

Module Name	Module Code
Metabolism of the Anthroposphere - Impacts on Waste Management	EMAEF042-01a
Module Coordinator	
Dr. Tobias Donath	
Organizer	
Institute for Natural Resource Conservation - Landscape Ecology	
Faculty	
Faculty of Agricultural and Nutritional Sciences	
Examination Office	
Faculty of Agricultural and Nutritional Sciences - Examination Office	

ECTS Credits	6
Evaluation	Graded
Duration	one semester
Frequency	Only takes place during winter semesters
Workload per ECTS Credit	30 hours
Total Workload	180 hours
Contact Time	60 hours
Independent Study	120 hours
Teaching Language	German

Recommended Requirements			
Basic knowledge Ecology and Chemistry			
Module Courses			
Course Type	Course Name	Compul- sory/Optional	SWS
Lecture	Metabolism of the Anthroposphere - Impacts on Waste Management	Compulsory	3
Seminar	Metabolism of the Anthroposphere - Impacts on Waste Management	Compulsory	1

Examination(s)				
Examination Name	Type of Examination	Evaluation	Compulsory / Optional	Weighting
Written Examination: Metabolism of the Anthroposphere - Impacts on Waste Management	Written Examination	Graded	Compulsory	50
Presentation: Metabolism of the Anthroposphere - Impacts on Waste Management	Seminar Paper	Graded	Compulsory	50
Further Information on the Examination(s)				
1 + 2. Period in winter semester 1. Period in summer semester Examiner: Dr. Dietrich Sturm QIS: 79100 +exam 79110				

Course Content
<ul style="list-style-type: none"> • Main metabolic processes of planet earth • Key issues for designing waste management / Circular Economy • The EU's approval to waste management / The waste hierarchy • Waste production today and tomorrow • Strategies for waste prevention, re-use and recycling • Requirements for recycling /the importance of product design • Material and energy cycles in Eco-Industrial Parks • Green chemistry : A powerful concept to avoid (hazardous) waste • The recycling value chain for <ul style="list-style-type: none"> • Precious and specialty metals (electric and electronic waste / the Business to Business (B2B und the Business to Consumer model (B2C)) • Nonferrous metals with special regard to copper • Construction and Demolition waste • Batteries • Plastics and Wood Waste incineration and landfilling – important methods for waste disposal
Learning Outcome
Students <ul style="list-style-type: none"> • Know the significance of the metabolism of the anthroposphere for waste management • Know the driving forces for waste production and waste reduction • Know the role of legislation for a circular economy • Are able to design waste management plans for municipal solid waste, WEEE, C&D-Waste, Batteries, Plastics and Wood • Learn to avoid waste production by application the Concept of Green Chemistry and the Concept of Industrial Ecology
Reading List
Books: P. Baccini, P. H. Brunner; Metabolism of the Anthroposphere. Analysis, Evaluation, Design. The MIT Press, Second Edition, 2012. R. Ayres, U. E. Simonis; Industrial Metabolism: Restructuring for Sustainable Development. The United Nations University, 1994.

Additional Information

Contact: Dr. Sturm via OLAT

Maximum number of participants: 20

Due to scientific focus of the module. students of Environmental Management, Sustainability, Society and the Environment, Applied Ecology have priority. Vacant places are provided to students from other master programs,

Enrollment by OLAT within workdays Monday through Friday in the 1st week of the 2. audit period of the preceding semester. Following information is necessary:

matriculation number

last name

first name

striven degree

study program

stu-Email

The allocation of the places takes place in the 2nd week of the 2. audit period of the preceding semester. Acceptance of the place by students only through participation at the first day of the course. Students without a place can get a place at the first day of the course by move-up procedure.

Use	Compulsory / Optional	Semester
Master, 1-subject, Agricultural Sciences, Agricultural Economics, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Agricultural Economics, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2013)	Optional	-
Master, 1-subject, Applied Ecology, (Version 2016)	Optional	-
Master, 1-subject, Applied Ecology, (Version 2015)	Optional	-
Master, 1-subject, Environmental Management, (Version 2017)	Optional	-
Master, 1-subject, Environmental Management, (Version 2013)	Optional	-
Master, 1-subject, Nutritional and Food Science, (Version 2013)	Optional	-
Master, 1-subject, Nutritional and Consumer Economics, (Version 2017)	Optional	-
Master, 1-subject, Nutritional and Consumer Economics, (Version 2013)	Optional	-