

Programme specification

(Notes on how to complete this template are provide in Annexe 2)

1. Overview/ factual information

Programme/award title(s)	Foundation Degree in Engineering – Motorsport Engineering
Teaching Institution	South Eastern Regional College
Awarding Institution	The Open University (OU)
Date of first OU validation	11/05/2022
Date of latest OU (re)validation	N/A
Next revalidation	
Credit points for the award	240
UCAS Code	N/A
HECoS Code	N/A
LDCS Code (FE Colleges)	N/A
Programme start date and cycle of starts if appropriate.	01/09/2022
Underpinning QAA subject benchmark(s)	Engineering
Other external and internal reference points used to inform programme outcomes. For apprenticeships, the standard or framework against which it will be delivered.	Network links with motorsport engineering companies and personnel, in NI and in GB, along with links in HE Colleges and Universities in GB offering motorsport programmes, have helped shape this programme. The skills set required for motorsport engineers in such companies will be developed in students on this programme. This motorsport network includes personnel from World Rally Car producers and Formula1 race car teams.
Professional/statutory recognition	N/A
For apprenticeships fully or partially integrated Assessment.	N/A
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	Full-time, Face to Face
Duration of the programme for each mode of study	2 years

Dual accreditation (if applicable)	N/A
Date of production/revision of this specification	March 2022

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in student module guide(s) and the students handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

2.1 Educational aims and objectives

The Foundation Degree in Motorsport Engineering is designed to fulfil the following aims:

- To provide a programme of study that will equip individuals with the skills, knowledge and understanding appropriate to employment within the global motorsport engineering sector.
- To provide industrial experience to build student skills and prepare them for employment and further study.
- To support and develop the knowledge pool of motorsport engineers by providing graduates with an awareness of their ethical, social, cultural, environmental, health and safety, and wider professional responsibilities.
- To contribute to wealth creation and social prosperity.
- To provide a programme of study that will equip individuals with the skills necessary to develop complex concepts into reality within the Motorsports industry.
- To develop creative, innovative, and sustainable solutions to motorsport problems.
- To develop problem solving skills using analytical and technical skills.
- To develop skills in teamwork and effective communication.
- To allow progression to an Honours Degree in this, or a related area.

On completion of the course it is envisaged that students will:

- Have acquired a high level of motorsport engineering skills and relevant industrial exposure to allow them to gain employment within the motorsport sector.
- Understand the relationship between key areas of motorsport technologies including engine technologies, chassis design, emerging technologies and sustainability issues.
- Effectively plan, present and manage motorsport projects
- Identify the opportunities available to them upon completion of the course including life-long learning

2.2 Relationship to other programmes and awards

(Where the award is part of a hierarchy of awards/programmes, this section describes the articulation between them, opportunities for progression upon completion of the programme, and arrangements for bridging modules or induction)

SERC currently offers a Level 3 in Motorsport Engineering programme. It is expected that the student cohorts which currently enrol on the Level 3 programme will be attracted by the opportunity to study locally for a university accredited Foundation Degree in Motorsport Engineering.

The programme also presents a potential opportunity for learners to progress to level 6 / degree study with other higher education institutions. Current provision at this level is only available outside Northern Ireland.

2.3 For Foundation Degrees, please list where the 60 credit work-related learning takes place. For apprenticeships an articulation of how the work based learning and academic content are organised with the award.

There will be a 40-credit work-based learning module in year 2 of the programme.

Project Based Learning is the fundamental delivery strategy within SERC. This enables learners to work on real world scenarios throughout their programme of study and provides an industry focus through their other modules on the programme, especially the modules for Engineering Practical Applications 1 and 2 (20 credits each).

2.4 List of all exit awards

Certification of Higher Education in Engineering – Motorsport Engineering

Foundation Degree in Engineering – Motorsport Engineering

3. Programme structure and learning outcomes

(The structure for any part-time delivery should be presented separately in this section.)

Programme Structure - LEVEL 4 (Full time)					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	Semester runs in
Engineering Practical Applications 1	20			No	1
Engine and Hybrid Technology	20			No	1
Engineering Mathematics	20			Yes	1/2
Engineering Science	20			No	1/2
Engineering Practical Applications 2	20			No	2
Vehicle Electronics and Diagnostic Techniques	20			No	2

Intended learning outcomes at Level 4 are listed below:

<u>Learning Outcomes – LEVEL 4</u>	
3A. Knowledge and understanding	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>A1 use essential technical theories and concepts which underpin motorsport engineering methodologies</p> <p>A2 apply knowledge of key motorsport chassis, engine/hybrid and electric/electronic systems in the context of motorsport engineering</p> <p>A3 demonstrate a knowledge of key science and mathematical skills used in engineering to process information and apply methods and statistical techniques to analyse data in the motorsport industry</p> <p>A4 show an awareness of professional, moral, ethical and legal issues which underpin the motorsport industry</p>	<p>Lectures will be used to disseminate the content of the programme. An interactive teaching style will be used.</p> <p>Practical exercises and workshop activity will support the lectures by providing time to develop understanding of motorsport engineering concepts by working on problems and set exercises. This work will take the form of inspection and testing activities as well as computer-based learning using Moodle.</p> <p>Students will be directed to read relevant parts of the recommended textbooks and material provided on the Moodle site. They will be encouraged to complete exercises and solve problems from the recommended texts.</p> <p>Tutorials will provide opportunities for individuals to be given support in areas which they are experiencing difficulties.</p> <p>The programme is delivered using blended learning.</p>

3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>B1 use subject specific facts, principles and concepts</p> <p>B2 interpret technical data and/or text in developing engineering solutions</p> <p>B3 develop problem solving skills using analytical and technical skills</p> <p>B4 assess and evaluate motorsport engineering systems</p>	<p>Lectures, practical exercises, interactive teaching (as above). Students will be assessed using appropriate assignments, projects and tasks.</p>
3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>C1 follow safe working practices in practical / motorsport workshop situations</p> <p>C2 develop practical skills to underpin industrial practice in motorsport engineering</p> <p>C3 use appropriate formats to communicate information</p>	<p>Lectures, practical exercises, interactive teaching (as above). Motorsport and engineering workshops will be used effectively to maximise the development of practical skills and to facilitate teamwork. Practical assessed tasks will be incorporated suitably in the modules of study.</p>

3C. Practical and professional skills	
<p>C4 analyse and develop technical systems to solve motorsport engineering problems</p> <p>C5 reflect on own practice and as an effective team member</p> <p>C6 show an awareness of the qualities necessary for employment in situations requiring personal responsibility and decision-making skills</p>	
3D. Key/transferable skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>D1 make effective use IT, numeracy and literacy skills</p> <p>D2 use appropriate data and information to solve problems in routine situations</p> <p>D3 develop an awareness of own ability and limitations and the willingness to seek appropriate support when required</p> <p>D4 develop skills in teamwork and effective communication and identify personal development needs</p>	<p>Preparation for coursework, assignments, presentations and practical activities will develop these transferable skills</p>

[Certificate of Higher Education in Motorsport Engineering]

<u>Programme Structure - LEVEL 5 (Full Time)</u>					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	Semester runs in
Motorsport Powertrain	20			No	1
Motorsport Management and Logistics	20			No	1/2
Engineering Design	20			No	1/2
Work-Based Learning / Project	40			No	1/2
Chassis Dynamics and Data Acquisition	20			No	2

Intended learning outcomes at Level 5 are listed below:

<u>Learning Outcomes – LEVEL 5</u>	
3A. Knowledge and understanding	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>A1 apply theories and concepts which underpin the development and implementation of motorsport performance solutions</p> <p>A2 develop and evaluate selected design techniques in the development of motorsport solutions</p> <p>A3 design, apply and evaluate test strategies in motorsport vehicle performance set-up and engineering solutions</p>	<p>Lectures will be used to disseminate the content of the programme. An interactive teaching style will be used.</p> <p>Practical exercises will support the lectures by providing time to develop understanding of motorsport engineering concepts by working on problems and set exercises. This work will take the form of inspection and testing activities as well as computer-based learning using Moodle.</p> <p>Students will be directed to read relevant parts of the recommended textbooks and material provided on the Moodle site. They will be</p>

<u>Learning Outcomes – LEVEL 5</u>	
3A. Knowledge and understanding	
A4 critically analyse current developments in motorsport vehicle technologies	encouraged to complete exercises and solve problems from the recommended texts.
A5 apply knowledge of professional, moral, ethical and legal issues which underpin the motorsport industry	Tutorials will provide opportunities for individuals to be given support in areas which they are experiencing difficulties. The programme is delivered using blended learning.
3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
B1 research and assess subject specific facts, theories, prototypes, principles and concepts	Lectures, practical exercises, interactive teaching (as above). Students will be assessed using appropriate assignments, projects and tasks.
B2 critically assess and evaluate motorsport vehicle performance systems	
B3 identify and interpret relevant data and/or text and evaluate information to develop complex concepts in the motorsport industry	
B4 evaluate the appropriateness of different approaches to solving problems	

3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>C1 assess, develop, review and use safe working practices in practical situations</p> <p>C2 communicate technical information to users, management and academics</p> <p>C3 specify, design and manage the development of systems to solve motorsport problems in a business or industrial setting</p> <p>C4 work effectively as a member of a team and reflect on own practice and that of others to develop creative, innovative and sustainable solutions to motorsport problems</p> <p>C5 demonstrate the practical skills to underpin industrial practice in the development of engineering systems and the qualities necessary for employment in situations requiring personal responsibility and decision-making skills</p>	<p>Lectures, practical exercises, interactive teaching (as above). Motorsport and engineering workshops will be used effectively to maximise the development of practical skills and to facilitate teamwork.</p>

3D. Key/transferable skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>D1 demonstrate effective use of IT, numeracy and literacy skills to a variety of audiences</p> <p>D2 identify, source, evaluate and use appropriate data and information to solve problems in both familiar and unfamiliar situations</p> <p>D3 reflect on own ability and limitations and identify and secure appropriate support when required</p> <p>D4 use industrial experience to build skills portfolio and identify personal development needs, the need for continuous professional development and begin to plan a career path</p> <p>D5 identify wider professional responsibilities relating to ethical, social, cultural, environmental and health & safety skills and time management, organisational skills and enterprise skills</p>	<p>Preparation for coursework, assignments, presentations and practical / workbased activities will develop these transferable skills</p>

[Foundation Degree in Engineering – Motorsport Engineering]

Assessment Schedule Matrix – Year 1

Year / Sem	Level / Credit	Module Title	Week of Semester																																																							
			Semester 1															Semester 2																																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15																										
1/1	4/20	Engineering Practical Applications 1																																																								
1/1	4/20	Engine and Hybrid Technology																																																								
1/1&2	4/20	Engineering Mathematics																																																								
1/1&2	4/20	Engineering Science																																																								
1/2	4/20	Engineering Practical Applications 2																																																								
1/2	4/20	Vehicle Electronics and Diagnostic Techniques																																																								

Assessment Schedule Matrix – Year 2

Year / Sem	Level / Credit	Module Title	Week of Semester																																														
			Semester 1															Semester 2																															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15																	
2/1	5/20	Motorsport Powertrain							CW1 (50%)										CW2 (50%)																														
2/1&2	5/20	Motorsport Management and Logistics																CW1 (50%)																		CW2 (50%)													
2/1&2	5/20	Engineering Design																CW1 (30%)									CW2 (30%)												CW3 (40%)										
1/1&2	5/40	Work based Learning / Project																																			CW1 (80%)			CW1 (20%)									
2/2	5/20	Chassis Dynamics and Data Acquisition																																			CW1 (70%)										CW2 (30%)		

4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive features such as:**
 - where in the structure above a professional/placement year fits in and how it may affect progression
 - any restrictions regarding the availability of elective modules
 - where in the programme structure students must make a choice of pathway/route
- **Additional considerations for apprenticeships:**
 - how the delivery of the academic award fits in with the wider apprenticeship
 - the integration of the 'on the job' and 'off the job' training
 - how the academic award fits within the assessment of the apprenticeship

The modes of delivery for the course are full-time (2 academic years, 4 semesters). The course is based on 120 credits of study per year (2 semesters) and modules at level 5 build on the knowledge and skills students learn and develop at Level 4. The division of time, between lectures, practical activity and independent study, within a module can vary - for each module, apart from the Work Based Learning module, students are expected to spend typically 200 hours of study in total. Students will have access to dedicated motorsport engineering workshops where they will develop skills using motorsport industry standard equipment and race/rally cars some of which are used in motorsport competitions such as the NI Sprint Championship.

Integral to the Foundation Degree is Work Based Learning. Cognisance of this has been taken in the design of the Foundation Degree programme by including a Work Based Learning module. This module is completed through an industrial placement which affords students the opportunity to gain invaluable experience of a motorsport working environment.

In addition to providing students with experience of industrial working practices, this module also provides an opportunity to relate and integrate these skills with the academic content of their course. Each student completes a report detailing the learning achieved during the placement and its relevance to future employment and makes a formal presentation of this to the course team.

Students take the Work Based Learning module in Year 2. When agreeing the work placement, the placement organisation will nominate an industrial supervisor and a member of the course team will act as placement tutor to the student. A mechanism, (the College Business Engagement and Student Tracking (BEST) system outlined below), will be put in place to allow the student and the industrial supervisor to have effective communication with the placement tutor, who will also make at least three visits to the placement during the placement period. Through the tutorial system at Level 4, students are introduced to the concept of work placement and at this point are guided to actively seek a suitable work placement. As a result, it is normal that students find a placement in their own locality. Where a student is unable to find a suitable placement, the placement tutor will provide options from a bank of employers in the local area. Details of these are available to students on the BEST system. All placements must be formally confirmed by the host organisation prior to

commencement of the Work Based Learning module. An on-going consultation process will occur with the student in tutorials to ensure a suitable placement has been selected.

No elective modules or pathway/routes are available from this programme.

5. Support for students and their learning.

(For apprenticeships this should include details of how student learning is supported in the work place)

Students and their learning are supported in a number of ways:

- A comprehensive programme induction for new students.
- Student programme and module handbooks are placed on the VLE (MOODLE) for students to reference at any time from any location.
- An HE Student Handbook for the academic year is available on the college website and VLE highlighting internal processes, codes of conduct, academic practices, support services and general college information for the learner.
- Assignment of students to a studies advisor and a year tutor.
- Access for students to the Course Director and academic staff through an 'office hours' system.
- Student representation on course committees and HE Review Boards.
- Opportunity to address general concerns through the student/staff consultative committee.
- Facilities and assistance offered by the library and computer services.
- Student e-mail accounts and full access to the College VLE (MOODLE).
- The Student Support Hub provide help in the field of customer service, young career support, health, counselling and guidance, careers, finance, learning support, pastoral care, library and resource centre and Students Union.
- Dedicated Work Placement department providing advice and support through the complete process for securing and undertaking Work Based Learning.
- Provision of Dedicated Work Based Learning tutor.
- The College has procedures for assessment of, and for making arrangements to meet the additional support needs of students with disabilities. These procedures follow DSA guidance.
- Timetabled tutorial sessions on a weekly basis will be provided for all students.
- College email system accessible for student to contact tutors for support and advice in and out of office hours.
- College Microsoft Teams system accessible for students to contact tutors for

support and advice whilst working remotely.

- The colleges operations a robust complaints and appeals process that the students can avail of as required.

6. Criteria for admission

(For apprenticeships this should include details of how the criteria will be used with employers who will be recruiting apprentices.)

The majority of students will enter the course with academic or vocational A-levels or a Level 3 vocational qualification in engineering equivalent to 64 UCAS Tariff points or higher. SERC currently delivers a Level 3 programme in Motorsport Engineering which will act as feeder course for the Foundation Degree.

All applicants will also be required to hold GCSE Mathematics Grade C or above, GCSE English Language Grade C or above or a University Equivalent for either plus a minimum of two other GCSE's at grade C or above. Candidates may have similar or equivalent qualifications, or Access qualifications.

Applicants who have already attained a qualification equivalent to or similar in content to any of the Foundation degree modules will be eligible to be considered for Accreditation of Prior Achievement (APA) at the interview stage, prior to entry on the course, in accordance with the College's Accreditation of Prior Experiential Learning (APEL) scheme. In such cases the onus will be on the student to present relevant evidence to the Course Director so that assessment of prior learning may be carried out by the course team, in accordance with the policies and procedures contained in the College's Quality Assurance Manual. In certain cases, students may be exempted from individual modules.

7. Language of study

The programme will be offered in English

8. Information about non-OU standard assessment regulations (including PSRB requirements)

None

9. For apprenticeships in England End Point Assessment (EPA).

(Summary of the approved assessment plan and how the academic award fits within this and the EPA)

N/A

10. Methods for evaluating and improving the quality and standards of teaching and learning.

In line with QAA Foundation Degree Characteristics Statement (2020) the following processes are in place:

- Cross marking, internal moderation and external examining processes used to ensure validity and reliability of assessment process.
- The Course Committee considers student feedback from each module.
- Student/staff consultative meetings provide the means of highlighting any difficulties, relating to the course, experienced by the cohort.
- Annual Course Review procedures consider quantitative and qualitative feedback from each course within a subject area.
- Students are given the opportunity to be represented at staff / student consultation meetings.
- Staff teaching performance is monitored annually
- Staff appraisal is carried out on a two-year cycle with attention given to the development needs of the individual staff member.
- The college annually complete a Self-Evaluation and Quality Improvement Plan for each programme following the Awarding Organizations' requirements.
- The College has a Staff Development Programme, which facilitates specific training/development for staff.
- All staff are encouraged to complete Information & Learning Technology qualifications.
- Views of External Examiners are considered as part of the quality processes and Awarding Organizations' reporting mechanisms are followed.

- Informal views and formal written feedback is considered from Employers.
- Student performance data and career progression is annually monitored.
- The Course Director attends annual meetings and workshops as provided by either the Awarding Organisation or Validated Institute. This also helps to regulate codes of practice and course management procedures.

10. Changes made to the programme since last (re)validation

N/A

Annexe 1: Curriculum map

Annexe 2: Notes on completing the OU programme specification template

Annexe 1 - Curriculum map

This table indicates which study units assume responsibility for delivering (shaded) and assessing (✓) particular programme learning outcomes.

Level	Study module/unit	Programme outcomes																															
		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7	
4	Engineering Practical Applications 1	✓	✓							✓	✓	✓	✓					✓	✓	✓	✓	✓	✓			✓	✓	✓	✓				
	Engine and Hybrid Technology	✓	✓		✓					✓	✓	✓	✓					✓	✓	✓						✓	✓	✓					
	Engineering Mathematics	✓		✓						✓	✓	✓								✓	✓					✓	✓						
	Engineering Science	✓		✓						✓	✓	✓						✓		✓						✓	✓						
	Engineering Practical Applications 2	✓	✓	✓						✓	✓	✓	✓					✓	✓	✓	✓	✓	✓				✓	✓	✓	✓			
	Vehicle Electronics and Diagnostic Techniques	✓	✓							✓	✓		✓					✓	✓	✓	✓		✓			✓	✓						

Level	Study module/unit	Programme outcomes																															
		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7	
5	Motorsport Powertrain	✓	✓	✓	✓	✓				✓	✓	✓	✓					✓	✓	✓	✓	✓			✓	✓							
	Motorsport Management and Logistics	✓	✓			✓				✓		✓	✓						✓	✓	✓	✓	✓			✓	✓						
	Engineering Design	✓	✓			✓				✓		✓	✓							✓	✓	✓	✓			✓	✓			✓			
	Work-Based Learning / Project	✓	✓			✓				✓		✓	✓					✓	✓	✓	✓	✓				✓	✓	✓	✓	✓			
	Chassis Dynamics and Data Acquisition	✓	✓	✓	✓					✓	✓	✓	✓					✓	✓	✓						✓	✓						

Annexe 2: Notes on completing programme specification templates

- 1 - This programme specification should be mapped against the learning outcomes detailed in module specifications.
- 2 – The expectations regarding student achievement and attributes described by the learning outcome in section 3 must be appropriate to the level of the award within the **QAA frameworks for HE qualifications**: <http://www.qaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx>
- 3 – Learning outcomes must also reflect the detailed statements of graduate attributes set out in **QAA subject benchmark statements** that are relevant to the programme/award: <http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx>
- 4 – In section 3, the learning and teaching methods deployed should enable the achievement of the full range of intended learning outcomes. Similarly, the choice of assessment methods in section 3 should enable students to demonstrate the achievement of related learning outcomes. Overall, assessment should cover the full range of learning outcomes.
- 5 - Where the programme contains validated **exit awards** (e.g. CertHE, DipHE, PGDip), learning outcomes must be clearly specified for each award.
- 6 - For programmes with distinctive study **routes or pathways** the specific rationale and learning outcomes for each route must be provided.
- 7 – Validated programmes delivered in **languages other than English** must have programme specifications both in English and the language of delivery.