

Module: Experimental Techniques for the Application in Schools			
University/Department/Institute: Freie Universität Berlin/Department of Biology, Chemistry, Pharmacy/Institute of Chemistry and Biochemistry			
Module supervisors: Lecturers of the module			
Entrance Requirements: successful passing of the modules “General and Inorganic Chemistry”, “Basic Chemistry Lab Course for Teaching Training Students”, “Basics of Organic Chemistry”, “Basics of Physical Chemistry”, “Basic Mathematics for Chemists” and of the “Advanced Chemistry Lab Course for Teaching Training Students “			
Goals of Qualification: Students are able to explain basic topics of chemistry, which have been taught in the lectures, with the help of attractive experiments either as a demonstration or as student experiments. They are able to independently choose, plan and prepare experiments. They are able to estimate the hazards and safety relevant aspects correctly and take these into consideration.			
Contents: Framework and relevant everyday aspects of the topics: “acids and bases”, “redox-chemistry”, “energy and thermodynamics”, “kinetics”, “natural products”, “macromolecules”, “colors”; theory and execution of classic demonstration experiments and student experiments, scope and limitations of the application of these experiments in school education.			
Teaching methods	Hours of attendance (semester periods per week)	Forms of active participation	Work effort (hours)
Lecture	1	-	Presence (L) Pre-, post-preparation (L) 15
Seminar	1	Contributions to topic related discussions	Presence (S) 15 Pre-, post-preparation (S) 15 Presence (Lab) 15
Safety relevant lab training	2	research on theoretical background, preparation and conduction of experiment (8-12 experiments)	<i>supervised lab training</i> <i>self-study in lab</i> 30 Pre-, post-preparation (Lab) 25 Exam preparation and examination 20
Language offer of lecture		German	
Compulsory regular attendance		Lecture attendance is recommended, Lab training, Seminar: yes	
Work effort (total)		150 hours	5 CP
Length of module		One semester	
Examination		Practical examination (presentation of theoretical background, experimental results and protocol)	
Lecture is offered		Depending on availability	
Applicability		Bachelor study program Chemistry for Teaching Training Students, 60-CP-Module offer Chemistry	