

Bioinformatics and sequence analysis (BINP11) 2017

Date	Time	Activity	Literature
Aug 28	10.00 11-12	Introduction (CvW) at the Computing Room. Compulsory! Bioinformatics – an overview. (CvW)	Handouts Chapter 1
Aug 29	8-10 13-15	Nucleic acid and protein sequence databases. (CvW) Exercise: Biological databases. (CvW)	Chapter 2 + handouts
Aug 30	8-10 13-15	Structural bioinformatics. (CvW) Exercise: Structural bioinformatics. (CvW)	Chapter 13 + handouts
Aug 31	8-10 10-12	Introduction to probability and statistical analysis. (TS) Exercise: Probability and statistical analysis. (TS)	Handouts
	13.00-13.50	<i>Compulsory for all new students: important information about computer related issues, Biology Building A</i>	
	14.00-15.30	<i>Compulsory for all new Master's students; meet your coordinator and general information</i>	
Sep 1	8-10 10-12	Sequence analysis (Part I). (CvW). Exercise: Practical sequence analysis (I). (CvW)	Chapter 3 + handouts
Sep 4	10-12 13-15	Sequence analysis (Part IIa). (CvW). Exercise: Practical sequence analysis (II). (CvW)	Chapter 4 + handouts
Sep 5	9-12 13-16	Hidden Markov models (HMM). (MO) Exercise: HMM. (MO)	Handouts
Sep 6	9-12 13-16	Artificial Neural Networks (ANN). (MO) Exercise: ANN. (MO)	Handouts
Sep 7	9-10 11-12	Sequence analysis (Part IIb). (CvW). Exercise: Practical sequence analysis (II). (CvW)	Chapter 5-6 + handouts
	13.00-14.10	<i>Compulsory for all new students: library information, Kristina Arnebrant, Hörsalen Biology Building A</i>	
	14.15-15.00	<i>Compulsory for all new students: lecture on cheating and plagiarism, Jep Agrell, Hörsalen Biology Building A</i>	
Sep 8	8-10 10-12	Sequence analysis (Part III). (CvW) Exercise: Practical sequence analysis (III). Group assignments (CvW)	Chapter 12 + handouts
Sep 11	9-12	Next-generation sequencing (NGS) applications. Lecture and exercise (HP)	Chapter 9 + handouts
Sep 12	10-12 13-15	Bacterial genome analysis. (CvW) Exercise: Genome analysis. Group assignments (CvW)	Chapter 15-17 + handouts
Sep 13	10-15	Group assignments (CvW) Extra time to complete exercises.	
Sep 14	9-12	Phylogenetic analysis (I and II). (SB)	
	13.00-15.00	<i>Compulsory for all new students: lecture on scientific writing, Emma Kritzberg, Hörsalen Biology Building A</i>	
Sep 15	9-12 13-16	Phylogenetic analysis (III and seminar). (SB) Exercise: Phylogenetic analysis using MEGA. (SB)	Chapter 7 + handouts
Sep 18	9-12 14-16	Project: Phylogenetics. (SB) Project: Phylogenetics. (SB)	
Sep 19	9-11	Project (phylogentic) presentation (SB)	
Sep 20	9-11 11-12 14-16	Eukaryotic genome analysis (I). (DA) Exercise: Gene annotation methods. (DA) Exercise: Gene annotation methods. (DA)	Chapter 18-20 + handouts
Sep 21	9-11 11-15	Eukaryotic genome analysis (II). (DA) Exercise: Gene annotation methods. (DA)	Chapter 18-20 + handouts
Sep 22		Time for individual studies	
Sep 25		Time for individual studies	
Sep 26	9-13	Examination. Room A213 (Hörsal) in the Biology Building A. http://biologi.lu.se/sites/biologi.lu.se/files/biologiv2a4.pdf	
XX	9-13	Resit	

The exercises and lectures will be held in the Computing Room (CR) at the Center for Chemistry and Chemical Engineering (Kemicentrum).

Literature:

Bioinformatics and Functional Genomics, J. Pevsner, 3rd edition. ISBN: 978-1-118-58178-0 (<http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1118581784.html>) and Handouts.

The introduction, exercises and examination are obligatory for the course.

Course director: Claes von Wachenfeldt, Department of Biology, 046 2223456, Claes.von_wachenfeldt@biol.lu.se

Lecturers:

CvW	Claes.von_wachenfeldt@biol.lu.se
DA	Dag.Ahren@biol.lu.se
HP	helena.persson@med.lu.se
MO	Mattias.Ohlsson@thep.lu.se
SB	Staffan.Bensch@biol.lu.se
TS	Torbjorn.Sall@biol.lu.se

In case of illness

Report absence, due to illness or other relevant cause, to Claes.von_wachenfeldt@biol.lu.se.