

ENERGY ENGINEERING DEGREE

- Duration: 240 ECTS points
- Facility: E.T.S.I DE MINAS Y ENERGIA- UPM
- Web: www.minasyenergia.upm.es
- Contact us: 91 067 63 24



POLITÉCNICA



ESCUELA TÉCNICA SUPERIOR
DE INGENIEROS DE MINAS Y ENERGÍA

Goals:

Training professionals in energy processes from energy sources and their formation, developing efficient and sustainable technologies.

Training the students to know the different trends in this field such as: wind and solar energy in all their variations, nuclear energy, cogeneration (electricity and heat), thermal power stations, nuclear engineering, fossil fuels, renewable energies and energy markets' management, in and environmental and sustainable perspective.

Specialization:

This university degree has two years of common basic learning and after these years, you will be able to choose between two specializations:

- **Energy Management and Use** (At the Higher Technical School of Mining and Energy Engineers)
- **Energy Technologies** (At the Higher Technical School of Industrial Engineers)

Career opportunities:

- Creation, management and use of energies.
- Conventional and renewable energy sources.
- Energy consultancy (energy audit and efficiency).





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SUBJECTS

Itinerary: Energy Management and Use (ETSIME-UPM)



FIRST YEAR

FIRST SEMESTER	ECTS	SECOND SEMESTER	ECTS
Calculation I	6	Calculation II	6
Algebra	6	Statistics	6
Physics I	6	Physics II	6
Chemistry I	6	Chemistry II	6
Graphic expression	6	Computing and Programming	6

SECOND YEAR

FIRST SEMESTER	ECTS	SECOND SEMESTER	ECTS
Differential equations	6	Numerical modelling and analysis	4.5
Electromagnetism	6	Circuit Theory	6
Mechanics	6	Fluid Mechanics and Hydraulics	6
Thermodynamics	6	Material Technology	7.5
Business Management	6	Heat and Mass Transfer	6

THIRD YEAR

FIRST SEMESTER	ECTS	SECOND SEMESTER	ECTS
Thermal Machines	6	Electric Power Generation industry	6
Fuel and Combustion Technologies	6	Refining	6
Nuclear Energy and Fuel Cycle	6	Academic and Professional communication in English	6
Process Engineering	6	Electronics, instrumentation and control	6
Use of electric power	6	Energy efficiency and savings	6

FOURTH YEAR

FIRST SEMESTER	ECTS	SECOND SEMESTER	ECTS
Market, logistics and fuel distribution	4.5	Elective subject	6
Market and electric power transmission	6	Internship	12
Project Engineering	3	Final project	12
Renewable energies	6		
Management and environmental engineering	3		
Fuel and energy advanced techniques	4.5		
Operation and maintenance techniques	3		