

CMS-CMA-ELG Computational Mathematics Basics				Responsible Lecturer:		Prof. Dr. Axel Voigt				M1100-CMS31	
Katalogmodul (Soll: 8 SWS)		Catalogue Module (Setpoint: 8 SWS Lecture hours per week)									
Eine Lehrveranstaltung des Katalogs CMS-CMA-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-CMA-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.	Course title	Faculty	Lecturer	SWS Effort	Language	Semester	Examiner	Examination performance	Duration	Weighting according to SWS	Course number Selma
1	Biophysical Methods	CMCB	Michael Schlierf	2V/2S	English	Winter	Michael Schlierf	Oral Presentation		4	K1112-5NB23
2	Concepts of Molecular Modelling	MW	Rafael Gutierrez	2V/2Ü/2P	English	Winter	Rafael Gutierrez	Written Examination	90 minutes	6	K1314-EX3006
3	Digitization and Data Analytics: Architectures, Methods and Consequences	INF	Wolfgang Nagel Sunna Torge	2V/2Ü	English	Summer	Wolfgang Nagel	Written Examination 90 min/Oral Assessment 20 min <= 10 Participants		4	K1102-ZIH03
4	Introduction to Mathematical Biology 1	INF	Andreas Deutsch Lutz Bruschi	2V/1Ü	English	Winter 18/19 Winter 20/21	Andreas Deutsch Lutz Bruschi	Oral Assessment	30 minutes	3	K1102-ZIH001
5	Introduction to Mathematical Biology 2	INF	Andreas Deutsch Lutz Bruschi	2V/1Ü	English	Winter 19/20	Andreas Deutsch Lutz Bruschi	Oral Assessment	30 minutes	3	K1102-ZIH002
6	Numerical Mathematics of Partial Differential Equations - Further Concepts	MATH	Oliver Sander Patrick Jaap	3V/1Ü	German/ English	Summer	Oliver Sander	Oral Assessment (Group Test) 20 min		4	K0108-40545x
7	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
8	Principles of Biophysics	CMCB	Michael Schlierf	2V/2Ü	English	Winter	Michael Schlierf	Written Examination	90 minutes	4	K1112-5MB15b
9	Scientific Programming – Fortgeschrittene Aspekte	MATH	Wolfgang Walter Simon Praetorius	3V/1Ü	German/ English	every	Wolfgang Walter Simon Praetorius	Oral Assessment (Group Test) 20 min		4	K0108-40643x
10	Theoretical Biophysics	CMCB	Frank Jülicher Christoph Weber	2V/2Ü	English	Summer	Frank Jülicher Christoph Weber	Oral Assessment	20 min	4	K1112-5NB24
11	Wissenschaftliches Arbeiten = Scientific Working Advanced Concepts of object-oriented Programming Languages	MATH	Wolfgang Walter	2 V 2 SWS Seminar	German/ English	Summer	Wolfgang Walter	ungraded Presentation (must be passed)		4	K0108-40140bV K0108-40140bS
12	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

CMS-CMA-MODSEM Modeling Case Studies			Responsible Lecturer: Prof. Dr. Axel Voigt						M1100-CMS331
Compulsory Module								PO 2020	
Course title	Faculty	Lecturer	SWS Effort	Language	Semester	Examiner	Examination performance	Duration	Course number Selma
Modellierungsseminar / Modeling Seminar	MATH	Stefan Neukamm Axel Voigt	4 SWS Seminar 4 SWS Project Processing	German/English	Summer	Stefan Neukamm Axel Voigt	Oral Presentation	60 min	K0108-40644xS
CMS-CMA-MODSEM Modeling Case Studies			Responsible Lecturer: Prof. Dr. Axel Voigt						M1100-CMS33
Compulsory Module								PO 2018	
Course title	Faculty	Lecturer	SWS Effort	Language	Semester	Examiner	Examination performance	Duration	Course number Selma
Modellierungsseminar / Modeling Seminar	MATH	Stefan Neukamm Axel Voigt	4 SWS Seminar + 90 Hours Project Processing	German/English	Summer	Stefan Neukamm Axel Voigt	ungraded Colloquium	60 min	K0108-40644xS

CMS-CMA-ELV1 Computational Mathematics Advanced			Responsible Lecturer:		Prof. Dr. Axel Voigt				M1100-CMS35		
Katalogmodul (Soll: 8 SWS)		Catalogue Module (Setpoint: 8 SWS Lecture hours per week)									
Eine Lehrveranstaltung des Katalogs CMS-CMA-ELV1 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-CMA-ELV1 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.	Course title	Faculty	Lecturer	SWS Effort	Language	Semester	Examiner	Examination performance	Duration	Weighting according to SWS	Course number Selma
1	Biological Hydrodynamics	CMCB	Benjamin Friedrich Jan Brugues	2V/2Ü	English	Winter	Benjamin Friedrich	Oral Assessment	20 minutes	4	K1112-5NB23
2	Computational Cell Biology	MED	Ingmar Glauche	2V/2Ü	English	Winter	Ingmar Glauche	Oral Presentation	30 minutes	4	K9603-11073
3	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
4	Digitization and Data Analytics: Architectures, Methods and Consequences	INF	Wolfgang Nagel Sunna Torge	2V/2Ü	English	Summer	Wolfgang Nagel	Written Examination 90 min/Oral Assessment 20 min <= 10 Participants		4	K1102-ZIH03
5	Introduction to Mathematical Biology 1	INF	Andreas Deutsch Lutz Brusch	2V/1Ü	English	Winter 18/19 Winter 20/21	Andreas Deutsch Lutz Brusch	Oral Assessment	30 minutes	3	K1102-ZIH001
6	Introduction to Mathematical Biology 2	INF	Andreas Deutsch Lutz Brusch	2V/1Ü	English	Winter 19/20	Andreas Deutsch Lutz Brusch	Oral Assessment	30 minutes	3	K1102-ZIH002
7	Molecular Electronics	MW	Gianaurelio Cuniberti Francesca Moresco	2V/2Ü	English	Winter	Gianaurelio Cuniberti Francesca Moresco	Written Examination 90 min/Oral Assessment 20 min <=10 Participants		4	K1314-EX0201
8	Nanostructured Materials 1	MW	Gianaurelio Cuniberti Bergoi Ibarlucea	2V/2Ü/2P	English	Summer	Cuniberti	1. Written Examination 90 min/Oral Assessment 20 min <= 10 Participants 2. Laboratory Report		6	K1314-2H0440
9	Numerical Mathematics of Partial Differential Equations - Further Concepts	MATH	Oliver Sander Patrick Jaap	3V/1Ü	German/English	Summer	Oliver Sander	Oral Assessment (Group Test) 20 min		4	K0108-40545x
10	Particle Methods	INF	Ivo Sbalzarini	2V/2Ü	English	Summer	Ivo Sbalzarini	Written Examination 90 min/Oral Assessment 30 min <=10 Participants		4	K1107-MA0006
11	Scientific Programming - Advanced Aspects	MATH	Wolfgang Walter Simon Praetorius	3V/1Ü	German/English	every	Wolfgang Walter Simon Praetorius	Oral Assessment (Group Test) 20 min		4	K0108-40643x
12	Scientific Visualization	INF	Stefan Gumhold	2V/2Ü	English	Summer	Stefan Gumhold	Written Examination 90 min/Oral Assessment 20 min <= 15 Participants		4	K1104-MA0032
13	Seminar Mathematical Biology	INF	Andreas Deutsch Lutz Brusch	2 Seminar	English	Summer	Andreas Deutsch Lutz Brusch	Oral Presentation	30 minutes	2	K1102-ZIH001S
14	Teamproject	chosen freely	chosen freely	8 SWS Project Processing	English	Summer		1. Project Report 70 Hours 2. Oral Presentation 30 minutes		8	
15	Wissenschaftliches Arbeiten = Scientific Working Advanced Concepts of object-oriented Programming Languages	MATH	Wolfgang Walter	2 V + 2 SWS Seminar	German/English	Summer	Wolfgang Walter	ungraded Presentation (must be passed)		4	K0108-40140bV K0108-40140bS
16	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

CMS-CMA-ELV2 Computational Mathematics Applications			Responsible Lecturer:		Prof. Dr. Axel Voigt				M1100-CMS36		
Katalogmodul (Soll: 8 SWS)		Catalogue Module (Setpoint: 8 SWS Lecture hours per week)									
Eine Lehrveranstaltung des Katalogs CMS-CMA-ELV2 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.											
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2	Computational Cell Biology	MED	Ingmar Glauche	2V/2Ü	English	Winter	Ingmar Glauche	Oral Presentation	30 minutes	4	K9603-11073
3	Computational Fluid Dynamics	MW	Jochen Fröhlich Jordi Ventosa Molina	2V/2Ü	English	Winter	Fröhlich Ventosa Molina	Written Examination 120 min/Oral Assessment 20 min <10 Participants		4	K1302-EX3040
4	Digitization and Data Analytics: Architectures, Methods and Consequences	INF	Wolfgang Nagel Sunna Torge	2V/2Ü	English	Summer	Wolfgang Nagel	Written Examination 90 min/Oral Assessment		4	K1102-ZIH03
5	Introduction to Mathematical Biology 1	INF	Andreas Deutsch Lutz Bruschi	2V/1Ü	English	Winter 18/19 Winter 20/21	Andreas Deutsch Lutz Bruschi	Oral Assessment	30 minutes	3	K1102-ZIH001
6	Introduction to Mathematical Biology 2	INF	Andreas Deutsch Lutz Bruschi	2V/1Ü	English	Winter 19/20	Andreas Deutsch Lutz Bruschi	Oral Assessment	30 minutes	3	K1102-ZIH002
7	Molecular Electronics	MW	Gianaurelio Cuniberti Francesca Moresco	2V/2Ü	English	Winter	Gianaurelio Cuniberti Francesca Moresco	Written Examination 90 min/Oral Assessment 20 min <= 10 Participants		4	K1314-EX0201
8	Nanostructured Materials 1	MW	Gianaurelio Cuniberti Bergoi Ibarlucea	2V/2Ü/2P	English	Summer	Cuniberti	1. Written Examination 90 min/Oral Assessment 20 min <= 10 Participants 2. Laboratory Report		6	K1314-2H0440
9	Numerical Mathematics of Partial Differential Equations - Further Concepts	MATH	Oliver Sander Patrick Jaap	3V/1Ü	German/ English	Summer	Oliver Sander	Oral Assessment (Group Test) 20 min		4	K0108-40545x
10	Particle Methods	INF	Ivo Sbalzarini	2V/2Ü	English	Summer	Ivo Sbalzarini	Written Examination 90 min/Oral Assessment 30 min <=10 Participants		4	K1107-MA0006
11	Scientific Programming - Advanced Aspects	MATH	Wolfgang Walter Simon Praetorius	3V/1Ü	German/ English	every	Wolfgang Walter Simon Praetorius	Oral Assessment (Group Test) 20 min		4	K0108-40643x
12	Scientific Visualization	INF	Stefan Gumhold	2V/2Ü	English	Summer	Stefan Gumhold	Written Examination 90 min/Oral Assessment 20 min <=15 Participants		4	K1104-MA0032
13	Seminar Mathematical Biology	INF	Andreas Deutsch Lutz Bruschi	2 Seminar	English	Summer	Andreas Deutsch Lutz Bruschi	Oral Presentation	30 minutes	2	K1102-ZIH001S
14	Teamproject	chosen freely	chosen freely	8 SWS Project Processing	English	Summer		1. Project Report 70 Hours 2. Oral Presentation 30 minutes		8	
15	Wissenschaftliches Arbeiten = Scientific Working Advanced Concepts of object-oriented Programming Languages	MATH	Wolfgang Walter	2 V + 2 SWS Seminar	German/ English	Summer	Wolfgang Walter	ungraded Presentation (must be passed)		4	K0108-40140bV K0108-40140bS
16	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