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The world awaits

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WHY STUDY WITH US?
LET **THE NUMBERS** DO THE TALKING:

800 
professors and
researchers

31k 
students from Italy and
all over the world

96 
courses to
choose from

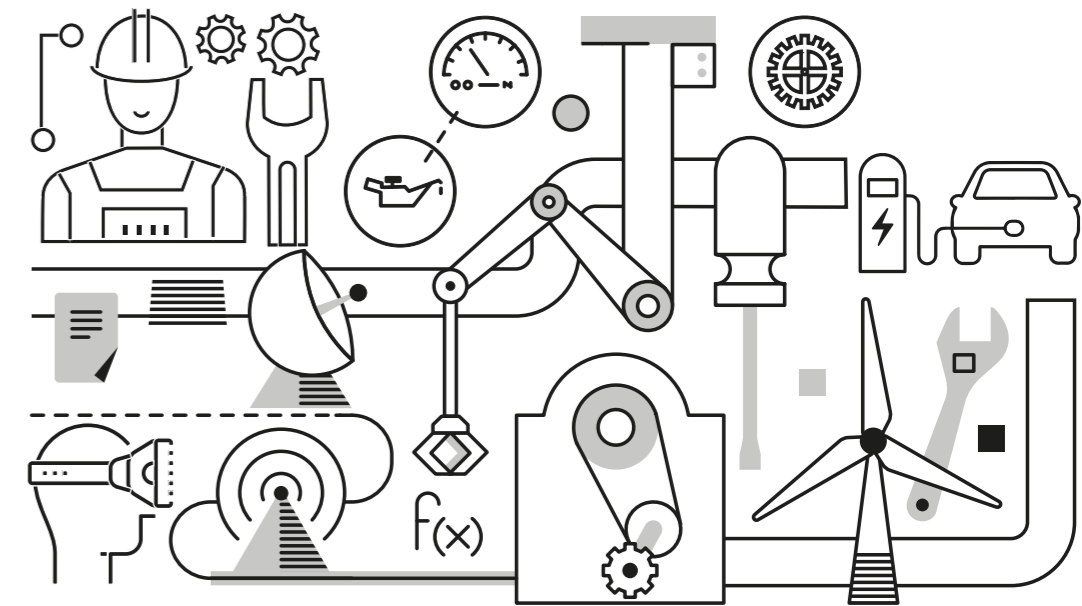
100% 
grants for
those entitled

ACADEMIC YEAR 2021/2022

TWO-YEAR SECOND-CYCLE DEGREE

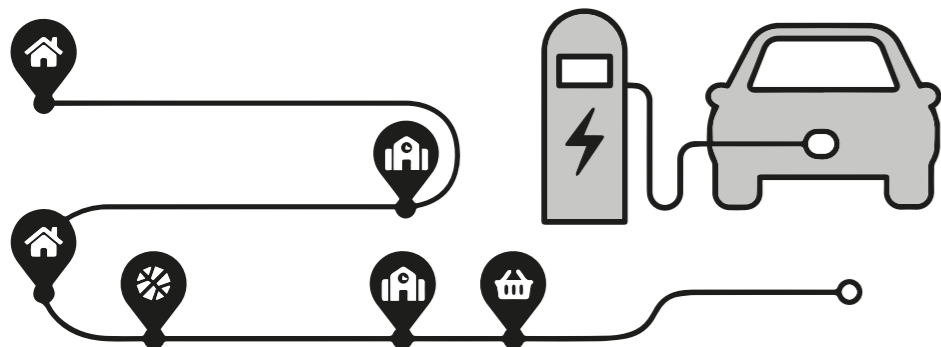


ELECTRIC VEHICLE ENGINEERING



Edizione marzo 2021

ELECTRIC VEHICLE ENGINEERING



WHY PARMA

The increasing success of electric propulsion vehicles is causing disruptive changes to the automotive industry. In particular, new professional figures devoted to developing and integrating the main electrical components that go into the new generation of vehicles and motorbikes are needed. The goal of the Inter-University Master's Degree in Electric Vehicle Engineering is to train engineers capable of operating in this new and

promising field, with particular attention to fully electric solutions and to the mobility problems associated with them.

The Electric Vehicle Engineering course is taught completely in English with particular emphasis on both theoretical and practical contents, thanks to internships performed at the industrial partners' premises and theses carried out in "Project Working" mode at university or industrial laboratories.

WHAT YOU WILL LEARN

FIRST YEAR

- ADVANCED ELECTRIC DRIVES AND SENSORS	12	CFU 69
- ELECTROMECHANICAL ENERGY STORAGE AND CONVERSION	6	
- DIAGNOSIS AND CONTROL	6	
- LABORATORY OF BUSINESS PLAN	3	
- VEHICLE ENERGETICS AND HVAC SYSTEMS	6	
- ELECTRICAL POWER SYSTEMS FOR SUSTAINABLE MOBILITY	6	
- ELECTRIC DRIVELINES	6	
- ELECTROMAGNETIC COMPATIBILITY	6	
- POWER ELECTRONIC CONVERTERS	6	

Guided choice elective courses

▪ COMMUNICATION SYSTEMS: THEORY AND MEASUREMENT	12	
▪ DYNAMICS AND COMPLIANT CONTROL OF ELECTRIC VEHICLES	6	
▪ HARDWARE-SOFTWARE DESIGN OF EMBEDDED SYSTEMS	6	
▪ TECHNOLOGIES AND APPLICATIONS OF WIRELESS POWER TRANSFER	6	

SECOND YEAR

- AUTOMOTIVE POWER CIRCUITS AND ELECTRIC MOTOR DESIGN	12	CFU 51
- VEHICLE DESIGN AND CONNECTIVITY	6	

Free choice elective courses:

▪ INSTRUMENTATION FOR ELECTRICAL ENGINEERING	9	
▪ LABORATORY OF ELECTRIC DRIVES	6	
▪ PRODUCT SAFETY, PRODUCT LIABILITY AND AUTOMOTIVE	3	
▪ LABORATORY OF TECHNICAL ENGLISH	6	
▪ LAB OF RELIABLE SYSTEMS DESIGN	3	
▪ VIRTUAL INSTRUMENTATION LABORATORY	3	
▪ MECHATRONICS SYSTEMS MODELING AND CONTROL	3	

- FINAL EXAMINATION WITH OPTIONAL INTERSHIP	24	
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CAREER OPPORTUNITIES

An Electric Vehicle Engineering engineer has a multidisciplinary training and is able to face all problems relative to the various subsystems of electric vehicles, from motors and batteries through to on-board communication systems. The main professional opportunities enabled by the Master's Degree in Electric Vehicle Engineering are in innovation and development of electric vehicles, advanced design, production planning, management of complex systems in manufacturing or service companies

engaged in the production of premium or racing electric vehicles and motorbikes and in the related supply chains, national and international.

Graduates in Electric Vehicle Engineering can complete their training enrolling in a PhD School or a 2nd level Master's degree.

Graduates also own the skills and the legislative requirements to practice as licensed professional engineers in the Italian *Ordine Professionale degli Ingegneri*, section A, sector B-Industrial.

GENERAL INFORMATION

COUNSELOR FOR TUTORING

PROF. ALESSANDRO TASORA alessandro.tasora@unipr.it

HOW TO ENROLL

Further information corsi.unibo.it/2cycle/ElectricVehicleEngineering - motorvehicleuniversity.com/

DEPARTMENT

Dipartimento di Ingegneria e Architettura - dia.unipr.it
Parco Area delle Scienze, 181/A - Campus Universitario

TYPE AND DURATION

Master's Degree - Laurea Magistrale (two years)

DEGREE CLASS

LM-28 Classe delle lauree magistrali in Ingegneria elettrica