

Module Name	3.2.4 Managing Matter Fluxes & Eco-Toxicological Effects
Identification code	AEF305, EM3.2.5 <b>(QIS-registration for examination) 78400</b>
Subtitle	
Courses embedded	
Term	Winter
Coordinator	Dr. C. Schimming
Teachers	Dr. C. Schimming PD Dr. W. Scharenberg Dr. I. Jensen
Tuition language	English
Programme involvement	Elective MSc Environmental Management
Teaching form, contact time per week class size	Seminar Managing Matter Fluxes & Eco-Toxicological Effects (60h/180h) 25
Workload overall	180h
Contact time	60h
ECTS credit points	6
Preconditions prescribed	
Prerequisites recommended	
Learning outcomes	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 compartments 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.
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 derived. Students will develop their own ideas on advancements in risk analysis and ecological management.
Assessment	Presentation 100%
Teaching media	Presentations, group work, discussions
References	Fent, K. 1998: Ökotoxikologie. Georg Thieme Verlag, Stuttgart. 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. Goudie A. 2000: The Human Impact on the Natural Environment. Blackwell, Oxford
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