Faculté des Sciences & Techniques

Le Mans Université

Professional Bachelor's degree Multitechnic systems maintenance

Motors and Environment

DYNAMIC BENCH

HYBRID - THERMAL / ELECTRIC

Le Mans Université

How does the bachelor's degree work ?

Classes for the Motors and Environment section are 90% at the Lycée Carnot in Saumur and 10% at the University of Le Mans.
The course is offered on a work-study basis (contrat de professionnalisation and contrat learning).

Target audience
The degree is particularly aimed at students from :
BTS Moteurs à Combustion Interne (BTS MCI or MTE)
BTS Maintenance des Véhicules (MV) et DUT Génie Mécanique et Productique (GMP) ou DUT Génie Thermique et énergétique BTS Conception de Produits Industriels (CPI), DUT Mesures physiques ou L2 Sciences Pour l'Ingénieur (SPI), L2 Physics

Training objectives

- Train technicians to carry out tests, measurements, analyses and R&D on propulsion and energy systems, whatever the energy source [electricity, gas, hydrogen, liquid fuels].
- Putting students in direct contact with the realities of the professional world through a strong involvement of the industrial engineering sector in the training program.

On completion of the training program, graduates can work as :

- In charge of thermal and/or electric engine development in all fields (motorcycle, car, truck, bus, tractor, marine, train, generator sets...).
- Specialist in reducing pollutant emissions
- Specialist in automation applied to test equipment, engines and vehicles

Admission

Log on to the Le Mans Université eCandidats website **ecandidats.univ-lemans.fr**. Your application will be examined by the LP M&E jury. You will receive the jury's final decision - Admitted, Refused, Admission on complementary list.

Organization

UE1 - Test equipment

- Software test facilities
- Test Equipment
- 4-stroke petrol and diesel engines and characterization

UE 2 - Engine specificities

- Gasoline and diesel combustion; gasoline and diesel emissions
- Electricity, physical quantities, electrochemistry

UE 3 - Generalities, on-board energy

- Liquid, synthetic and gaseous fuels
- Consumption reduction strategies, CO_2, BV, comparisons
- Hybridization, electrification, energy balances
- Lubrication and pollution control

UE 4 - Control, motor architectures

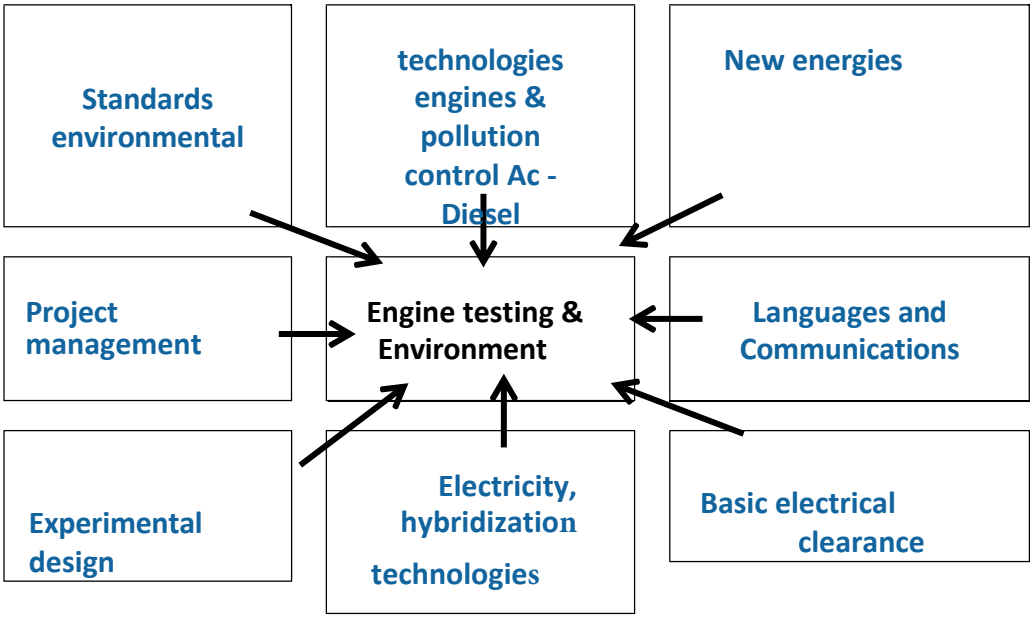
- Controls,Acquisition and electrotechnical components
- ECU architecture, engine control, hydrogen combustion
- AC and diesel engine emission control strategies

UE 5 - Languages, communication, projects

- Electrical certification
- Quality and project management
- Experimental design
- Technical English

UE6- Company project

UE7 - Internship - activity report


Standards environmental
technologies engines & pollution control Ac - Diesel
New energies
Project management
Engine testing & Environment
Languages and Communications
Experimental design
Electricity, hybridization technologies
Basic electrical clearance

.

Training benefits

A number of professionals are involved in the training program:

- from the VOLVO powertrain technical center
- speakers from major automotive brands (Stellantis - Renault)
- from test bench companies (FEV - Horiba)
- engineers recognized for their expertise (LRX Autotechnic - SVTEIC - AJconseil)

Contact

Elisabeth Dubois (secretariat) - 02 43 83 36 23
Elisabeth.Dubois@univ-lemans.fr

Mickaël LESCOP (Teacher - Lycée de Saumur) licencepro.moteur@gmail.com

Florent CALVAYRAC (training manager)
florent.calvayrac@univ-lemans.fr

Le Mans University
www.univ-lemans.fr

Lycée Sadi Carnot - Jean Bertin
25 rue Marceau
49401 SAUMUR Cedex
Tel: 02 41 53 50 00

CFA (apprentice training center) FORMASUP Pays de la Loire https://www.formasup-paysdelaloire.fr/