



	HTWK Leipzig, Leipzig University of Applied Sciences			
	Module Course code		Photovoltaics PhV (EIM7801)	
	Semester		Summer semester	
	ECTS, level		5 points, Master's (graduate)	
	Language of instruction		English	
	Teaching staff		Prof. Dr.-Ing. Frank Illing	
Prerequisites	Basics of power engineering / power management			
Learning outcomes	<p><b>Goals:</b> Mediation of deeper and advanced expertise in electrical engineering in particular theoretical and linguistic knowledge in photovoltaics.</p> <p><b>Specialist and methodological skills:</b></p> <ul style="list-style-type: none"><li>- skills to design, assess and operate complex technical systems</li><li>- work-related and specialised communication in a foreign language</li><li>- knowledge of natural prerequisites of using solar energy</li><li>- knowledge of the conversion of solar energy into electrical energy by using solar cells</li><li>- application of the knowledge for the design and sizing of PV-systems</li><li>- learning of the required technical terms</li><li>- improvement of language skills e.g. listening comprehension and free speaking</li></ul> <p><b>Involvement in the vocational preparation:</b> The lecture lays the essential foundations in the field of photovoltaics and facilitates an overseas stay due to the learning and applying of discipline-specific terms.</p>			
Course contents	<ul style="list-style-type: none"><li>- Introduction to Photovoltaics</li><li>- The "power plant" sun – unlimited energy</li><li>- Photovoltaic effect</li><li>- Solar cells and PV-modules</li><li>- Grid-tied photovoltaic systems</li><li>- Stand-alone PV-systems</li><li>- Potentials, economic viability and prospects of Photovoltaics</li></ul>			
Workload	150 hours, of which 28 hours attendance (14 weeks x 2 hours)			
Pre-examination requirements	Homework			
Mode of instruction and assessment	Lecture	Seminar	Laboratory Course	Assessment
	2 hours per week			Written examination
Recommended reading	Falk ANTHONY; Christian DÜRSCHER; Karl Heinz REMMERS: <i>Photovoltaics for Professionals</i> , Solarpraxis, Berlin 2006 Heinrich HÄBERLIN; <i>Photovoltaics – System Design and Practice</i> ; John Wiley & Sons Ltd., 2012			