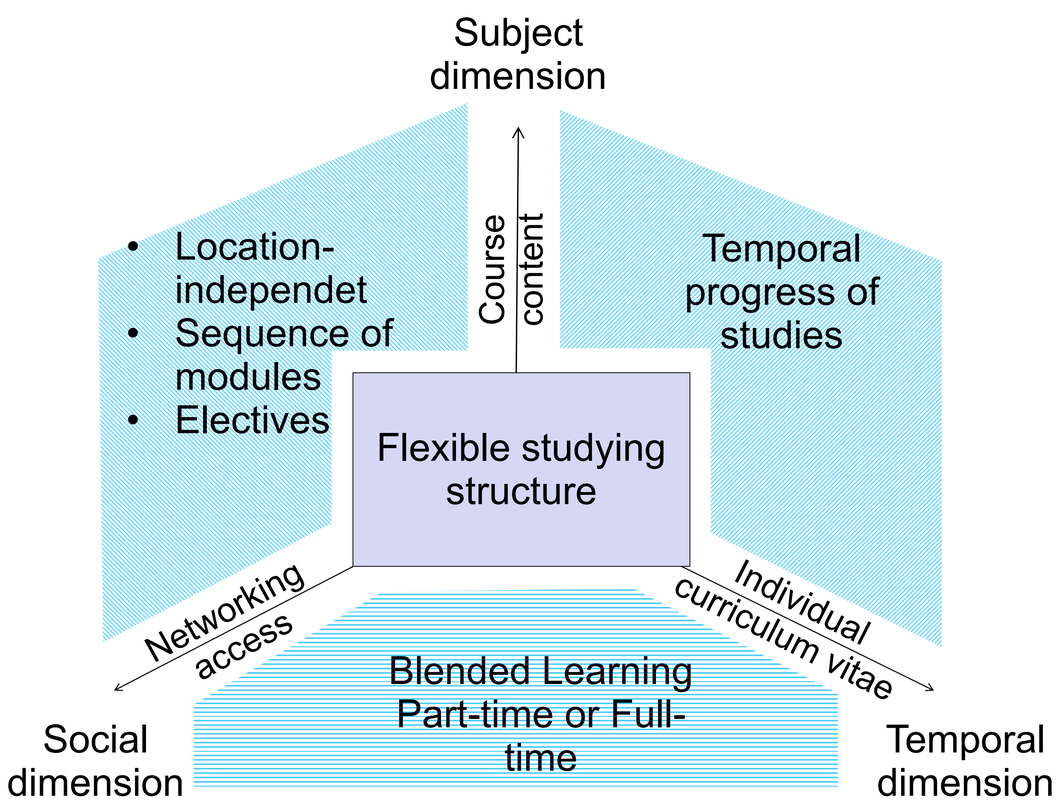
Blended Learning - Renewable Energy Master Course

Tanja Behrendt, Larissa Krekeler, Michael Golba

Introduction

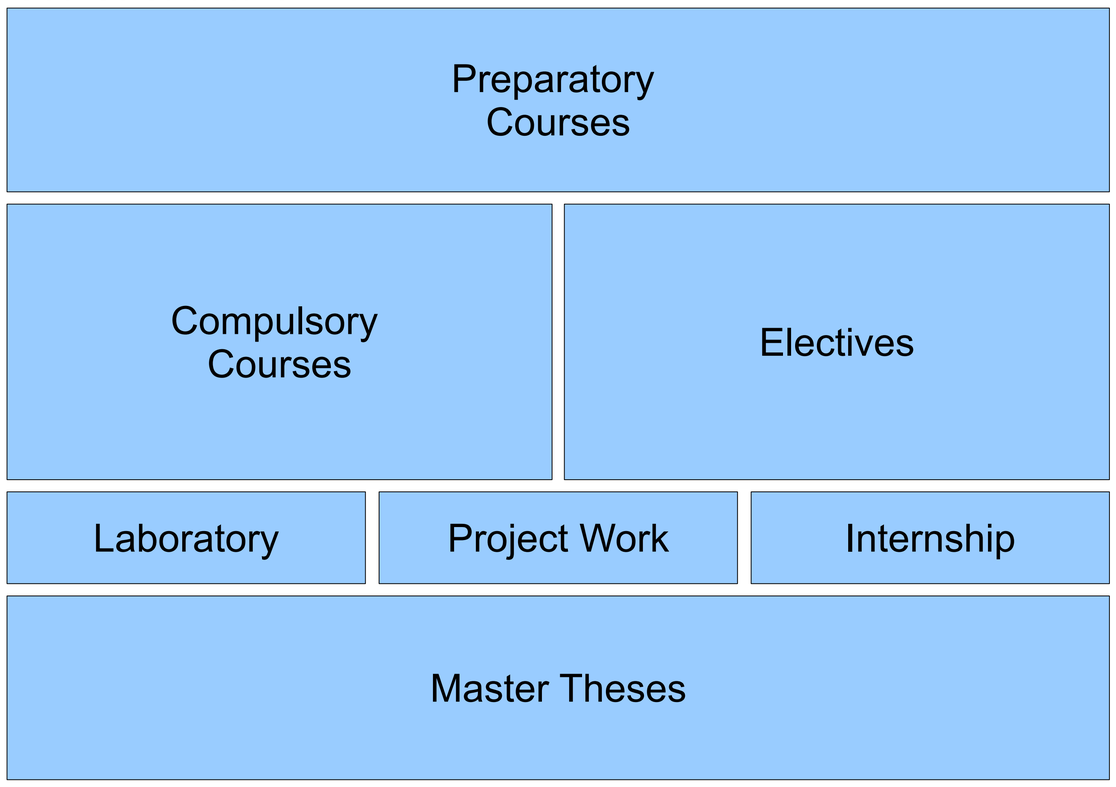
A new master course will be developed in Oldenburg especially for the needs of employed people who would like to pursue extra curriculum renewable energy studies. It will be realised within a blended learning concept - a mixture of online and face-to-face learning. This concept allows highly flexible learning, mainly independently of time and space. Depending on personal constraints and interests the course offers to the students a flexible choice of the sequence of modules time-wise and content wise. Overall the course will take 24 months (incl. master thesis) if studied full time and can be extended if studied part-time. The development of the complete course will be finished by 2017.

Realising a highly flexible course structure



Studying independently of space in time implies a flexible choice for the students in all dimensions. This requires a high share of electives and an individual support of the student in all dimensions by means of career coaching.

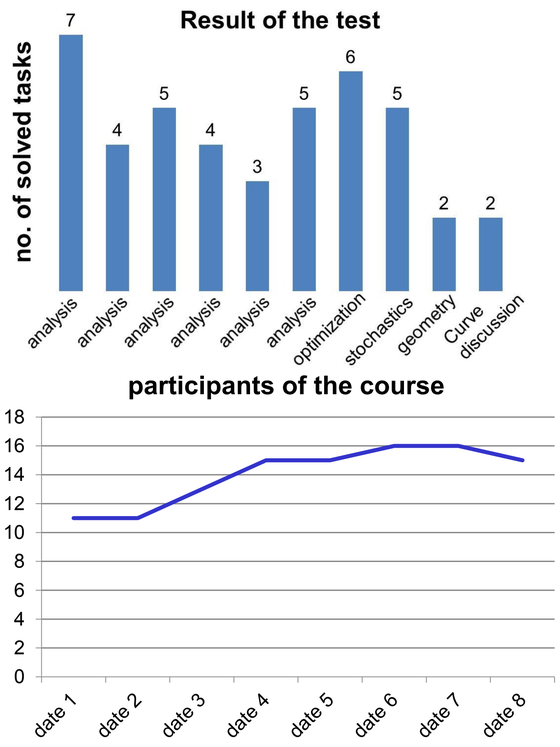
Course structure



To successfully start into the course a **Preparatory Course** will provide the opportunity to learn or refresh the basics required to study Renewable Energies. Within the **Compulsory Courses** an understanding of Renewable Energy Systems, Resources and Sustainability will be established and within the **Electives** fundamentals and advanced concepts of different technologies can be studied. **Laboratory Courses** will mainly be part of the face-to-face periods. There students can gain hands-on experience.

Preparatory Mathematics Course

Mathematics is one of the important knowledge required to study Renewable Energy. A pilot face-to-face mathematics course was developed and realised as preparation before PPRE and EUREC course starting in WS 2012/2013. An online version of this course will be available 2013.

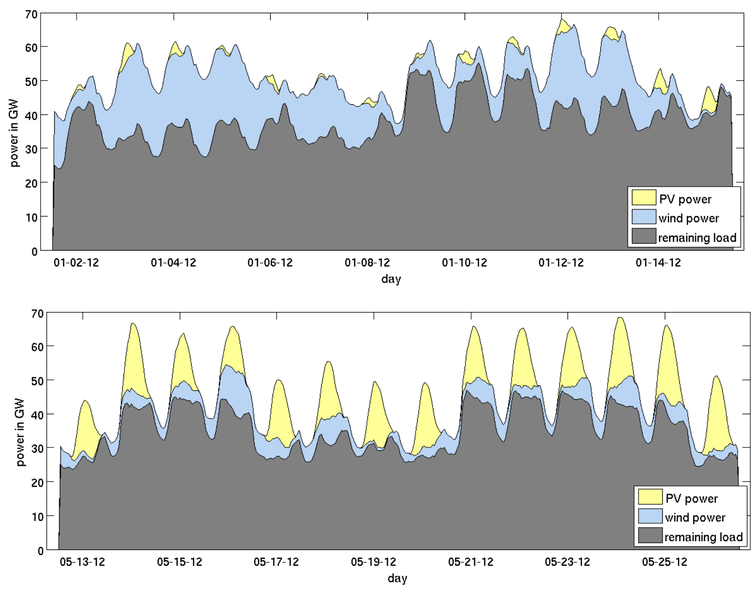


The content of the course was chosen depending on the requisites for the following master course and by evaluating the students knowledge in advance. Exercises were solved by the students and knowledge gaps were identified. The main difficulties occured in Stochastics and Geometry. During the course Analysis, Stochastics, and Logic was taught. The number of participants increased.

Exemplary Online Lecture Energy Meteorology

The Energy Meteorology lecture will be an integral part of the Blended Learning Master Renewable Energy. During this course basic meteorological knowledge is taught which is necessary for the understanding of the fluctuating nature of solar and wind energy resources.

Currently an online lecture Energy Meteorology is developed. The lecture will be tested in the winter term 12/13 parallel to the face-to-face PPRE-course. In this way a direct comparison of the online course to the face-to-face lecture will be made.



Example of wind and solar energy share of electrical load in Germany
graph: Jan Kühnert Uni-Oldenburg, data: http://www.transparency.eex.com/de/

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