Modulbezeichnung	Solar thermal and geothermal energy
Semester (Häufigkeit)	5 (jedes Wintersemester)
ECTS-Punkte (Dauer)	5 (1 Semester)
Art	Pflichtmodul
Studentische Arbeitsbelastung	60 h Kontaktzeit + 90 h Selbststudium
Voraussetzungen (laut BPO)	
Empf. Voraussetzungen	Thermo- und Fluiddynamik
Verwendbarkeit	BEEEE, BIBS
Prüfungsform und -dauer	Vorlesung: Klausur 1,5h oder mündliche Prüfung oder Test am Rechner (Prüfungsleistung); Praktikum: experimentelle Arbeit oder Test am Rechner (Studienleistung)
Lehr- und Lernmethoden	Vorlesung, Praktikum
Modulverantwortliche(r)	I. Herraez

Qualifikationsziele

The students understand the physical and working principles of solar thermal as well as photovoltaic energy systems. They are capable to select and size the components required for the mentioned types of technologies. They are in a position to assess the performance and potential of those renewable energy systems. They are also able to design efficient hybrid energy systems combining different technologies and energy sources.

Lehrinhalte

Solar resource, thermal and electrical energy demand, components of solar thermal and photovoltaics systems, physics of solar energy utilization, performance analysis, efficiency of solar collectors and photovoltaic cells, design and sizing of solar thermal and photovoltaic systems, combination of solar energy systems with heat pumps.

Literatur

- Eicker, U.: Energy Efficient Buildings with Solar and Geothermal Resources, Wiley, 2014.

Lehrveranstaltungen

Dozenten/-innen	Titel der Lehrveranstaltung	SWS
I. Herraez	Vorlesung 'Solar thermal and geothermal energy'	2
I. Herraez	Praktikum 'Solar Thermal and Geothermal Energy'	2