

Module: Reaction Mechanisms in Organic Chemistry			
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 will be acquainted with the mechanisms of typical organic reactions. They will have a broad and cohesive overview of the reaction types in organic chemistry and their mechanisms. By crosslinking their knowledge of the reaction mechanisms, which is based and ordered by the different chemical classes, students are able to predict the effect of substituents, solvents and reactivity considering stereochemical aspects. They know different methods for the analysis of reaction mechanisms (e.g. reaction kinetics, stereochemistry, isotope effect) and are able to evaluate and interpret the data sets obtained by these methods. They solve assignments concerning the lecture topics independently and in that way deepen their knowledge of the reaction mechanisms of organic chemistry. Students are able to present and critically evaluate their solutions.			
Contents: Classification of organic reactions and their mechanisms (polar, radicalic, pericyclic reactions, Oxidation/reduction), basics of thermodynamics and kinetics, implications for the stereochemical classification of reactions, effects of solvents and substitution, Brönsted- and Lewis-acids, typical examples for nucleophile substitution reactions (S_N1 und S_N2 ; S_N2_t to carboxylic acid derivatives) addition reaction (nucleophile addition to the C=O double bond, electrophile addition to the C=C double bond), redoxreactions			
Teaching methods	Hours of attendance (Hours per week)	Forms of active participation	Workload (hours)
Lecture	3	-	Presence (L) 45 Pre-, post-preparation (L) 45
Seminar	1	Solving assignments, Contributions to topic related discussions	Presence (S) 15 Pre-, post-preparation (S) 15 Exam preparation and examination 30
Language offer of lecture		German	
Compulsory regular attendance		Attendance is recommended	
Workload (total)		150 hours	5 CP
Length of module		One 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, Bachelor study program Chemistry for teachers in training, 60-CP-Module offer Chemistry	