

Module Card

Module Number	Module Name	Type (C/CE/E)	Semester (proposed)	Module Coordinator
REAP-M-Mod-201	Urban Material Cycles	C	2.	Prof. Dr. Wolfgang Willkomm

Subject Area	Duration
Fundamentals and Methods	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)
<ul style="list-style-type: none"> Survey of the basic strategies for sustainable urban material cycles. Competence of perception, assessment and decision making in the field of selection of material related urban and building planning procedures.

Contents
<ul style="list-style-type: none"> Introduction into lifecycles, quantities and qualities of urban waste materials, data of waste material quantities and qualities, future development prognosis and scenarios. Typology of materials incl. construction and demolition waste, industrial production waste and communal waste. Strategies of prevention, reduction and recycling of waste by means of political decision, planning, organization and technology as well as priority order of product recycling, material recycling with recycling, re-recycling and downcycling. Reciprocal effects of design, construction, material and energy strategical targets for optimized solutions on the national, regional, urban, building and detailed scale. Examples for projects and strategies.

Recommended Literature
<ul style="list-style-type: none"> Thomas Christensen (Editor): Solid Waste Technology and Management, 2 Volume Set, ISBN: 978-1-4051-7517-3, November 2010 Karl J. Thomé-Kozmiensky, Stephanie Thiel (Editors): Waste Management, ISBN 978-3-944310-29-9, ViViS 2016

Teaching and Learning Methods
Lecture complemented by individual student inputs for specific subjects and project visits.

Exam(s)

Precondition of Examination	
Regular participation, individual oral input, successful completion of student report and oral presentation	
Type of Examination	Duration of Examination (if written or oral exam)
term paper (S), Presentation (R)	
Composition of Module Mark	
Poster 25 %, Presentation 25 % final Report 50%	

Additional Information

Previous Knowledge / Conditions for Participation (in form and content)
<ul style="list-style-type: none"> Basic understanding of the physics of building construction and demolition, industrial and municipal waste materials. (content) Basic understanding of regional, urban and building construction planning procedures (content)

Applicability of Module
The successful completion of this module is required for the attendance of the module REAP-M-Mod-204 Project II.

Frequency of Offering
Summerterm

Course Language
English