

[C2.2]	Membrane biology	Compulsory elective module in the core area C2	4-5 CP (total) = 120-150 h				2-3 SWS
			Contact hours 2-3 SWS / 30-45 h		Independent study 90-115 h		
Content							
<p>In this module we discuss biological membranes from the perspective of their main constituents: lipids and proteins. Each lecture combines both theory as well as related practical aspects for studying membrane lipids and proteins. Recent literature is discussed. The seminar will highlight most-recent developments in membrane biology.</p> <p><u>Lecture</u>: Topics included are the diversity and design of lipids and membrane proteins, cellular organization of lipids, biogenesis of membrane proteins, membrane protein – lipid interactions, the pathophysiology of membrane proteins, and contemporary methodology for studying structure, function, and dynamics of membrane proteins. The students will independently study selected research papers addressing one of these topics and discuss these in the following lecture (self study).</p> <p><u>Seminar (optional)</u>: The students participate in research lectures and seminars on membrane biology to learn about recent achievements and methodological developments.</p> <p><i>The lecture can optionally be combined with the seminar.</i></p>							
Learning outcomes and skills							
<p>The aim of this module is to establish a broad knowledge base on lipids and membrane proteins and dedicated practical approaches for studying these. Students will learn to evaluate the advantages and limitations of different methodological approaches such that they can critically assess published experimental data and design their own experimental setup.</p>							
Admissions requirements/Conditions for participation in the module/courses							
Recommended prior knowledge							
Organizational details							
Seminar: regular and active participation documented by the signature of the host or presenter.							
Module allocation (degree programme/faculty)		Master Biochemistry / FB14					
Module transferrable to other degree programmes							
Module offered		winter semester					
Duration		1 semester					
Module coordinator		Prof. Hänelt					
Course requirements for credits							
Participation record		Seminar: regular and active participation					
Coursework		None					
Forms of teaching / learning		Lecture, self study, seminar					
Language teaching and instruction		English					
Module assessment		Form / duration / content, if applicable					
Final module assessment		Oral exam for the lecture (30 min.)					
Cumulative module assessment consisting of							
Composition of the module grade for cumulative module assessment							
		Mode of teaching / study	Semester hours per week	Semester CP			
				1	2	3	4
	Membrane biology	L+self study	2	4			
	<i>Optional</i> : Current research in membrane biology	S	1	1			
	TOTAL		2-3	4-5			