

Module Name Lecture Computational Biology						
Type of Module ○ Basic Module				Module Code Computational Lecture		
Identification Number	Workload	Credit Points	Term	Offered Every	Start	Duration
MN-B-C 1	180 h	6 CP	1 st term of studying	Winter term	Winter term only	1 term
1	Course Types Lecture		Contact Time 49 h		Private Study 131 h	
2	Module Objectives and Skills to be Acquired Students who successfully completed this module <ul style="list-style-type: none"> • have acquired detailed knowledge about the fundamentals of bioinformatics/computational biology (BICB). • have acquired in-depth knowledge of important concepts and algorithms in BICB. • know the kind of biological problems that can be solved with bioinformatic tools. • are able to contextualize quantitative approaches and methods with other fields of biology. 					
3	Module Content <ul style="list-style-type: none"> • Basic algorithms • BICB algorithms • DNA and RNA sequence analysis • Genomes, transcriptomes, proteomes • Gene expression analysis • Prediction of protein architecture • Databases of biological sequences • Specialized biological databases • Mathematical and statistical modelling 					
4	Teaching Methods <ul style="list-style-type: none"> • Lecture 					
5	Prerequisites (for the Module) Enrollment in one of the Master's of Science degree courses of the Department of Biology Additional academic requirements Good quantitative/mathematical skills are required.					
6	Type of Examination Two hours written examination about topics of the lectures (100 % of the total module mark)					

7	Credits Awarded Written examination at least "sufficient"
8	Compatibility with other Curricula* Optional module for the second (or third) mandatory lecture module in the other Master's of Science degree courses of the Department of Biology
9	Proportion of Final Grade 7.5 %
10	Module Coordinator Prof. Dr. Thomas Wiehe, phone 470 1588, e-mail: twiehe@uni-koeln.de
11	Further Information Participating faculty: Prof. Dr. A. Beyer, Prof. Dr. K. Hofmann, Prof. Dr. T. Wiehe Literature: <ul style="list-style-type: none">Information about textbooks and other reading material will be given on the ILIAS representation of the course (see https://www.ilias.uni-koeln.de/ilias/goto_uk_cat_2815610.html) General time schedule: Weeks 1-14: Mon. and Wed. from 8:30 to 9:30 a.m. as well as Fri. from 10:00 to 11:30 a.m.; Week 15 (Mon.-Fri.): Preparation for the written examination Introduction to the module / Examination dates: October 09, 2023 at 9:00 a.m., online (further information/link will be sent to your Smail-Account); for preparation to the module before this introduction see ILIAS link under literature. Written examination: February 02, 2024, second/supplementary examination March 01, 2024; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.