

Titel des Moduls: Energy and Development Project Dt.: Projektwerkstatt Energy and Development	LP (nach ECTS): 6	Stand: 11.06.2015
Verantwortlich für das Modul: Erdmann, Georg	Ansprechpartner für das Modul: Ansari, Dawud	
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URL: http://www.eadp.eu		Sprache: Englisch

Modulbeschreibung

<p>Lernergebnisse</p> <p>Upon completing the course, students will be able to apply their knowledge for solving complex problems. They will be able to include interdependencies between different dimensions of a planning process in their work, such as technical design, economics, society, and the environment. Within their own field of study, the students will have gained an insight into up-to-date research relevant for the project. On a social level, they will have learned about their responsibility as engineers, researchers, or project planners towards people who are depending on their results. Furthermore, they will have gained experience in working within a project team.</p> <p>The course is principally designed to impart Technical skills 25%, Methodological skills 20%, System skills 25%, Social skills 30%</p>
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<p>Lehrinhalte</p> <p>The project deals with the planning and implementation of solutions for specific non-electrified regions in least developed countries (LDCs).</p> <p>In an introductory lecture part, students become equipped with necessary basics in</p> <ul style="list-style-type: none"> - development studies (energy poverty, growth theory, energy access) - small-scale energy systems (basic physics and energy engineering, introduction to mechanical / thermal / electrical systems for pumping, cooking, and electricity generation, load profile curves, off-grids, basics of lighting) - decision-making (reliability evaluation, climate and weather statistics, investment decisions, basic microeconomics, analysis under risk-neutrality and risk-aversion, cost-benefit analysis, (non-)cooperative game theory). - research aids (databases, scientific search engines, reliability of online materials, statistical regression) <p>to gain an overview of the topic and to be able to work within an interdisciplinary team.</p> <p>Subsequently, the students take part in the planning of a (off-grid) solution for a specified case, i.e. a non-electrified region or village in an LDC. According to their academic backgrounds and interests, they self-select into different subgroups to research on questions assigned by the group or to engage in technical design. Possible tasks include the design of electricity generation and the grid, pumping, or cooking as well as the development of financing options and the evaluation of social consequences. In cooperation with the local population, the student groups tries to implement their results.</p>
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Modulbestandteile				
Pflichtgruppe (Pflicht)				
<i>LV-Titel</i>	<i>LV-Art</i>	<i>LV-Nummer</i>	<i>Turnus</i>	<i>SWS</i>
Projektwerkstatt "Energy and Development"	IV		WS/SS	4

Arbeitsaufwand und Leistungspunkte			
1 ECTS entspricht 30.0 Stunden (Runden: Aufrunden)			
Projektwerkstatt "Energy and Development" (Integrierte Veranstaltung)			180.0h
<i>Aufwandbeschreibung:</i>	<i>Multiplikator:</i>	<i>Stunden:</i>	=
Exam preparation	1.0	25.0h	25.0
Individual research	10.0	4.0h	40.0
Lectures	5.0	4.0h	20.0
Project meetings	10.0	4.0h	40.0
Report preparation	1.0	25.0h	25.0
Sub-group meetings	10.0	3.0h	30.0

Beschreibung der Lehr- und Lernformen
(Guest-) lectures, group meetings, discussions, self-study, and individual research.
The course is completely offered in English. In case of language barriers, individual derivations from that may be possible.

Voraussetzungen für die Teilnahme / Prüfung
Wünschenswerte Voraussetzungen für die Teilnahme zu den Lehrveranstaltungen: Background in energy engineering, electrical engineering, economics, earth sciences, development studies, or similar fields of study. For passing the written test, undergraduate-level mathematics are required.
Verpflichtende Voraussetzungen für die Modulprüfungsanmeldung: keine

Abschluss des Moduls	
Benotung: benotet.	
Prüfungsform: Portfolioprüfung	
Grading is based on a "Portfolioprüfung".	
A maximum of 100 points can be achieved from	
- a written mid-term test, covering the content of the introductory lectures (50 points)	
- a written final report, documenting the own project work (50 points)	
<i>Studienleistung</i>	<i>Punkte</i>
1. Mid-term test	50
2. Final report	50

Dauer des Moduls
Das Modul kann in 1 Semester(n) abgeschlossen werden.

Maximale Teilnehmer(innen)zahl
Das Modul ist auf 25 Teilnehmer begrenzt.

Anmeldeformalitäten

Please pre-register via email: [ansari\(at\)eadp.eu](mailto:ansari(at)eadp.eu).

Literaturhinweise, Skripte

Skripte in Papierform vorhanden? _____ Nein

Skripte in elektronischer Form vorhanden? Ja _____

Hinweis:

Link will be announced during the first session

Literatur: IEA (2010). Energy Poverty – How to make modern energy access universal?
IEA (2011). Energy for all – Financing access for the poor
IPCC (2012) – Special Report on Renewable Energy Sources and Climate Change Mitigation.
The World Bank: I. E. G. (2008) The Welfare Impact of Rural Electrification: A Reassessment of the Costs and Benefits.

Zugeordnete Studiengänge

Available as an elective course (Freie Wahl) for all programs of study or according to the student's specific study and examination regulations.

Sonstiges

Further information: <http://www.eadp.eu/>.