

## Teach wind energy in 18 hours?

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### ABSTRACT

### WIND ENERGY Hamburg

#### Conference organized by Wind EUROPE

One of the challenges in promoting wind energy is the lack of qualified engineers in this field. Various universities are offering courses that vary in duration. The International Hellenic University has asked me to design a **course about wind energy** which is now taught to postgraduate students pursuing the MSc in Energy Systems degree in Greece.

The wind course duration is 18 hours and is offered in English to local and international students who study energy systems.

The presentations highlight the important subjects that a scientist or an engineer needs to know. The 18 hours curriculum is divided in 9 modules that include the following:

- Wind **turbine technology** today and future trends onshore & offshore, **turbine certification**,
- **Wind resource evaluation** (instruments-measurements-modeling), meteorological parameters,
- Atmospheric boundary layer, **wind speed profiles**, analysis of **measurements**, **wind atlases** onshore & offshore,
- Selection methodology of most **suitable locations**, site surveys,
- **Environmental constrains** of wind farms, bird and marine life protection,
- **Energy yield** (measurements-modeling-state of the art tools). Wake losses, CFD codes,
- **Social acceptability**, aesthetics, noise calculations, shadow flicker, good examples from large wind farms in the world,
- Methodology on how to **design** wind farms in areas of **complex terrain**, plains or the sea,
- A full **example** of **technical** and **economic** evaluation of a big wind farm.

The presentation will show that through a careful selection of material from accredited international sources, selection of videos and last but not least, drawing from the experience of wind engineers, we can make this task possible.

Developing more wind energy is a society decision. Following the successful Paris COP 21 agreement last year, we are more optimistic about a world that runs on renewable energy. We have the means and the tools to educate the people that will make this a reality. Wind is a KEY player.