

Daily Schedule (two times per week):

9.00-11.00	Lecture		
Mo-Tu 11.00-12.00	Class Programming (play/exercises)	We-Th 11.00-13.00	Class mathematics (theory plus exercises)
	– lunch –		
13.00-14.00	Class Programming theory		
14.00-16.00	Project		

Lectures 9.00-11.00:

Week	Day	Room	Topic, contents	Lecturer
1	Mon 5/9	P6.24	General: Modeling, optimality Evolution: mutations, selection, sex orthologs	JH
	Tue 6/9	P6.24	Genomics (Genes, genomics data, codons, translation/ transcription, microarray & proteomics data, splicing, PSI-blast)	JH
2	Mon 12/9	P6.24	Genomics (Sequence alignment / Bioinformatics for Systems Biology, Smith/Waterman (DP), sequence DBs)	JH
	Tue 13/9	P6.24	Ontologies & GO	AG
3	Mon 19/9	P6.24	Protein Bioinformatics: aa's, ss, folds, domains, disorder, TM, PDB	SA
	Tue 20/9	P6.24	Protein Bioinformatics: protein interactions & thermodynamics	AF
4	Mon 26/9	P6.24	Petri-net models	AF
	Tue 27/9	P6.24	Secondary Structure prediction (including Machine Learning)	JH
5	Mon 3/10	P6.24	Repeat detection and/or Domain prediction	JH
	Tue 4/10	P6.24	t.b.d. (Next Gen Sequencing? / Wrapping up?)	(AF?/JH?)
6-7			– project work –	
8		P1.28/ P1.36/ P1.52	Oral and/or written exams	JH/ AF/ SA
	Fri 28/10	Plantagemiddellaan 45:	presentations + questions	all

Acronym Lecturer

JH Jaap Heringa
 AF Anton Feenstra
 SA Sanne Abeln
 AG Andrew Gibson

Acronym Lecturer

NB Nicola Bonzanni
 PB Punto Bawono
 ME Mohamed El-Kebir

Classes: 11.00-12.00 & 13.00-14.00

week 1: short questionnaire/test to identify entry level in Biology, Programming and Mathematics

weeks 1-6: twice weekly sessions

Programming (Mondays and Tuesdays, room P3.37):

- Python
- leading up to the scripting work for the practicals

Week	Day	Room	Topic, contents	Lecturer
1	Mon 5/9	P3.37	Questionnaire & Sorting & Practical Issues (afternoon: Linux intro)	AF/SA
	Tue 6/9	P3.37	python shell: print, operator, types, if exercise: 'calculation' script	AF/NB
2	Mon 12/9	P3.37	for/while, arrays exercise: sum i over n; n!	ME
	Tue 13/9	P3.37	Functions, scope, namespace, import (libraries) exercise: guessing game; n! with recursion (bonus)	ME
3	Mon 19/9	P3.37	file I/O, dictionaries, string manipulation (e.g., split)	AF
	Tue 20/9	P3.37	exercise: codon table & translation	
4	Mon 26/9	P3.37	Multi-dimensional arrays (lists, dictionaries), urls	AF
	Tue 27/9	P3.37	exercise: Score alignment, given pairwise alignment and BLOSUM62 matrix	
5	Mon 3/10	P3.37	Regular expressions	SA
	Tue 4/10	P3.37	exercise: GO parsing	
6	Mon 10/10	P3.37	Advanced issues: classes, documentation	SA
	Tue 11/10	P3.37		

Mathematics (Wednesdays and Thursdays):

- Mathematica?
- analytical functions
- differential equations
- linear algebra

Biology (Fridays, at UvA):

- metabolism
- signalling
- genomes and gene regulation
- cell biology

Project: 14.00-16.00

Week	Day	Room	Topic, contents	Lecturer
1	Mon 5/9	P3.37	Practical stuff (login etc.) and intro to Linux	AF
	Tue 6/9	P3.37	Intro to Project	AF
2	Tue 13/9	P3.37	Find Protein(s)	PB
	Mon 12/9	P3.37	Find Pfam family for your protein(s)	PB
3	Mon 19/9	P3.37	Find GO terms for your protein(s)	PB
	Tue 20/9	P3.37	Find matching sequences (Blast) plus GO & Pfam entries	PB
4	Mon 26/9	P3.37	Find SCOP families	PB
	Tue 27/9	P3.37	Scoring & Benchmarking	PB
5	Mon 3/10	P3.37	PSI-blast	PB/SA
	Tue 4/10	P3.37	<breathing space>	
6-7		P3.37	Project work: <ul style="list-style-type: none">- building on scripts & results from practicals- report, presentation	