

Module Name Seminar Computational Biology						
Type of Module ○ Basic Module				Module Code Computational Seminar		
Identification Number MN-B-C 2	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 Seminar (incl. Project work)		Contact Time 60 h	Private Study 120 h		Planned Group Size 24 students
2	Module Objectives and Skills to be Acquired Students who successfully completed this module <ul style="list-style-type: none"> • are able to perform simple bioinformatic analyses and related tasks on personal computers running the Linux operating system. • have acquired practical skills in the use of common bioinformatic algorithms, computational sequence analysis tools as well as biological databases, and have acquired skills in the statistical evaluation of bioinformatic results. • know the kind of biological problems that can be solved with bioinformatic tools, can choose appropriate methods and judge the statistical and biological significance of the results. • can independently carry out small scientific projects related to the topic of the module. • have learned how to present research results in oral and written form and to critically discuss scientific publications related to the topic of the module on a professional level. 					
3	Module Content <ul style="list-style-type: none"> • Computer operating system Linux • Programming with shell scripts and the statistical programming language R and Rstudio • Use of biological databases • Organization of bioinformatics/computational biology experiments • Application of bioinformatic software to biological problems • Studying, presenting and discussing scientific literature related to the topic of the module • Writing of protocols and/or seminar papers 					
4	Teaching Methods <ul style="list-style-type: none"> • Project work; Seminar; Computer exercises; Training on presentation techniques in oral and written form 					
5	Prerequisites (for the Module) Enrollment in the Master´s degree course “Biological Sciences”; Simultaneous participation in the lecture module Computational Biology					
6	Type of Examination Seminar paper (100 % of the total module mark)					

7	Credits Awarded Regular and active participation; Seminar paper at least "sufficient"
8	Compatibility with other Curricula None
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: Tue. and Thu. from 2:00 to 4:00 p.m. Introduction to the module: October 11, 2022 at 2:00 p.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.