

ENGINEERING MSc MOTORBIKES





MONLAU MOTUL TECHNICAL SCHOOL



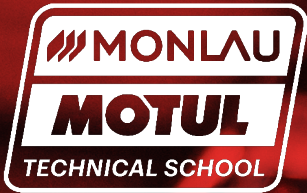
Jaime Serrano
Managing Director

With more than 25 years of experience teaching cars and motorbikes racing techniques, from **Monlau Motul Technical School** we launched in 2010 the first Motorsport Engineering Master with a brilliant staff of active professors in the most important international FIA and FIM championships , all of them specialized in the different Master modules.

During these years we have established our Master as a reference in motorsport. Year after year, we have improved the Master up to the optimal condition to give our students the warranty and the knowledge required to open the door to their future in the world of motorsport.

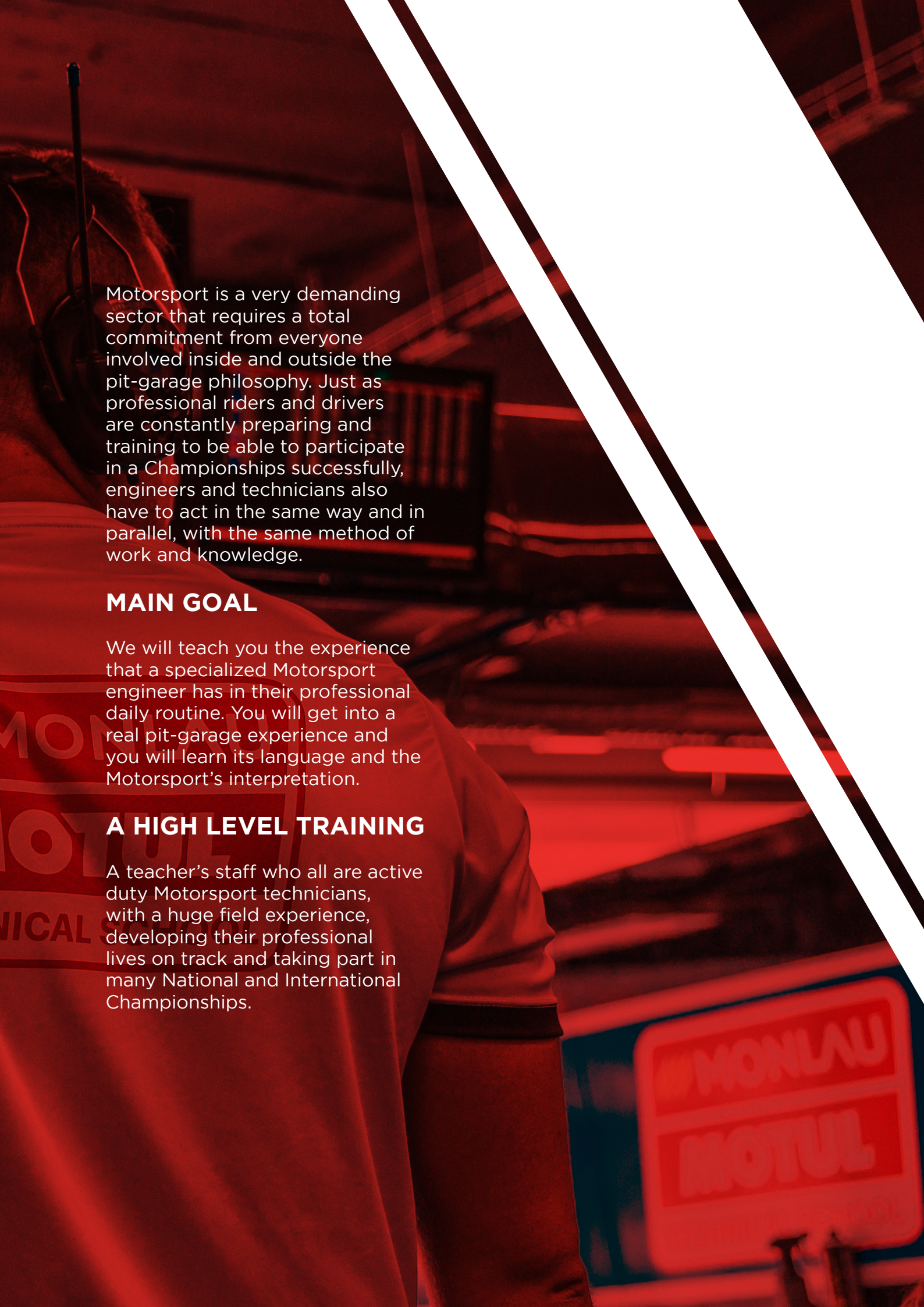
In 2016 we launched Motorsport Online Engineering Master with the same enthusiasm that we had before but with successful experience in the academic world.

With the same standard basis that we succeed in the On Campus Master, we introduce the digital version for those engineers who love motorsport and due to different reasons cannot move to Barcelona to study their passion: The world of motorsport. We now offer the chance to get a motorsport racing degree anywhere in the world. No matter where you are because you will have the same theoretical and practical lessons as On Campus Master students.



ENGINEERING MSc MOTORBIKES





Motorsport is a very demanding sector that requires a total commitment from everyone involved inside and outside the pit-garage philosophy. Just as professional riders and drivers are constantly preparing and training to be able to participate in a Championships successfully, engineers and technicians also have to act in the same way and in parallel, with the same method of work and knowledge.

MAIN GOAL

We will teach you the experience that a specialized Motorsport engineer has in their professional daily routine. You will get into a real pit-garage experience and you will learn its language and the Motorsport's interpretation.

A HIGH LEVEL TRAINING

A teacher's staff who all are active duty Motorsport technicians, with a huge field experience, developing their professional lives on track and taking part in many National and International Championships.

ENGINEERING MSc RACE MOTORBIKES

STUDENT REQUIREMENTS

1. Be passionate about motorsport.
2. choose the msc option that you prefer, sign up, complete the registration process and we will send you the access code.
3. Enter with your student username and enjoy a new training experience that will be of great help for you.



NO SCHEDULES

Take all the time you need. Organize your own schedule and enjoy the different modules about the MSc you choose.

MASTER PRICE

2300€

***INCLUDED REAL PRACTICE IN CIRCUIT**

ENGINEERING MSc

RACE MOTORBIKES

STUDIES PLANNING

1. MOTORSPORT INTRODUCTION AND RACING TEAM

In this introductory module you will learn about and enjoy the history of Motorsport from its beginnings to today. In addition, we will analyze the different organizations and categories of the FIM that exist and have existed. This first module will help us to put ourselves in a situation and to acquire culture in this exciting World.

Thanks to this module you will learn what the current structures are like within a Motorsport team of which, one day, you could be a member. This module will help you to know in detail what are the main tasks of a member of a team.

2. PARTS LIST: RACE MOTORBIKES

In this module we will see the parts that make up a race motorbike, specifically a Moto3. This module wants to be a glossary to identify all the vehicle elements and know about their main function..

3. RACE MOTORBIKES DYNAMICS

In the world of Motorsport, it is very important to know and interpret what feelings the rider has on our motorbike. The trust that we can give him will be a key point. For this reason, this module will show different technical adjustment aspects and how they physically affect the motorbike's behaviour.



4. RACE MOTORBIKES DATA ACQUISITION

Race motorbikes are equipped with a series of electronic components that allow us to have real samples of what is happening on the track. We will see what components monitor by using track software systems such as 2D, as well as different examples that will help us to learn how to read and interpret data.

5. RACE BRAKES

To get the best lap time and be the fastest, not only the speed and power factor is enough. Brakes can be decisive during a race. In this module we will learn about all parts that make up a brake system, the different problems that we may have, and their solution. As well as perform an optimal braking calculation..

6. RACE SHOCK ABSORBERS

The suspension elements take on a special importance for the dynamics of our vehicle and, consequently, for its performance on the track. In this module we will see different parts and types of shock absorbers that will help us to better understand the dynamics of our vehicle.

7. RACE MOTORBIKES ENGINE

In races where same motorcycles compete, a differential factor is the condition and preparation of the engine. In this module we will see a real example of preparation that will help you to see the key points to improve the engine performance.

8. RACE FUELS AND LUBRICANTS

Having a good lubricant and an optimal gasoline will for sure affect the final performance of our vehicle. In this module we will explain what types of lubricants exist and how they will help us to make the best choice for our motorbike when competing.

9. MOTORSPORT AERODYNAMICS

In this module we will focus on the Aero Maps and we will see an example of calculation to achieve an optimal aerodynamic balance for our vehicle.

10. POWERTRAIN RACE MOTORBIKES

From the engine to the wheels, there are many parts that come into play and sometimes they are the ones that will allow us to have a better speed or acceleration. In this module we will see the different parts of the transmission and we will discover the key points to be able to choose one gear ratio or another.

11. MOTORSPORT MATERIALS

In Motorsport, many vehicle parts are made of specific materials. The choice of materials for the different motorbike elements is not arbitrary. In this module we will learn what characteristics each material has and the benefits they can offer to the motorbikes racing field.



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STUDIES PLANNING

12. ANSYS

- Using finite element analysis (FEA), ANSYS Structural provides the method to predict the behaviour and performance of complex products of all kind of materials.

- The high demands on the structural elements with little weight in race vehicles, requires a precise analysis, with a correct definition and meshing of the geometry, a realistic definition of the stresses and a meticulous post-processing.

Review some basic fluid mechanics concepts. Assimilate the steps involved in a fluid flow simulation. Intercept the results and understand the limitations of fluid flow simulations. Get acquainted with the ANSYS Fluent simulation tool.

- ANSYS Design Modeler.
- ANSYS Meshing.
- ANSYS Fluent.
- Models & Formulation.
- Cell Zones & Boundary Conditions.
- Solver Settings.
- Post-processing.
- ANSYS CFD-Post.

13. PTC CREO

- 3D solid creation using all tools available.

- Assemblies, static assemblies, dynamic assemblies; dynamic movement analysis using pro/mechanism; structural and thermal simulation.

- Surface modeling.

14. MATLAB FUNDAMENTALS & SIMULINK

Understanding MATLAB software and its environment.

Provide a basic knowledge of MATLAB programming, usage of functions and script files.

-Creating and modifying Simulink models and simulating system dynamic.

-Modeling continuous-time, discrete-time, and hybrid systems.

-Modifying solver settings for simulation accuracy and speed.

-Building hierarchy into a Simulink model.

-Creating reusable model







17
km/h

PARTNERS:



CABREIROÁ

SCALEXTRIC

SAMSUNG
SSD



GALFER

GESTORIA
GABALDON

BLINKER
PROFESSIONAL COMPONENTS

ITR
RACING PARTS



Beta

CUPRA
RACING

HRC
Honda RACING



SC
PROJECT



SPORT

SHARK

2D
2d-datarecording.com

RACC
Mobility
Club

alkamel
SYSTEMS

MAGURO
マグロ

HURLY
MOTORCYCLE RACING PARTS
MADE IN ITALY

simtechpro
THE VR & SIMULATION COMPANY

SF
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FILTER

SIC
RACING

SS
MOTORSPORT



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real federación
motociclista española



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