Module: Environmental Chemistry: Air, Water, Earth

University/Department/Institute: Freie Universität Berlin/Department of Biology, Chemistry, Pharmacy/Institute of Chemistry and Biochemistry

Module supervisors: Lecturers of the module

Entrance Requirements: none

Goals of Qualification: Students know the important basics of environmental chemistry in relation to the environmental media: air, water and earth. They are aware of the fundamental connections in the natural environment. They are able to differentiate between the human influences on the environment and the natural variability of the environment and to rate man made changes on different scales. They are able to judge the significance of human influence on the environment in selected examples in a fundamental form. They are able to analyze different connections in the environment and can use this analysis to understand original scientific papers of the environmental sciences, to begin their first research projects in the field of environmental sciences. They have acquired the basics for a professional activity in the field of environment protection.

Contents: Chemistry of the atmosphere: structure and composition of the atmosphere, dynamics of the atmosphere, chemistry of transient pollutants, chemistry of stable pollutants, measures for prevention of emission of pollutants including juridical regulations, methods of measurement in the environment, local, regional and global changes in the environment, chemistry of water and earth: natural composition of oceans and lakes, distribution of pollutants in water, specific water pollution, drinking water and drinking water preparation, sewage and sewage treatment, basics for the protection of ground water; ground structure, ground ratios and ground horizons, chemical and biological composition of the ground, pollutants and nutrients in the earth, erosion, ground and water

Teaching methods	**Hours of attendance** (Hours per week)	**Forms of active participation**	**Workload** (hours)	
Lecture 1	2	-	Presence (L1) Pre-, post-preparation (L1) Presence (L2) Pre- , post-preparation (L2) Exam preparation and examination	30 30 30 30 30
Lecture 2	2	-		
Language offer of lecture		German		
Compulsory regular attendance		Attendance is recommended		
Workload (total)		150 hours		5 LP
Length of module		Two semester		
Examination		Exam (120 minutes); The exam can also be conducted electronically		
Lecture is offered		Every semester		
Applicability		Bachelor study program Chemistry, Bachelor study program Biochemistry, Master study program Chemistry		