

ENERGETICS RENEWABLE ENERGIES



Key Words

Processes for renewable energies, energy management of buildings, renewable and non renewable energy sources, control engineering, electricity, electronics, energy management, sustainable development, cogeneration, hybridization, life cycle assessment.

Objectives

An energetics and renewable energies engineer will be able to carry out energy audits for buildings or energy processes, to conceive or to recondition buildings or processes using renewable energies*, to optimize, to build and to manage buildings or processes including renewable energies*, following both global and local approaches of sustainable development, taking into account different social, legal and safety aspects.

* solar – wind energy – biomass – geothermal energy – hydraulics – sea energies

Employment Sectors

The current energy and environmental issues have led to important changes including growing needs for energetics and renewable energies engineers. This potential has been identified in large national and international companies, in the engineering and study offices specialised in renewable energies, local and national government agencies, in the international development organisations as well as in specialised private research institutes...

Industrial Partnerships

Industrial partners are constantly involved in curriculum definition, in offering work placements, in defining industrial projects and in presenting specialised lectures.

Industrial placements :

- third year (1 to 2 months)
- fourth year (2 to 3 months)
- fifth year (4 to 6 months)

Projects

- Throughout the three year programme : both in research laboratories and in industry.

These compulsory industrial placements and projects provide the students with the practical knowledge and know-how of the professional environment, as they put the students in real life technical situations.

They are carried out in regional, national and international industries and are directly linked to the potential job market.

Research Partnerships

Students are taught by academics and lecturers who also carry out research activities in the laboratories of the University of Perpignan (UPVD), in collaboration with other national research institutes (CNRS, INRA, CIRAD, IRD, IFREMER, CEMAGREF). Some of these research activities are carried out in collaboration with industrial companies (large companies or small and medium enterprises) through industrial contracts or national (ANR, Competitiveness clusters like DERBI, Suez, Saint-Gobain, EDF, Bertin ...) or European projects.

Consequently, students are currently linked to advanced state of the art industrial technologies. They may then work directly in Research and Development Departments, or enrol in PhD studies in Energetics and Renewable Energies.

The Department has developed privileged relationships with regional and national technology transfer centres.

Academic Partnerships

Polytech'Montpellier – UM2, UPVD, France, has well-established agreements with several European and non-European universities.



under agreement with



HEAD OF DEPARTMENT: Thierry TALBERT
Administration: +33 (0)4 68 83 50 91 - fax +33 (0)4 68 68 22 13
E.mail scola@polytech.univ-montp2.fr
www.polytech.univ-montp2.fr

Core curriculum for all Polytech'Montpellier Departments

3rd to 5th year

Mathematics engineering, Computer engineering
Social sciences, Corporate culture, Project management, Communication,
Project engineering, Foreign languages, Careers advice

THIRD UNIVERSITY YEAR 60 ECTS

Semesters 5 and 6 - Modules

Module 1 : Thermodynamics 1	Module 1 : Project
Module 2 : Thermal processes 1	Module 2 : Thermodynamics 2
Module 3 : Fluid mechanics 1	Module 3 : Thermal processes 2
Module 4 : Renewable energy sources	Module 4 : Fluid mechanics 2
Module 5 : Electricity	Module 5 : Renewable energy sources
Module 6 : Analog electronics	Module 6 : Electric machines
Module 7 : Automatic processes	Module 7 : Thermal regulation of buildings
Module 8 : Mathematics 1	Module 8 : Process Control
Module 9 : Practices of programming in energetics	Module 9 : Mathematics 2
	Module 10 : Computer tools for engineers

INDUSTRIAL PLACEMENT (1 to 2 months)

FOURTH UNIVERSITY YEAR 60 ECTS

Semesters 7 and 8 - Modules

Module 1 : Chemical and physical kinetics	Module 1 : Project
Module 2 : Reactors engineering	Module 2 : Unit proceedings
Module 3 : Materials	Module 3 : Nuclear or fossil energy
Module 4 : Renewable Energy technologies	Module 4 : Renewable energy technologies
Module 5 : Power electronics	Module 5 : SED
Module 6 : Fault detection	Module 6 : Systems management in renewable energy
Module 7 : Analog electronics	Module 7 : Life cycle analysis
Module 8 : Statistics	Module 8 : Energy storages
Module 9 : Industrial software for energetics	Module 9 : Continuous systems

INDUSTRIAL PLACEMENT (2 to 3 months)

FIFTH UNIVERSITY YEAR 60 ECTS

Semesters 9 and 10 - Modules

Module 1 : Project	Module 3 : Sensors
Module 2 : 8 options to be chosen	Module 4 : Hybridization-cogeneration

It is also possible to specialise in one of our sister schools in the Polytech'network or in another engineering school in France or abroad.

INDUSTRIAL PLACEMENT (4 to 6 months)

POLYTECH' MONTPELLIER also offers to foreign students who don't speak French the chance to study in their MUNDUS PROGRAMME.

This is a special programme that enables foreign students who already have Master's level in their country of origin to come and spend a year learning intensive French and also specialised scientific subjects according to their choice of Speciality (Major). Upon successful completion of this year, they can join Years 4 and 5, and go on to obtain the prestigious French Engineering qualification.

For more details of this **MUNDUS PROGRAMME**, please contact us at the International Relations office : relint@polytech.univ-montp2.fr

