

# CLEAN ENERGY

An overview of our energy production system, based on fossil fuels and the main contributor to the emission of greenhouse gases, a reflection on the urgency to shift to clean technologies in order to limit climate change, and a review of the role and challenges of renewable energy sources (solar, wind,...), which are becoming the core of our energy systems.

➤ **ECTS credits: 1**

➤ **Dates: 12 to 16 July 2021**

■ **Recommended background knowledge for students:**

- Interest in energy-related issues. Basic notions about energy and power

## Meet Our INSTRUCTOR



**Carlos del Cañizo** is full professor at the UPM, specializing in photovoltaics since 1994. He is Director of the Solar Energy Institute, a R&D center belonging to the UPM founded in 1979. He has lengthy experience in solar cell fabrication and characterisation, and also works on the topic of silicon ultrapurification for photovoltaic applications.

## LEARNING GOALS

■ **Analyse**

Information



Energy technologies and environmental impacts

■ **Evaluate**

Key properties



Clean energies

■ **Acquire**

Overview



Current energy system

■ **Learn**

Potential



Renewable energies, especially photovoltaics

## SYLLABUS

MODULE	01	Environmental impact of energy systems, Climate change, pollution and the need of clean technologies
	02	Renewable technologies for energy provision, From conventional energy sources to renewables, status of development and challenges
	03	Photovoltaic solar energy (PV), Operation principles, components, applications, economics. Manufacturing of PV cells and modules
	04	Industry talk and question and answer session

## Meet Our INDUSTRY SPEAKER



**Eduardo Forniés** received a PhD in Physics from the Universidad de Alcalá. He has worked for several photovoltaic companies and is currently technology manager at Aurinka PV, a company with more than 25 years of experience in cells and modules manufacturing, as well as in solar plant installation and maintenance.