[C1.3]	Cellular Biochemistry	Compulsory elective module in the core area C1	4 CP (total) = 120 h		2 SWS
			Contact hours 2 SWS / 30 h	Independent study 90 h	

Content

This Master course in Biochemistry covers various key topics, including chaperone-mediated protein folding, the relationship between protein misfolding and diseases, principles of proteasomal protein degradation, ubiquitination, the ubiquitin proteasome pathway, ER-associated protein degradation (ERAD), protein translocation and secretion, insertion mechanisms for type I, II, and III membrane proteins, alternative pathways for membrane protein insertion, the structure and mechanisms of ABC transporters, signal transduction mechanisms, G-coupled receptors, receptor tyrosine kinases, and plasma membrane organization.

In this context, chaperone-mediated protein folding refers to the process by which specialized proteins called chaperones assist in the correct folding of other proteins, ensuring their proper structure and function. This is a critical aspect of cellular protein homeostasis and functionality.

The students will independently study selected research papers addressing these topics and discuss these in the following lecture (self study).

Learning outcomes / competency goals

The students have a well-founded knowledge of elementary biochemical processes in the cell. This enables them to understand and assess the latest developments in cellular biochemistry.

Participation requirements for the module or for individual courses of the module

None

Recommended requirements

None

Organizational details

Module allocation (degree programme/faculty)	Master Biochemistry / FB14
Module transferrable to other degree programmes	
Module offered	Summer semester
Duration	1 semester
Module coordinator	Prof. Tampé
Course requirements for credits	
Participation record	None
Coursework	None
Forms of teaching / learning	Lecture, self study
Language teaching and instruction	English
Module assessment	**Form / duration / content, if applicable**
Final module assessment	Oral (30 min.) or written (180 min.) exam for the lecture
Cumulative module assessment consisting of	
Composition of the module grade for cumulative module assessment	

	Type of teaching session	Semester hours per week	Semester CP			
			1	2	3	4
Cellular biochemistry	L+self study	2		4		
TOTAL		2		4		