

Integrative Topics in Cell Biology (M4461)				Stand: 4.2.2019		
ECTS-Punkte	Arbeitsaufwand [h]	Dauer	Turnus	Semester		
14	420	1 Semester	WiSe	2 oder 3		
Lehrveranstaltungen		Typ	Umfang [SWS]	Präsenz [h]	Eigenstud. [h]	Gruppengr.
Lecture		V	2	30	90	
Practical		PExp	18	240	60	16
Modulverantwortlicher		Prof. Dr. M. Pauly				
Beteiligte Dozenten		H. Aberle, I. Axmann, P. Bauer, M. Beller, A. Buell, M. Feldbrügge, U. Fleig, S. Gould, T. Klein, N. Linka, M. Pauly, R. Simon, I. Span, Y. Stahl, A. Weber				
Sprache		English				
Verwendbarkeit des Moduls		Studiengang		Modus		
		M.Sc. Biochemie M.Sc. Biochemistry International M.Sc. Biologie		Elective		
Lernziele und Kompetenzen						
Students have learned the concepts and methods of modern cell biology and are capable of using them. They have adopted genetic, cellular, molecular biological and biochemical techniques and can apply these techniques independently. Students are familiar with the major scientific equipment and are capable of using the instruments precisely and independently. Students are able to work in teams.						
Inhalte						
Lecture: <i>Organization of the cell:</i> Cell chemistry - Membrane structure and transport across membranes - Intracellular compartments and protein sorting – intracellular membrane trafficking – endosymbiosis - mitochondria and plastids – cell signaling – cytoskeleton <i>Cells in their social context:</i> Cell junctions – extracellular matrix – stem cells – cell morphogenesis and growth – neural development – visualizing cells						
Practical: <i>Molecular biology:</i> e.g. DNA - and RNA isolation methods, vector construction, transformation of organisms, gel-electrophoresis, PCR <i>Cell biology:</i> fluorescence microscopy <i>Biochemistry:</i> e.g. immuno-localization and purification of proteins, analysis of enzyme kinetics and regulatory properties of proteins, carbohydrate analysis The practical course will consist of research projects in the laboratories of the participating lecturers. The laboratory can be chosen according to the student's interest. The methods to be learned will depend on the research project.						
Teilnahmevoraussetzungen		Keine				
Studienleistungen		Regelmäßige, aktive Teilnahme				
Zulassungsvoraussetzung zur Abschlussprüfung		Erfüllung der Studienleistungen des Praktikums				
Prüfung und Bewertung		Prüfungsform		Dauer [min]	Gewichtung in Modulnote	
		Klausur		120	70%	
		Wissenschaftlicher Bericht			30%	
Gewichtung in Gesamtnote		Gewichtet mit 14 von ca. 100 benoteten LP (ca. 14%)				
Weitere Informationen						
Literatur		Alberts "Molecular Biology of the Cell; primary literature provided at beginning				

