

CMS-CLS-ELG Computational Life Science Basics						Responsible Lecturer: Prof. Dr. Ivo F. Sbalzarini				M1107-CMS21	
Katalogmodul (Soll: 8 SWS)		Catalogue Module (Setpoint: 8 SWS Lecture hours per week)									
Eine Lehrveranstaltung des Katalogs CMS-CLS-ELG kann nicht gewählt werden, wenn diese bereits in einem anderen Pflichtmodul mit wahlpflichtigem Inhalt bzw. in einem Wahlpflichtmodul der Grundlagenausbildung im Masterstudiengang Computational Modeling and Simulation gewählt wurde.											
Please note that any course of the catalogue CMS-CLS-ELG cannot be selected if it has been already selected for another CMS-module.											
Die Modulnote ergibt sich aus dem nach Semesterwochenstunden (SWS) gewichteten Durchschnitt der Noten der Prüfungsleistungen. The module grade is the average of the grades of the individual examinations, weighted by course effort (SWS, semester-week-hours).											
Nr.	Title	Faculty	Lecturer	Effort	Language	Semester	Examiner	Examination performance	Duration	Weighting according to SWS	Course number Selma
1	Biophysical Chemistry	CMCB	Elisabeth Fischer-Friedrich	2V	English	Winter	Fischer-Friedrich	Written Examination	90 min	2	
2	Biophysical Methods	CMCB	Michael Schlierf	2V/2S	English	Winter	Michael Schlierf	Oral Presentation		4	
3	Dynamics of Protein Networks	CMCB	Simon Alberti	2V	English	Summer	Simon Alberti	Oral Presentation	30 min	2	K1112-5MB22V
4	Genome Engineering	CMCB	Francis Stewart Michael Hiller	2V	English	Summer	Francis Stewart	Oral Presentation	30 min	2	K1112-5NBE2bV
5	Introduction to Proteomics	CMCB	Simon Alberti	3V	English	Winter	Simon Alberti	Written Examination/Oral Assessment <= 15 Participants		3	
6	Principles of Biophysics	CMCB	Michael Schlierf	2V/2Ü	English	Winter	Michael Schlierf	Written Examination	90 min	4	
7	Theoretical Biophysics	CMCB	Christoph Weber Frank Jülicher	2V/2Ü	English	Summer	Christoph Weber Frank Jülicher	Oral Assessment	20 min	4	K1112-5NB24
8	Advanced User Interfaces	INF	Raimund Dachsel Anke Lehmann	2V/2Ü	German/ English	Summer	Raimund Dachsel Anke Lehmann	Written Examination	90 min	4	K1104-MA0001
9	Basic Numerical Methods	INF	Ivo Sbalzarini	2V/2Ü	English	Winter	Ivo Sbalzarini	Written Examination 90 min/Oral Assessment 30 min < 10 Participants		4	K1107-MA0017
10	Computer Vision 1	INF	Björn Andres	2V/2Ü	English	Winter	Björn Andres	Oral Assessment	30 min	4	K1107-MA0009
11	Computer Vision 2	INF	Björn Andres	2 Seminar	English	Summer	Björn Andres	Oral Presentation	30 min	2	K1107-MA0016S
12	Computer Graphics 1	INF	Stefan Gumhold	2V/2Ü	German/ English	Winter	Stefan Gumhold	Written Examination 90 min/Oral Assessment 20 min <=15 Participants		4	K1104-MA0025
13	Computer Graphics 2	INF	Stefan Gumhold	2V/2Ü	English	Summer	Stefan Gumhold	Written Examination 90 min/Oral Assessment 20 min <=15 Participants		4	K1104-MA0005
14	Data Visualization	INF	Raimund Dachsel Stefan Gumhold	2V/2Ü	German/ English	Winter	Raimund Dachsel Stefan Gumhold	Written Examination 90 min/Oral Assessment 30 min < 10 Participants		4	K1104-CMS03
15	Design Patterns and Frameworks	INF	Uwe Aßmann Sebastian Götz	2V/2Ü	English	Winter	Uwe Aßmann Sebastian Götz	Written Examination 90 min/Oral Assessment 15 min < 20 Participants		4	K1104-MA0020
16	Digitization and Data Analytics: Architectures, Methods and Consequences	INF	Wolfgang Nagel Robert Schöne Sunna Torge	2V/2Ü	English	Summer	Wolfgang Nagel	Written Examination 90 min/Oral Assessment 20 min <= 10 Participants		4	K1102-ZIH03
17	Machine Learning 1	INF	Björn Andres	2V/2Ü	English	Winter	Björn Andres	Written Examination 90 min/Oral Assessment 30 min < 10 Participants		4	K1107-MA0060
18	Machine Learning 2	INF	Björn Andres	2 Seminar	English	Summer	Björn Andres	Oral Presentation	30 min	2	K1107-MA0062S
19	Particle Methods	INF	Ivo Sbalzarini	2V/2Ü	English	Summer	Ivo Sbalzarini	Written Examination 90 min/Oral Assessment 30 min <= 10 Participants		4	K1107-MA0006
20	Scientific Visualization	INF	Stefan Gumhold	2V/2Ü	English	Summer	Stefan Gumhold	Written Examination 90 min/Oral Assessment 20 min <=15 Participants		4	K1104-MA0032

21	Stochastic Modeling and Simulation	INF	Ivo Sbalzarini Christoph Zechner	2V/2Ü	English	Winter	Ivo Sbalzarini	Written Examination 90 min/Oral Assessment 30 min < 10 Participants	4	K1107-MA0002	
22	Transactional Information Systems	INF	Wolfgang Lehner Dirk Habich	2V/2Ü	English	Winter	Wolfgang Lehner Dirk Habich	Written Examination 90 min/Oral Assessment 30 min < 10 Participants	4	K1106-MA0020	
23	User Interface Engineering	INF	Raimund Dachzelt Anke Lehmann	2V/2Ü	German/ English	Winter	Raimund Dachzelt Anke Lehmann	Written Examination 90 min/Oral Assessment 20 min <= 10 Participants	4	K1104-MA0024	
24	Introduction to Mathematical Biology 1	INF (ZIH)	Andreas Deutsch Lutz Bruschi	2V/1Ü	English	Winter 18/19 Winter 20/21	Andreas Deutsch Lutz Bruschi	Oral Assessment	30 min	3	K1102-ZIH001
25	Introduction to Mathematical Biology 2	INF (ZIH)	Andreas Deutsch Lutz Bruschi	2V/1Ü	English	Winter 19/20 Winter 21/22	Andreas Deutsch Lutz Bruschi	Oral Assessment	30 min	3	K1102-ZIH002
26	Finite-Elemente-Methode – Theorie, Implementierung und Anwendungen / Finite Element Method - Theory, Implementation and Applications	MATH	Axel Voigt	3V/1Ü	German/ English	Winter	Axel Voigt	Written Examination 120 min/Oral Assessment 20 min < 10 Participants	4	K0108-40641x	
27	Numerik partieller Differentialgleichungen / Numerics of partial differential equations	MATH	Oliver Sander Patrick Jaap	3V/1Ü	German/ English	Winter	Oliver Sander	Oral Assessment (Group Test) 20 min	4	K0108-40543x	
28	Wissenschaftliches Rechnen - Fortgeschrittene Aspekte = Scientific Arithmetic - Advanced Aspects	MATH	Axel Voigt Marco Salvalaglio	3V/1Ü	English	Summer	Axel Voigt Marco Salvalaglio	Oral Assessment (Group Test) 20 min	4	K0108-40642x	
29	Computational Fluid Dynamics	MW	Jochen Fröhlich Jordi Ventosa Molina	2V/2Ü	English	Winter	Jochen Fröhlich Jordi Ventosa Molina	Written Examination 120 min/Oral Assessment 20 min < 10 Participants	4	K1302-EX3040	
30	Concepts of Molecular Modelling	MW	Rafael Gutierrez	2V/2Ü/2P	English	Winter	Rafael Gutierrez	Written Examination	90 min	6	K1314-EX3006
31	Kinematik und Kinetik der Mehrkörpersysteme / Kinematics and kinetics of multibody systems	MW	Michael Beitel Schmidt David Bernstein	2V/2Ü	German/ English	Summer	Beitel Schmidt	Written Examination Multibody Dynamics	90 min	4	K1301-1H1305
32	Cognitive Neuroscience Methods (CAN5)	PSY	Stefan Kiebel	2V	German/ English	Winter	Stefan Kiebel	Written Examination 90 min/Oral Assessment	90 min	2	K0401-4CAN5xV

CMS-CLS-ABI Applied Bioinformatics				Responsible Lecturer:	Prof. Dr. Michael Schroeder	M1100-CMS23		
Compulsory Module for Track CLS								
Title	Faculty	Lecturer	Effort	Language	Semester	Examiner	Examination performance	Course number Selma
Applied Bioinformatics	CMCB	Michael Schroeder	2V/2Ü	English	Summer	Michael Schroeder	Test 45 min	K3012-5MB14a

CMS-CLS-MOS Modeling and Simulation in Biology				Responsible Lecturer:		Prof. Dr. Ivo F. Sbalzarini		M1107-CMS26
Compulsory Module for Track CLS								
Title	Faculty	Lecturer	Effort	Language	Semester	Examiner	Examination performance	Course number Selma
Spatiotemporal Modeling and Simulation of Biological Systems	INF	Ivo Sbalzarini	2V/2Ü	English	Summer	Ivo Sbalzarini	Written Examination 120 min/Oral Assessment 30 min < 10 Participants	K1107-MA0015

CMS-CLS-TEA	Modul Computational Life Science Teamproject			Responsible Lecturer:	Prof. Dr. Ivo F. Sbalzarini		M1107-CMS251	
Pflichtmodul im Track CLS	Compulsory Module for Track CLS						PO 2020	
Ein Teamprojekt kann nicht gewählt werden, wenn dieses bereits in einem anderen Pflichtmodul mit wahlpflichtigem Inhalt im Masterstudiengang Computational Modeling and Simulation gewählt wurde.								
Please note that any teamproject cannot be selected if it has been already selected for another CMS-module.								
Name	Faculty	Supervisor	SWS Teaching format	Language	Semester	Examiner	Examination performance	Course number Selma
Teamproject	chosen freely	chosen freely	8 SWS Project Processing	German/English	Summer	after confirmation by examination board CMS	1. Project Report 70 Hours 2. Oral Presentation 30 Minutes	
				Project Report will be single weighted. Oral Presentation will be single weighted.				
CMS-CLS-TEA	Modul Computational Life Science Teamproject			Responsible Lecturer:	Prof. Dr. Ivo F. Sbalzarini		M1107-CMS25	
Pflichtmodul im Track CLS	Compulsory Module for Track CLS						PO 2018	
Ein Teamprojekt kann nicht gewählt werden, wenn dieses bereits in einem anderen Pflichtmodul mit wahlpflichtigem Inhalt im Masterstudiengang Computational Modeling and Simulation gewählt wurde.								
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Title	Faculty	Supervisor	Effort	Language	Semester	Examiner	Examination performance	Course number Selma
Teamproject	chosen freely	chosen freely	8 SWS Project Processing	German/English	Summer	after confirmation by examination board CMS	1. Project Report 12 Wochen 2. Colloquium 30 Minutes	
				Project Report will be weighted twice. Colloquium will be single weighted.				