

Practical in Computational Biology					
Identification number	Workload	Credit points	Term of studying	Frequency of occurrence	Duration
MN-B-C 2	180 h	6 CP	1 st term or higher term of studying	Winter term	15 weeks
1	Type of lessons Seminar/Project work		Contact times 60 h	Self-study times 120 h	Intended group size 24
2	Aims of the module and acquired skills 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	Contents of the module <ul style="list-style-type: none"> • Computer operating system Linux • Programming with shell scripts and the statistical programming language R • 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/Learning methods <ul style="list-style-type: none"> • Project work; Seminar; Computer exercises; Training on presentation techniques in oral and written form 				
5	Requirements for participation Enrollment in the Master´s degree course "Biological Sciences"; Simultaneous participation in the lecture module "Computational Biology". Additional academic requirements Good quantitative skills and strong motivation to work quantitatively are/is required.				
6	Type of module examinations Weakly written homework exercises (100 % of the total module mark)				
7	Requisites for the allocation of credits Regular and active participation; Passed oral presentation; Weakly written home exercises at least "sufficient"				

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8	Compatibility with other Curricula* None
9	Significance of the module mark for the overall grade 7.5 % of the overall grade
10	Module coordinator Prof. Dr. Thomas Wiehe, phone 470 1588, e-mail: twiehe@uni-koeln.de
11	Additional 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 (https://www.ilias.uni-koeln.de/ilias/goto_uk_crs_3516846.html) General time schedule: Weeks 1-14: Tue. and Thu. from 2:00 to 4:00 p.m. Introduction to the module: November 03, 2020 at 2:00 p.m., online (further information/link will be sent to your Smail-Account)