

Module Card

Master Resource Efficiency in
Architecture and Planning
HCU Hamburg

Module Number	Module Name	Type (C/CE/E)	Semester (proposed)	Module Coordinator
REAP-M-Mod-301	Climate Responsive Architecture and Planning	CE	3.	Prof. Dr. Udo Dietrich

Subject Area	Duration
Resources, Technologies and Environment	1 semester

CP (according to ECTS)	Contact Hours/Week (SWS)	Self-study
5 CP (= 150 h workload)	3 (= 31,5 h contact time)	118,5 h

Objectives and Contents

Objective of Qualification (competencies)

- Potential to reach Zero-Energy-Situations in the different main climates zones.
- Knowledge of interdependencies between buildings, their arrangement in urban space, energy demand, comfort and user behaviour.

Contents

- Comfort criteria (specially thermal in summer and visual).
- Passive-solar optimization of buildings, passive cooling methods and their application to different climatic locations.
- Low-energy planning strategies for urban quarters and buildings.
- Urban design requirements for climate-responsive energy applications.
- Urban buildings as energy generators.
- Vernacular architecture and best practice examples as sources for climate responsive building design.
- Building user behaviour and its impact on energy performance of buildings and the sustainability of urban environments.
- Tools for the assessment of climate and derivation of design rules.

Recommended Literature

- Special script for this course
- David Mackay: Without the hot air, www.withouthotair.com

Teaching and Learning Methods

Lecture (complemented by seminar discussions, individual student inputs for specific subjects).
Students work in groups, each group deals with another climate / location.

Exam(s)

Precondition of Examination

regular participation – obligatory 9 of 11 seminars
successful completion of student report and oral presentation

Type of Examination	Duration of Examination (if written or oral exam)
semester work (S) comprising report (R), as a sequence of short oral presentations and printed summaries.	

Composition of Module Mark

Three short presentations contribute with 1/3 each to the grade.

Additional Information

Previous Knowledge / Conditions for Participation (in form and content)

Recommended:

Successful completion of the module REAP-M-Mod-101 and REAP-M-Mod-202 is required. (in form)

Applicability of Module

Students have to select 2 modules of the block "Resources, Technologies and Environment" to attend REAP-M-Mod-309 Project III.

Frequency of Offering

Each Winterterm

Course Language

English