

Title of module	responsible	SWS	type of course	title of lecture (teacher)	Examination	ECTS points
1st semester						
Introductory modules - obligatory						
Fundamentals of Biophysics	Guck	2	lecture	Biophysical Chemistry (Guck)	written exam (90 min) 40% presentation 40% lab protocol 20%	10
		2	lecture	Biophysical Methods (Guck)		
		2	seminar			
		1	lab classes			
Structural and Computational Biology	Pisabarro	2	lecture	Structural and Computational Biology (Pisabarro)	presentation 25% written exam (90 min) 75%	4
		2	seminar			
Introduction to Biochemistry and Molecular Cell Biology	Hoflack Stewart	2	lecture	Introduction to Biochemistry (Stewart, Gro)	oral exam (20 min) 40% lab protocol 20%	10 (over 2 semester)
		2	lab classes			
Elements of Nanobiotechnology	Cuniberti	2	lecture	Introduction to Nanobiotechnology (Cuniberti, Opitz)	oral exam (20 min) 50% lab protocol 15% presentation 35%	6
		1	lab classes			
		2	seminar	New Developments in Nanotechnology (Di)		
Concepts of Molecular Modelling	Cuniberti	2	lecture	Concepts of Molecular Modelling (Cuniberti)	oral exam (20 min) OR written exam (90 min) 50% and project 50%	6
		2	exercise			
		2	lab classes			
		26				
2nd semester						
Core modules - obligatory						
Introduction to Biochemistry and Molecular Cell Biology	Hoflack Stewart	2	lecture	Introduction to Molecular Cell Biology (Stewart)	oral exam (20 min) 40%	10 (over 2 semester)
		2	exercise			
Microsystems and Bioinspired Structures	Braun	2	lecture	Microsystems and Bioinspired Structures (Braun)	oral exam (20 min) 85% lab protocol 15%	5
		2	lab classes			
Advanced Biophysics	Grill	2	lecture	Theoretical Biophysics (Grill, Jülicher)	oral exam (20 min) 40%	12 (over 2 semester)
		2	exercise			
Applied Nanotechnology	Büchner	2	lecture	Biological Nanomachines (Diez)	presentation 50% oral exam (20 min) 50%	7
		2	seminar			
		2	lecture	Molecular Nanostructures (Büchner)		
Nanostructured Materials	Cuniberti	2	lecture	Nanostructured Materials (Cuniberti)	oral exam (20 min) OR written exam (90 min) 50% and project 50%	6
		2	exercise			
		2	lab classes			
		24				
3rd semester						
Core modules - obligatory						
Advanced Biophysics	Grill	2	lab classes	Scanning Probe Techniques (Büchner/Eng)	2 lab protocols 20%	12 (over 2 semester)
		2	lab classes	Single Molecule Optics (Diez)		
		2	lecture	Biological Hydrodynamics (Grill)	oral exam (20 min) 40%	
		2	exercise			

Lab Rotation Biophysics	Guck	6	lab classes	Lab Rotation Biophysics	lab protocol	6
Lab Rotation Nanophysics	Cuniberti	6	lab classes	Lab Rotation Nanophysics	lab protocol	6
Lab Rotation Choice	Guck	6	lab classes	Lab Rotation Choice	lab protocol	6
Specialization module - choose 2 topics among:					2 oral exams of 20 min, each 50%	6
Applied Bioinformatics	Schroeder	2	lecture			
Biofunctionalised Surfaces	Scharnweber	2	lecture			
Biological Thermodynamics	Fahmy	2	lecture			
Biomedical Tissue Engineering	Corbeil	2	lecture			
Bionics	Gude et al.	2	lecture			
Cellular Machines: Molecular Motors	Diez	2	lecture			
Current topics in Materials Science	Cuniberti	2	seminar			
Developmental Biology	Brand	2	lecture			
Diffraction Methods	Braun	2	lecture			
Electromechanical Networks	Marschner	2	lecture			
Environmental Nanotechnology	Cuniberti	2	lecture			
Fluctuations and Transport in Biology	Zaburdaev/Grill	2	lecture			
Genomes and Evolution	Stewart	2	lecture			
Image Processing	Sellent/Schmidt	2	lecture			
Integrated Circuits for Broadband Optical Communications	Ellinger	3	lecture			
Introduction to Proteomics	Stewart	2	lecture			
Magnetism on the Nanoscale	Büchner	2	lecture			
Materials for Nanoelectronics and Printing Technology	Richter	4	lecture			
Mathematical Biology	Deutsch	2	lecture			
Molecular Electronics	Cuniberti/Mores	2	lecture			
Nanooptics	Eng	2	lecture			
Nanotechnology	Eng	2	lecture			
Nonlinear Dynamics and Stochastic Processes with Applications	Friedrich/Grill	2	lecture			
Physical Characterization of Organic and Organic-Inorganic Thin Films	Zschech	2	lecture			
Probability, Statistics and Programming for Computational Biology	Cannistraci	2	lecture			
Protein Engineering	Stewart	2	lecture			
Public and Economic Aspects	Diebel/Schmied	2	lecture			
Stem Cell Engineering	Anastasiadis	2	lecture			
Surface Chemistry	Werner	2	lecture			
		30				
4th semester						
Masters Thesis						30
Total ECTS:						120