

Curriculum Master Computational Science 2026 - 2027

	Semester 1			Semester 2		
	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
	September-October	November-December	January	February-March	April-May	June
Compulsory Core Courses (year 1) 24 EC	Introduction to Computational Science (UvA) 6 EC	Numerical Algorithms (UvA) 6 EC	Complex System Simulation (UvA) 6 EC			
		Stochastic Simulation (UvA) 6 EC				
Restricted-Choice Elective Courses (year 1 and 2) 24 EC	Evolutionary Computing (VU) 6 EC	Performance of Networked Systems (VU) 6 EC	Biosystems Data Analysis (UvA) 6 EC	Experimental Design and Data Analysis (VU) 6 EC	Theory of Complex Systems (UvA) 6 EC	Agent-Based Modelling (UvA) 6 EC
	Programming Large-scale Parallel Systems (VU) 6 EC			Computational Biology (UvA) 6 EC	Data Mining Techniques (VU) 6 EC	
				Computational Finance (UvA) 6 EC	Distributed Algorithms (VU) 6 EC	
				Scientific Computing (UvA) 6 EC		
Restricted-Choice Professional Skills 6 EC	<i>Professional Skills: 1-2 modules, e.g. Scientific Writing, Scientific Ethics, etc. (UvA)</i>					
Free-Choice Elective Courses (year 1 and 2) 24 EC	From Physics to Physiology (VU) 6 EC	Algorithms in Sequence Analysis (VU) 6 EC	High Performance Computing and Big Data (UvA) 6 EC		Accelerator-Centric Computing ECosystems (VU) 6 EC	Machine Learning for the Quantified Self (VU) 6 EC
	Fundamentals of Bioinformatics (VU) 6 EC	Complex Economic Dynamics (UvA) 5EC	Non-equilibrium Statistical Physics (UvA) 3 EC		Biomolecular Simulations (UvA) 6 EC	
	Machine Learning 1 (UvA) 6 EC	Computational Social Science (UvA) 6 EC	Parallel Programming Practical (VU) 6 EC		Bioinformatics for Translational Medicine (VU) 6 EC	
	Non-equilibrium Statistical Physics (UvA) 3 EC	Distributed Systems (VU) 6 EC	Understanding Molecular Simulation (UvA) 6 EC		Game Theory (UvA) 6 EC	
	Physics of Complex Systems: Dynamics and Chaos (UvA) 3 EC	Scientific Visualization and Virtual Reality (UvA) 6 EC				
		Statistical Theory of Complex Molecular Systems (UvA) 6 EC				
	Numerical Methods for Stochastic Differential Equations (UvA) 8 EC					
	Portfolio Theory (UvA) 6EC					
	Stochastic Processes for Finance (UvA) 6 EC□					
Compulsory (year 2) 42 EC		Master Thesis Computational Science - 42 EC				

*The course Collective Futures 1 (UvA) 18 EC is also available as a free choice elective course