



DESIGN AND DEVELOPMENT OF VEHICLE DYNAMICS

THE POST BACHELOR PROGRAMME 3rd Edition 2018-2019, Italy October 2018

The innovative course has the aim of training highly qualified professionals with a solid background in the design of vehicle dynamics and capable of operating in all the phases of design and development: from the dynamic simulation to the testing of the prototype and the preproduction vehicle.

The course provides students with special and specific competence in vehicle testing technique, both virtually, through CAE, and experimentally, on the real vehicle (on track and road).

The training program, as an absolutely innovative feature, includes, alongside frontal instruction, test sessions on the Quattroruote ASC (Automotive Safety Centre) track and proving ground areas at Vairano (PV), during which the participants are engaged at first hand in learning the techniques and methodologies used

in testing, inspection, checks and fine tuning of the vehicle dynamic behavior.

With the Bio-mechatronics module the students are introduced to the driver/vehicle interaction methodologies and to the physiological adaptation and stress evaluation topics. The discipline of the Vehicle dynamic control is also a strategic asset of the course.

The training program of the course is completed, and this aspect represents a further innovation, by the full-time use of a compact static simulator, located at the Master's course headquarters in Palazzo Vistarino (University of Pavia), for developing vehicles in a virtual environment. Students will attend also a special workshop on the VI-grade DiM (Driver in Motion) driving dynamic simulator.

The course includes a 6 months internship period offered by the Companies partner of the Programme.





The Programme

- Total Vehicle Design
- Fundamental Driving Dynamics
- Virtual Dynamics Design and Simulation
- Materials and Structural Design
- Propulsion: IC and Hybrid
- Vehicle Dynamics Control
- Total Vehicle Testing and Development
- Biomechanics: Driver/Vehicle interaction

Duration: **one-year full-time**

Start date: **October 2018**

Location: **Pavia, Italy**

Application start: **July 2018**

Minimum requirements for admission: **Bachelor Degree in Engineering**

Advanced Short Courses included:

During the Programme, the applicants will participate to Advanced Short Courses, held by expert professionals from Academics and Companies, on the following topics:

- Unconventional Vehicle Dynamics
- Tire/Vehicle Handling Analyses
- Tire/Vehicle Handling: experimental test with different tire specifications
- Advanced techniques for the physical modelling of tire/road interaction phenomena
- Composites application in Automotive
- Experimental workshop on objective and subjective performance evaluations
- Autonomous Vehicles and Regulation
- Advanced Driver Assistance Systems



For further information:

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<http://iii.unipv.it/index.php?pag=didattica/master.html>

