

Sustainable Energy Systems, MB 601, MB 602

Keywords:

Renewable Energy, Sustainability, Energy Efficiency, Hydrogen, Fuel Cell, Energy Storage

Target Group(s):	6. Semester	
Workload:	8 ECTS-Credits	(240 hours)
thereof	Contact hours	120 Hours
	Self study	80 Hours
	Exam preparation	40 Hours
Language of instruction:	english	
Module owner:	Prof. Dr.-Ing. Walter Czarnetzki	
date:	30.01.2012	

Prerequisites:

none

Total Target:

Achieving a solid knowledge about: renewable energies, sustainability and the use of hydrogen as an energy carrier. Achieving the knowledge to design and calculate sustainable, effective and decentralized systems converting and storing energy.

Module Content:

Renewable energy sources like solar, wind, geothermal; generation and use of hydrogen, sustainability, effective power cycles, energy storage, concept of exergy, Life Cycle Assessments.

Reference material:

lecture notes

Offered:

every semester

Relevance for other study programs:

Energy engineering, electrical engineering

Content and type of Assessment:

Renewable Energy Sources and Carriers:

Form of learning: lectures, practices and exam preparation

Semester periods per week: 4 hours

Workload: 120 hours

Targets: Achieving a solid knowledge about: renewable energies and the use of hydrogen as an energy carrier.

Sustainable, Efficient and Decentralized Energy Systems:

Form of learning: lectures, practices and exam preparation

Semester periods per week: 2 hours

Workload: 60 hours

Targets: Achieving the knowledge to design and calculate sustainable, effective and decentralized systems converting and storing energy. Implementing Life Cycle Assessments

Laboratory Sustainable Energy Systems:

Form of learning: practices in laboratory

Semester periods per week: 2 hours

Workload: 60 hours

Targets: Deepening and using the knowledge obtained in the lectures, Implementing Life Cycle Assessments.

Assessment:

Renewable Energy Sources and Carriers: Written examination (120 minutes),
Sustainable, Efficient and Decentralized Energy Systems: Written examination (60 minutes),

Laboratory Sustainable Energy Systems: Certificate