Module Name	Module Code
Managing Matter Fluxes & Eco-Toxicological Effects	AEF-EM021
Module Coordinator	
Dr. agr. Claus-Georg Schimming	
Organizer	
Institut für Natur- und Ressourcenschutz - Hydrologie und Wasserwirtschaft	
Faculty	
Faculty of Agricultural and Nutritional Sciences	
Examination Office	
Prüfungsamt Agrar- und Ernährungswissenschaftliche Fakultät	

ECTS Credits	6
Evaluation	Graded
Duration	ein 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	English

Module Courses			
Course Type	**Course Name**	**Compul-sory/Optional**	**SWS**
Seminar	Managing Matter Fluxes & Eco-Toxicological Effects	Compulsory	4
Prerequisits for Admission to the Examination(s)			

Examination(s)				
Examination Name	**Type of Examination**	**Evaluation**	**Compulsory / Optional**	**Weighting**
Presentation: Managing Matter Fluxes & Eco-Toxicological Effects	Seminar Paper	Graded	Compulsory	100

Further Information on the Examination(s)

1.+2. period in wintersemester
1. period in summersemester

examiner: Dr. Schimming/Prof. Dr. Scharenberg
QIS: 78400 with number of Examination 78410

Course Content

The first part gives basics of ecotoxicology (definitions, principles, etc.) including toxicological and ecotoxicological testing methods. Examples of actual status of the environment will be discussed. Based on this, criteria for risk analysis and critical limits will be derivated. Students will develop their own ideas on advancements in risk analysis and ecological management.

Learning Outcome

Students learn about important chemical components that are discharged by processed of land use and by industrial activities and get to know their physico-chemical characteristics. Students will be enabled to differentiate patterns of chemical comportments and the effects on different spatial and time scales as well as on organism scales (from cells to ecosystems). Students will be able to explain principles on risk assessment and risk management of chemicals in the environment. Part of this is the reduction of input, substitution of dangerous materials and recycling concepts. Also realized will be how environmental quality data is surveyed.

Reading List

Fent, K. 1998: Ökotoxikologie. Georg Thieme Verlag, Stuttgart.
Goudie A. 2000: The Human Impact on the Natural Environment. Blackwell, Oxford
Hoffma, D.J. et al. (Eds) 1995: Handbook of Ecotoxicology. Lewis Publishers, Boca Raton.
Fränzle O. 1993: Contaminants in Terrestrial Environment. Springer, Berlin.
Baccini P, Bader H. 1996: Regionaler Stoffbudget. Spektrum, Heidelberg.
Schlesinger, W.H. 1997: Biogeochemistry. An Analysis of Global Change. Academic Press, San Diego
Schüürmann, G., Markert, E. (1998): Ecotoxicology- Ecotlogical Fundamentals, Chemical exposure and Biological Effects. Wiley, New York

Additional Information

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25 places

Use	Compulsory / Optional	Semester
Master, 1-subject, Agricultural Sciences, Agricultural Economics, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2013)	Optional	-
Master, 1-subject, Environmental Management, (Version 2013)	Optional	-
Master, 1-subject, Environmental Management - Management of Natural Resources, (Version 2010)	Optional	-
Master, 1-subject, Nutritional and Food Science, (Version 2013)	Optional	-
Master, 1-subject, Nutritional and Consumer Economics, (Version 2013)	Optional	-
Master, 1-subject, Sustainability, Society and the Environment, (Version 2013)	Optional	-