

## Master Programme VU Bioinformatics and Systems Biology / UvA Life Sciences: Systems Biology and Bioinformatics – 2018-2019

Period 1		Period 2		Period 3	Period 4		Period 5		Period 6
sept	oct	nov	dec	jan	feb	mar	apr	may	jun

### Bioinformatics and Systems Biology - Compulsory (24 ec for all + 18 ec 'profile')

Fundamentals of Bioinformatics (6ec) VU + UvA X_405052	Algorithms in Sequence Analysis (6ec) VU X_405050	Biosystems Data Analysis (6ec) UvA 5304BIDA6Y	Structural Bioinformatics (6ec) VU X_405019	Bioinformatics for Translational Medicine (6ec) VU X_405092	Advanced Modeling in Systems Biology (6ec) # VU X_418155
Introduction to Systems Biology (6ec) VU + UvA X_428565	Basic Models of Biological Networks (6ec) VU X_418154		Systems Biology in Practice (6ec) UvA 5304SBIP6Y	Statistics with R (6ec) # VU X_418156	

One out of Proposal Writing (VU - 6 ec) or Thesis Writing (UvA - 6 ec). Both are individual work that can be flexibly planned at the end of the first year, or during the second year.

### Optional Recommended Courses

		Signal Transduction in Health and Disease (6ec) VU X_432535		Computational Biology (6ec) UvA 5284COBI6Y	iGEM (30ec) -- continues after period 6
				Machine Learning (6ec) VU X_400154	Data Mining Techniques (6ec) VU X_400108
					Machine Learning f/t Quantified Self (6ec) VU XM_40012

### Preparatory Bachelor Courses (assigned to address deficiencies; max 6 ec)

	Calculus (6ec) VU X_400617		Lineaire algebra 2 (3ec) VU	Natuurkunde & Gezondh.(3ec) VU	
	Introduction to Programming (Python) (6ec) VU X_401096				

### Optional Courses Other Masters (may also be taken in second year, if necessary)

Genomes and Gene Expression (6ec) VU AM_470614	Stochastic Simulation (6ec) UvA 5284STSI6Y	Understanding Molecular Simulation (6ec) UvA	Scientific Computing (6ec) UvA 5284SCCO6Y	Deep Learning (6ec) UvA 5204DLFV6Y	Complex System Simulation (6ec) UvA 5284COSS6Y
Evolutionary Computing (6ec) VU X_400111	Applied Machine Learning (6ec) UvA 5294APML6Y		Big Data (6ec) UvA 5294BIDA6Y	Computational Biology (6ec) UvA 5284COBI6Y	
Statistics, Simulation & Optimization (6ec) UvA 5294STSO6Y	Introduction to Scientific programming for Chemists (6ec) VU XBUJ_0001	High Performance Computing & Big Data (6ec) UvA 5284HPCB6Y	Biomolecular Simulation (6ec) UvA 5254BISI6Y		
	Software Architecture (6ec) VU X_400170		Scientific Computing and Programming (6ec) UvA 52548SCP6Y		

### Key:

<b>Compulsory</b>	First year: o 42 ects are compulsory: - 24 ects are compulsory for all students - 18 ects differentiate between the Bioinformatics and Systems Biology profiles o 18 ects are can be chosen freely. # choose one out of Advanced Modeling in Systems Biology or Statistics with R	Second year: 60 ects of projects: - major (max. 42 ects) must match profile (Bioinformatics or Systems Biology) - minor (min. 18 ects)
<b>Bioinformatics Profile</b>		
<b>Systems Biology Profile</b>		
<b>Recommended Optional Courses</b>		
<b>Supplementary Courses</b>		
<b>Optional Courses</b>		