

<b>Module:</b> Molecular Spectroscopy			
<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> successful completion of the module „Atomic Structure and Chemical Bonding“			
<b>Goals of Qualification:</b> Students are able to use rotation-, oscillation- and electronic spectrums for the investigation of the geometric structure, the electronic structure, as well as energy – related and further characteristics of molecules and even for the qualitative analysis of larger molecules. By up to date examples of optic spectroscopy students have acquired in-depth knowledge of the connections and the fundamental importance of spectroscopy in science and technology. They are able to solve assignments independently and can present their results to their study group.			
<b>Contents:</b> Physical basics of electromagnetic radiation, interaction of electromagnetic radiation with mater with/without absorption and emission of photons, experimental aspects, rotational spectroscopy, oscillation spectroscopy, electronic transitions			
Teaching methods	Hours of attendance (Hours per week)	Forms of active participation	Workload (hours)
Lecture	2	-	Presence (L) 30 Pre-, post-preparation (L) 30 Presence (T) 30
Tutorial	2	Solving assignments, Contributions to topic related discussions	Pre- , post-preparation (T) 30 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 Chemistry for teachers in training, 60-CP-Module offer Chemistry	