



Who is Muner

It's the result of a synergetic connection between **4 Italian Universities**, that are synonymous with advanced training, and the **Motor Companies** that represent the excellence of Made in Italy in the world - historically rooted into the Emilia-Romagna Motor Valley - with the support of the **Regional Government**.

Together they designed the 9 high-level careers in Automotive Engineering of the future.

Founding partners





















Regular partners



















And who supports it

The Emilia Romagna Region has been supporting MUNER's activities since 2017.

In 2025-2026 is among the beneficiaries of the fund program "Fesr 2021-2027, azione 1.1.7 - Contributi per le associazioni" to implement the project "Programma Strategico di Intervento dell'Associazione MUNER 2023-2024 (Acronimo: PSIAM 23-24)".

Supported by















Facts and figures

OUR HUB OF EXCELLENCE

- 4 universities
- **8** engineering departments
- 3 Master's Degree programs
- **9** engineering careers
- +100 professors
- **10%** company lecturers
- 90% of students satisfied with teaching

OUR STUDENTS

230 places offered in 2024/2025

Over 1000 contacts for admission

80% of students **graduated on time**

80% of students **graduated with honors**

95% of students employed one year after graduation

70% of students **employed by MUNER affiliates**



Our master's degree programs

• ADVANCED AUTOMOTIVE ENGINEERING



- Advanced Powertrain
- Advanced Motorcycle Engineering
- Advanced Sportscar Manufacturing
- High Performance Car Design
- Racing Car Design
- Off Highway Vehicle Engineering

• ELECTRONIC ENGINEERING FOR INTELLIGENT VEHICLES



- Autonomous Driving Engineering
- Electronic and Communication Systems

• ELECTRIC VEHICLE ENGINEERING

• Single track in Electric Vehilce Engineering







OUR MASTER'S DEGREES PROGRAMS

ELECTRIC VEHICLE ENGINEERING (EVE)

Shaping the future of sustainable transportation technology

The Electric Vehicle Engineering (EVE) program trains engineers specialized in the design and integration of the main components of electric traction systems.



Graduates acquire skills in the fields of energy, electrical, electronic, control, and communication engineering, which are necessary for the development of batteries, electric motors, on-board converters, and the power systems of battery electric vehicles (BEV) and hybrid electric vehicles (HEV).



- Main Topics:
 Electric drivelines
- •Charging systems
- Electric motors
- Power electronics
- Battery systems
- •Onboard electric power systems
- •Thermal conditioning systems











For students who want to become electrical engineers, capable of developing and integrating the electrical energy systems of different types of electric vehicles.

TOPICS

- Electric drivelines
- Charging systems
- Electric motors
- Power electronics
- Battery Systems
- Onboard electric power systems
- Thermal conditioning systems

Muner teaching venues









ELECTRIC VEHICLE ENGINEERING (EVE) ADMINISTRATIVE INFO:

Application Period:

Non-EU (I intake): February - March EU (II intake): April - Early July

Enrollment Process:

Submission of the application with required attachments.

Oral interview for eligible students to assess skills and motivation. Followed by ranking publication and enrollment.

Administrative University: University of Bologna (Unibo)

Reference Department:

Department of Electrical, Electronic, and Information Engineering "Guglielmo Marconi" (Unibo)

Contacts:

arianna.tibaldi2@unibo.it

TUITION FEES:

Max Fee: €3,315/year Based on ISEE for EU students or country of origin for non-EU students.

Scholarships: Funding Opportunities

Program Start Date: SeptemberTeaching Language: English





OUR MASTER'S DEGREE PROGRAMS

ELECTRONIC ENGINEERING FOR INTELLIGENT VEHICLES (EEIV)

Driving the future of vehicle technology

The Master's Degree program in Electronic Engineering for Intelligent Vehicles offers a cuttingedge educational path aimed at training engineers who will drive the application of ICT technologies in next-generation vehicles.

It is divided into two curricula:









The Electronic and Communication Systems (ECS) curriculum focuses on developing electronic systems integrated in vehicles. Graduates master the principles of electronic and communication devices, with skills in controlling and securely connecting automotive subsystems.

The first academic year is at the Bologna Campus, while the second academic year is at the Mode- na Campus.



- Automotive sensors
- Embedded systems
- Vehicular communications
- Wired and wireless interconnections
- Power electronics
- Automotive cybersecurity

The Autonomous Driving Engineering (ADE) curriculum trains engineers to develop intelligent transportation systems.

Graduates are equipped with knowledge of software and electronic systems for sensing, data processing, and vehicle control, enabling them to contribute to advanced driver assistance systems (ADAS) and fully autonomous driving. The first academic year is at the Bologna Campus, while the second academic year is at the Parma Campus.



Main Topics:

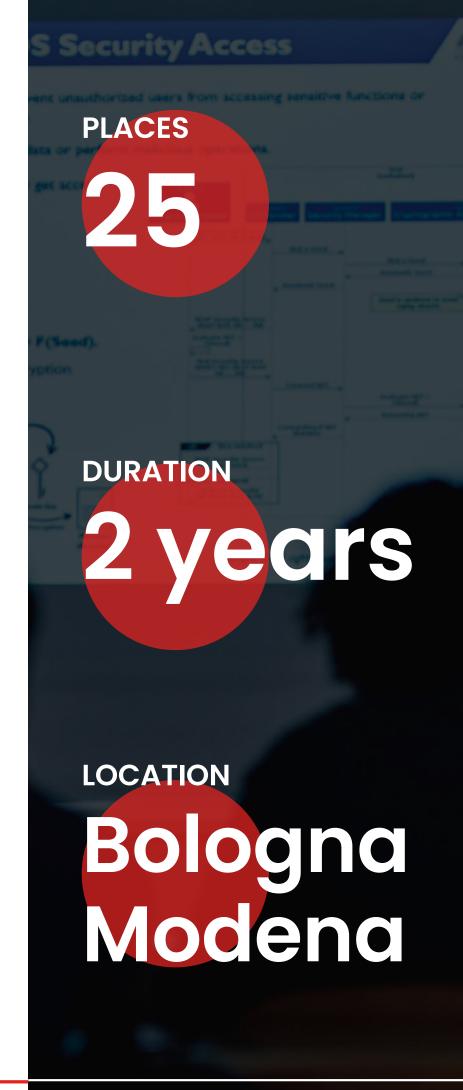
- Automotive sensors
- Embedded systems
- Image processing
- Deep learning
- Autonomous driving technologies
- Path and trajectory planning











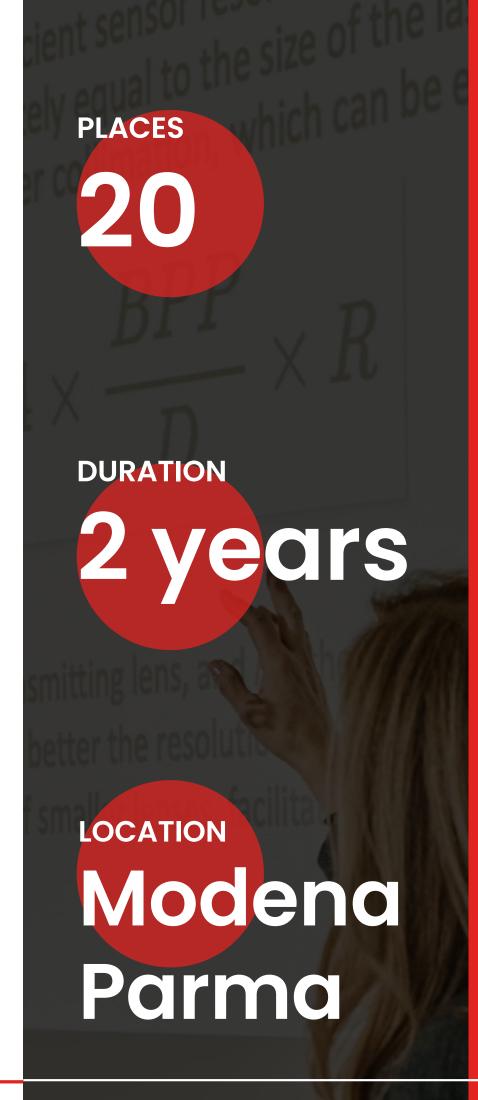
For students aiming to become electronic engineers with a solid knowledge of the methods and tools that make electronics the foundation of all systems that collect, process, transmit and store information, with particular emphasis on the electronic subsystems embedded in current and future vehicles.

TOPICS

- Advanced automotive sensors
- Hardware-software design of embedded systems
- Signals and systems for vehicular communications
- Wired and wireless interconnection
- Power electronics for automotive
- Automotive cyber security
- Modeling and control of electromechanical systems







For students aiming to become **electronic engineers** with a solid knowledge of the methods and tools used in the development of **intelligent** transportation systems including software and electronic systems widely used in intelligent vehicles for: perceiving the environment, processing sensor data, planning driving.

TOPICS

- Advanced automotive sensors
- Hardware-software design of embedded systems
- Image processing and computer vision
- Deep learning for engineering applications
- Statistical signal processing
- Autonomous driving and ADAS technologies
- Visual perception for self- driving cars
- path and trajectory planning

Muner teaching venue









ELECTRONIC ENGINEERING FOR INTELLIGENT VEHICLES (EEIV) ADMINISTRATIVE INFO:

Application Period:

Non-EU (I intake): February - March EU (II intake): April - Early July

Enrollment Process:

Submission of the application with required attachments. Oral interview for eligible students to assess skills and motivation. Followed by ranking publication and enrollment.

Administrative University: University of Parma (Unipr)

Reference Department:

Department of Engineering and Architecture (Unipr)

Contacts:

dia.didattica@unipr.it

TUITION FEES:

Max Fee: €2,160/year Based on ISEE for EU students or flat tax for non-EU students abroad.

Scholarships: Fees and Benefits Info | <u>ER.GO</u>

Program Start Date: September

Teaching Language: English





OUR MASTER'S DEGREE PROGRAMS

ADVANCED AUTOMOTIVE ENGINEERING (AAE)

Design and development of the next generation of high-performance vehicles

The Master's Degree program in Advanced Automotive Engineering provides students with the skills needed to design and develop high-performance vehicles.

It is divided into six curricula:













Applications and enrolments are all made to the AAE Master's Degree program; students indicate an order of preference among the 6 curricula, but allocation is automatic according to final ranking position.













The Off-Highway Vehicle

Engineering (OHVE) curriculum

The Advanced Powertrain (AP) curriculum, with two different specializations, trains engineers to design and develop highperformance propulsion systems, including both internal combustion engines and hybrid and electric systems.

The program offers two specializations:

Bologna: Focuses on internal combustion and hybrid powertrains, covering modeling, control, testing, calibration, and homologation. After a common first semester in Modena, courses continue at the Bologna Campus.

Modena: Specializes in the design and modeling of highperformance propulsion systems, with a focus on FEM and CFD calculations, held entirely in Modena.

Main Topics:

- Electric drives
- Internal combustion engines
- Mechanical transmissions
- Propulsion system design
- FEM/CFD modeling
- Powertrain testing and calibration

The **Advanced Motorcycle Engineering (AME)** curriculum prepares engineers to design and manufacture high-performance and race motorcycles. Graduates specialize in powertrain and chassis design, vehicle dynamics, and the integration of electronics into modern motorcycles. After a common first semester in Modena, courses continue at the Bologna Campus.



Main Topics:

- Powertrain design
- Chassis design
- Vehicle dynamics
- Electric drives
- Internal combustion engines
- Manufacturing processes

The Advanced Sportscar Manufacturing (ASM) curriculum focuses on the development and management of automotive production processes and supply chains. Graduates are experts in advanced manufacturing technologies, including digital factories, industrial robotics, and big data analytics.

After a common first semester in Modena, courses continue at the Bologna Campus.



Main Topics:

- Manufacturing systems
- Smart manufacturing technologies
- Automotive assembly systems
- Robotics
- Supply chain management
- Big data analytics

(HPCD) curriculum trains engineers in the design and development of highperformance road vehicles. Graduates are skilled in aerodynamics, vehicle dynamics, structural analysis, and materials selection, with a focus on computer- aided engineering tools. The program is entirely held at the Modena Campus.

The High Performance Car Design



Main Topics:

- Aerodynamics
- Vehicle dynamics
- · Chassis design
- Automotive CAD
- Structural analysis NVH testing

The Racing Car Design (RCD) curriculum prepares engineers for careers in race car development, emphasizing lightweight design, aerodynamics, and experimental testing.

Graduates are proficient in designing race car structures and components, particularly using advanced materials and solutions for highperformance racing applications. After a common first semester in Modena, courses continue at the Dallara Academy.



Main Topics:

- Aerodynamics
- Vehicle dynamics
- Composite materials
- Chassis design
- Race car testing
- Lightweight construction

trains engineers to design and develop modern off-highway vehicles with a focus on precision farming machinery and hightechnology propulsion systems. Graduates have expertise in vehicle dynamics, terramechanics, and advanced fluid power systems, using state-of-the-art computer-aided engineering methods. After a common first semester in

Modena, courses continue at the



Main Topics:

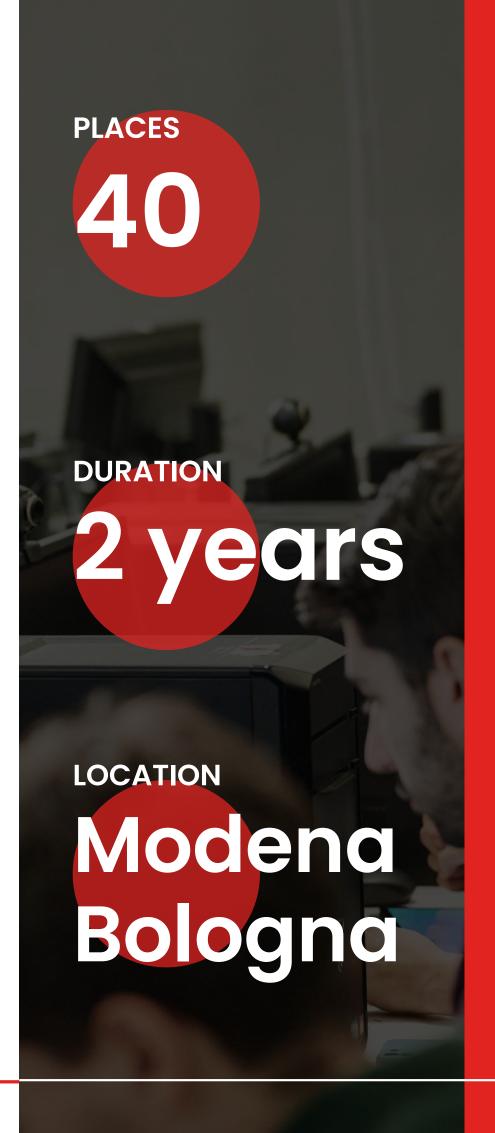
Bologna Campuses.

- Off-highway vehicles
- Precision farming
- Electric drives
- Ground interaction
- Fluid power systems
- Vehicle control and testing









For students aiming a career as design and manufacturing engineers, experts in the development of high-performance propulsion systems, with a focus on Internal Combustion Engines and hybrid propulsion systems.

Two curricula offer special views on powertrain development (Modena Campus) and engine control (Bologna Campus).

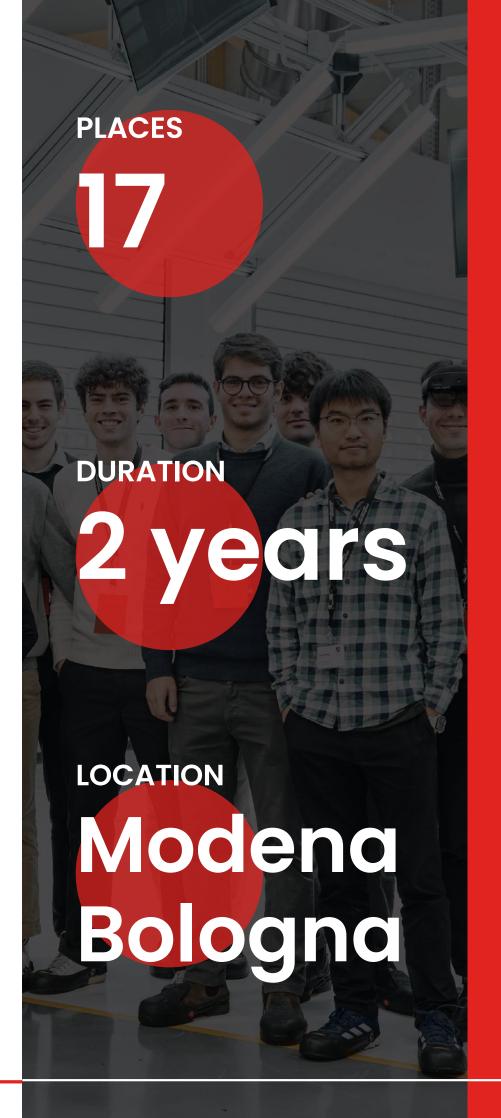
TOPICS

- Electric drives
- Electricpropulsionsystems
- Engine components design and manufacturing
- Internal combustion engines
- Mechanical transmissions
- Automatic controls
- Design and modelling of high performance propulsion systems
- Electromechanical energy storage and conversion

* The Course is held by the University of Modena and Reggio Emilia as part of the Master's Degree in Advanced Automotive Engineering.







For students aiming a career as **production** engineers, experts in the development and managing of automotive production processes and relative supply chains, offering a specific focus on advanced manufacturing and assembly systems and enabling technologies for digital factories, such as industrial robotics, big data analytics.

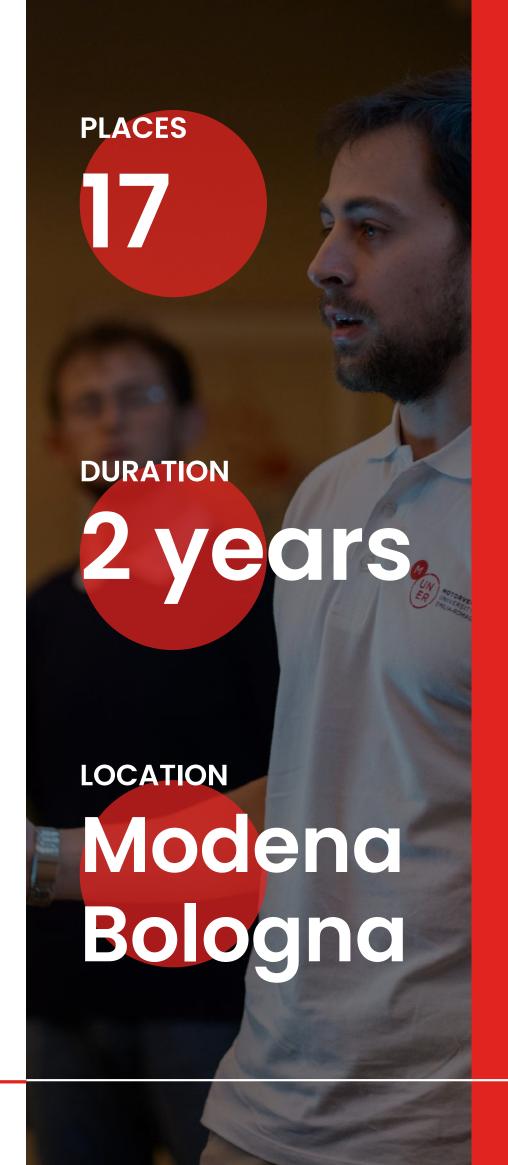
TOPICS

- Automatic controls
- Electric drives
- Powertrain design and manufacturing
- Internal combustion engines
- Chassis and body design and manufacturing
- Vehicle virtual design
- Modeling and control of internal combustion engines and hybrid propulsion system
- Motorcycle vehicle dynamics
- Powertrain testing, calibration and homologation

* The Course is held by the University of Modena and Reggio Emilia as part of the Master's Degree in Advanced Automotive Engineering.







For students aiming a career as design and manufacturing engineers, experts in the development of high-performance and race motorcycles, with a focus on chassis and powertrain design and manufacturing, also considering motorcycle vehicle dynamics.

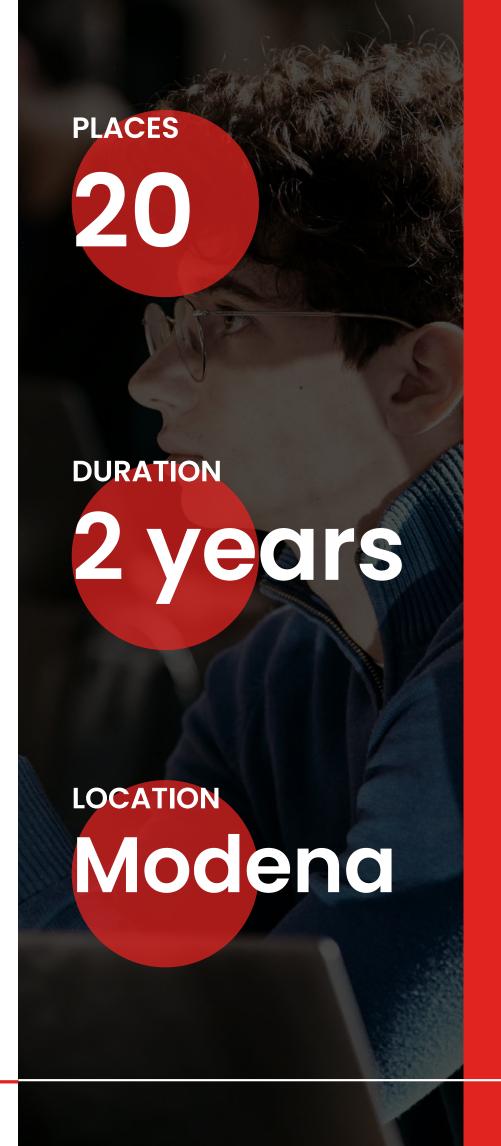
TOPICS

- Automatic controls
- Electric drives
- Powertrain design and manufacturing
- Internal combustion engines
- Big data analytics for automotive manufacturing applications
- Industrial plants design
- Industrial robotics
- Operations and supply chain design and management
- Automotive manufacturing and assembly systems

^{*} The Course is held by the University of Modena and Reggio Emilia as part of the Master's Degree in Advanced Automotive Engineering.







For students aiming a career as design and manufacturing **engineers**, experts in the development of highperformance vehicles, through state-ofthe-art computer aided engineering methods and tools for aerodynamics, vehicle dynamics, structural analysis for chassis and body, engineering design of automotive components and systems.

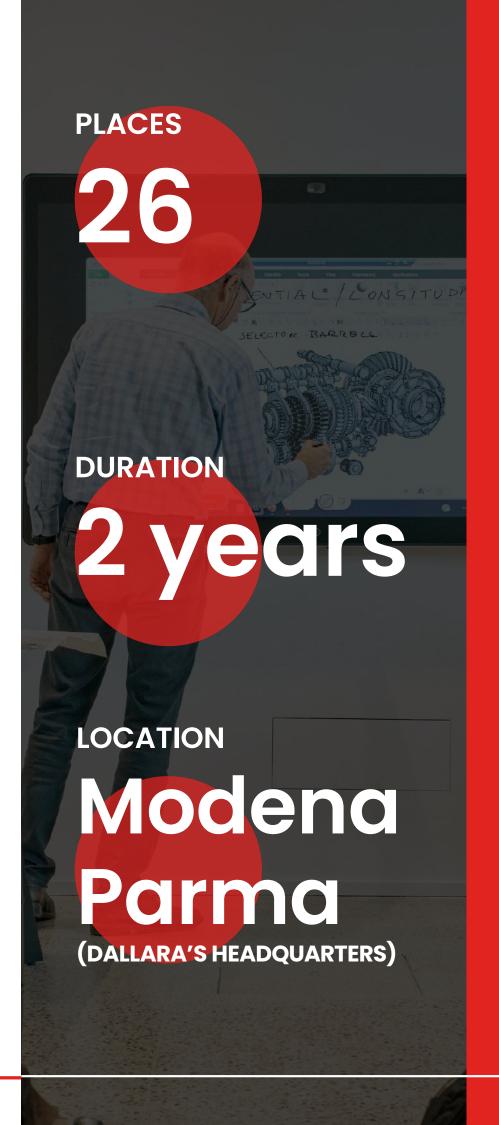
TOPICS

- Automotive computer aided design
- CFD fundamentals and aerodynamics
- FEM fundamentals and chassis design
- Vehicle dynamics
- Automatic controls
- Automotive fluid power systems
- Vehicle NH testing

* The Course is held by the University of Modena and Reggio Emilia as part of the Master's Degree in Advanced Automotive Engineering.







For students aiming a career as design and manufacturing engineers, experts in the development of race cars, with a special focus of fundamental and applied aerodynamics, advanced vehicle dynamics and light weight design and manufacturing of carbon fiber chassis and components.

TOPICS

- Automotive Computer aided design
- CFD fundamentals and aerodynamics
- FEM fundamentals and chassis design
- Vehicle dynamics
- Chassis and body design
- Design of racing car composite structure
- Dynamic testing of vehicles

* The Course is held by the University of Modena and Reggio Emilia as part of the Master's Degree in Advanced Automotive Engineering.







For students aiming a career as design and manufacturing engineers, experts in the development of off-highway vehicles, through fluid power actuation, electric and combustion propulsion systems, off-highway vehicle dynamics and testing, precision farming, product lifecycle management.

TOPICS

- Computer aided design
- Off-highway drive machinery and vehicles
- Ground interaction
- Electric drives
- Fluid power actuation/Vehicle dynamics
- Off-highway control and testing
- Precision farming machinery

* The Course is held by the University of Modena and Reggio Emilia as part of the Master's Degree in Advanced Automotive Engineering.

Muner teaching venues





ADVANCED AUTOMOTIVE ENGINEERING (AAE) ADMINISTRATIVE INFO:

Application Period:

Non-EU (Extra EU): 7 Feb - 28 March

EU: Early May - Early July

Enrollment Process:

Submission of the application with required attachments (including a presentation video for skills and motivation). Followed by ranking publication and enrollment.

Administrative University:

University of Modena and Reggio Emilia (Unimore)

Reference Department:

Enzo Ferrari Department of Engineering (Administrative headquarters)

Contacts:

info.aae@unimore.it

TUITION FEES:

Max Fee: €2,160/year Based on ISEE for EU students or flat tax for non-EU students abroad.

Scholarships: <u>Fees and Benefits Info</u> | <u>ER.GO</u>

Program Start Date: September

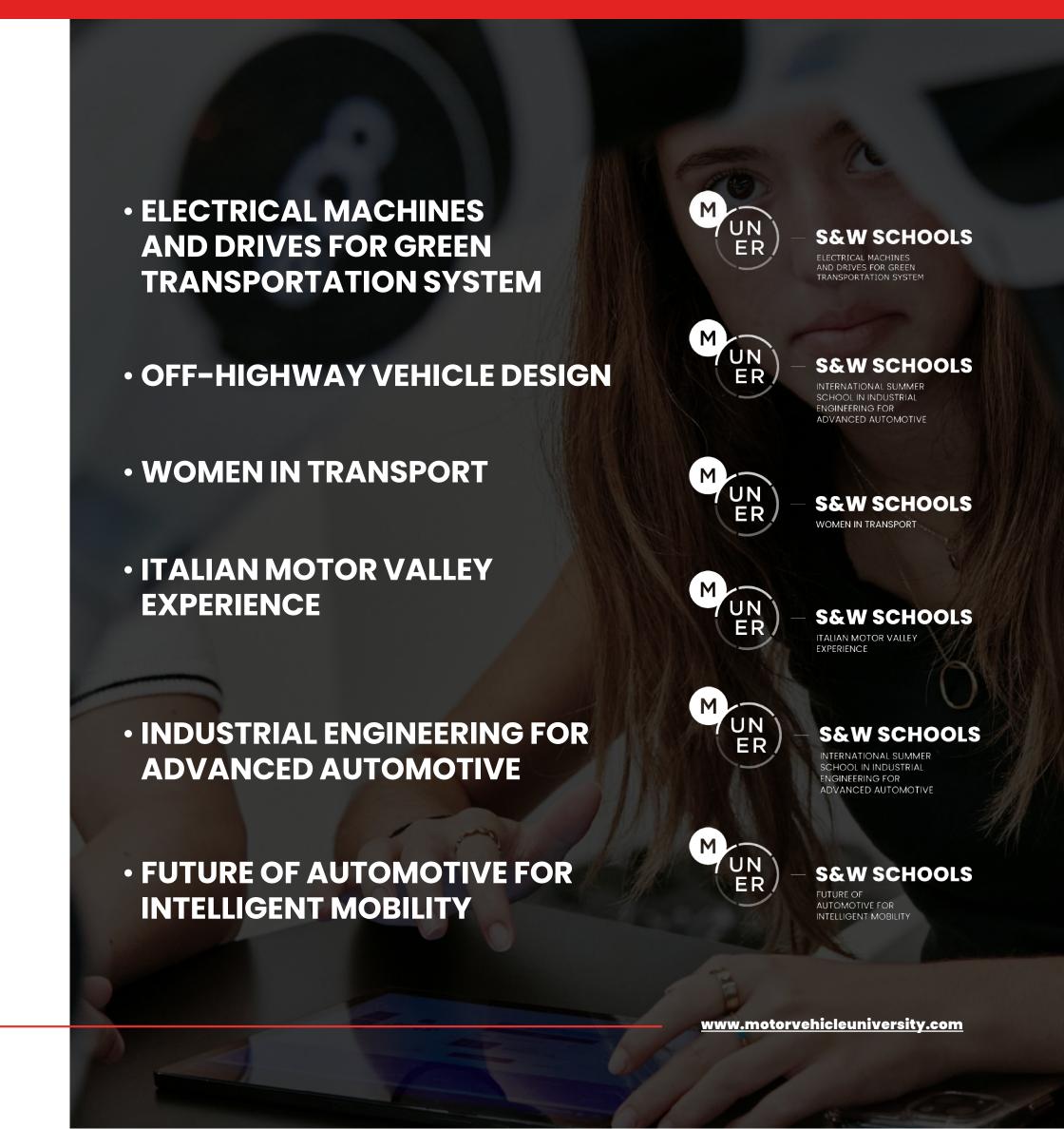
Teaching Language: English

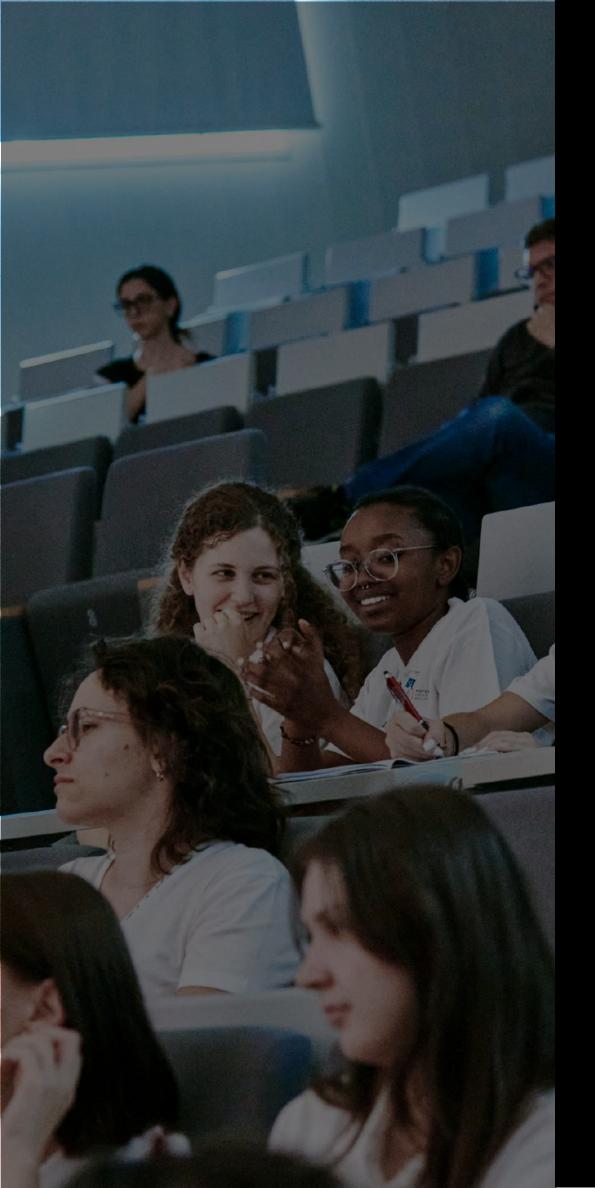






Our summer & winter schools





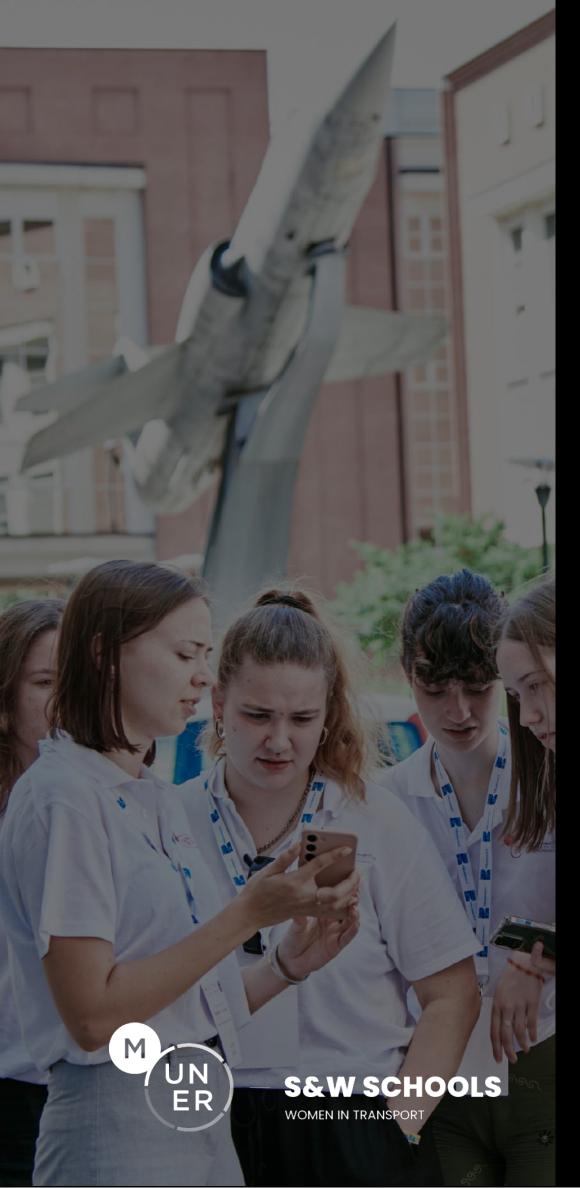


OUR SUMMER & WINTER SCHOOL

WOMEN IN TRANSPORT

The Summer School – Women in Transport is an immersive experience in the automotive world, designed to inspire young women and encourage their involvement in the transport sector by overcoming gender stereotypes. Organized with the support of Fondazione Marco Biagi, in collaboration with Unimore and the Department of Engineering Enzo Ferrari, the program combines academic insights, industry exposure, and cultural experiences. Delivered as an on-campus residential program at the Modena Campus, it includes company visits and seminars with MUNER's partner industries. Open to female students worldwide with a background in engineering, the initiative is endorsed by Women in Transport – EU Platform for Change, supporting gender equality in the sector.ummer

www.motorvehicleuniversity.com







On site at the Department of Engineering Enzo Ferrari (Modena Campus), in the Emilia Romagna region of Italy.

TARGET

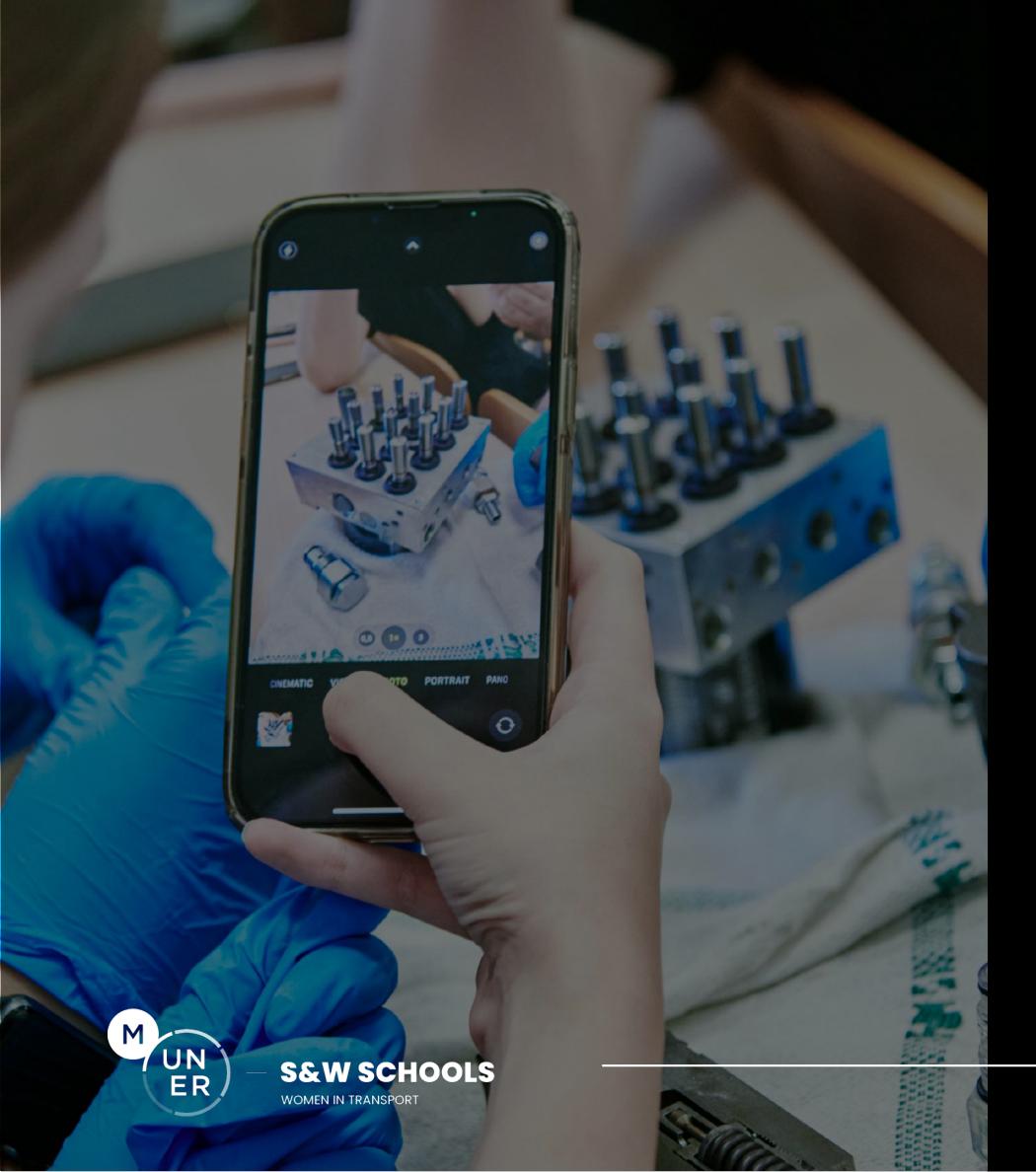
Young female students

Young female students who have obtained/are enrolled in a bachelor's degree in engineering.

Applications from students in other fields (architecture, chemistry, physics...) are also accepted;

applications and relevant competencies will be evaluated in the interview.

20 places.



PARTNER





DIRECTOR

Prof. Elena Bassoli (Unimore)

CONTACT

wit@motorvehicleuniversity.com



Lectures, workshops and seminars at the Department of Engineering Enzo Ferrari (University of Modena and Reggio Emilia).

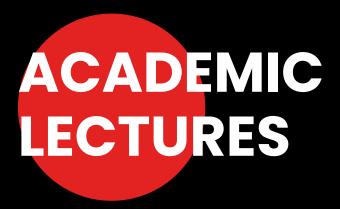
Cultural activities and social events to immerse participants in Italian culture, Factory Tours and meetings with Motor Valley businesswomen.

Practical experience with the Formula SAE team, final round table session on the topic of a diverse work environment.

All activities are held in English.

Discover more >

www.motorvehicleuniversity.com



Daily lectures held by professors and researchers from MUNER.

Example of the topics covered:

- Engine R&D on hybridization and alternative fuels
- CAD modelling of an automotive part
- Electrical machines for greener transportation
- Additive Manufacturing
- Structural analysis: theory and experiment
- Hands on hydraulic components for off highway vehicles



Our hands-on acivities:

- Exclusive activities with the MUNER partner companies, usually 4 per year: half-day or full-day comprising visits to production sites, visits to museums, seminars given by engineers
- Robotics lab
- Activities in collaboration with Formula SAE
- Final round table «Diversity and Inclusion»



Discover the Motor Valley through:

• Visit to Casa Maria Luigia in Modena



INTERNATIONAL PARTICIPANTS **NORWAY NETHERLANDS** BELGIUM LITHUANIA **UNITED KINGDOM** CREECE TURKS **FRANCE PORTUGAL** GREECE TURKEY **SPAIN INDIA COLOMBIA** COSTA RICA **RWANDA**

S&W SCHOOLS

WOMEN IN TRANSPORT

2 week

July
2025



S&W SCHOOLS WOMEN IN TRANSPORT

AGENDA 2024



S&W SCHOOLS ITALIAN MOTOR VALLEY EXPERIENCE

MONDAY 1/7/24

UNIMORE - DIEF: via Pietro Vivarelli. 10.

Modena

9 - 13 WELCOME ACTIVITIES Opening of school and link with EU Women in Transport initiative - Ruth Lopian -Policy Officer - Equality Coordinator

> 13 - 14.30 FREE LUNCH

14.30 - 18 **LECTURES** "Experimental and Numerical Approaches to Structural Analysis" - Prof. Mantovani, Prof. Giacalone

TUESDAY 2/7/24

UNIMORE - DIEF: via Pietro Vivarelli. 10.

Modena

9 - 13 **LECTURES** "Aerodynamics" - Prof. Cimarelli "Sustainable mobility: a pathway towards sustainable powertrains" -Prof. Ravaglioli

> 13 - 14.30 **FREE LUNCH**

14.30 - 17 **ASSEMBLY AND TESTING** @Formula SAE together with the MMR team

17 - 19.30 WIT FIRST REUNION Light aperitif

WEDNESDAY 3/7/24

UNIMORE - DIEF: via Pietro Vivarelli. 10.

Modena

9 - 13

ASSEMBLY AND TESTING

@Formula SAE together

with the MMR team

13 - 14.30

FREE LUNCH

14.30 - 18 **LECTURES** "LCA of additive

manufacturing" - Prof.

Colombini

THURSDAY 4/7/24

Via Leonardo da Vinci 300, Modena,

9 - 13 Robotic challenge -@COMAU, e.DO Learning Center

> 13 - 14.30 **FREE LUNCH**

CASA MARIA LUIGIA, Stradello Bonaghini 56, San Damaso, Modena

16 - 19 **VISIT TO CASA MARIA** LUIGIA

FRIDAY 5/7/24

Dallara Academy, Via Provinciale, 33A, 43040 Rizzone PR

ALL DAY LONG **FACTORY TOUR AND SEMINAR @Dallara Academy**



DURATION

PERIOD





S&W SCHOOLS
WOMEN IN TRANSPORT

AGENDA 2024



S&W SCHOOLS

ITALIAN MOTOR VALLEY
EXPERIENCE

SATURDAY 6/7/24

SUNDAY 7/7/24

MONDAY 8/7/24

TUESDAY 9/7/24

WEDNESDAY 10/7/24

Museo Enzo Ferrari, Via Paolo Ferrari,

85, 41121 Modena MO

9 - 13 VISIT TO THE ENZO FERRARI MUSEUM IN MODENA **FREE DAY**

Ferrari, Maranello

ALL DAY LONG
MUSEUM AND FACTORY
TOUR
SEMINAR
@FERRARI



UNIMORE - DIEF: via Pietro Vivarelli, 10, Modena

> 9 - 12 LECTURES CAD - Dr. Dal Padulo

> > 12 - 13 FREE LUNCH

Ducati, Via Antonio Cavalieri Ducati, 74/5

13.45 - 18
MUSEUM AND FACTORY
TOUR
@DUCATI



UNIMORE - DIEF: via Pietro Vivarelli, 10, Modena

> 9 - 12 LECTURES

"Electrified power unit architectures" - Prof. Nuzzo

> 12 - 13 FREE LUNCH

LAMBORGHINI, Via Modena, 12, 40019 Sant'Agata Bolognese BO

13.45 - 18 MUSEUM AND FACTORY TOUR @LAMBOGHINI



2 week

July
2025





S&W SCHOOLS
WOMEN IN TRANSPORT

AGENDA 2024





THURSDAY 11/7/24

UNIMORE - DIEF: via Pietro Vivarelli, 10, Modena

9 - 12
LECTURES
"Hands on Hydraulic
Components" - Prof.
Barbara Zardin

12-13
Speech by KOHLER presentation of EnginHER
edition 2024

13 - 14.30 FREE LUNCH

14.30 - 18 LECTURES "Innovative propulsion systems" - Dr. Stefano Sfriso FRIDAY 12/7/24

UNIMORE - DIEF: via Pietro Vivarelli, 10,

9 - 13 LECTURES CAD - Dr. Dal Padulo

> 13 - 14.30 FREE LUNCH

14.30 - 18
FINAL ROUND TABLE
"Diversity and Inclusion"

18.00 FAREWELL APERITIF SIDE NOTES

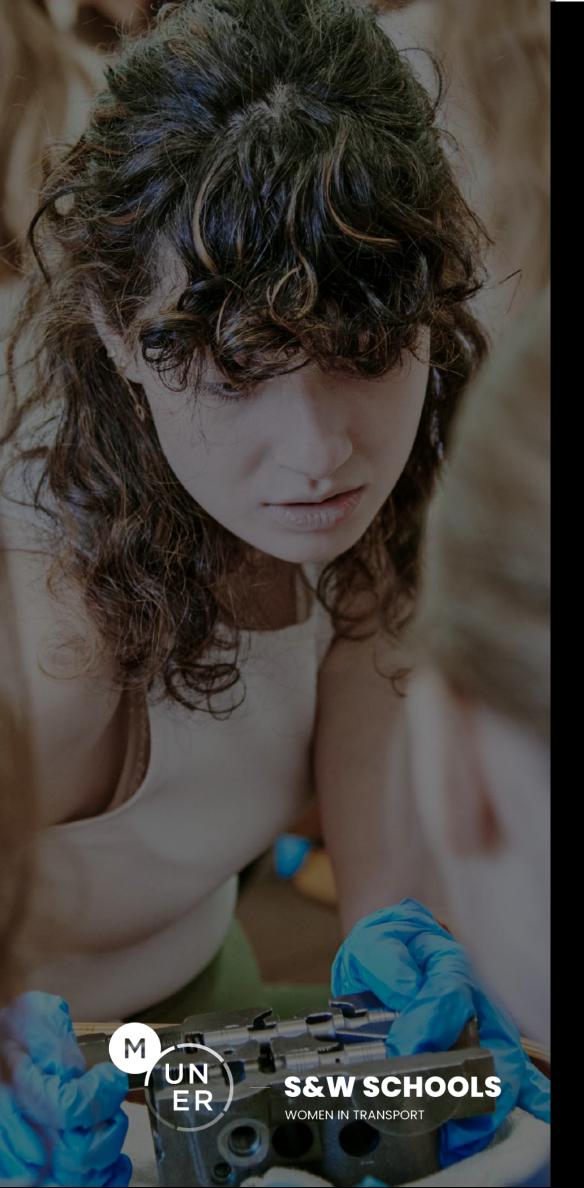
Accommodation at the Hotel Libertà, Modena

Please note: While at school and especially during company visits, it is necessary to wear appropriate clothing with closed shoes, covered shoulders and a formal dress code.



July
2025







Accommodation:

Fondazione San Carlo, a historic university college in the heart of the city.

Arrival and departure:

Students should arrive Sunday before the activity starts. We recommend that you book your flight/train for departure on Saturday, as the last day of the activity is Friday.

ALL THE DETAILS OF THE PROGRAM ORGANIZATION WILL BE SENT TO THE SELECTED STUDENTS BY E-MAIL ONE MONTH BEFORE THE SCHOOL STARTS.



- Students will arrive at the Department of Engineering Enzo Ferrari each day **by public bus** (not included in the fee)
- Activities begin at 9AM and end at 6PM, with a one-hour lunch break. Schedule may vary depending on specific activities of the day.
- **Special days:** Transportation to and from the locations of the partner companies is included in the fee and will be provided by shuttle buses organized by MUNER.





WHAT IS INCLUDED?

- Accommodation in Modena city center
- Academic and cultural activities as scheduled in the final program
- **Transportation** to and from partner companies for scheduled visits
- Final roundtable and Cocktail Reception
- Accident **insurance**

WHAT IS NOT INCLUDED?

- Flights and any personal transfers
- Meals and public buses
- Any personal expenses.

ONLINE APPLICATION

TIPS FOR APPLYING:

- Provide the information requested, including contact and personal information.
- In the CV, highlight both your grades and any extracurricular STEM activities.
- In your cover letter, emphasize your passion for the automotive world and why you chose to apply to this program.

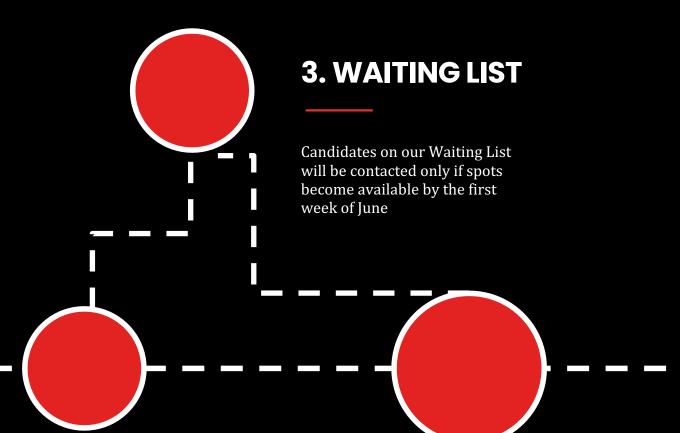
OPEN TILL

April 28th 2025





STEP TO GET STARTED



1. APPLICATION

2. APPLICATIONS SCREENING

3. MOTIVATIONAL INTERVIEW

4. ENROLLMENT

Selection Criteria:

- Fluency in English
- Be enrolled in or have recently completed a Bachelor's degree in Engineering/STEM subjects
- Motivation and commitment

Candidates will be selected on the basis of the Scientific Committee's final assessment of the above criteria. Selected candidates will be informed by e-mail about the registration procedure.

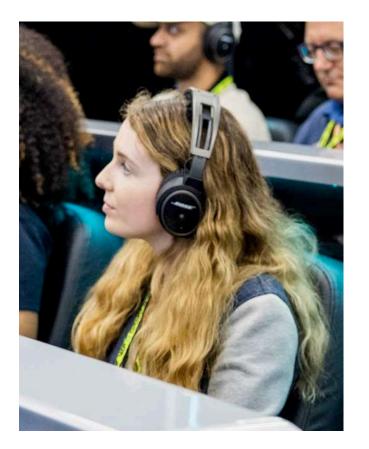
The scientific committee evaluates applications based on the CV's alignment with selection criteria thresholds and the quality of motivational letters

Calls for motivational interviews will take place from 5 May 2025.

Candidates positively evaluated will receive admission notification via email, with instructions and deadlines for enrollment.

www.motorvehicleuniversity.com





Grace Newman

From: **UK**

Background:

MEng Automotive Engineering (Loughborough University)
WIT 2024 Alumna
Royal Academy of Engineering Scholar
Loughborough Female Undergraduate
Engineer of the Year
Stemette Futures Youth Board Advisor
Lboro WES Professional Liaison
LU Motorsport Formula
Student Simulation Project Lead

Former work experience / placements:
Cosworth, Extreme E, McLaren Racing,
Mercedes-AMG PETRONAS F1 Team,
Mercedes HPP

ALUMNAE

