

<b>Module:</b> Organic Synthetic Chemistry and Synthesis Development			
<b>University/Department/Institute:</b> Freie Universität Berlin/Department of Biology, Chemistry, Pharmacy/Institute of Chemistry and Biochemistry			
<b>Module supervisors:</b> Lecturers of the module			
<b>Entrance Requirements:</b> none			
<b>Goals of Qualification:</b> Students are able to understand important synthetic organic reactions and are able to independently design synthetic strategies for moderately complex target molecules. They know the most important methods to prepare C-X bonds and C-C single bonds and multiple bonds and the synthetic applications of pericyclic reactions. In small teams they are able to find out synthetic routes by searching the literature using data bases and to discuss their results.			
<b>Contents:</b> important synthetic and industrial reactions, concepts of retrosynthesis (synthons, retrons, synthesis equivalents, conversion of functional groups), modern radicalic reactions, electrophilic aromatic secondary substitutions (substituent effects), elimination (E1/E2/E1cb) and their stereo-chemical implications, ylides, Wittig-reaction and their variants (stereo-chemical control), nucleophilic additions to the C=O double bond, Dunitz-Bürgi-Lehn trajectory, "umpolung"-reactions, (synthesis of 1,n-difunctional compounds, pericyclic reactions, sextet rearrangement, catalysis with the example of palladium-catalyzed cross coupling, examples for basic and advanced retrosynthesis.			
Teaching methods	Hours of attendance (Hours per week)	Forms of active participation	Workload (hours)
Lecture	3	-	Presence (L) 45 Pre-, post-preparation (L) 45
Tutorial	1	Solving assignments, Contributions to topic related discussions	Presence (T) 15 Pre-, post-preparation (T) 15 Exam preparation and examination 30
<b>Language offer of lecture</b>		German	
<b>Compulsory regular attendance</b>		Attendance is recommended	
<b>Workload (total)</b>		150 hours	5 CP
<b>Length of module</b>		One semester	
<b>Examination</b>		Exam (120 minutes); The exam can also be conducted electronically	
<b>Lecture is offered</b>		Every semester	
<b>Applicability</b>		Bachelor study program Chemistry, Bachelor study program Biochemistry, Bachelor study program Chemistry for teachers in training, 60-CP-Module offer Chemistry	