Module Name							
Seminar Computational Biology							

Type of Module				Module Code			
o Basic Module				Computational Seminar			

Identification Number	Workload	Credit Points	Term	Offered Every	Start		Duration
MN-B-C 2	180 h	6 CP	1st term of studying	Winter term	Winter term only		1 term

1	Course Types	Contact Time	Private Study	Planned Group Size
	Seminar (incl. Project work)	60 h	120 h	24 students

2	Module Objectives and Skills to be Acquired
	Students who successfully completed this module • 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
	• 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
	• 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
	Oral presentation (100 % of the total module mark)

7	**Credits Awarded** Regular and active participation; Oral presentation 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:** • Information about textbooks and other reading material will be given on the ILIAS representation of the course (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 12, 2021 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.