Course: Specialisation Photovoltaics (Cyprus) credits: 30

Course code	RWVM23SPV
Name	Specialisation Photovoltaics (Cyprus)
Study year	2026-2027
ECTS credits	30
Language	English
Coordinator	H.M. Moesker
Modes of delivery	Education
Assessments	Specialisation Photovoltaics - Other assessment

Learning outcomes

The student will
♦ be able to discuss the properties of semiconductors which are important for PV applications.
♦ be able to describe the important PV devices.
♦ have a good understanding of semiconductors in equilibrium and non-equilibrium situations, homojunction and heterojunction solar cell devices and the differences between ideal and real devices.
♦ understand the need for purity and minimisation of crystal imperfections for making high performance devices.
♦ be able to describe and discuss the pros and cons of bulk crystal growth, epitaxial and low cost thin film deposition methods.
♦ at an introductory level outline how to make important solar cell devices.

Students will be able to:
♦ discuss the principles of operation and design of PV devices.
♦ discuss the main fabrication methods for advanced PV devices.
♦ describe and use the main characterisation methods used with semiconductor materials and PV devices.

The student will:
• Be able to complete basic design of both stand alone and grid connected systems
• Understand the requirements for construction, electrical connection and operation of systems
• Have experience of analysing system performance

The students will:
• Have an understanding of the economics of photovoltaic systems and their comparison with other electricity sources
• Be able to perform an environmental impact assessment or energy analysis for a PV system

Content

This specialisation covers the wide range of topics that makes up photovoltaics, from the design and manufacture of the solar cells themselves through to their implementation in photovoltaic (PV) systems for a variety of applications. Economic and environmental impact assessment and policy making for development and implementation are part of the specialisation. The aim is to produce graduates who can contribute to all parts of the PV supply chain and understand the links between them.

Included in programme(s)

European Master in Renewable Energy

School(s)

Engineering, Life Sciences & ICT

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