NATIONAL MOTORSPORT ACADEMY

WORLD'S FIRST *ONLINE*
Motorsport Engineering Degrees

National Motorsport Academy Student-run Ex Le Mans Lotus Evora GTE

WELCOME

...to the National Motorsport Academy

Turn your passion for motorsport into an exciting career by studying our online BSc (Hons) in Motorsport Engineering or top-up your HND to a full BSc (Hons) with just one further year's study. If you already hold a Bachelor's degree in an engineering related subject, study the online MSc. in Advanced Motorsport Engineering for a Senior or Management career in Motorsport or to run your own team. At NMA we offer flexible online degrees that fit around your work and personal life and because NMA is not for profit, our fees are substantially lower than studying on-campus. Gain the skills that are much in demand by this exciting global industry and join staff from 9 (of the 10) F1 teams, WEC and WRC teams and others across the globe, who are currently studying with NMA.

NMA also runs its own student-run race team, winning the GT Cup GTO championship in 2018 in the Mosler MT900. The team is currently racing the Lotus Evora GTO Le Mans Replica built in-house by NMA, with an engine developed with Lotus.

NMA offers the following degrees, awarded by our Academic Partner **De Montfort University Leicester (DMU)**:

- **BSc (Hons) Motorsport Engineering**
- **BSc (Hons) Motorsport Engineering Final Year Top-Up**
- **MSc Advanced Motorsport Engineering**

Most importantly, NMA programmes are industry-led, taught by experienced professionals and include the latest industry software, providing you with the best preparation for a career in Motorsport or the commercial and entrepreneurial skills to start your own business. I hope you enjoy reading our Degree Course Guide and we look forward to helping you to achieve your goals.

Pauline Riley - Academy Director

WHY NMA?

Why study with NMA?

Online:

If you can connect to the internet you can study, contact your tutor and other students from anywhere in the world using our bespoke Virtual Learning Studio (VLS).

Affordable:

NMA is a 'Not for Profit' Foundation, meaning profits are used to maintain up to 40% lower fees for the benefit of our students. Access to student loans for UK students.

Flexible:

Earn while you learn, study flexibly around work and family commitments. NMA provides structured degree programmes with individual choice, allowing you to work at your own pace and still achieve your aspirational goals.

Accredited:

All NMA Degrees are awarded by our Academic Partner, De Montfort University Leicester.

Supported:

As well as a dedicated student support team you will be assigned your own personal tutor who you can contact via telephone, email or Skype from Monday to Friday 9am-5pm.

FREE Software:

As a National Motorsport Academy student you will have free access to the most expensive, Industry leading software during your studies.


NATIONAL MOTORSPORT ACADEMY
Virtual Learning Studio
Colin Alexander
Course modules
Latest mail
March 2017
500,000 people going to University and there is STILL a shortage of GOOD engineers?
DONINGTON GP , GT Cup Rounds 15, 16 & 17 · 13th & 14th August 2016
FdSc – BSc (Hons) MOTORSPORT ENGINEERING
Student Handbook

Motorsport taught online?

The Virtual Learning Studio (VLS)

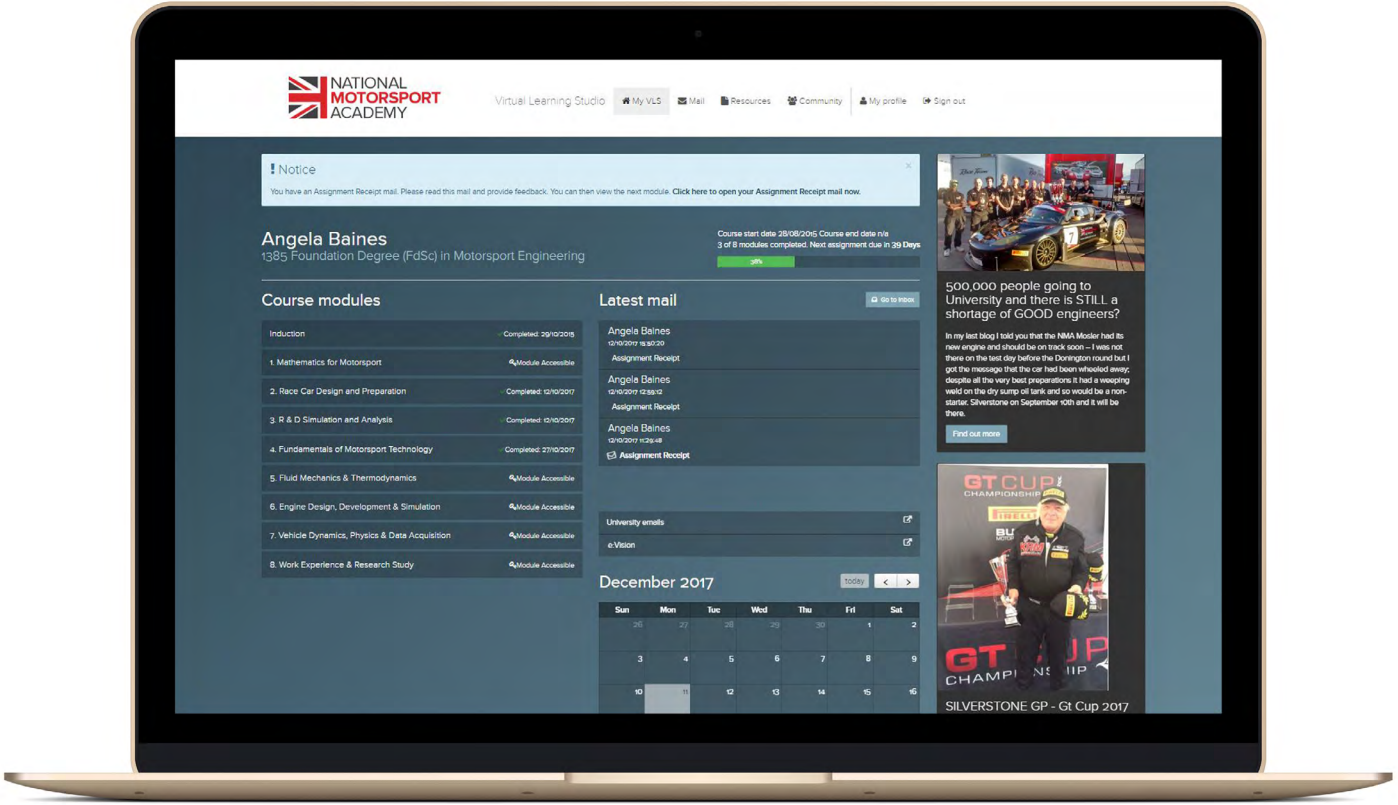
Many people imagine studying such a practical subject as Motorsport Engineering online would be a touch challenging. However, our involvement and experience over many years shows that it can be very effectively achieved.
The VLS is our exclusive, online resource which replaces the normal lectures given in Colleges and Universities. This provides links to other online resources and may contain videos, images, quizzes and lectures.

Students can rewind and re-watch until they are sure they have understood. No frantic note taking and no missing an important lecture! Study when and where it suits you!

To view some frequently asked questions please visit the FAQ's section of our website.

> *"The VLS is a really good way to learn, you've got all your content there, the video content is fantastic. It's a great way to learn, seeing someone speaking to you is almost like having a one-to-one lesson..."*
>
> Scott Edlin - BSc (Hons) student

ONLINE STUDY



HISTORY

NMA Background in Motorsport

Kevin Riley – Director NDA Foundation

Kevin has been involved with Motorsport for over 30 years as a Team Principal and Driver. He has over 500 races under his belt and has raced just about everything from Formula Vee, Formula Ford 1600, Formula Ford 2000, F3 and the infamous Thundersports BMW M1 Chevrolet driving with Mick Hill. Then followed the British & European Ferrari Challenge, British GT, Spanish GT, Supercar Challenge, Britcar and GT Cup.

Having spoken to other team principals from F1 to small club racing teams, he was surprised when they all confirmed that there was a severe shortage of qualified motorsport engineers with the skills and specialist knowledge required by this multi-billion pound industry.

Having over 20 years' experience delivering online qualifications in other subject areas Kevin's solution was to offer those working in motorsport or automotive without a degree a second opportunity; to study alongside their work and family commitments.

This was the start of the **National Motorsport Academy** and the **World's First *Online* Motorsport Engineering Degrees**.


KRM


PIRELLI
MARANELLO
7
S


TEXACO
ESSO


97
RILEY


ER MOTORCYCLING
Silkolene
Kevin Riley
50


DUNLOP


National Motorsport Academy
GT CUP


PIRELLI


12
MELBOURNE


GT CUP
CHAMPIONSHIP


Wayne Gater
NATIONAL MOTORSPORT ACADEMY

SUPPORT

Student Support & Guidance

The National Motorsport Academy has a team of dedicated staff and their goal is to support our students in every way possible to achieve their qualification in motorsport engineering. You will be assigned a subject expert tutor for each module of your course. The tutors can be contacted via email, phone or Skype as often as you need Monday – Friday from 9am – 5pm British time. Personal tutorials can also be arranged.

We also have a dedicated Student Support and Administration Team to help deal with any other quieries such as payments, student loans advice and anything else you may need a helping hand with.

Our Student Helpline is also available at any time Monday-Friday 9.00.a.m. – 5.00.p.m.

> *"The tutor support on the course is really good, you can email or phone the guys at any time of day and they'll get back to you as soon as possible and give you as much support as you need."*
>
> Scott Edlin - BSc (Hons) Student

TUTORS

Meet the NMA Tutors

Dr. Kieran Reeves - Director of Motorsport

Kieran has over 17 years' experience in Higher Education with senior lecturer, management and external examiner roles. During this time, he has successfully written and validated numerous Automotive and Motorsport degrees, including some of the first ever Foundation Degree qualifications in the UK. Kieran holds a PhD from Lancaster University with a focus on energy management of hybrid race vehicles. His research has enabled him to present across the UK, Europe and America to peers, Tier 1 suppliers and a variety of OEM's.

Alongside his academic profession, Kieran has over 20 years' experience in the Motorsport Industry, competing at Chief Engineer level in several forms of Motorsport, both at and away from the race circuit. Having originally built long distance rally vehicles included in the Manchester to Bombay and Panama to Alaska competitions, he then worked in single seater, open-wheel race formulae.

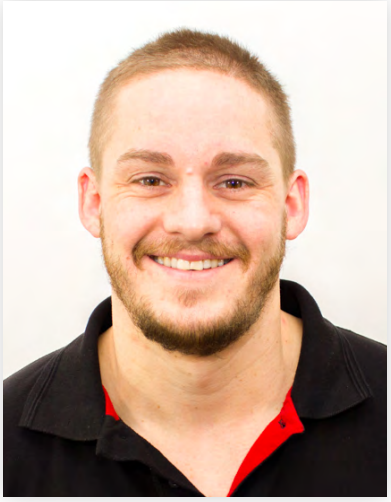
He has held several consultancy roles for race teams, including GT Porsche, and has contributed to the development of race winning engine packages. He has also provided engine research and development paths to Formula Student teams. Currently, alongside his role as Director and Teaching duties, Kieran is also the Team Manager and Chief Engineer to the NMA's race team.


Britain's first online
MOTORSPORT ENGINEERING DEGREES
NATIONAL
MOTORSPORT
ACADEMY
OMP


DE MONTFORT UNIVERSITY LEICESTER
NATIONAL MOTORSPORT ACADEMY
Race Team

TUTORS

Meet the NMA Tutors



Wayne Gater - Deputy Director of Motorsport

Wayne began his career the Aerospace industry after studying Electrical Electronic Engineering and Aerodynamics. There followed a career change into education as a College Lecturer delivering Mathematics, Science and Electronics, before progressing later into a Higher Education teaching post his specialist subjects being Aerodynamics, Engine Technology, Design & Manufacture and Engineering Validation Techniques. He then became Programme Leader for Motorsport & Automotive Higher Education Programmes before leaving to join the NMA.

Wayne has spent more than seven years researching and implementing Aerodynamic and Fluid dynamic design for external and internal performance gains. His Master's Thesis was on the design and control of Active Aerodynamic Systems for Sports Cars. Nascar and Endurance are Wayne's favourite forms of mainstream motor sport. He also has a fondness for the grass roots Motorsport disciplines such as Drift, Time Trial and Hill Climb events. He's an avid Porsche and Nissan fan, especially the Z cars.

TUTORS

Meet the NMA Tutors

Roger Grimshaw - Motorsport Tutor

Rogers appetite for teaching emerged during his successful business career, where much of his time in the workplace was spent training and mentoring personnel and other colleagues. As Roger is also a lawyer he is able to effectively combine great subject knowledge and superb communication skills and with a patient persona, he has a talent for explaining things, however complex. For Roger, this is fundamental to the role and it underpins what he loves most about education.

Rogers specialist areas within the NMA course delivery include Mathematics, Motorsport Technology Fundamentals and the essential Academic and Professional Practices that feature through undergraduate to postgraduate level and beyond.

Roger was also a talented amateur race driver, giving him the ability to bridge the gap between driving and engineering race cars, and to help motorsport engineering students and racing enthusiasts to recognise and understand the links between the academic and practical racing work.


Roger Grimshaw
NATIONAL MOTORSPORT ACADEMY

Meet the NMA Tutors

Tim Mullis - Motorsport Tutor

Tim has worked in motorsport for over 20 years since graduating with a Mechanical Engineering degree. During that time, he has experienced cars and drivers ranging from karts to F1 and has worked for teams, constructors and suppliers. Tim then gained his teaching qualification and became a university lecturer involved in the teaching and development of motorsport degree courses, before joining NMA.

Tim hopes to pass on skills and lessons learnt from the motorsport industry to NMA students. With a particular interest in the areas of data acquisition, vehicle dynamics, strategy and simulation, Tim continues to combine tutor work at the NMA with participation as a data and strategy engineer in the European Le Mans Series, mostly with LMP3 cars ensuring course content is kept up to date and relevant to the industry.

He particularly likes prototype/endurance racing, a type of racing that requires the whole team to play an important part to solve the challenges imposed by the longer, multi-driver races.

TUTORS

Wayne Hargreaves - Motorsport Tutor

Wayne has worked in education for over 17 years, teaching motor vehicle and motorsport qualifications. He specialises in Engine Design & development, CFD, Data Logging and Hybrid Technologies, with extensive experience of software packages such as GT Suite, StarCCM+, Motec and AIM.

He has also been involved in the curriculum design of Motorsport and Automotive programmes and carried out external examiner roles, graduating with a Master's Degree in Mechanical Engineering. Having a healthy interest in Moto GP and F1, Wayne has been involved with various racing teams, most notably Formula Renault, running a team with students and competing in the BARC series championship.

With a passion for motorcycles and restoring classic 2 stoke racing machines, he spends most of his spare time running a motocross team with two youth riders, competing in the NLWMCC Championship and wild card entries in National events.

TUTORS

Meet the NMA Tutors

Ed Sarling - Motorsport Tutor

Edward has been working on cars and motorbikes since childhood. After running a successful small business for 20 years, and mentoring apprentices through college in that time, he decided to move towards teaching as a full-time career.

Having built and developed several high performance Japanese cars for both track and road use his passion has always been with the Asian car market. His passion for motoring first took him to Japan in 2011, and he has been studying the Japanese language, both reading and writing, ever since. Most recently he has been preparing, maintaining and running exotic Supercars and Ariel Atoms for race, test and track days. Ed is also a familiar face within the NMA race team.

He has particular interests in ECU mapping, for which he completed a specialist course in 2015, and setting up suspension, for which he fancies himself as a bit of a Nikki Lauder! Already holding an Honours Degree in Motorsport Engineering, Ed is currently working towards his Masters in Advanced Motorsport Engineering, he understands first-hand how remote learning differs from being in a classroom.


The WORLD'S FIRST ONLINE
Motorsport Engineering Degree
NATIONAL MOTORSPORT ACADEMY

SOFTWARE

Industry Leading Software

As a National Motorsport Academy student you will have **free** access to the most expensive, Industry leading software during your studies. You will be taught how to master this software through step-by-step video tutorials and student tasks.

Many manufacturers and large race teams look for software and simulation skills in their R&D Engineers and having experience of this leading software gives you a competitive advantage when applying to join the top teams. Alongside the more usual 3D CAD and Finite Element Analysis packages you will also become an expert at using **GT-Suite**, C**hassisSim**, **Star-CCM+** and during the MSc Advanced Motorsport Engineering, **MATLAB.**

> *"The exposure to tools like Star-CCM+ and Autodesk Inventor which are very expensive software tools, and then to be guided through building a product in them, by a tutor, is hugely valuable..."*
>
> Andy Napier - BSc (Hons) Student

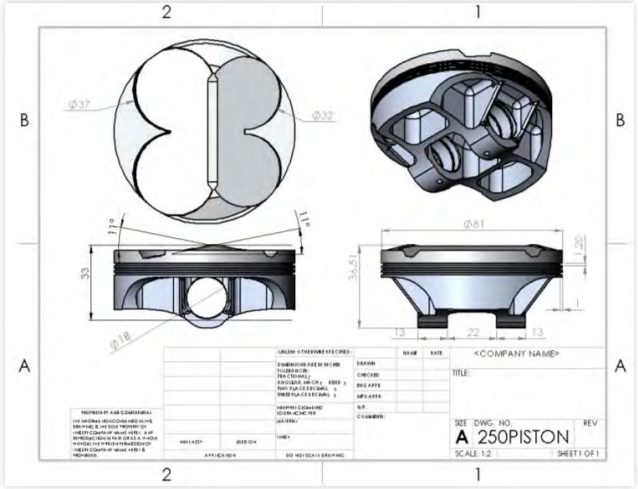
Autodesk AutoCAD & Inventor

AutoCAD, although quite a complex design program, is the industry standard. You will find applying for jobs easier if you can use this 2D program confidently.

Predominantly used for constructing technical drawings. All NMA Degree students have free access to AutoCAD.

AUTODESK® AUTOCAD®

AUTODESK® INVENTOR®



Autodesk is one of the most well known and integral design packages in the Engineering sector, and one of the reasons for this is that it is incredibly intuitive to utilise most packages.

What's more, they offer a three year free student license on ALL of their software packages meaning you not only get access to Autodesks Inventor 3D modelling and FEA programme, but also AutoCad, and Alias Design studio which would allow you to carry out any kind of Automotive Engineering task that you may wish to.

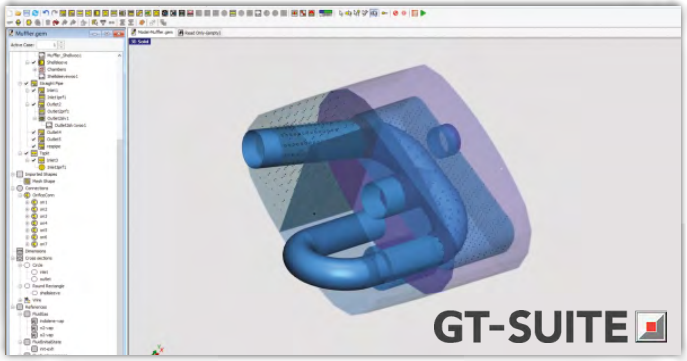
During your studies you will have the opportunity to design, build and validate components for Aerodynamic and Mechanical systems by means of Autodesk Inventor and its inbuilt FEA platform.

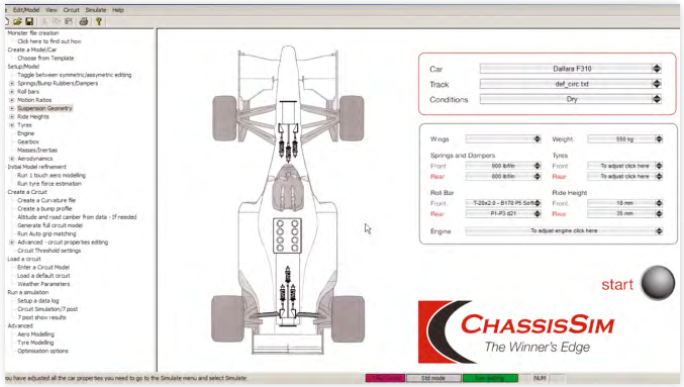
These components can then be exported in a universal format to be utilised in other programmes such as Star CCM+ or GT-Suite. Although all design packages differ somewhat, there is a large amount of transferrable skills that can be applied to any design package that you may come into contact with in your industry role.

GT-Suite

GT-SUITE is the industry-leading simulation tool with capabilities and libraries aimed at a wide variety of applications in automotive engineering and beyond. It offers engineers functionalities ranging from fast concept design to detailed system or sub-system/component analysis, design optimisation, and root cause investigation.

GT-SUITE is the number one vehicle and powertrain simulation software and it is recognised worldwide as the Industry Standard, used by all leading OEMs and suppliers such as Ferrari, BMW, VW, Bentley, Porsche and Lamborghini to name a few. You will be able to use the full suite of tools and by the end of your programme you will be able to fully design, build and validate a realistic engine simulation. You will also have the chance to test your simulations with the addition of GT-Drive, a fully-simulated powertrain package including Hybrid vehicle drivetrains.





ChassiSim

ChassisSim is one of the world's most advanced and accurate vehicle simulation packages. It has been used by international open wheel formula teams, sports car, world endurance cars, Touring car teams, plus Australian V8 Supercar teams. In the past year the development of high-slip tyre models has also opened up the software to World Rally Teams.

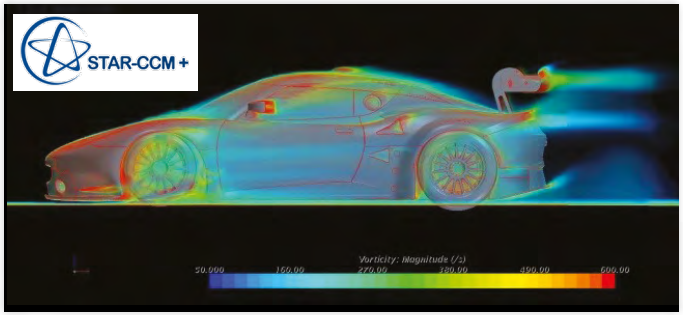
You will be taught how to increase your car's competitive advantage through development of the vehicle dynamics of a race vehicle, including suspension design and geometry, aerodynamic mapping and the inclusion of hybrid powertrains. This software will help you develop your understanding of vehicle behaviour, a must have skill for Chief Engineers, Race Mechanics and Research & Development Engineers alike.

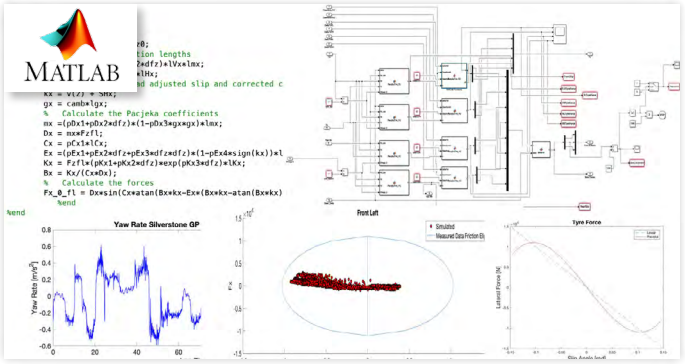
Star-CCM+

One of the go-to platforms for the Industry and used throughout Formula One, STAR-CCM+ is unrivalled in its ability to tackle problems involving multi-physics and complex geometries. STAR-CCM+ has an established reputation for producing high quality results in a single code with minimum user effort.

You will have the chance to design internal engine fluid dynamics including in-cylinder flow phenomena and blown diffuser concepts. You will also develop aerodynamic bodies from concept parts to full vehicles whilst developing your analysis skills to be able to analyse the results to improve your original concepts.

Formula 1 teams are relying more and more on CFD simulation with wind Aero testing currently limited in the rules and regulations. CFD allows a cheaper, faster alternative and for realistic results the CFD package must be reliable and realistic. These skills will be beneficial to you as you move your Motorsport career forwards.





MATLAB (MSc only)

MATLAB® is a language and interactive environment for developing algorithms, analyzing and visualizing data, and performing numerical computation. You can develop and explore your own motorsport models and analyse them through built-in engineering and mathematical functions, plots and visualisations. Over one million people around the world use MATLAB and is an industry standard for most applications within the Automotive and Motorsport Industry.

By combining a powerful computational engine and programming environment with interactive tools, MATLAB has become the language of technical computing. During the Master's programme you will be introduced to Matlab and Simulink so that you can start your journey into mathematical modelling of motorsport systems exploring vehicle dynamics models and using algorithms to develop race strategies and optimum race times.

SOFTWARE

RACEDAYS

Learn Online & On-Track

All NMA students get the opportunity to join Team NMA racing in the **British GT Cup Championship**, held at circuits throughout the UK. Team NMA's involvement in the GT Cup goes back to 2012, when co-founder Kevin Riley first took part. The team has entered both the **Mosler MT 900** and a **Lotus Evora GTE** ex-Le Mans works car, meaning that competition is always fierce!

Students who volunteer gain valuable practical experience on race weekends and are involved in every part of the process – from set-up and testing to data analysis and tuning. Sound like fun? Take a look at our courses and the latest racing calendar to find out more about getting involved.

> *"One of the good things about NMA is that they have got their own team! They are actually a professional racing outfit as well. You come here for the weekend, soak up the atmosphere, enjoy yourself, but also get practical experience of what it is you are learning in the modules and the coursework that you're doing, I think it's great!"*
>
> Richard Haslett - BSc (Hons) Student


NATIONAL
MOTORSPORT
ACADEMY
motorsport.nda.ac.uk
GT CUP
CHAMPIONSHIP

BACHELOR'S

BSc (Hons) Motorsport Engineering And Final Year Top-Up

(3 years flexible or Direct Entry onto Final Year)

This course will teach you the specialist skills required by this competitive global industry. Not only will you be highly competent using the latest industry software you will have extensive practical motorsport engineering experience, with opportunities to join the NMA Race team for race weekends.

At the end of your Bachelor's degree, you will be a fully qualified motorsport engineer with the highly sought-after skills, experience and specialist knowledge demanded by today's top teams and employers.

Entry Requirements

Full BSc (Hons) - (Equivalent to 3 year university degree programme)

- Diploma (or extended diploma) in motorsport engineering, motorsport technology, automotive maintenance, automotive engineering, mechanical engineering or other engineering discipline - **international equivalent qualifications accepted.**
- **Mature students** - Those aged 21+ without previous qualifications – entry is by CV showing evidence of practical experience of automotive and/or motorsport engineering plus a good standard of maths.

BSc (Hons) Final Year Top-Up - (Equivalent to 3rd year of a degree)

- Foundation Degree or HND in motorsport engineering, motorsport technology, automotive engineering, mechanical engineering or equivalent engineering qualification - **international equivalent qualifications accepted.**
- **Mature students** - those aged 21+ without previous qualifications - entry is by CV showing evidence of practical experience of automotive and/or motorsport engineering **at a senior level**, plus a good standard of maths.

What will I study?

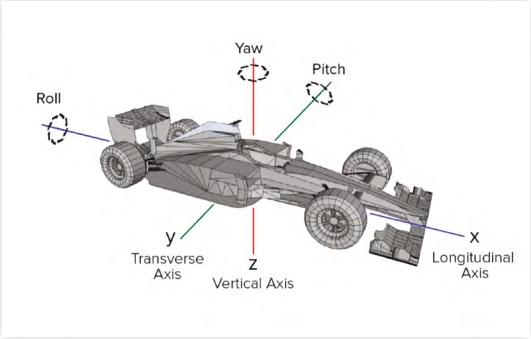
- Full BSc (Hons) students study **Modules 1 - 11**
- BSc (Hons) Final Year Top-Up students study **Modules 9 - 11**

First Year

Module 1: Maths for Motorsport

It is an essential skill for Motorsport Engineers to be able to calculate, transpose and develop mathematical formulae to enable them to problem solve, fault find and analyse race vehicle data. This module enables you to develop your mathematical skills from basic transposition of formula to complex calculus for the engine, chassis and complete vehicle development.

All Mathematics is relevant to Motorsport, with step-by-step video tutorials.



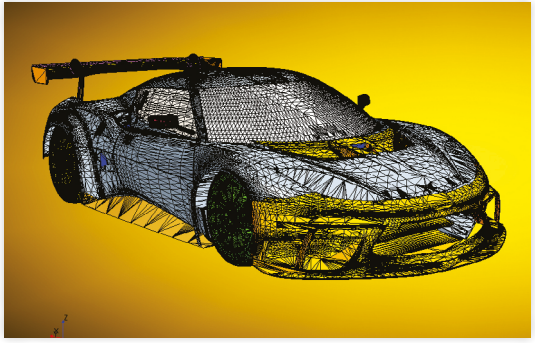
CONTENT

Module 2: Race Car Design & Preparation

Current race vehicle design, manufacture and preparation follow a complex homologation process. The decision of final race vehicle concept and product are determined by race rules and regulations alongside choice of appropriate components and vehicle behaviour. This module has been developed to encompass all aspects of the design process and the preparation of the vehicle prior to track use.

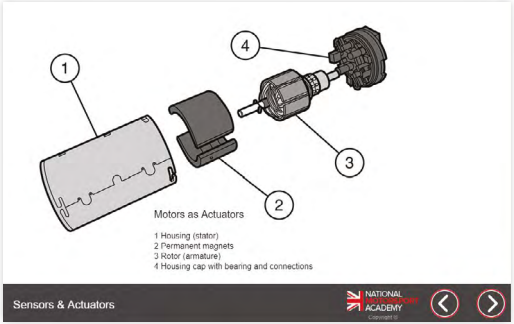
Module 3: R&D Simulation & Analysis

Simulation software has become an important part of the engineer's 'toolbox'. Computational Fluid Dynamics, Finite Element Analysis and Vehicle Dynamic modelling are used by the industry to cut research and development time and cost. During this module, you will learn the skills to utilise several industry-standard CAD and simulation packages to enable you to produce, analyse and validate appropriate models and components essential in future modules.



Module 4: Fundamentals of Motorsport Technology

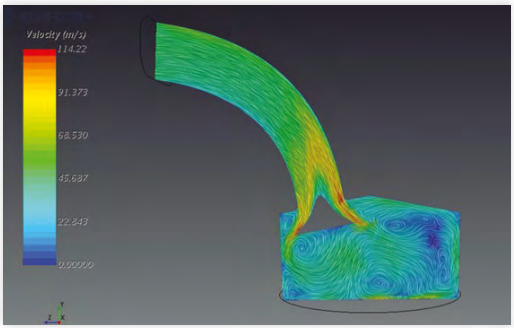
The aim of this module is to investigate a number of major scientific and engineering principles that underpin the skill sets required to succeed in the Motorsport engineering industry. The module will provide you with an overview of engineering science, physics and electrical fundamentals. You will also be introduced to engineering design material selection and failure principles through CAD design.



Second Year

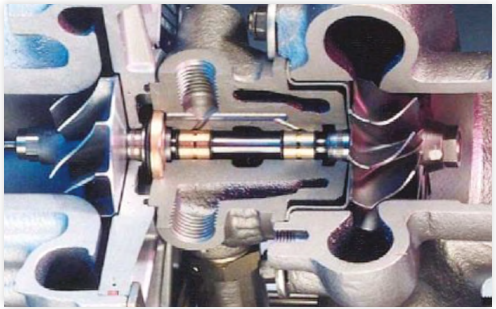
Module 5: Fluid Mechanics & Thermodynamics

Fluid Mechanics and Thermodynamics encompass the majority of engineering physics. This module allows you to develop the knowledge to apply standard formulae and principles in relation to heat transfer, over body flow dynamics and internal fluid flow both in a static and dynamic context. These will be essential for future aerodynamic and engine design modules.



CONTENT

Module 6: Engine Design, Development & Simulation



1D and 3D engine simulation and modelling provides research and development engineers with a platform to help design and develop high performance engines from initial mathematical concepts to fully-validated virtual models. This module teaches you the mathematics and theoretical knowledge utilised to design race engines. You will then use this knowledge to develop, simulate and analyse engine performance characteristics.

Module 7: Vehicle Mechanics & Data Aquisition

This module teaches the fundamentals of longitudinal and lateral vehicle dynamics, suspension systems, tyre modelling and race car set-up, enabling you to determine vehicle interaction with circuit and driver. You will be taught industry-standard data logging techniques and software, as utilised by race engineers, allowing you to directly correlate vehicle physics with measured vehicle handling behaviour.

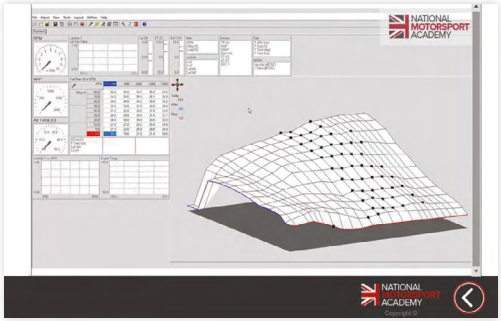
Module 8: Work Experience & Research Project

You are expected to complete a minimum of 40 hours of work experience during your programme of study. As part of this remit, you will produce a research study within the industry that includes project management, health and safety within the workplace and the creation of a personal development portfolio.

Third Year (Also Finar Year Top-Up)

Option - Module 9a: Advanced Engine Development

Physical engine testing and development is imperative to ensure you maintain the winning edge. Race teams spend large budgets and staff resources to find small percentage gains over the competition. To ensure successful validation of simulated models, engine test facilities are utilised creating a plethora of data from flow bench tests to dynamometer combustion analysis. This module allows you to develop higher level analytical skills required to be competent within the industry. You will have access to large data files allowing you to analyse test results and determine correct development paths.



Option - Module 9b: Aerodynamics

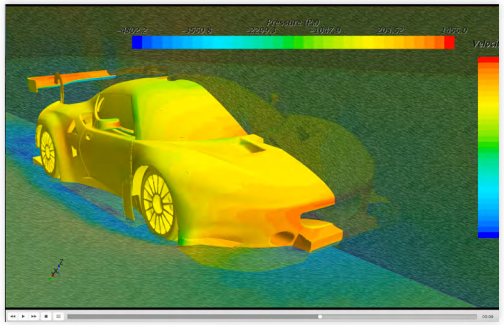
A race vehicle's handling and stability can be greatly improved by the addition of aerodynamic devices. This module develops your mathematical and analytical skills to enable you to design and develop aero packages for specific race vehicles. You will have the opportunity to design, test and analyse, through computational fluid dynamics, appropriate devices ensuring that you can solve complex industry problems.

Module 10: Hybrid & Electric Vehicles

The future of motorsport is with hybrid and electric vehicles and the harnessing/ regeneration of electric power. This module begins with the fundamentals of hybrid and electric vehicle architecture and regeneration techniques. As you progress through the module you will be able to develop hybrid models through simulation and then analyse the results enabling you to determine appropriate component choices.

Module 11: Final Motorsport Project (Double Credits)

As a final module to your programme, you have the chance to show your knowledge and skills through a final year project. This project allows you to choose the content and development path to fully explore a research area that will enhance your future job prospects in your chosen career. The project must include research skills, simulation and software skills gained through the programme so that you fully showcase your analytical skills at Level 6.



BACHELOR'S

MASTER'S


GT CUP
GTO
NATIONAL
ACADEMY
motorsport.nda.ac.uk
PIRELLI
GT CUP

MSc Advanced Motorsport Engineering

(18 months to 2 years - flexible)

Study online for the Master's Advanced Motorsport Engineering with National Motorsport Academy and boost your motorsport career. With the ability to fit your studies around your existing career and family, the MSc is flexible and affordable. Start on any date and study when and where suits you!

When you graduate with your Master's you will have gained the advanced, specialist skills that are essential to progress to a senior level or management role in the highly demanding motorsport industry, and the entrepreneurial skills to run your own team or start your own business.

Entry Requirements

- Entry is by a Bachelor's Degree in a relevant Engineering discipline or by interview if an applicant has several years' experience working in a high level engineering role in Motorsport.

For questions about entry requirements please contact our admissions team.

What will I study?

- **Master's (MSc) students study all Modules 1 - 9**

Module 1: Research Methods (15 Credits)

One of the major skills required for a Mechanical Engineer working at the forefront of their discipline is the ability to critique others' work and communicate their research and outcomes effectively. This module enables you to appraise, debate and present complex issues relating to technical literature within your chosen field of study through application of a range of project management techniques and effective presentation of scientific results such as the introduction of a new product and/or implementation of new technological processes.

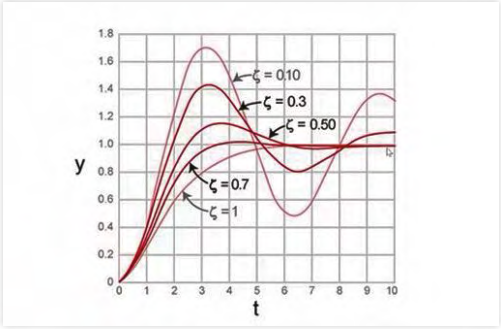
Module 2: Design & Modelling of Motorsport Systems (15 Credits)

Motorsport systems rely upon extensive testing to prove their capabilities prior to application. These systems must therefore start from a design objective where the final outcomes and all possible variables have already been considered. Design and modelling of a system must go through several iterative steps before converging upon the appropriate design path and as such a total overview of the end product must be considered and modelled. During this module you will learn the importance of design cycles and product requirements. You will develop the skills required to design a system from initial problem to final conceptual design.

CONTENT

Module 3: Advanced Vehicle Dynamics (15 Credits)

Data Analysts and Race car performance engineers require excellent knowledge of vehicle dynamics and vehicle performance through application of mathematical methods and data analysis for such a role in the Industry. In this module you will study the effects of vehicle dynamic modelling and set-up changes, enabling you to strategise effectively, both pre (through validated models), during and post race events to maximise racecar performance.



Module 4: Engineering Management Practices (15 Credits)

As you develop your career it is more than likely you will take on more of a management role whether this be as a team leader in an engineering or research department or as Team Principal. It is essential that you understand the concepts of management and the legislation surrounding the motorsport industry. This module teaches you the art of managing people whether they be staff or drivers, how to negotiate sponsorship agreements, prepare and agree driver contracts and the legalities of all aspects of a race team from race truck legislation to employment law.

Module 5: Multi-physics Analysis for Motorsport (15 Credits)

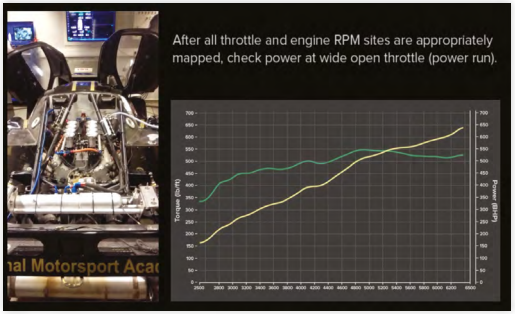
Advanced computational fluid dynamics is an imperative part of validating models against real world results. This module continues your knowledge of thermodynamic and fluid mechanic phenomena by applying analysis to problems of pervasive flow and species so that you can effectively secure solutions to race vehicle design concepts via moving meshes, multi-species environments and temperature dependant flow modelling.

Module 6: Driver Coaching (15 Credits)

An important part of the Chief data analyst skillset is the understanding of measured data and the importance of video recording to enable both set-up changes and improve driver performance. This module teaches you the fundamentals of industry standard data and video recording software and how to effectively review and utilise this information and feedback to the driver to ensure an improvement in lap time.

Module 7: Race Car Applications (15 Credits)

An important part of the race-car engineer's skillset is the understanding of the mathematical applications of race vehicles and how to critically analyse the system behaviour so that future development plans, race strategies and system modelling can be appropriately generated and utilised. This module teaches you how to develop your own mathematical models through an introduction to Matlab and Simulink.



Module 8: Race Strategy Optimisation (15 Credits)

With many race series now restricting testing, race teams performing in high-end race-series rely more on race simulation and strategic mathematical decisions before and during race events. This module introduces you to the process of race strategy through vehicle simulation, lap-time simulation and data analysis.

Module 9: Advanced Motorsport Project (60 Credits)

As a final module to your programme, you have the chance to showcase your knowledge and skills through a final year project. This project allows you to choose the content and development path to fully explore a research area that you have chosen as your career. The project must include research skills, simulation and software skills, analysis skills and academic writing ability gained through the programme to ensure you fully showcase your analytical skills at Level 7.

MASTER'S

FUNDING

Student Loans

With a tuition fee student loan, even mature students can forget about paying fees and concentrate on becoming a qualified motorsport engineer. Even if you already have a degree in a non-related subject, you are still eligible for a student loan (or a second student loan) to study an engineering subject.

It is important to note that student loans are not based on household income or means tested, consequently the majority of students in England and Wales will qualify (N. Ireland and Scotland will vary).

In a nutshell, this means that the government will be paying your tuition fees, and repayments will only commence after four years or when you finish your studies, but only when you earn £25,000 per year or more. Otherwise, you do not have to repay.

To find out more please visit the Student Loans section of the NMA Website.

> *"Student loans are one of the cheapest and safest forms of long-term borrowing possible. The massive advantage over normal borrowing is you only repay if you earn enough, and if you lose your job, repayments stop."*
>
> Martin Lewis - Money Saving Expert

Armed Forces - ELCAS

The National Motorsport Academy is pleased to announce that we are now a registered learning provider on the MOD's Enhanced Learning Credits Scheme (ELCAS). Our ELC Approved Provider status now means that all of our motorsport degrees are now accessible for both serving Armed Forces personnel and service leavers.

Our courses provide those with an engineering background the opportunity to convert their existing skills into highly sought-after motorsport specific qualifications.

Applications for all courses are made via the NMA Website. ELCAS is simply the route through which you fund your course fees, which by the way, are 40% lower than most University fees!

To find out more please visit the Armed Forces - ELCAS section of the NMA Website.

PROGRESSION

What next?

When studying with the NMA, we are preparing you for a career in motorsport. After graduating with a **BSc (Hons) Motorsport Engineering**, there are a variety of motorsport careers allowing you to specialise in a specific field. Including: **race engineer, data acquisition technician, aerodynamicist, propulsion engineer, drive train engineer, chassis design engineer** or a member of a **manufacturer design team**.

We offer advice and support to help you to prepare your CV, build industry connections and even help you to find your dream job in motorsport.

Your final progression from a Bachelor's Degree with Honours is to our online **MSc Advanced Motorsport Engineering** (Master's) Degree programme, which you can also study alongside your other commitments. When you graduate with your Master's you will have gained the advanced, specialist skills that are essential to progress to a senior level or management role in the highly demanding motorsport industry, and the entrepreneurial skills to run your own team or start your own business.

> *"This kind of programme is fantastic for bringing in young talent and giving them a platform from which to progress into other levels of motorsport, wherever that may be."*
>
> Johnny Mowlem - International Racing Driver

National Motorsport Academy Student-run Mosler MT900

GRADUATION

NMA Student Graduation

Graduation day is truly a wonderful way to celebrate with friends, family and fellow students and allows you a chance to proudly reflect upon your amazing achievement.

NMA degree programmes are awarded by our Academic Partners De Montfort University Leicester (DMU).

When you have successfully completed your degree you and your guests will be invited to attend an amazing graduation ceremony, in the theatre setting of the DMU campus in Leicester, held in July and January each year. You will also be invited to a private NMA reception and prize giving beforehand.

During the ceremony you will be presented to the Vice Chancellor of De Montfort University, proudly watched by your family and guests.

> *"It's been such a fantastic day!... I'm so very proud of myself and my fellow students who received a degree today, thank you NMA for helping to change my life."*
>
> BSc (Hons) Graduate

SPOTLIGHT

Student Success Stories

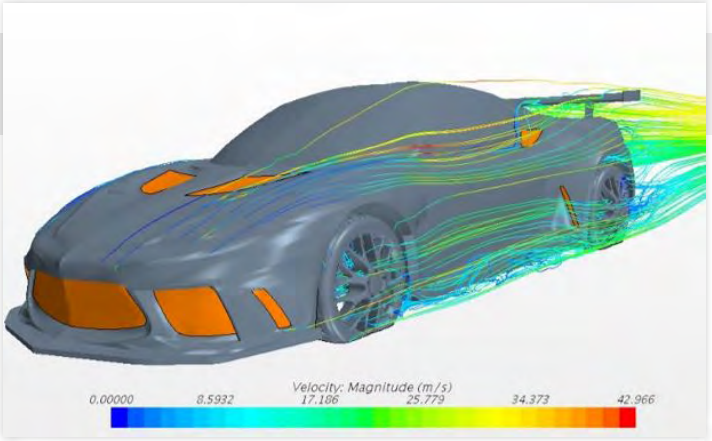
Dan Galley - BSc (Hons) Graduate

Before starting his BSc (Hons) with NMA Dan was studying a Foundation Degree in Motorsport, full time at another university. Enrolling on the NMA BSc (Hons) gave him the freedom to accept an exciting full time job opportunity, while continuing to study online for his 3 year Bachelor's Degree. During his studies with NMA and since completion of his degree Dan has been a regular and valuable member of the NMA Race Team in the British GT Cup competiton and continues to work full time at the Central Lotus dealership in Nottingham, in their servicing and parts department.

To find out more about the online BSc (Hons) Motorsport Engineering studied by Dan, or our online Master's (MSc) Advanced Motorsport Engineering Degree programme, please visit the NMA website.

> *"I would highly recommend studying with the National Motorsport academy, it's a great way to earn and learn at the same time, instead of submitting a few years of your life to go full-time to university."*


BRANDS
psi
bar
kPa
LOTUS



"I fully recommend the NMA Motorsport Engineering degree to anyone, I've already recommended it to friends coming out of college, who are passionate about motorsport and want to make a career out of it"

SPOTLIGHT

Student Success Stories

Jamie Gomeche - BSc (Hons) Graduate

Jamie enrolled on the NMA BSc (Hons) course as a direct entrant onto the final year top-up. Having just completed a Master's degree in mechanical engineering at another institution, he wanted to continue studying but in the new path of motorsport engineering, a lifelong passion and interest. He completed the first two modules of the 3rd year whilst working part time in a hotel bar. Delighted to achieve this, he began volunteering for MacG Racing to gain valuable experience within the industry. He also joined the NMA race team at two race weekends during the British GT Cup season.

Jamie was subsequently offered a full-time position within the NMA race team. This tied in perfectly with his final year project, designing an aerodynamic package for the new Team NMA Lotus Evora GT3 race car. During this time he completed his BSc (Hons), achieving a 1st class honours degree, one of the first students in the world to complete an online degree in motorsport engineering.

Jamie has since worked as a professional race enginneer for Fortec Motorsport, moving onto Stratton Motorsport as chief technichal engineer for their British Formula 3 team. He is now working for Arden Motorsport as a full time race engineer in Formula Renault.

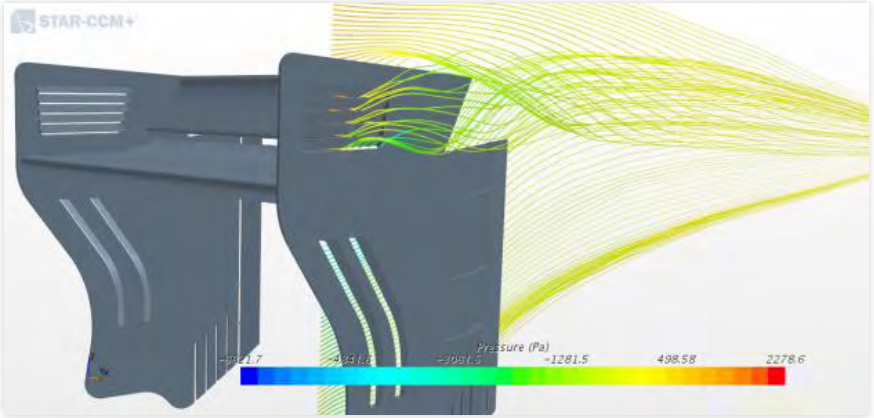
SPOTLIGHT

Student Success Stories

Ben Amos - BSc (Hons) Graduate

Ben had previously completed a HND in Motorsport Engineering at Swansea Metropolitan University. Following this, he began working as a contractor for the Ministry of Defence and later the American Military maintaining and repairing a wide range of military vehicles. After about 4 years he felt he wanted to progress, so enrolled onto the NMA BSc Top-Up Motorsport Engineering, this allowed him to turn his HND into a full BSc Degree.

Shortly after beginning the course, Ben was offered a Junior Engineering role at Aston Martin helping to produce 25 new, track only DB4GT's. He could utilise what he had learned about historic Aston Martin vehicles, while also building on the knowledge gained from the NMA BSc Top-up course. Since completing his BSc (Hons) Ben has been promoted to a Senior Engineer position and is now considering enrolling on to the NMA Master's Degree programme.



“Having this degree has already helped my career even when I started it and was in the process of doing it, I got a promotion and since completing it I have got another promotion! So it’s certainly working out pretty well for me!”

WHE

NMA Headquarters

National Motorsport Academy

Rufford Hall, Waterside Way,

Nottingham, NG2 4DP

United Kingdom

Phone: +44 (0) 1159 123 456

Email: admissions@motorsport.nda.ac.uk

ERE TO FIND US

NMA Race Centre

National Motorsport Academy

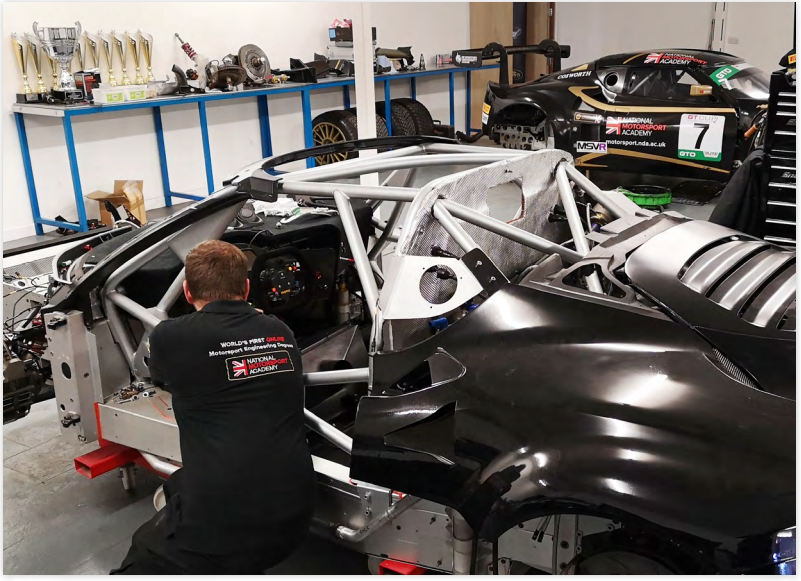
Centre Court, 33 Little Tennis Street,

Nottingham, NG2 4EL

United Kingdom

Phone: +44 (0) 1159 123 456

Email: admissions@motorsport.nda.ac.uk



ACCREDITED

Partners, Associations & Sponsors

DE MONTFORT UNIVERSITY LEICESTER

student finance england

GOV.UK

CENTRAL www.centrallotus.com

CCC COMPETITIVE CARBON COMPOSITES

VBOX MOTORSPORT

RACE STAFF
NUMBER 1 FOR MOTORSPORT JOBS

MOTORSPORT INDUSTRY ASSOCIATION MEMBER

Enhanced Learning Credits elcas Administration Service

THE FOUNDATION

The National Motorsport Academy is part of The NDA Foundation, a not-for-profit organisation committed to widening access to Further & Higher Education through affordable, flexible, ***online*** delivery.

NATIONAL
MOTORSPORT
ACADEMY