the design process, including cost drivers, and evaluate outcomes.

**D6-** Communicate their work to technical and non-technical audiences.

**D7m** – Demonstrate wide knowledge and comprehensive understanding of design processes and methodologies and the ability to apply and adapt them in unfamiliar situations.

**D8m** – Demonstrate the ability to generate an innovative design for products, systems, components or processes to fulfil new needs.

	<b>Transferable skills Economic, Legal, Social, Ethical &amp; Environmental Context</b>		<b>Teaching and learning methods</b>	<b>Assessment strategy</b>
	BEng	MEng		
<b>D1</b>	<b>EL1b-</b> Understanding of the need for a high level of professional and ethical production in engineering and a knowledge of professional codes of conduct.	<b>EL1m-</b> 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.	Transferable skills D1 to D6 are assessed by coursework, project reports, technical reports and presentations.
<b>D2</b>	<b>EL2-</b> Knowledge and understanding of the commercial, economic and social context of engineering processes.	<b>EL2-</b> Knowledge and understanding of the commercial, economic and social context of engineering processes.	Throughout, the learner is encouraged to develop transferable skills by maintaining a record of evidence and completing a personal development plan.	
<b>D3</b>	<b>EL3b-</b> Knowledge and understanding of management techniques, including project management, that may be used to achieve engineering objectives.	<b>EL3m-</b> 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.		
<b>D4</b>	<b>EL4-</b> Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate.	<b>EL4-</b> Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate.		
<b>D5</b>	<b>EL5b-</b> Awareness of the relevant legal requirements governing engineering activities, including personnel, health and safety, contracts, intellectual property rights, product safety and liability issues.	<b>EL5m-</b> 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.		



<b>E4</b>	<b>P4-</b> Understanding use of technical literature and other information sources.	<b>P4-</b> Understanding use of technical literature and other information sources.		
<b>E5</b>	<b>P5-</b> Knowledge of relevant legal and contractual issues.	<b>P5-</b> Knowledge of relevant legal and contractual issues.		
<b>E6</b>	<b>P6-</b> Understanding of appropriate codes of practice and industry standards.	<b>P6-</b> Understanding of appropriate codes of practice and industry standards.		
<b>E7</b>	<b>P7-</b> Awareness of quality issues and their application to continuous improvement.	<b>P7-</b> Awareness of quality issues and their application to continuous improvement.		
<b>E8</b>	<b>P8-</b> Ability to work with technical uncertainty.	<b>P8-</b> Ability to work with technical uncertainty.		
<b>E9</b>		<b>P9m</b> – A thorough understanding of current practice and its limitations, and some appreciation of likely new developments.		
<b>E10</b>		<b>P10m</b> – Ability to apply engineering techniques taking account of a range of commercial and industrial constraints.		
<b>E11</b>	<b>P11b-</b> Understanding of, and the ability to work in, different roles within an engineering team.	<b>P11m-</b> 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.		
<b>Transferable Skills</b>			<b>Teaching and learning methods</b>	<b>Assessment strategy</b>
BEng		MEng		
<b>F1</b>	<b>G1-</b> Apply their skills in problem solving, communication, information retrieval, working with	<b>G1-</b> Apply their skills in problem solving, communication, information	Additional general skills are developed throughout the programme by the methods and strategies outlined in above.	Additional general skills are assessed through the following approaches:

	others and the effective use of general IT facilities.	retrieval, working with others and the effective use of general IT facilities.	F1 is developed through feedback on coursework reports, oral presentations and project reports.	F1, and F2 are assessed through coursework, individual project and technical reports and oral presentations.
<b>F2</b>	<b>G2-</b> Plan self-learning and improve performance, as the foundation for lifelong learning/CPD.	<b>G2-</b> Plan self-learning and improve performance, as the foundation for lifelong learning/CPD.	F2 is developed in a dedicated module that emphasises the role of such practice.	
<b>F3</b>	<b>G3b-</b> Plan and carry out a personal programmes of work, adjusting where appropriate.	<b>G3m-</b> Monitor and adjust a personal programme of work on an ongoing basis.	F3 is developed through project work planning and throughout the programme.	F3 and F4 are assessed by review of an individual's progress during individual project work.
<b>F4</b>	<b>G4-</b> Exercise initiative and personal responsibility, which may be as a team member or leader.	<b>G4-</b> Exercise initiative and personal responsibility, which may be as a team member or leader.	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.	

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## D. Programme Structures, Features, Levels, Modules, and Credits

The BEng 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.

The MEng programme is normally offered in full-time (4 years), sandwich (5 years) or part-time (8 years) modes, and leads to the award of a BEng degree with Honours in the student's chosen engineering discipline.

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 BEng Automotive and Mechanical programmes (excluding Study Abroad and Year Abroad awards) are accredited by IMechE and satisfy, in part, the academic requirements for Chartered Engineer (CEng) registration for the cohort intakes from 2016 up to, and including, 2022. Accreditation by IMechE is being sought for the 2023 intake.

The MEng Automotive and Mechanical programmes (excluding Study Abroad and Year Abroad awards) are accredited by IMechE and satisfy, in full, the academic requirements for Chartered Engineer (CEng) registration for the cohort intakes from 2016 up to, and including, 2022. Accreditation is being sought for the 2023 intake.

See <https://www.imeche.org/> for further information.

### 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. A sandwich award requires the successful completion of at least 30 weeks full-time equivalent placement activity from a maximum of two separate approved placements, neither of which will be normally 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 placement 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 are encouraged by university staff, to use their experience and their reports as a basis for a presentation to the local Professional Institution Branch, Regions or Division possibly through student paper or poster competitions.

Students who have not achieved the minimum progression requirements at the end of level 5 may be prevented from undertaking a sandwich placement. 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 (first year) 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 Aerospace

industry sector will be covered in the materials, design and design and build CDIO modules at levels 4 and 5 and explicitly researched in the project modules at levels 6 and 7 (MEng only).

### **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 normally 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 the 6ENT0001 Year Abroad module whilst students studying abroad for a single semester will be enrolled on the 6ENT1051 Semester Abroad module. 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 MEng degree with Honours in one of the named awards as listed in Section 1 “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:

UAV Projects (6ENT1042)  
Formula Student (6ENT1043)

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 Unit/Programme Learning Outcomes are developed and assessed through the constituent modules, as identified within the Unit/Programme Specifications listed in Section B, above.

For all awards:

- Progression to level 5 requires a minimum of 90 credits at level 4.
- Progression to level 6 requires of 210 credit points and above with at least 90 credit points at Level 5 to remain on the honours award.
- Industrial Placement, Year Abroad and Study Abroad modules always take place between levels 5 and 6.
- 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.

## Table 1a Outline Programme Structure

### BEng (Hons) Mechanical Engineering

#### Mode of study

BEng Full Time: 3 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

**Level 6**

<b>Optional Modules (delete this part if not applicable)</b> Module Titles	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
BEng Individual Project (Mechanical)	6ENT2047	30	-	-	80	20	AB

## Table 1a Outline Programme Structure

### BEng (Hons) Mechanical Engineering (Sandwich)

#### Mode of study

BEng Full Time: 4 years.

Entry point Semester A

#### Level 4

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

#### Level 5

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

**Level 6**

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Industrial Placement	6AAD0015	0	0	0	P/F	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
BEng Individual Project (Mechanical)	6ENT2047	30	-	-	80	20	AB

<b>Optional Modules (delete this part if not applicable)</b> Module Titles	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

**Table 1a Outline Programme Structure**

**BEng (Hons) Mechanical Engineering with Year Abroad**

**Mode of study**

BEng Full Time: 4 years.

**Entry point** Semester A

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

**Level 6**

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Year Abroad	6ENT0001	0	0	0	0	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
BEng Individual Project (Mechanical)	6ENT2047	30	-	-	80	20	AB

<b>Optional Modules (delete this part if not applicable)</b> Module Titles	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

## Table 1a Outline Programme Structure

### BEng (Hons) Mechanical Engineering with Study Abroad

#### Mode of study

BEng Full Time: 4 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

**Level 6**

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Semester Abroad	6ENT1051	0	0	0	0	0	A or B
<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
BEng Individual Project (Mechanical)	6ENT2047	30	-	-	80	20	AB
<b>Optional Modules (delete this part if not applicable)</b> Module Titles	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

**Table 1a Outline Programme Structure**

**MEng (Hons) Mechanical Engineering**

**Mode of study**

MEng Full Time: 4 years.

**Entry point Semester A  
Level 4**

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

**Level 5**

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

## Level 6

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
<b>Module Title</b>							
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
MEng Individual Project (Mechanical)	6ENT2054	30	-	-	80	20	AB
<b>Optional Modules (delete this part if not applicable)</b>							
<b>Module Titles</b>							
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

## Level 7

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
<b>Module Title</b>							
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
CFD & Applications	7ENT1133	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
CAE & Applications	7ENT1131	15	-	50	50	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

## Table 1a Outline Programme Structure

### MEng (Hons) Mechanical Engineering (Sandwich)

#### Mode of study

MEng Full Time: 5 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

## Level 6

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Industrial Placement	6AAD0015	0	0	0	P/F	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
MEng Individual Project (Mechanical)	6ENT2054	30	-	-	80	20	AB

<b>Optional Modules (delete this part if not applicable)</b> Module Titles	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

## Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
CFD & Applications	7ENT1133	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
CAE & Applications	7ENT1131	15	-	50	50	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

## Table 1a Outline Programme Structure

### MEng (Hons) Mechanical Engineering with Year Abroad

#### Mode of study

MEng Full Time: 5 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

## Level 6

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Year Abroad	6ENT0001	0	0	0	0	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
MEng Individual Project (Mechanical)	6ENT2054	30	-	-	80	20	AB

<b>Optional Modules (delete this part if not applicable)</b> Module Titles	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

## Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
CFD & Applications	7ENT1133	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
CAE & Applications	7ENT1131	15	-	50	50	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

## Table 1a Outline Programme Structure

### MEng (Hons) Mechanical Engineering with Study Abroad

#### Mode of study

MEng Full Time: 5 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Fundamentals	4ENT1098	15	-	-	100	-	A
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems	4ENT1167	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Sustainable Design	5ENT1119	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Structural Mechanics	5ENT1122	15	80	-	20	-	B
Introduction and Applications of Control Systems	5ENT1124	15	-	-	100	-	B
Industrial Mechanics	5ENT1125	15	-	-	100	-	B

## Level 6

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Semester Abroad	6ENT1051	0	0	0	0	0	A or B

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Advanced Mechanics	6ENT1174	15	-	60	40	-	A
Acoustics	6ENT1159	15	20	60	20	-	B
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
MEng Individual Project (Mechanical)	6ENT2054	30	-	-	80	20	AB

<b>Optional Modules (delete this part if not applicable)</b> Module Titles	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Plant Engineering	6ENT1155	15	-	60	40	-	A
Thermal Power Systems	6ENT1156	15	20	60	20	-	B
Analysis of Applied Control Systems	6ENT1158	15	-	-	100	-	A
Advanced Controller Design and Stability	6ENT1157	15	-	-	100	-	B

## Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
CFD & Applications	7ENT1133	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
CAE & Applications	7ENT1131	15	-	50	50	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

## Table 1a Outline Programme Structure

### BEng (Hons) Automotive Engineering

#### Mode of study

BEng Full-time: 3 years.

#### Entry point Semester A

#### Level 4

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

#### Level 6

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

## Table 1a Outline Programme Structure

### BEng (Hons) Automotive Engineering (Sandwich)

#### Mode of study

BEng Full-time: 4 years.

Entry point Semester A

#### Level 4

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

**Level 6**

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Industrial Placement	6AAD0015	0	0	0	P/F	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

## Table 1a Outline Programme Structure

### BEng (Hons) Automotive Engineering with Year Abroad

#### Mode of study

BEng Full-time: 4 years.

Entry point Semester A

#### Level 4

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

**Level 6**

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Year Abroad	6ENT0001	0	0	0	0	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

## Table 1a Outline Programme Structure

### BEng (Hons) Automotive Engineering with Study Abroad

#### Mode of study

BEng Full-time: 4 years.

Entry point Semester A

#### Level 4

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

Compulsory Modules Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

**Level 6**

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Semester Abroad	6ENT1051	0	0	0	0	0	A or B

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

## Table 1a Outline Programme Structure

### MEng (Hons) Automotive Engineering

#### Mode of study

MEng Full-time: 4 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

**Level 7**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Powertrain Technology	7ENT1149	15	-	60	40	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

## Table 1a Outline Programme Structure

### MEng (Hons) Automotive Engineering (Sandwich)

#### Mode of study

MEng Full-time: 5 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

## Level 6

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Industrial Placement	6AAD0015	0	0	0	P/F	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

## Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Powertrain Technology	7ENT1149	15	-	60	40	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

## Table 1a Outline Programme Structure

### MEng (Hons) Automotive Engineering with Year Abroad

#### Mode of study

MEng Full-time: 5 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

## Level 6

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Year Abroad	6ENT0001	0	0	0	0	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

## Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Powertrain Technology	7ENT1149	15	-	60	40	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

## Table 1a Outline Programme Structure

### MEng (Hons) Automotive Engineering with Study Abroad

#### Mode of study

MEng Full-time: 5 years.

Entry point Semester A

#### Level 4

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

#### Level 5

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Automotive Design	5ENT1126	15	-	-	100	-	B

## Level 6

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Semester Abroad	6ENT1051	0	0	0	0	0	A or B

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Connected Autonomous Vehicles	6ENT1152	15	-	60	40	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
Automotive Powertrain Technology	6ENT1161	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

## Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Analytics and Artificial Intelligence	7ENT1145	15	-	60	40	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Powertrain Technology	7ENT1149	15	-	60	40	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**BEng (Hons) Automotive Engineering with Motorsport**

**Mode of study**

BEng Full-time: 3 years.

**Entry point Semester A**

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**BEng (Hons) Automotive Engineering with Motorsport (Sandwich)**

**Mode of study**

BEng Full-time: 4 years.

**Entry point** Semester A

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Module</b>							
Module Title							
Industrial Placement	6AAD0015	0	0	0	P/F	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**BEng (Hons) Automotive Engineering with Motorsport with Year Abroad**

**Mode of study**

BEng Full-time: 4 years.

**Entry point** Semester A

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Module</b>							
Module Title							
Year Abroad	6ENT0001	0	0	0	0	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**BEng (Hons) Automotive Engineering with Motorsport with Study Abroad**

**Mode of study**

BEng Full-time: 4 years.

**Entry point Semester A**

**Level 4**

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

<b>Compulsory Module</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Semester Abroad	6ENT1051	0	0	0	0	0	A or B

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
BEng Individual Project (Automotive)	6ENT2046	30	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**MEng (Hons) Automotive Engineering with Motorsport**

**Mode of study**

MEng Full-time: 4 years.

**Entry point** Semester A

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

**Level 7**

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Acquisition	7ENT1148	15	-	-	100	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Aerodynamics	7ENT1150	15	-	-	100	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**MEng (Hons) Automotive Engineering with Motorsport (Sandwich)**

**Mode of study**

MEng Full-time: 5 years.

**Entry point** Semester A

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Module</b>							
Module Title							
Industrial Placement	6AAD0015	0	0	0	P/F	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

### Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Acquisition	7ENT1148	15	-	-	100	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Aerodynamics	7ENT1150	15	-	-	100	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**MEng (Hons) Automotive Engineering with Motorsport with Year Abroad**

**Mode of study**

MEng Full-time: 5 years.

**Entry point** Semester A

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Module</b>							
Module Title							
Year Abroad	6ENT0001	0	0	0	0	0	AB

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

### Level 7

<b>Compulsory Modules</b> Module Title	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Acquisition	7ENT1148	15	-	-	100	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Aerodynamics	7ENT1150	15	-	-	100	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

**Table 1a Outline Programme Structure**

**MEng (Hons) Automotive Engineering with Motorsport with Study Abroad**

**Mode of study**

MEng Full-time: 5 years.

**Entry point** Semester A

**Level 4**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Mathematics	4ENT1160	15	40	60	-	-	A
Statics and Dynamics	4ENT1161	15	60	-	40	-	A
Automotive Engineering Fundamentals	4ENT1162	15	60	-	40	-	A
Applied Design	4ENT1163	15	-	-	100	-	A
Electrical Science	4ENT1164	15	30	-	70	-	B
Programming for Engineers	4ENT1165	15	40	-	-	60	B
Engineering Professionalism	4ENT1166	15	-	-	100	-	B
Introduction to Mechatronic Systems (Automotive)	4ENT2014	15	-	-	100	-	B

**Level 5**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Fluid Mechanics	5ENT1116	15	20	60	20	-	A
Thermodynamics	5ENT1117	15	75	-	25	-	A
Materials in Engineering	5ENT1118	15	-	60	40	-	A
Automotive Sustainable Design	5ENT1120	15	-	-	100	-	A
Dynamics and Vibrations	5ENT1121	15	80	-	20	-	B
Automotive Structures	5ENT1123	15	-	60	40	-	B
Automotive Electronics and Control Systems	5ENT1011	15	50	-	50	-	B
Motorsport Design	5ENT1127	15	-	-	100	-	B

**Level 6**

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Module</b>							
Module Title							
Semester Abroad	6ENT1051	0	0	0	0	0	A or B

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Lean Manufacturing and Supply Chains	6ENT2014	15	-	-	60	40	A
Vehicle Design and Body Engineering	6ENT1175	15	-	50	50	-	A
Motorsport Engineering	6ENT1053	15	30	-	70	-	A
Renewable Energy and the Environment	6ENT1160	15	60	-	40	-	B
Vibration, Noise & Vehicle Dynamics	6ENT1066	15	20	60	20	-	B
High Performance Engine Design	6ENT1054	15	80	-	20	-	B
MEng Individual Project (Automotive)	6ENT2052	30	-	-	80	20	AB

### Level 7

	Module Code	Credit Points	% Test	% Examination	% Coursework	% Practical	Semesters
<b>Compulsory Modules</b>							
Module Title							
Engineering Management and Innovation	7ENT2002	15	-	-	100	-	A
Advanced FEA and Crashworthiness	7ENT1147	15	-	50	50	-	A
Data Acquisition	7ENT1148	15	-	-	100	-	A
Advanced Materials and Manufacturing	7ENT1146	15	-	60	40	-	B
Advanced Aerodynamics	7ENT1150	15	-	-	100	-	B
MEng Team Project	7ENT2044	45	-	-	80	20	AB

### Honours classification

The University has approved structure and assessment regulations common to all programmes. Full details are provided in [UPR AS14](#), Section D. However, this programme has specific regulations relating to the determination of Honours classification given under the Programme-Specific Regulations in Section 2.

**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		480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must pass the MEng Individual Project and MEng Team Project modules.	7	<p><b>MEng (Hons) Mechanical Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2a and 2c.</p> <p><b>MEng (Hons) Automotive Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2d and 2f.</p> <p><b>MEng (Hons) Automotive with Motorsport:</b> All programme learning outcomes for the specified named award, see Tables 2g and 2i.</p>
MEng (Hons) in the named award (Sandwich)	Mechanical Engineering	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must pass the MEng Individual Project, MEng Team Project and Placement Year modules.	7	
MEng (Hons) in the named award with Study Abroad	Automotive Engineering	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must pass the MEng Individual Project, MEng Team Project and Semester Abroad modules.	7	
MEng (Hons) in the named award with Year Abroad	Automotive Engineering with Motorsport	480 credit points including 360 at levels 7/6/5 of which 120 must be at level 7. Additionally, students must pass the MEng Individual Project, MEng Team Project and Year Abroad modules.	7	
BEng (Hons) in the named award		360 credit points including 240 at level 6/5 of which 120 must be at level 6. Additionally, students must pass the BEng Individual Project module.	6	<p><b>BEng (Hons) Mechanical Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2a and 2b.</p> <p><b>BEng (Hons) Automotive Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2d and 2e.</p> <p><b>BEng (Hons) Automotive with Motorsport:</b> All programme learning outcomes for the specified named award, see Tables 2g and 2h.</p>
BEng (Hons) in the named award (Sandwich)	Mechanical Engineering	360 credit points including 240 at level 6/5 of which 120 must be at level 6. Additionally, students must pass the BEng Individual Project and Placement Year modules.	6	
BEng (Hons) in the named award with Study Abroad	Automotive Engineering	360 credit points including 240 at level 6/5 of which 120 must be at level 6. Additionally, students must pass the BEng Individual Project and Semester Abroad modules.	6	
BEng (Hons) in the named award with Year Abroad	Automotive Engineering with Motorsport	360 credit points including 240 at level 6/5 of which 120 must be at level 6. Additionally, students must pass the BEng Individual Project and Year Abroad modules.	6	

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: <a href="http://sitem.herts.ac.uk/secreg/upr/AS11.htm">http://sitem.herts.ac.uk/secreg/upr/AS11.htm</a>
Certificate of Higher Education		120 credit points at level 4	4, 5	See UPR AS11, section 13: <a href="http://sitem.herts.ac.uk/secreg/upr/AS11.htm">http://sitem.herts.ac.uk/secreg/upr/AS11.htm</a>
Diploma of Higher Education		240 credit points including at least 120 at level 5	5, 6	See UPR AS11, section 13: <a href="http://sitem.herts.ac.uk/secreg/upr/AS11.htm">http://sitem.herts.ac.uk/secreg/upr/AS11.htm</a>
BEng in the named award	Mechanical Engineering  Automotive Engineering  Automotive Engineering with Motorsport	For students entering directly at level 6 only, 75 UH specified credits must be at level 6. (*)	6	<b>BEng (Hons) Mechanical Engineering:</b> A subset of programme learning outcomes based on modules passed, see Tables 2a and 2b.  <b>BEng (Hons) Automotive Engineering:</b> A subset of programme learning outcomes based on modules passed, see Tables 2d and 2e.  <b>BEng (Hons) Automotive with Motorsport:</b> A subset of programme learning outcomes based on modules passed, see Tables 2g and 2h.
BEng in the named award	Mechanical Engineering  Automotive Engineering  Automotive Engineering with Motorsport	300 credit points including 180 at level 6/5 of which 60 must be at level 6.	6	<b>BEng (Hons) Mechanical Engineering:</b> A subset of programme learning outcomes based on modules passed, see Tables 2a and 2b.  <b>BEng (Hons) Automotive Engineering:</b> A subset of programme learning outcomes based on modules passed, see Tables 2d and 2e.  <b>BEng (Hons) Automotive with Motorsport:</b> A subset of programme learning outcomes based on modules passed, see Tables 2g and 2h.
BEng in the named award (Sandwich)		300 credit points including 180 at level 6/5 of which 60 must be at level 6. Additionally, students must pass the Placement Year module.		
BEng in the named award with Study Abroad		300 credit points including 180 at level 6/5 of which 60 must be at level 6. Additionally, students must pass the Semester Abroad module.		
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 pass the Year Abroad module.		
BEng (Hons) in the named award	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	<b>BEng (Hons) Mechanical Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2a and 2b.  <b>BEng (Hons) Automotive Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2d and 2e.  <b>BEng (Hons) Automotive with Motorsport:</b> All programme learning outcomes for the specified named award, see Tables 2g and 2h.
BEng (Hons) in the named award (Sandwich)	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 requirements have not been achieved).  Additionally, students must pass the individual project and the Placement Year modules.		
BEng (Hons) in the named		360 credit points including 240 at level 6/5 of which 120 must be at level 6 (Minimum Engineering		

award with Study Abroad		Council compensation requirements have not been achieved). Additionally, students must pass the individual project and the Semester Abroad Modules.		
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 (minimum Engineering Council compensation requirements have not been achieved). Additionally, students must pass the individual project and the Year Abroad modules.		
MEng (Hons) in the named award		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 pass the MEng Individual Project and the MEng Team Project. Compliant with UH compensation requirements.		
MEng(Hons) in the named award (Sandwich)	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 pass the MEng Individual Project, the MEng Team Project and the Placement Year module. Compliant with UH compensation requirements.		<b>MEng (Hons) Mechanical Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2a and 2c.
MEng(Hons) in the named award with Study Abroad	Automotive Studies** Automotive Studies with Motorsport**	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 pass the MEng Individual Project, the MEng Team Project and pass the Semester Abroad modules. Compliant with UH compensation requirements.	7	<b>MEng (Hons) Automotive Engineering:</b> All programme learning outcomes for the specified named award, see Tables 2d and 2f.
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. (Minimum Engineering Council compensation requirements have not been achieved). Additionally, students must pass the MEng Individual Project, the MEng Team Project and pass the Year Abroad modules. Compliant with UH compensation requirements.		<b>MEng (Hons) Automotive with Motorsport:</b> All programme learning outcomes for the specified named award, see Tables 2g and 2i.

Notes:

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

(\*\*) This 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:

- **There is no compensation for the individual projects, which must be included in the final degree classification:** BEng Individual Project (Mechanical) 6ENT2047, MEng Individual Project (Mechanical) 6ENT2054, BEng Individual Project (Automotive) 6ENT2046, MEng Individual Project (Automotive) 6ENT2052. Students who are offered a re-enrolment opportunity on project modules in line with University regulations, will normally be allocated an entirely different project.
- **There is no compensation for the MEng team project, which must be included in the final degree classification:** MEng Team Project 7ENT2044.
- Students exiting with a BEng (Hons) award or MEng (Hons) award shall have their degree classification determined in accordance with UPR AS14 and include the individual projects in the calculation of degree.
- 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).
- 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.
- Additionally, for **BEng (Hons) accredited awards:**
  - To comply with professional body regulations students must achieve in all 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.
- Additionally, for **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 15 credit points can be compensated at level 7.**

Course Code	Course Instance	Award Title	Modules (child instance codes & title)	Must be included in classification algorithm?
EIBENGAME	M3F M4S MP6P	BEng (Hons) Mechanical Engineering	BEng Individual Project (Mechanical) 6ENT2047	yes
EIMENGME	MENGM3F MENGM4S MENGM4F MENGM5S	MEng (Hons) Mechanical Engineering	MEng Individual Project (Mechanical) 6ENT2054  MEng Team Project 7ENT2044	yes
EIBENGAU	V3F V4S	BEng (Hons) Automotive Engineering	BEng Individual Project (Automotive) 6ENT2046	yes

EIMENGAU	MENGV3F MENGG4S	MEng (Hons) Automotive Engineering	MEng Individual Project (Automotive) 6ENT2052  MEng Team Project 7ENT2044	yes
EIBENGAU	VMS3F VMS4F	BEng (Hons) Automotive with Motorsport	BEng Individual Project (Automotive) 6ENT2046	yes
EIMENGAU	MENGVMS3FMENGVMS4S	MEng (Hons) Automotive with Motorsport	MEng Individual Project (Automotive) 6ENT2052  MEng Team Project 7ENT2044	yes

## E. Management of Programme & Support for student learning.

### Management

The programme is managed and administered through:

- Dean of School;
- Associate Dean (Academic Quality Assurance);
- Associate Dean (Learning, Teaching and Student Experience);
- Programme Leader who has overall responsibility for the effective operationalization of the programme, and ensuring that academic standards are maintained and an effective student learning experience is provided;
- An Admissions Tutor with specific responsibility for open days and selection;
- Student representatives on programme committees;
- Module Leaders who are responsible for individual modules;
- A designated administrative team to deal with day-to-day administration associated with the modules within the programme.

### Support

Students are supported by:

- An induction week at the beginning of each new academic session;
- Overseas Orientation;
- You will have a Personal Tutor who will be an important point of contact, able to help you gain a good understanding of the School and programme you are studying;
- A substantial Student Centre that provides advice on issues such as finance, University regulations, legal matters, accommodation, and international student support, etc;
- Office of Dean of Students, Student Wellbeing (incorporating Counselling, Mental Health and Disability Support), Chaplaincy, and Day Nursery;
- A versatile on-line inter-active intranet and learning environment;
- Guided student-centred learning on Canvas module sites;
- Access to extensive digital and print collections of information resources;
- Attractive modern study environments in 2 Learning Resources Centres;
- Student Success Hubs, which include a Mathematics Drop-in Centre;
- Medical Centre;
- University Disability Advisors;

- An Equality Office;
  - Careers Enterprise and Employment Services;
  - Hertfordshire Student's Union;
  - Dedicated programme site.
- 

## 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 dedicated programme site
- A Definitive Module Document (DMD) 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/>.

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## G. Entry requirements

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).

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If you would like this information in an alternative format please contact:  
Hutton Hub Student Administration Service [hhaq@herts.ac.uk](mailto:hhaq@herts.ac.uk)

If you wish to receive a copy of the latest External Examiner's Report for the programme, please email a request to [aqo@herts.ac.uk](mailto:aqo@herts.ac.uk)

## MEng/BEng (Hons) Mechanical Engineering: Levels 4 and 5

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding															Intellectual Skills				
	Module Title	Module Code	SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6
Level 4	Engineering Fundamentals	4ENT1098	X						X		X										
	Engineering Mathematics	4ENT1160		X													X				
	Statics and Dynamics	4ENT1161														X	X	X			
	Applied Design	4ENT1163												X					X		
	Electrical Science	4ENT1164	X		X							X				X	X				
	Programming for Engineers	4ENT1165																X			
	Engineering Professionalism	4ENT1166							X	X	X	X	X								
	Introduction to Mechatronic Systems	4ENT1167			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					
	Sustainable Design	5ENT1119			X					X	X			X		X		X	X		
	Dynamics & Vibrations	5ENT1121	X													X	X				
	Structural Mechanics	5ENT1122														X	X	X			
	Introduction and Application of Control Systems	5ENT1124		X												X	X	X			
	Industrial Mechanics	5ENT1125			X					X	X			X		X		X	X		

		Programme Learning Outcomes (as identified in section 1)																								
		Practical Skills																								
	Module Title	Module Code	D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4	
Level 4	Engineering Fundamentals	4ENT1098											X													
	Engineering Mathematics	4ENT1160											X													
	Statics and Dynamics	4ENT1161											X													
	Applied Design	4ENT1163											X												X	X
	Electrical Science	4ENT1164									X	X											X			
	Programming for Engineers	4ENT1165											X													
	Engineering Professionalism	4ENT1166						X						X	X	X						X	X	X		
	Introduction to Mechatronic Systems	4ENT1167	X	X	X	X	X	X			X	X	X						X			X				
Level 5	Fluid Mechanics	5ENT1116																								
	Thermodynamics	5ENT1117																								
	Materials in Engineering	5ENT1118									X															
	Sustainable Design	5ENT1119	X	X	X	X	X	X			X	X	X						X			X	X			
	Dynamics & Vibrations	5ENT1121											X													
	Structural Mechanics	5ENT1122																								
	Introduction and Application of Control Systems	5ENT1124																								
	Industrial Mechanics	5ENT1125	X	X	X	X	X	X			X	X	X						X			X	X			

## BEng (Hons) Mechanical Engineering: Level 6

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding															Intellectual Skills				
	Module Title	Module Code	SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6
Level 6	Industrial Placement	6AAD0015						X													X
	Plant Engineering	6ENT1155	X	X																	
	Thermal Power Systems	6ENT1156	X		X											X					
	Advanced Controller Design and Stability	6ENT1157		X			X										X	X			X
	Analysis of Applied Control Systems	6ENT1158														X	X	X	X		
	Acoustics	6ENT1159	X		X			X													
	Renewable Energy and the Environment	6ENT1160	X	X	X	X															X
	Advanced Mechanics	6ENT1174																X	X	X	
	Lean Manufacturing and Supply Chains	6ENT2014									X	X									
	BEng Individual Project (Mechanical)	6ENT2047	X							X	X	X	X	X	X	X				X	

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
	Module Title	Module Code	D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4
Level 6	Industrial Placement	6AAD0015	X	X	X		X	X			X	X			X	X		X			X	X	X	X	X
	Plant Engineering	6ENT1155											X			X	X								
	Thermal Power Systems	6ENT1156		X																					
	Advanced Controller Design and Stability	6ENT1157																							
	Analysis of Applied Control Systems	6ENT1158											X												
	Acoustics	6ENT1159																							
	Renewable Energy and the Environment	6ENT1160		X																X					
	Advanced Mechanics	6ENT1174																							
	Lean Manufacturing and Supply Chains	6ENT2014								X		X				X	X								
	BEng Individual Project (Mechanical)	6ENT2047	X		X			X						X				X				X		X	X

**MEng (Hons) Mechanical Engineering: Levels 6 and 7**

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

		Programme Learning Outcomes (as identified in section 1)																				
		Knowledge & Understanding															Intellectual Skills					
Module Title		Module Code	SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6	
Level 6	Industrial Placement	6AAD0015						X													X	
	Plant Engineering	6ENT1155	X	X																		
	Thermal Power Systems	6ENT1156	X		X											X						
	Advanced Controller Design and Stability	6ENT1157		X			X										X	X			X	
	Analysis of Applied Control Systems	6ENT1158														X	X	X	X			
	Acoustics	6ENT1159	X		X			X														
	Renewable Energy and the Environment	6ENT1160	X	X	X	X															X	
	Advanced Mechanics	6ENT1174																X	X	X		
	Lean Manufacturing and Supply Chains	6ENT2014									X	X										
	MEng Individual Project (Mechanical)	6ENT2054	X							X	X	X	X	X	X	X					X	
Level 7	CAE & Applications	7ENT1131	X	X			X		X							X	X	X				
	CFD & Applications	7ENT1133	X	X			X		X				X			X	X	X				
	Data Analytics and Artificial Intelligence	7ENT1145		X				X									X			X	X	
	Advanced Materials and Manufacturing	7ENT1146		X													X					
	MEng Team Project	7ENT1164		X		X			X	X		X	X		X	X		X	X		X	
	Engineering Management and Innovation	7ENT2002										X	X									

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
Module Title	Module Code	D 1	D 2	D 3	D 4	D 5	D 6	D 7	D 8	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P1 0	P1 1	G 1	G 2	G 3	G 4	
Industrial Placement	6AAD0015	X	X	X		X	X			X	X			X	X		X			X	X	X	X	X	
Plant Engineering	6ENT1155											X			X	X									
Thermal Power Systems	6ENT1156		X																						
Advanced Controller Design and Stability	6ENT1157																								
Analysis of Applied Control Systems	6ENT1158											X													
Acoustics	6ENT1159																								
Renewable Energy and the Environment	6ENT1160		X															X							
Advanced Mechanics	6ENT1174																								
Lean Manufacturing and Supply Chains	6ENT2014								X		X				X	X									
MEng Individual Project (Mechanical)	6ENT2054	X		X			X	X	X				X				X				X		X	X	
CAE & Applications	7ENT1131	X		X	X														X						
CFD & Applications	7ENT1133	X		X		X																			
Data Analytics and Artificial Intelligence	7ENT1145											X													
Advanced Materials and Manufacturing	7ENT1146											X													
MEng Team Project	7ENT1164		X	X		X		X						X	X	X	X	X	X	X	X			X	
Engineering Management and Innovation	7ENT2002		X		X		X	X																	

## MEng/BEng (Hons) Automotive Engineering: Levels 4 and 5

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

Module Title		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding															Intellectual Skills				
		SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6	
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		
	Electrical Science	4ENT1164	X		X							X			X	X					
	Programming for Engineers	4ENT1165															X				
	Engineering Professionalism	4ENT1166							X	X	X	X	X								
	Introduction to Mechatronic Systems (Automotive)	4ENT2014			X					X	X			X		X		X	X		
Level 5	Automotive Electronics and Control Systems	5ENT1011													X	X	X				
	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			
	Dynamics & Vibrations	5ENT1121	X												X	X					
	Automotive Structures	5ENT1123	X												X	X					
	Automotive Design	5ENT1126			X						X	X			X		X	X			

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
Module Title	Module Code	D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4	
Level 4	Engineering Mathematics	4ENT1160										X													
	Statics and Dynamics	4ENT1161										X													
	Automotive Engineering Fundamentals	4ENT1162										X													
	Applied Design	4ENT1163										X											X	X	
	Electrical Science	4ENT1164									X	X										X			
	Programming for Engineers	4ENT1165										X													
	Engineering Professionalism	4ENT1166						X					X	X	X					X	X	X			
	Introduction to Mechatronic Systems (Automotive)	4ENT2014	X	X	X	X	X	X			X	X	X					X			X				
Level 5	Automotive Electronics and Control Systems	5ENT1011																							
	Fluid Mechanics	5ENT1116																							
	Thermodynamics	5ENT1117																							
	Materials in Engineering	5ENT1118									X														
	Automotive Sustainable Design	5ENT1120	X	X	X	X	X	X			X	X	X					X			X	X			
	Dynamics & Vibrations	5ENT1121											X												
	Automotive Structures	5ENT1123																							
	Automotive Design	5ENT1126	X	X	X	X	X	X			X	X	X					X			X	X			

## BEng (Hons) Automotive Engineering: Level 6

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding															Intellectual Skills				
Module Title		Module Code	SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6
Level 6	Industrial Placement	6AAD0015						X													X
	Vibration, Noise & Vehicle Dynamics	6ENT1066	X	X	X	X	X	X								X	X	X	X		X
	Connected Autonomous Vehicles	6ENT1152	X	X		X		X											X		
	Renewable Energy and the Environment	6ENT1160	X	X	X	X														X	
	Automotive Powertrain Technology	6ENT1161	X		X													X			
	Vehicle Design and Body Engineering	6ENT1175	X	X	X	X	X	X		X							X	X	X	X	X
	Lean Manufacturing and Supply Chains	6ENT2014								X	X										
	BEng Individual Project (Automotive)	6ENT2046	X							X	X	X	X	X	X	X				X	

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
Module Title		Module Code	D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4
Level 6	Industrial Placement	6AAD0015	X	X	X		X	X			X	X			X	X		X			X	X	X	X	X
	Vibration, Noise & Vehicle Dynamics	6ENT1066											X												
	Connected Autonomous Vehicles	6ENT1152		X		X										X			X						
	Renewable Energy and the Environment	6ENT1160		X															X						
	Automotive Powertrain Technology	6ENT1161																	X						
	Vehicle Design and Body Engineering	6ENT1175									X							X							
	Lean Manufacturing and Supply Chains	6ENT2014									X	X				X	X								
	BEng Individual Project (Automotive)	6ENT2046	X		X			X						X				X					X		X

## MEng (Hons) Automotive Engineering: Levels 6 and 7

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

Module Title		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding															Intellectual Skills				
		SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6	
Level 6	Industrial Placement	6AAD0015						X												X	
	Vibration, Noise & Vehicle Dynamics	6ENT1066	X	X	X	X	X	X								X	X	X	X		X
	Connected Autonomous Vehicles	6ENT1152	X	X		X		X											X		
	Renewable Energy and the Environment	6ENT1160	X	X	X	X														X	
	Automotive Powertrain Technology	6ENT1161	X		X													X			
	Vehicle Design and Body Engineering	6ENT1175	X	X	X	X	X	X		X							X	X	X	X	X
	Lean Manufacturing and Supply Chains	6ENT2014									X	X									
	MEng Individual Project (Automotive)	6ENT2052	X							X	X	X	X	X	X	X				X	
Level 7	Data Analytics and Artificial Intelligence	7ENT1145		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			X		X
	MEng Team Project	7ENT1164		X		X			X	X		X	X		X	X		X	X		X
	Engineering Management and Innovation	7ENT2002										X	X								

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
	Module Title	Module Code	D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4
Level 6	Industrial Placement	6AAD0015	X	X	X		X	X			X	X			X	X		X			X	X	X	X	X
	Vibration, Noise & Vehicle Dynamics	6ENT1066											X												
	Connected Autonomous Vehicles	6ENT1152		X		X										X				X					
	Renewable Energy and the Environment	6ENT1160		X																X					
	Automotive Powertrain Technology	6ENT1161																		X					
	Vehicle Design and Body Engineering	6ENT1175								X									X						
	Lean Manufacturing and Supply Chains	6ENT2014								X		X				X	X								
	MEng Individual Project (Automotive)	6ENT2052	X		X			X	X	X				X					X				X		X
Level 7	Data Analytics and Artificial Intelligence	7ENT1145											X												
	Advanced Materials and Manufacturing	7ENT1146											X												
	Advanced FEA and Crashworthiness	7ENT1147			X															X					
	Advanced Powertrain Technology	7ENT1149																							
	MEng Team Project	7ENT1164		X	X		X		X							X	X	X	X	X	X	X	X		X
	Engineering Management and Innovation	7ENT2002		X		X		X	X																

## MEng/BEng (Hons) Automotive Engineering with Motorsport: Levels 4 and 5

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding															Intellectual Skills				
Module Title	Module Code	SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6	
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			
	Electrical Science	4ENT1164	X		X						X				X	X					
	Programming for Engineers	4ENT1165															X				
	Engineering Professionalism	4ENT1166							X	X	X	X	X								
	Introduction to Mechatronic Systems (Automotive)	4ENT2014			X					X	X			X		X		X	X		
Level 5	Automotive Electronics and Control Systems	5ENT1011													X	X	X				
	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			
	Dynamics & Vibrations	5ENT1121	X												X	X					
	Automotive Structures	5ENT1123	X												X	X					
	Motorsport Design	5ENT1127			X					X	X			X	X		X	X			

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
		D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4	
Module Title	Module Code																								
Level 4	Engineering Mathematics	4ENT1160																							
	Statics and Dynamics	4ENT1161																							
	Automotive Engineering Fundamentals	4ENT1162																							
	Applied Design	4ENT1163																				X	X		
	Electrical Science	4ENT1164																				X			
	Programming for Engineers	4ENT1165																							
	Engineering Professionalism	4ENT1166						X							X	X	X				X	X	X		
	Introduction to Mechatronic Systems (Automotive)	4ENT2014	X	X	X	X	X	X			X	X	X						X		X				
Level 5	Automotive Electronics and Control Systems	5ENT1011																							
	Fluid Mechanics	5ENT1116																							
	Thermodynamics	5ENT1117																							
	Materials in Engineering	5ENT1118										X													
	Automotive Sustainable Design	5ENT1120	X	X	X	X	X	X			X	X	X					X		X	X				
	Dynamics & Vibrations	5ENT1121											X												
	Automotive Structures	5ENT1123																							
	Motorsport Design	5ENT1127	X	X	X	X	X	X			X	X	X					X		X	X				

## BEng (Hons) Automotive Engineering with Motorsport: Level 6

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding														Intellectual Skills					
Module Title		Module Code	SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6
Level 6	Industrial Placement	6AAD0015						X													X
	Motorsport Engineering	6ENT1053	X	X																	
	High Performance Engine Design	6ENT1054	X	X																	
	Vibration, Noise & Vehicle Dynamics	6ENT1066	X	X	X	X	X	X								X	X	X	X		X
	Renewable Energy and the Environment	6ENT1160	X	X	X	X														X	
	Vehicle Design and Body Engineering	6ENT1175	X	X	X	X	X	X		X							X	X	X	X	X
	Lean Manufacturing and Supply Chains	6ENT2014								X	X										
	BEng Individual Project (Automotive)	6ENT2046	X							X	X	X	X	X	X	X				X	

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
Module Title		Module Code	D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4
Level 6	Industrial Placement	6AAD0015	X	X	X		X	X			X	X			X	X		X			X	X	X	X	X
	Motorsport Engineering	6ENT1053		X	X			X					X												X
	High Performance Engine Design	6ENT1054		X		X							X												
	Vibration, Noise & Vehicle Dynamics	6ENT1066											X												
	Renewable Energy and the Environment	6ENT1160		X																X					
	Vehicle Design and Body Engineering	6ENT1175									X								X						
	Lean Manufacturing and Supply Chains	6ENT2014									X		X				X	X							
	BEng Individual Project (Automotive)	6ENT2046	X		X			X							X				X				X		X

## MEng (Hons) Automotive Engineering with Motorsport: Levels 6 and 7

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

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (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.

Module Title		Programme Learning Outcomes (as identified in section 1)																			
		Knowledge & Understanding														Intellectual Skills					
		SM1	SM2	SM3	SM4	SM5	SM6	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EA1	EA2	EA3	EA4	EA5	EA6	
Level 6	Industrial Placement	6AAD0015						X												X	
	Motorsport Engineering	6ENT1053	X	X																	
	High Performance Engine Design	6ENT1054	X	X																	
	Vibration, Noise & Vehicle Dynamics	6ENT1066	X	X	X	X	X	X							X	X	X	X		X	
	Renewable Energy and the Environment	6ENT1160	X	X	X	X													X		
	Vehicle Design and Body Engineering	6ENT1175	X	X	X	X	X	X		X						X	X	X	X	X	
	Lean Manufacturing and Supply Chains	6ENT2014								X	X										
	MEng Individual Project (Automotive)	6ENT2052	X						X	X	X	X	X	X				X			
Level 7	Advanced Materials and Manufacturing	7ENT1146		X												X					
	Advanced FEA and Crashworthiness	7ENT1147													X	X	X	X	X	X	
	Data Acquisition	7ENT1148													X	X	X				
	Advanced Aerodynamics	7ENT1150													X			X	X		
	MEng Team Project	7ENT1164		X		X			X	X		X	X		X	X		X	X	X	
Engineering Management and Innovation	7ENT2002										X	X									

		Programme Learning Outcomes (as identified in section 1)																							
		Practical Skills																							
Module Title		Module Code	D1	D2	D3	D4	D5	D6	D7	D8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	G1	G2	G3	G4
Level 6	Industrial Placement	6AAD0015	X	X	X		X	X			X	X			X	X		X			X	X	X	X	X
	Motorsport Engineering	6ENT1053		X	X			X					X												X
	High Performance Engine Design	6ENT1054		X		X							X												
	Vibration, Noise & Vehicle Dynamics	6ENT1066											X												
	Renewable Energy and the Environment	6ENT1160		X																X					
	Vehicle Design and Body Engineering	6ENT1175								X								X							
	Lean Manufacturing and Supply Chains	6ENT2014									X	X				X	X								
	MEng Individual Project (Automotive)	6ENT2052	X		X			X	X	X				X					X				X		X
Level 7	Advanced Materials and Manufacturing	7ENT1146											X												
	Advanced FEA and Crashworthiness	7ENT1147			X															X					
	Data Acquisition	7ENT1148											X												
	Advanced Aerodynamics	7ENT1150																							
	MEng Team Project	7ENT1164		X	X		X		X							X	X	X	X	X	X	X	X		X
	Engineering Management and Innovation	7ENT2002		X		X		X	X																

## KEY TO PROGRAMME LEARNING OUTCOMES

### Knowledge and Understanding

- A1. 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.
- A2. 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.
- A3b. Ability to apply and integrate knowledge and understanding of other engineering disciplines to support a study of mechanical / automotive engineering.
- A3m. 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.
- A4. Awareness of developing technologies related to mechanical / automotive engineering.
  
- A5. A comprehensive knowledge and understanding of mathematical and computational models relevant to mechanical / automotive engineering, and an appreciation of their limitations.
- A6. 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.

### Intellectual Skills

- B1. Understanding of engineering principles and the ability to apply them to analyse of key engineering processes.

### Practical Skills

- C1. Understand and evaluate business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics.
- C2. 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.
- C3b. Work with information that may be incomplete or uncertain and quantify the effect of this on the design.
- C3m. 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. 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. Plan and manage the design process, including cost drivers, and evaluate outcomes.
- C6. Communicate their work to technical and non-technical audiences.
  
- C7. Demonstrate wide knowledge and comprehensive understanding of design processes and methodologies and the ability to apply and adapt them in unfamiliar situations.
- C8. Demonstrate the ability to generate an innovative design for products, systems, components or processes to fulfil new needs.

### Economic, Legal, Social, Ethical and Environmental

- D1b. Understanding of the need for a high level of professional and ethical production in engineering and a knowledge of professional codes of conduct.

- B2. Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.
- B3. Ability to apply quantitative and computational methods in order to solve engineering problems and implement appropriate action.
- B4. Understanding of, and the ability to apply, an integrated or systems approach to solving engineering problems.
- B5. Ability to use fundamental knowledge to investigate new and emerging technologies.
- B6. Ability to extract and evaluate pertinent data and to apply engineering analysis techniques in the solution of unfamiliar problems.

### **Engineering Practice**

- E1. Understanding of contexts in which engineering knowledge can be applied (e.g. operations and management, application and development of technology, etc.)
- E2b. Knowledge of characteristics of particular materials, equipment, processes or products.
- E2m. 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. Ability to apply relevant practical and laboratory skills.

- D1m. 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.
- D2. Knowledge and understanding of the commercial, economic and social context of engineering processes.
- D3b. Knowledge and understanding of management techniques, including project management, that may be used to achieve engineering objectives.
- D3m. 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. Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate.
- D5b. Awareness of the relevant legal requirements governing engineering activities, including personnel, health and safety, contracts, intellectual property rights, product safety and liability issues.
- D5m. 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.
- D6b. Knowledge and understanding of risk issues, including health and safety, environmental and commercial risk, risk assessment and risk management techniques.
- D6m. 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. Understanding of the key drivers for business success, including innovation, calculated commercial risks and customer satisfaction.

### **Transferrable Skills**

- F1. Apply their skills in problem solving, communication, information retrieval, working with others and the effective use of general IT facilities.
- F2. Plan self-learning and improve performance, as the foundation for lifelong learning/CPD.
- F3b. Plan and carry out a personal programmes of work, adjusting where appropriate.
- F3m. Monitor and adjust a personal programme of work on an ongoing basis.

E4. Understanding use of technical literature and other information sources.

E5. Knowledge of relevant legal and contractual issues.

E6. Understanding of appropriate codes of practice and industry standards.

E7. Awareness of quality issues and their application to continuous improvement.

E8. Ability to work with technical uncertainty.

E9. A thorough understanding of current practice and its limitations, and some appreciation of likely new developments.

E10. Ability to apply engineering techniques taking account of a range of commercial and industrial constraints.

E11. Understanding of, and the ability to work in, different roles within an engineering team.

E11m. 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.

F4. Exercise initiative and personal responsibility, which may be as a team member or leader.

## MEng/BEng (Hons) Mechanical Engineering

### Table 3: Development of Graduate Attributes in the Constituent Modules

This map identifies where the Graduate Attributes are delivered in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the development of the Graduate Attributes (ii) a checklist for quality control purposes and (iii) a means to help students monitor their own personal and professional development as the programme progresses.

D = Delivered

	Module Title	Module Code	Professionally Focused	Globally Minded	Sustainability Driven	Digitally capable & confident	Inclusive and collaborative	Evidenced based and Ethical
Level 4	Engineering Fundamentals	4ENT1098	D					D
	Engineering Mathematics	4ENT1160	D					D
	Statics and Dynamics	4ENT1161	D					D
	Applied Design	4ENT1163	D	D			D	
	Electrical Science	4ENT1164	D		D			D
	Programming for Engineers	4ENT1165		D		D		D
	Engineering Professionalism	4ENT1166	D	D	D		D	D
	Introduction to Mechatronic Systems	4ENT1167		D		D	D	
Level 5	Fluid Mechanics	5ENT1116	D		D			D
	Thermodynamics	5ENT1117	D		D			D
	Materials in Engineering	5ENT1118			D			D
	Sustainable Design	5ENT1119	D	D	D	D	D	
	Dynamics and Vibrations	5ENT1121	D					D
	Structural Mechanics	5ENT1122	D					D
	Introduction and Applications of Control Systems	5ENT1124				D		D
	Industrial Mechanics	5ENT1125	D	D		D	D	
	Placement Year	6AAD0015	D					D
	Year Abroad	6ENT0001		D				
	Semester Abroad	6ENT1051		D				

Level 6	Lean Manufacturing and Supply Chains	6ENT2014	D	D		D	D	
	Advanced Mechanics	6ENT1174	D					D
	Acoustics	6ENT1159	D					D
	Renewable Energy and the Environment	6ENT1160	D	D	D			D
	Plant Engineering	6ENT1155	D					
	Thermal Power Systems	6ENT1156	D		D			D
	Advanced Controller and Stability	6ENT1157	D					D
	Analysis of Applied Control Systems	6ENT1158	D			D		D
	BEng Individual Project (Mechanical)	6ENT2047	D	D	D	D		D
	MEng Individual Project (Mechanical)	6ENT2054	D	D	D	D		D
Level 7	Engineering Management and Innovation	7ENT2002	D	D			D	
	CFD & Applications	7ENT1133	D			D		D
	Data Analytics and Artificial Intelligence	7ENT1145	D			D		D
	Advanced Materials and Manufacturing	7ENT1146	D		D			D
	CAE & Applications	7ENT1131	D			D		D
MEng Team Project	7ENT2044	D				D	D	

## MEng/BEng (Hons) Automotive Engineering – MEng/BEng (Hons) Automotive Engineering with Motorsport

### Table 3: Development of Graduate Attributes in the Constituent Modules

This map identifies where the Graduate Attributes are delivered in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the development of the Graduate Attributes (ii) a checklist for quality control purposes and (iii) a means to help students monitor their own personal and professional development as the programme progresses.

D = Delivered

	Module Title	Module Code	Professionally Focused	Globally Minded	Sustainability Driven	Digitally capable & confident	Inclusive and collaborative	Evidenced based and Ethical
Level 4	Automotive Engineering Fundamentals	4ENT1162	D					D
	Engineering Mathematics	4ENT1160	D					D
	Statics and Dynamics	4ENT1161	D					D
	Applied Design	4ENT1163	D	D			D	
	Electrical Science	4ENT1164	D		D			D
	Programming for Engineers	4ENT1165		D		D		D
	Engineering Professionalism	4ENT1166	D	D	D		D	D
	Introduction to Mechatronic Systems (Automotive)	4ENT2014		D		D	D	
Level 5	Fluid Mechanics	5ENT1116	D		D			D
	Thermodynamics	5ENT1117	D		D			D
	Materials in Engineering	5ENT1118			D			D
	Automotive Sustainable Design	5ENT1120	D	D	D	D	D	
	Dynamics and Vibrations	5ENT1121	D					D
	Structural Mechanics	5ENT1122	D					D
	Introduction and Applications of Control Systems	5ENT1124				D		D
	Automotive Design	5ENT1126	D	D		D	D	
	Motorsport Design	5ENT1127	D	D		D	D	
Placement Year	Placement Year	6AAD0015	D					D
	Year Abroad	6ENT0001		D				
	Semester Abroad	6ENT1051		D				

Level 6	Lean Manufacturing and Supply Chains	6ENT2014	D	D		D	D	
	Vehicle Body and Engineering Design	6ENT1175				D	D	D
	Connected Autonomous Vehicles	6ENT1152		D		D		D
	Renewable Energy and the Environment	6ENT1160	D	D	D			D
	Vibration, Noise, and Vehicle Dynamics	6ENT1066	D					
	Automotive Powertrain Technology	6ENT1161	D		D			D
	Motorsport Engineering	6ENT1053	D			D		D
	High Performance Engine Design	6ENT1054	D		D			D
	BEng Individual Project (Automotive)	6ENT2046	D	D	D	D		D
	MEng Individual Project (Automotive)	6ENT2052	D	D	D	D		D
Level 7	Engineering Management and Innovation	7ENT2002	D	D			D	
	Advanced FEA and Crashworthiness	7ENT1147	D			D		D
	Data Analytics and Artificial Intelligence	7ENT1145	D			D		D
	Data Acquisition	7ENT1148				D	D	
	Advanced Materials and Manufacturing	7ENT1152	D		D			D
	Advanced Aerodynamics	7ENT1150	D			D		D
	Advanced Powertrain Technology	7ENT1149	D			D		
	MEng Team Project	7ENT2044	D	D			D	D

## Section 2

### Programme management

<b>Relevant QAA subject benchmarking statements</b>	Mechanical Engineering
<b>Type of programme</b>	Undergraduate
<b>Date of validation/last periodic review</b>	November 19
<b>Date of production/ last revision of PS</b>	March 23
<b>Relevant to level/cohort</b>	Level 4 entering September 2023
<b>Administrative School</b>	School of Physics, Engineering and Computer Science
<b>Relevant QAA subject benchmarking statements</b>	Mechanical Engineering

**Table 4 Course structure**

Course Code
EIBENGAU

Course details			
Course Code	Course Description	HECOS	UCAS
EIBENGAU	BEng (Hons) Automotive Engineering	100201	H330
EIMENGAU	MEng (Hons) Automotive Engineering	100201	H341
EIBENGAU	BEng (Hons) Automotive with Motorsport	100201	H335
EIMENGAU	MEng (Hons) Automotive with Motorsport	100201	H336
EIBENGAME	BEng (Hons) Mechanical Engineering	100190	H300
EIMENGME	MEng (Hons) Mechanical Engineering	100190	H301