

Programme Specification

Programme Title: BSc (Hons) in Motorsport Technology

Awarding Institution:	The University of Bolton		
Teaching Institution:	University of Bolton		
Division and/or Faculty/Institute:	Engineering, Sports and Sciences Academic Group		
Professional accreditation	Professional body	Professional body URL	Status of graduates
	IMechE	www.imeche.org/Home	
Final award(s):	BSc (Honours)		
Interim award(s)			
Exit or Fallback award(s)	Diploma of Higher Education in Motorsport Technology Certificate of Higher Education in Motorsport Technology		
Programme title(s)	Motorsport Technology		
UCAS Code	H334		
JACS Code	H330		
University Course Code(s)	ENG000		
QAA Benchmark Statement(s)	<i>UK Standards for Professional Engineering Competences (UK-SPEC): The Accreditation of Higher Education Programmes (2010).</i>		
Other internal and external reference points	<p>The QAA subject benchmark statements are those define the Engineering Council as the academic standards expected of graduates with an engineering' BSc degree. QAA Academic Infrastructure, including the Framework for Higher Education Qualifications and the Code of Practice.</p> <p>UK Quality Code for Higher Education University of Bolton awards framework</p>		
Language of study	English		

Mode of study and normal Period of study	BSc (Hons) Full Time – 3 years Part Time – 4.5 years
Admissions criteria Subject to satisfactory UCAS points including Mathematics and Science.	
Additional admissions matters Non-standard and mature student entry to Part-Time or Full-Time: <ul style="list-style-type: none"> - Certificate (HND/C) will be considered for direct entry to HE5 Level given good results in Level 4 Mathematics and Science. - Engineering related work experience and interview (essential for those applying with non-standard entry routes qualifications). - Foundation Degree may be considered for entry to HE5 <p>Interviews or informal discussions may be used for Part Time entry students to assess suitability or entry point onto the programme.</p> <p>Include English Language requirements for overseas students specified as a minimum IELTS score of 6.0 (or equivalent).</p>	
Fitness to practise declaration Not applicable	

Aims of the programme

This BSc (Hons) in Motorsport Technology (PT/FT) route is one of two automotive engineering routes. The broad aims of these programmes are to:

- Educate and develop prospective engineers to the academic requirements (UK Standards for Professional Engineering Competences (UK-SPEC)) leading towards Incorporated Engineer status with an appropriate professional body.
- Prepare prospective engineers for meaningful professional employment in the Motorsport/Automotive sector of industry.
- Provide a programme to achieve delivery efficiency and integration of subject matter. Hence, this Motorsport BSc (Hons) route is integrated with the Automotive BEng (Hons) route.
- Deliver an inclusive learning environment, this provides for the diverse needs of international/home students and develops social skills and consideration of ethical responsibility within the classroom.
- Be aware of the financial, moral, legal, economic, environmental and cultural constraints in which they operate
- Complete a programme of professional development Planning and training (PDP) and committed to and prepared for lifelong learning.

In doing so, the programme aims to:

- Provide a real world working environment through our motorsport partners so that work-related learning can be achieved
- Use integrated engineering elements in the degree which focus on a practical approach.
- Incorporate health and safety, environmental issues and sustainability
- Ensure content matches the needs and developments in modern industry and society
- Develop application and modelling skills and the use of those skills as well as providing an environment so that knowledge and understanding can take place.

Distinctive features of the programme

The Centre for Advanced Performance Engineering, is offering an exciting chance to learn from real motorsport professionals and enhance the learning environment by placing emphasis on real World practices and problems within motorsport. The BSc Motorsport Technology course produces incorporated motorsport and automotive engineers and importantly strives to offer a practical approach to engineering; students work on real projects and encounter real problems associated with motorsport, they use state of the art testing facilities and/or simulation software, used within motorsports to deliver their finding and solutions.

Students will have the unique prospect of working alongside some of the best motorsport engineers in the country and those who excel; an opportunity to work with and get involved with RLR race team who regularly race at places such as Le Mans.

Distinctive features are:

- Students will participate in a real motorsport environment and have the opportunity to work with our motorsport partners.
- Open access and skills development using industry standard software; CAD/CAM/CAE such as CATIA, Solid Works and simulation of formulas (MATLAB) for modelling and applications purposes.
- Individual and group Industrial projects involving our new performance testing and manufacturing laboratories.
- A number of integrating application engineering themes, such as motorsport operations, Dynamics using Computer Fluid Dynamics (CFD) and advanced composites using Finite Element Analysis (FEA) simulation, and Telemetry & analysis.
- A purpose-designed route ready for accreditation with an appropriate professional body for routes towards satisfying IEng registration that is internationally recognised.
- Project-based learning (PBL), either in groups or as individuals, linked to Personal development plan (ePDP).

PROGRAMME LEARNING OUTCOMES

UK-SPEC General Learning Outcomes:
On completion of this programme you will:

UK-SPEC
coding

Knowledge and Understanding

Be able to demonstrate their knowledge and understanding of essential facts, concepts, theories and principles of their engineering discipline, and its underpinning science and mathematics		K1
Have underpinning scientific and mathematical knowledge and understanding to enable the application of engineering principles within existing technology to future engineering problems and processes	K1i	
Have an appreciation of the wider multidisciplinary engineering context and its underlying principles		K2
Appreciate the social, environmental, ethical, economic and commercial considerations affecting the exercise of their engineering judgement		K3

Intellectual Abilities

Be able to apply appropriate quantitative science and engineering tools to the analysis of problems		C1
Be able to support know-how when applying technology to future engineering problems and processes	C1i	
Be able to demonstrate creative and innovative ability in the synthesis of solutions and in formulating design		C2
Be able to comprehend the broad picture and thus work with an appropriate level of detail		C3

Practical Skills

Possess practical engineering skills acquired through, for example, work carried out in laboratories and workshops, in industry through supervised work experience, in individual and group project work, in design work and in the development and use of computer software in design, analysis and control		PS1
Be able to apply engineering principles within existing technology to future engineering problems and processes	PS1i	
Provide evidence of group working and participation in a major project is expected		PS2

Transferrable Skills

Have developed transferable skills that will be of value in a wide range of situations		T1
Demonstrate the QCA Higher Level Key Skills and include problem solving, communication, and working with others, as well as the effective use of general IT facilities and information retrieval skills		T2
Include planning self-learning and improving performance, as the foundation for lifelong learning/CPD		T3

UK-SPEC General Learning Outcomes:
On completion of this programme you will:

UK-SPEC
coding

Underpinning Science and Mathematics and associated engineering disciplines

Have knowledge and understanding of scientific principles and methodology necessary to underpin their education in mechanical and related engineering disciplines, to enable appreciation of its scientific and engineering context and to support their understanding of future developments and technologies.		US1
Have knowledge and understanding of the scientific principles underpinning relevant technologies and their evolution	US1i	
Have knowledge and understanding of mathematical principles necessary to underpin their education in mechanical and related engineering disciplines and to enable them to apply mathematical methods, tools and notations proficiently in the analysis and solution of engineering problems		US2
Have knowledge and understanding of mathematics necessary to support application of key engineering principles	US2i	
Be able to apply and integrate knowledge and understanding of other engineering disciplines to support the study of mechanical and related engineering disciplines		US3

Engineering Analysis

Understand engineering principles and the ability to apply them to analyse key engineering processes.		E1
Be able to monitor, interpret and apply the results of analysis and modelling in order to bring about continuous improvement	E1i	
Be able to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques		E2
Be able to use the results of analysis to solve engineering problems, apply technology and implement engineering processes.	E2i	
Be able to apply quantitative methods and computer software relevant to mechanical and related engineering disciplines, to solve engineering problems		E3
Be able to apply quantitative methods and computer software relevant to mechanical engineering technology, frequently within a multidisciplinary context.	E3i	
Understand and able to apply a systems approach to engineering problems		E4
Be able to apply a systems approach to engineering problems through know-how of the application of the relevant technologies	E4i	

Design

Be able to investigate and define a problem and identify constraints including environmental and sustainability limitations, health and safety and risk assessment issues		D1
Be able to define a problem and identify constraints	D1i	
Understand customer and user needs and the importance of considerations such as aesthetics		D2
Be able to design solutions according to customer and user needs	D2i	
Be able to identify and manage cost drivers		D3
Use creativity to establish innovative solutions		D4
Use creativity and innovation in a practical context	D4i	
Ensure fitness for purpose for all aspects of the problem including production, operation, maintenance and disposal		D5
Ensure fitness for purpose (including operation, maintenance, reliability etc)	D5i	
Manage the design process and evaluate outcomes		D6
Adapt designs to meet their new purposes or applications	D6i	

Economic, social and environmental context

Have knowledge and understanding of commercial and economic context of engineering processes		S1
Have knowledge of management techniques which may be used to achieve engineering objectives within that context		S2
Understand the requirement for engineering activities to promote sustainable development		S3
Be Aware of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues		S4
Understand the need for a high level of professional and ethical conduct in engineering		S5

Engineering Practice

Have knowledge of characteristics of particular equipment, processes or products		P1
Understand and able to use relevant equipment, tools, processes, or products	P1i	
Have engineering workshop and laboratory skills		P2
Have knowledge and understanding of engineering workshop and laboratory practice	P2i	
Understand the contexts in which engineering knowledge can be applied (e.g. operations and management, technology, development, etc)		P3
Have knowledge of contexts in which engineering knowledge can be applied (e.g. operations and management, application and development of technology etc)	P3i	
Understand the use of technical literature and other information sources		P4
Be able to use and apply information from technical literature	P4i	
Be Aware of nature of intellectual property and contractual issues		P5
Understand the appropriate codes of practice and industry standards		P6
Be able to use appropriate codes of practice and industry standards	P6i	
Be Aware of quality issues		P7
Be Aware of quality issues and their application to continuous improvement	P7i	
Be able to work with technical uncertainty		P8
Understand the principles of managing engineering processes	P8i	

Programme structure

This 3 year full time/4.5 year part time route requires 360 credits to be achieved for the award BSc (Hons) in Motorsport Technology; 120 credits at HE4, 120 credits at HE5 and 120 credits at HE6.

Part time students study 80 credits-worth of modules/year, thus, taking four and a half years to complete the route.

All modules are Core modules and are 20 credit values.

Code	Credit	Module Title	Module Leader	Core/ Option/ Elective (C/O/E)	Length (1, 2 or 3 periods)
MSP4000	20	Engine Systems & Aerodynamics	Keith Holmes	C	2
MSP4001	20	Chassis & Electronic Principles	Keith Holmes	C	2
MSP4002	20	Vehicle Systems	Garry Owen	C	2
MSP4003	20	CAD/CAM	Tim Ward	C	2
MSP4004	20	High Performance Materials	Paul Clavell	C	2
MSP4005	20	Applied Analytical Methods	Garry Owen	C	2
MSP5000	20	Powertrains & Aerodynamics	Keith Holmes	C	2
MSP5001	20	Chassis Development & Telemetry	Keith Holmes	C	2
MSP5002	20	Team Project	Paul Clavell	C	2
MSP5003	20	Auto & Component Design	Garry Owen	C	2
MSP5004	20	Composite Structures & testing	Paul Clavell	C	2
MSP5006	20	Motorsport Operations	Garry Owen	C	2
MSP6000	20	Performance Modelling & CFD	Keith Holmes	C	2
MSP6001	20	Vehicle Dynamics & Adv. Electronics	Keith Holmes	C	2
MSP6002	20	Individual Automotive Project	Tim Ward	C	2
MSP6003	20	Race-Car Design Project	Tim Ward	C	2
MSP6004	20	Advanced Materials & FEA	Peter Myler	C	2
MSP6006	20	Motorsport as a Business	Garry Owen	C	2

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Date: [MAY 2013]

**Theme
(all 20 credits)**

Level 4

Level 5

Level 6

Powertrain & performance

Engine Systems & Aerodynamics
MSP4000

Powertrains & Aerodynamics
MSP5000

Performance Modelling & CFD
MSP6000

Dynamics & Electronics

Chassis & Electronic Principles
MSP4001

Chassis development & Telemetry
MSP5001

Vehicle Dynamics & Adv. Electronics
MSP6001

Practical

Vehicle Systems
MSP4002

Team Project
MSP5002

Individual Automotive Project
MSP6002

Design

CAD/CAM
MSP4003

Auto & Component Design
MSP5003

Race-Car Design Project
MSP6003

Materials & Structures

High Performance Materials
MSP4004

Composite Structures & Testing
MSP5004

Advanced Materials & FEA
MSP6004

Other topics

Applied Analytical Methods
MSP4005

Motorsport Operations
MSP5006

Motorsport as a Business
MSP6006

Learning and teaching strategies

The diverse nature of this engineering programme necessitates the use of a variety of teaching and learning methods in order to ensure the acquisition and development of appropriate concepts, knowledge and skills. Many of these methods will be experienced during formal timetabled classes. Other methods, which are also demanded by professional body accreditation requirements, will be experienced through opportunities to develop creativity and innovative skills. This is predominantly achieved through open-ended project and design, make and test activity, where application, assimilation and integration of course material are realised.

Learning activities (KIS entry)

	Course Year						
	1	2	3	4	5	6	7
Scheduled learning and teaching activities	33%	28%	32%				
Guided independent study	67%	72%	68%				
Placement/study abroad							

Assessment strategy

The assessment strategy for the programme is designed to ensure that the overall aims and learning outcomes of the programme are assessed and achieved. To accomplish this, a range of assessment methods are used and applied, depending upon the learning outcome in question and the type of module content being assessed. Assessment and feedback may be Formative or Summative.

In line with the University of Bolton Curriculum Framework, Summative Assessment (that leading to assignment/project mark, module grade and hence to overall performance classification) constitutes a maximum of two pieces of assessed work per 20 credit module. The aggregate pass module mark is 40%. You must achieve a pass in all elements of assessment for each module. Summative Assessment may consist of:

- Project, Assignment and/or Design reports
- Written Examinations
- Module Portfolios
- Presentations
- Viva Examination

Assessment methods (KIS entry)	Course Year						
	1	2	3	4	5	6	7
Written exams	32%	8%	21%				
Coursework	60%	70%	66%				
Practical exams	8%	22%	13%				

Assessment regulations

- Assessment Regulations for Undergraduate Modular Programmes

The mark awarded will be made up, where specified, of the weighted average of the examination and coursework assessment marks. You must achieve a mark of 40% or above in all assessments to show that you have achieved the Learning Outcomes for each module and achieved an overall average of 40 percent to pass a module.

For the full and current version of the Assessment Regulations, refer to the document “*Assessment Regulations for Undergraduate Modular Programmes (Main Document)*” at the following university intranet site:
<http://www.bolton.ac.uk/Quality/QAECContents/APPR/Home.aspx>

Grade bands and classifications

Grade Description	Mark %	Honours Degree Classification
Work of Exceptional quality	70+	i
Work of very good quality	60-69	ii.i
Work of good quality	50-59	ii.ii
Work of satisfactory quality	40-49	iii
Borderline fail	35-39	
Fail	Below 35	

Honours Classification

(i) A student will normally be awarded the honours classification resulting from application of the following algorithm:

Rule ACM20

A weighted average of the marks from modules worth a total of 200 credits at Levels HE5 and HE6 combined, including the marks from modules worth no more than 80 credits at least at Level HE5 (weighted 30 percent) and marks from modules worth at least 120 credits at Level HE6 (weighted 70 percent), which represent the best marks achieved by a student at those Levels.

(ii) Where a student has marks available for 120 credits or less at Level HE6, the honours classification shall normally be based **solely** on a simple average of the available marks for modules at Level HE6, subject to there being marks for a **minimum of 60 credits awarded by the University. Upgrading of the honours classification will not normally be available to students for whom there are marks available for fewer than 120 credits at Level HE6**, unless explicitly approved.

Role of external examiners

External examiners are appointed for all programmes of study. They oversee the assessment process and their duties include: approving assessment tasks, reviewing assessment marks, attending assessment boards and reporting to the University on the assessment process.

Support for student learning

- The programme is managed by a programme leader
- Induction programme introduces the student to the University and their programme
- Each student has a personal tutor, responsible for support and guidance
- Personal Development Planning (PDP) integrated into all programmes
- Feedback on formative and summative assessments
- A Student Centre providing a one-stop shop for information and advice
- University support services include housing, counselling, financial advice, careers and a disability
- A Chaplaincy
- Library and IT services
- Student Liaison Officers attached to each Faculty
- The Students' Union advice services
- Faculty and Programme Handbooks which provide information about the programme and University regulations
- The opportunity to develop skills for employment
- English language support for International students
- Specialist teaching facilities/resources
- Support from professional bodies by student membership of IMechE

Methods for evaluating and enhancing the quality of learning opportunities

- Programme committees with student representation
- Module evaluations by students
- Students surveys, e.g. National Student Survey (NSS), Postgraduate Taught Experience Survey (PTES)
- Annual quality monitoring and action planning through Programme Quality Enhancement Plans (PQEPs), Data Analysis Report (DARs) Subject Annual Self Evaluation Report (SASERs), Faculty Quality Enhancement Plans (FQEPs), University Quality Enhancement Plan (UQEP)
- Peer review/observation of teaching
- Professional development programme for staff
- External examiner reports

Other sources of information

Student portal: www.bolton.ac.uk/Students/Home.aspx

Students Union www.ubsu.org.uk/

Faculty or similar Handbook: www.bolton.ac.uk/Students

Programme Handbook (add link)

Student Entitlement Statement:

<http://www.bolton.ac.uk/Students/AdviceAndSupport/Home.aspx>

Module database <https://modules.bolton.ac.uk/>

Moodle (for the programme?) <http://elearning.bolton.ac.uk/>

External examiners reports:

<http://www.bolton.ac.uk/Quality/QAECContents/ExternalExaminers/Taught.aspx>

Document control

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Approved by:	
Date approved:	
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Document History:	

UKSpec General Learning Outcomes (IEng UK-Spec) Map – BSc(Hons) in Motorsport Technology

Module Title	Module Code	K1i			C1i			PS1i			PS2	T1	T2	T3
		K1	K2	K3	C1	C2	C3	PS1						
Level 4														
Engine Systems & Aerodynamics	MSP4000		✓		✓									
Chassis & Electronic Principles	MSP4001		✓			✓								
Vehicle Systems (Team Project)	MSP4002			✓				✓	✓	✓	✓	✓	✓	✓
CAD/CAM	MSP4003							✓		✓	✓			
High Performance Materials	MSP4004	✓							✓					
Applied Analytical Methods	MSP4005		✓			✓								
Level 5														
Powertrains and Aerodynamics	MSP5000	✓		✓		✓	✓		✓					
Chassis Development & Telemetry	MSP5001			✓		✓	✓			✓	✓			
Team (Vehicle) Project	MSP5002			✓	✓			✓	✓	✓	✓	✓	✓	✓
Auto & Component Design	MSP5003	✓			✓			✓		✓	✓			
Composite Structures and Testing	MSP5004	✓	✓				✓				✓			
Motorsport Operations	MSP5006				✓				✓					
Level 6														
Performance modelling & CFD	MSP6000	✓			✓	✓	✓	✓	✓					
Vehicle Dynamics & Adv. Electronics	MSP6001	✓				✓	✓	✓			✓			
Individual Automotive Project	MSP6002			✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Race-Car Design Project	MSP6003	✓		✓		✓		✓	✓		✓	✓	✓	✓
Advanced Materials and FEA	MSP6004		✓											
Motorsport as a Business	MSP6006				✓									✓

Programme specification: [BSc (Hons) in Motorsport Technology]

Date: [MAY 2013]

UKSpec Learning Outcomes Map – BSc (Hons) in Motorsport Technology

	Engine Systems & Aerodynamics	Chassis & Electronic Principles	Vehicle Systems (Team Project)	CAD/CAM	High Performance Materials	Applied Analytical Methods	Powertrains and Aerodynamics	Chassis Development & Telemetry	Team (Vehicle) Project	Auto & Component Design	Composite Structures and Testing	Motorsport Operations	Performance modelling & CFD	Vehicle Dynamics & Adv. Electronics	Individual Automotive Project	Race-Car Design Project	Advanced Materials and FEA	Motorsport as a Business
UKSpec Code	MSP4000	MSP4001	MSP4002	MSP4003	MSP4004	MSP4005	MSP5000	MSP5001	MSP5002	MSP5003	MSP5004	MSP5006	MSP6000	MSP6001	MSP6002	MSP6003	MSP6004	MSP6006

Underpinning Science and Mathematics and associated engineering disciplines

	US1						✓	✓					✓	✓	✓	✓		
US1i							✓	✓					✓	✓	✓			
	US2	✓				✓	✓							✓	✓			
US2i		✓		✓	✓		✓							✓	✓			
	US3	✓		✓	✓		✓	✓	✓	✓	✓			✓	✓	✓		

Engineering Analysis

	E1			✓	✓		✓							✓	✓			
E1i				✓	✓		✓							✓	✓			
	E2		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓			
E2i			✓	✓		✓	✓	✓	✓	✓			✓	✓	✓			✓
	E3		✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓		
E3i				✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	
	E4	✓	✓	✓	✓		✓	✓	✓	✓				✓	✓	✓	✓	
E4i		✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓

Design

	D1			✓	✓			✓		✓				✓		✓		
D1i				✓	✓	✓				✓				✓		✓		
	D2			✓	✓			✓	✓	✓			✓		✓	✓		
D2i				✓	✓	✓	✓	✓	✓	✓			✓		✓	✓		
	D3		✓	✓	✓			✓	✓	✓				✓	✓	✓		
	D4			✓	✓			✓	✓	✓					✓	✓		
D4i				✓	✓			✓	✓	✓					✓	✓		
	D5				✓		✓	✓	✓	✓					✓	✓	✓	
D5i					✓		✓	✓	✓	✓					✓	✓		✓
	D6			✓	✓	✓			✓	✓					✓	✓		
D6i				✓					✓	✓					✓	✓		

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		Engine Systems & Aerodynamics	Chassis & Electronic Principles	Vehicle Systems (Team Project)	CAD/CAM	High Performance Materials	Applied Analytical Methods	Powertrains and Aerodynamics	Chassis Development & Telemetry	Team (Vehicle) Project	Auto & Component Design	Composite Structures and Testing	Motorsport Operations	Performance modelling & CFD	Vehicle Dynamics & Adv. Electronics	Individual Automotive Project	Race-Car Design Project	Advanced Materials and FEA	Motorsport as a Business
UKSpec Code		MSP4000	MSP4001	MSP4002	MSP4003	MSP4004	MSP4005	MSP5000	MSP5001	MSP5002	MSP5003	MSP5004	MSP5006	MSP6000	MSP6001	MSP6002	MSP6003	MSP6004	MSP6006

Economic, social and environmental context

	S1					✓														✓
	S2															✓				✓
	S3					✓		✓		✓	✓			✓		✓	✓			✓
	S4					✓		✓			✓			✓		✓				✓
	S5														✓	✓				✓

Engineering Practice

	P1			✓		✓		✓	✓	✓				✓	✓					
P1i				✓		✓		✓	✓	✓				✓	✓					
	P2			✓	✓	✓			✓	✓	✓				✓	✓	✓			
P2i				✓	✓	✓			✓	✓		✓			✓	✓	✓	✓		
	P3	✓			✓	✓		✓		✓			✓		✓	✓				
P3i		✓	✓		✓	✓	✓	✓		✓			✓		✓	✓				✓
	P4				✓	✓			✓		✓			✓	✓	✓	✓			
P4i					✓	✓			✓		✓			✓	✓	✓	✓			✓
	P5					✓							✓							✓
	P6				✓	✓		✓	✓		✓		✓	✓	✓	✓	✓			
P6i					✓	✓					✓		✓		✓	✓	✓			✓
	P7				✓	✓								✓	✓					
P7i					✓	✓								✓	✓					✓
	P8					✓									✓					
P8i						✓							✓		✓					✓

Module listing BSc (Hons) in Motorsport Technology

Module title	Mod Code	New? ✓	Level	Credits	Type	Core/ Option/ Elective C/O/E	Pre-requisite module	Assessment 1			Assessment 2		
								Assessment type	Assessment %	Add Y if final item	Assessment type	Assessment %	Add Y if final item
Engine Systems & Aerodynamics	MSP4000	✓	HE4	20		C	NONE	CW	50		CW	50	Y
Chassis & Electronic Principles	MSP4001	✓	HE4	20		C	NONE	CW	50		Exam	50	Y
Vehicle Systems	MSP4002	✓	HE4	20		C	NONE	CW	50		CW	50	Y
CAD/CAM	MSP4003	✓	HE4	20		C	NONE	Exam	40		CW	60	Y
High Performance Materials	MSP4004	✓	HE4	20		C	NONE	CW	50		PRA	50	Y
Applied Analytical Methods	MSP4005	✓	HE4	20		C	NONE	Exam	50		Exam	50	Y
Powertrains & Aerodynamics	MSP5000	✓	HE5	20		C	MSP4000	CW	50		Exam	50	Y
Chassis Development & Telemetry	MSP5001	✓	HE5	20		C	MSP4001	CW	50		CW	50	Y
Team Project	MSP5002	✓	HE5	20		C	NONE	PRA	30		CW	70	Y
Auto & Component Design	MSP5003	✓	HE5	20		C	NONE	CW	50		PRA	50	Y
Composite Structures & Testing	MSP5004	✓	HE5	20		C	NONE	CW	50		CW	50	Y
Motorsport Operations	MSP5006	✓	HE5	20		C	NONE	CW	50		PRA	50	Y
Performance Modelling & CFD	MSP6000	✓	HE6	20		C	MSP5000	CW	50		CW	50	Y
Vehicle Dynamics & Adv. Electronics	MSP6001	✓	HE5	20		C	MSP5001	CW	50		Exam	50	Y
Individual Automotive Project	MSP6002	✓	HE6	20		C	NONE	CW	70		PRA	30	Y
Race-Car Design Project	MSP6003	✓	HE6	20		C	NONE	CW	50		CW	50	Y
Advanced Materials & FEA	MSP6004	✓	HE6	20		C	MSP5004	CW	75		Exam	25	Y
Motorsport as a Business	MSP6006	✓	HE6	20		C	NONE	CW	50		PRA	50	Y

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Date: [MAY 2013]

Bolton Values Map – BSc (Hons) in Motorsport Technology

BSc (Hons) in Motorsport Technology	Engine Systems & Aerodynamics	Chassis & Electronic Principles	Vehicle Systems	CAD/CAM	High Performance Materials	Applied Analytical Methods	Powertrains & Aerodynamics	Chassis Development & Telemetry	Team Project	Auto & Component Design	Composite Structures & Testing	Motorsport Operations	Performance Modelling & CFD	Vehicle Dynamics & Advanced Electronics	BEng Individual Project	Race-Car Design Project	Advanced Materials & FEA	Motorsport as a Business
Value	MSP4000	MSP4001	MSP4002	MSP4003	MSP4004	MSP4005	MSP5000	MSP5001	MSP5002	MSP5003	MSP5004	MSP5006	MSP6000	MSP6001	MSP6002	MSP6003	MSP6004	MSP6006
Employability																		
Communication	d	d	da	tda	dta	d	da		da	td	d	tda	da	td	tda	da	tda	dt
Team Work			da		d		d		da	td		tda		td	tda	da		dt
Organisation & Planning			dt		d		td		d			tda	d	td	tda	da		dta
Numerical Interpretation	tda	dta	da			dta	tda	tda	da	tda	dta		tda	tda	tda	da	tda	
Problem Solving	tda	dta	da			dta	d	tda	da	tda	dta	d	ad	tda	tda	da	tda	
Flexibility & Adaptability	d				d			d				d			d	da		dt
Action Planning	d		dt		d			d	d			tda			tda	da		dt
Self Awareness			tda		dta							d	d		d	d		dt
Initiative	d		d		d				d			d	ad	d	d	d		dt
Personal Impact & Confidence					d			d				d		d	d	d		dt
Internationalisation																		
International content or international comparative approach					d		t					tda		tda				dt
Preparation for international profession			tda		d		at			d		tda	tda	d	d		td	dt
Foreign language or cross-cultural communication																		
Preparation for internationally recognised qualification			dt		d		d		dt	t		tda	da	t	d		d	dt
Environmental Sustainability & Awareness																		
Globalisation & the global context					d		td					tda	d			d		dta
Consumer culture and the free market					d							tda						dt
Carbon reduction	t						t	d				d	tda	d		d	d	
Systems, control mechanisms and environments	ta		da		d		td	d	da			d		d				dt
Energy, consumption, waste and technology	ta		d		d		t	d		d		tda	tda		d		d	dt
Business impact and business practices on the environment					d					td		tda	d					dta
Social, Public & Ethical Responsibility																		
Professional standards and practice			d	td	d		tda			d		tda		d		d		dt
Ethics					d							tda	da	td		d		dt
Political or social judgement					d							d	tda			d		dt
Cultural or moral issues					d							d	tda			d		dt

d – developed; a – assessed; t - taught

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