

Module: Systems Chemistry			
University/department/institute: Freie Universität Berlin/Department of Biology, Chemistry and Pharmacy/Institute of Chemistry and Biochemistry			
Responsible for the module: module lecturers			
Admission requirements: none			
Qualification aims: The students know the behavior of complex chemical systems and understand the development of emergent properties in chemical networks. They can establish relationships to other complex systems in the everyday world.			
Content: Dynamic combinatorial libraries; self-organization; transformation cascades in dynamic self-organizing systems; self-sorting processes and network topologies; minimal replicators and their integration in dynamic systems; properties of autocatalytic peptide networks; oscillating reactions and their application in gels and polymers; symmetry breaking and homochirogenesis; chemical models for homeostasis and autopoiesis; adaptive materials			
Teaching and learning units	Attendance (Semester hours per week = SH)	Forms of active participation	Study time (hours)
Lecture	2	-	Attendance L 30 Preparation and follow-up L 30
Seminar	1	Lectures, working on problem sets, contributing to	Attendance S 15 Preparation and follow-up S 45 Examination preparation,
		discussions	examination 30
Language of instruction		German or English	
Compulsory regular attendance		Attendance recommended	
Study time, total hours		150 hours	5 CP
Duration of module		One semester	
Module offered		Not regularly	
Application		Master's program in Chemistry	