

Module elements of the master of science degree program - bioinformatics

Module code	Titel of module	Hours per week	CP	Type of exam	Minimal requirement (CP) per category
Core lecture courses in computer science (graded)					18
I-M-1	Data Structures and Algorithms	V4 Ü2	9	K	
I-M-2	Computer Graphics	V4 Ü2	9	K	
I-M-3	Database Systems	V4 Ü2	9	K	
I-M-4	Information Retrieval	V4 Ü2	9	K	
I-M-5	Artificial Intelligence	V4 Ü2	9	K	
I-M-6	Optimization	V4 Ü2	9	K	
I-M-7	Geometric Modelling	V4 Ü2	9	K	
I-M-8	Introduction to Computational Logic	V4 Ü2	9	K	
I-M-9	Image Processing and Computer Vision	V4 Ü2	9	K	
I-M-10	Software Engineering	V4 Ü2	9	K	
I-M-11	Machine Learning	V4 Ü2	9	K	
Advanced lectures in life sciences (graded)					12
B-M-1	Molecular Biotechnology 2	V2	3	K	
B-M-2	The Human Genome	V2	3	K	
B-M-3	Systems and Synthetic Biology	V2 Ü1 S1	6	K	
B-M-4	Bio-Reaction Engineering	V2 Ü1 S1	6	K	
B-M-5	Special-topic Lecture Biosciences (different topics)	V2 Ü1	5	K / M	
Advanced lectures in bioinformatics (graded)					19
BI-M-1	Bioinformatics 3	V4 Ü2	9	K	
BI-BM-1	Special-topic Lecture Bioinformatics (different topics)	V2 Ü1	5	K / M	
Practical training in Bioinformatics (ungraded)					5
BI-PM-1	Programming Course	P2	5	Prot / K	
Practical skills classes (ungraded)					0
E-BM-1	Organization of Scientific Research	V1	1	K	
E-BM-2	Project Management	V1/Ü1	1	K	
E-BM-3	Patent Law and Bioethics	V1/Ü1	1	K	
Advanced practical training in life sciences (ungraded)					0
B-PM-1	Advanced Practical Training of Life Sciences	P3	8	Prot	
Seminar (graded)					7
BI-SM-1	Seminar about bioinformatics Topics (Maximum of two)	S2	7	V* / Prot	
Master seminar (graded)					12
BI-MS-1	Master Seminar about Topics of Bioinformatics	S1 P3	12	V*	
Total sum of mandatory credits					73
of which have to be graded at least					68

Master Thesis: 30 credits

17 „free“ credits which can be combined from any course of the approved categories or from heading a tutorial (tutorship).

Minimum sum of credits for master degree: 120

Abbreviations:

S = Seminar

P = Practical

V = Lecture (Vorlesung)

Ü = Tutorial (Übung)

K = Written Exam (Klausur)

M= Oral Exam (mündliche Prüfung)

Prot = Summary Report (Protokoll)

V* = Talk (Vortrag)

Master Thesis = 30 Credits

Tutorship = 4 Credits