



MASTER'S DEGREE IN ENERGY FOR SUSTAINABLE ENGINEERING

Graduate Track For Intelligent & Innovative Mobility



POLYTECH[®]
CLERMONT



Institute of Technology

3 graduate schools of Engineering in Clermont-Ferrand

Clermont Auvergne University

Computer science • Biological Engineering • Mechanical Engineering • Civil Engineering • Electrical Engineering • Mathematical Engineering & Data Science • Engineering Physics • Production Systems Engineering • Chemistry & Chemical Engineering



Polytech Clermont is a public Graduate School of Engineering of the French Ministry of Higher Education, Research, and Innovation. Polytech Clermont is a part of Clermont Auvergne INP and is a member of the Polytech Group which regroups 15 Graduate Engineering Schools in France, that train more than 10,000 engineers a year.

Polytech Clermont benefits from the active international research and study environment of Clermont Auvergne University, its staff is associated to 10 of its research laboratories. Polytech Clermont offers graduate students **six programs: Biological Engineering, Civil Engineering, Electrical Engineering, Mathematical Engineering and Data Science, Engineering Physics, Production System Engineering.**

Currently, around **1,200 students** are enrolled at Polytech Clermont. Polytech Clermont-Ferrand has trained nearly 7,000 engineers since its inception in 1969.

3 engineering graduate schools
Clermont Auvergne INP - ISIMA
Clermont Auvergne INP - SIGMA Clermont
Clermont Auvergne INP - Polytech Clermont

4 engineering preparatory classes
(at undergraduate level)
La Prépa des INP (Groupe INP)
CPI (Fédération Gay-Lussac)
Prép' Isima
PeiP (réseau Polytech)

2 500 students

189 international cooperation agreements

350 academic & administrative staff

3 Main research centers affiliated to the French National Research Centre (CNRS)

INP Member of the INP Group
+35 public engineering school in France

1 professional training department



EDUCATION



RESEARCH

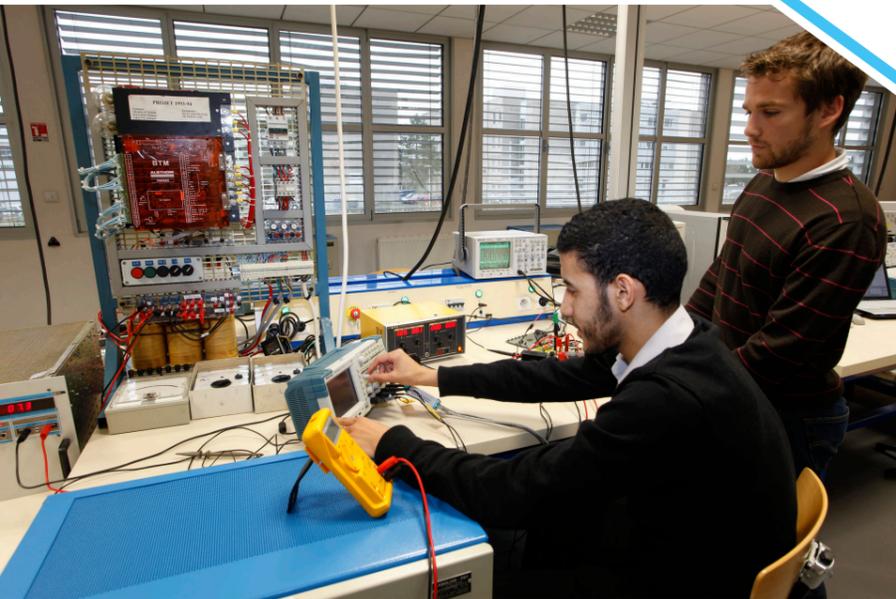


PROMOTION OF RESEARCH



MASTER'S DEGREE IN ENERGY FOR SUSTAINABLE ENGINEERING

The mobility of people and objects consumes a large quantity of natural resources, in terms of both materials and energy. Energy efficiency, energy sobriety, and decarbonized energies are the keys for a sustainable future.



In short:

> **Training period:**
3 semesters at POLYTECH Clermont
+ 1 semester of internship

> **Language:**
English + additional French language courses

> **Starting in:** September

> **ECTS:** 60+60

This master's degree offers students multidisciplinary training in the field of engineering applied to energy production, storage, supply, and management, including mainly:

- renewable energy (bioenergy, solar from materials to panels)
- hydrogen production and power-to-gas
- sustainable mobility based on hydrogen, power, or liquid biofuels
- energy efficiency for industrial and service sectors

Take advantage of specialized training and research bench-scale to pilot-scale facilities of the chemical and biochemical engineering laboratory, and of the engineering physics workshops (CAD, soldering, 3D printing, physicochemical properties) of POLYTECH Clermont for project-based learning.

Industrial Partners:

Institut Pascal (chemical engineering, bioenergy, solar energy, physics), Excellence Laboratory on sustainable mobility (LabEx IMobS3) and CIR ITPS (Innovative Systems for Transportation and Production), Michelin, Bio-Valo.

Hosting Graduate School :



Contact: Christophe VIAL - christophe.vial@uca.fr

PROGRAM

1st semester

- 1/ Energy tools for engineers - 50 hrs
- 2/ Specialized energy tools in chemical and biochemical engineering - 50 hrs
- 3/ Specialized energy tools in engineering physics - 50 hrs
- 4/ Project in energy and sustainable development - 150 hrs
- 5/ Humanities, French, English - 50 hrs

2nd semester

- 1/ Energy tools for engineers - 50 hrs
- 2/ Sustainable development - 50 hrs
- 3/ Project in energy and sustainable development - 50 hrs
- 4/ Humanities, French, English - 50 hrs
- 5/ 4-month internship in a research laboratory (academic or industrial)

3rd semester

- 1/ Energy engineering - 40 hrs
- 2/ Decarbonized energy - 40 hrs
- 3/ Energy efficiency - 40 hrs
- 4/ Energy storage and supply - 40 hrs
- 5/ Energy management - 40 hrs
- 6/ Sustainable Mobility - 60 hrs
- 7/ Research and innovation project - 100 hrs
- 8/ Humanities, French, English - 40 hrs

4th semester

Final internship (5-6 months)

ADMISSION CRITERIA

- Applicants should already have passed/validated a bachelor's degree in Physics, Physical Chemistry, Materials Engineering, Chemical Engineering, or Biochemical Engineering.
- The selection process will be based on the examination of the application file (cv, transcript of the BEng, English language certification). The candidate may be invited to an interview.



3 school projects
and 2 internships

> 4-month internship between
the 2nd and 3rd semesters

> final internship (5-6 months)



POLYTECH Clermont

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