

# RENEWABLE ENERGY

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**Admission exams:** Biology and Geology (02) or Mathematics (16) or Physics and Chemistry (07)

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ISMAI aims to train graduates in Renewable Energy who have knowledge in different fields and are able to apply, integrate and develop intelligent solutions and rationally use available energy resources. Graduates will have a variety of skills, will have knowledge of methods and tools for managing and using energy, will be able to manage resources in different areas of society and guarantee that society advances in its use of renewable energy.

As well as specific training in engineering, the course includes contributions from other fields, particularly mathematics, statistics, the physical sciences and the environment, to provide complete, comprehensive training.

Graduates should be able to plan and implement energy systems that are appropriate to local conditions and the legislation in force. The characteristics of the course enable graduates to join the national and international labour markets and effectively carry out different functions in multicultural settings.

## Professional opportunities

- Industries that produce technology and components for the use of renewable energy.
- Companies that install, maintain and operate renewable infrastructures.
- Study and project firms (installing or developing isolated and integrated renewable energy systems).
- Energy service companies (assessing best practices/techniques and selecting types of technology, carrying out energy evaluations, measuring energy efficiency).
- Local authorities and public institutions (management and operation of public infrastructures, sustainability, energy efficiency and energy planning at local, regional and national level).

## What makes this course different?

The course syllabus deals with all forms of renewable energy and provides complete, up-to-date training on each one. The course includes an important engineering component and provides both contextualisation and understanding about the interaction between the different types of renewable energy in the global energy landscape.

The Bachelor's degree in Renewable Energy is certified by the Portuguese Order of Technical Engineers (OET), which recognises the vocational qualifications awarded as being sufficient to enable holders to perform the role of technical engineer in the field of energy engineering and power systems. After completing a work placement, graduates may join the relevant speciality college of the Order of Technical Engineers.

This course is designed to produce professionals who have the perspective for tens of thousands of positions in Europe and throughout the world.

## Internationalisation

Students may apply for periods of mobility for studies in around 150 higher education institutions of more than 30 countries, as well for international internships, with possibility of financial support.

## YEAR 1

### SEMESTER 1 • 30 ECTS

- 4 Algebra
- 5 Climatology
- 5 Ecology and the Environment
- 5 General Physics
- 5 Mathematics I
- 6 Principles of Renewable Energy

### SEMESTER 2 • 30 ECTS

- 4 Environmental Resource Economics
  - 5 Electrotechnology
  - 5 Hydrogeology and Water Resources
  - 6 Mathematics II
  - 4 Chemistry
  - 6 Thermodynamics
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## YEAR 2

### SEMESTER 1 • 30 ECTS

- 6 Environmental Biotechnology
- 5 Wind Power
- 6 Statistics
- 5 Further Electrotechnology
- 5 Solar Power
- 3 Renewable Energy Law

### SEMESTER 2 • 30 ECTS

- 5 Biomass Power
  - 5 Geothermal Power
  - 5 Hydro Power
  - 5 Power Distribution Grids
  - 5 Information Systems and Machinery Maintenance
  - 5 Marine Power
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## YEAR 3

### SEMESTER 1 • 30 ECTS

- 6 Energy Efficiency and Management
- 5 Entrepreneurship and Innovation
- 4 Renewable System Design
- 5 Industrial Management
- 5 Operational Research
- 5 Energy Storage Systems

### SEMESTER 2 • 30 ECTS

- 5 Biofuels
- 4 Electric Machines
- 12 Project
- 4 Automation and Control
- 5 Energy Systems in Buildings