

# Renewable energy: wind and solar power



## Component

École Nationale  
Supérieure  
d'Électrotechnique  
d'Électronique  
d'Informatique  
d'Hydraulique  
et des  
Télécommunications

## In brief

- > **Amety's Code:** N8EE19B
- > **Open to exchange students:** Yes

## Presentation

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### Objectives

Discover two renewable technologies for electricity generation: photovoltaic and wind power.

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### Description

This course presents the technical and economic aspects of photovoltaic and wind power.

Photovoltaic: from photovoltaic cells to systems, solar radiation, photovoltaic conversion, photovoltaic panels, power plants, cost, environmental impact.

Wind power: characterization of wind resources, effects of altitude and wake, theoretical elements (Betz limit) on wind power production and the energy efficiency of wind turbines; mechanical control through blade adjustment, from start-up to safe shutdown.

Composition of electric wind turbines: nacelles with and without speed multipliers.