

Module Name Lecture Computational Biology						
Type of Module ○ Basic Module				Module Code Computational Lecture		
Identification Number MN-B-C 1	Workload 180 h	Credit Points 6 CP	Term 1 st term of studying	Offered Every Winter term	Start Winter term only	Duration 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 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	<p>Further Information</p> <p>Participating faculty: Prof. Dr. A. Beyer, Prof. Dr. K. Hofmann, Prof. Dr. T. Wiehe</p> <p>Literature:</p> <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) <p>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</p> <p>Introduction to the module: October 06, 2025 at 9:00 a.m., lecture hall, COPT building No. 315</p> <p>Written examination: February 6th, 2026, second/supplementary examination March 6th, 2026; the second date may vary upon agreement of students and module coordinator. More details will be given at the beginning of the module.</p>
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