



Background Knowledge Matrix for the Nanobiology Master's Programme

Listed below are the required topics that applicants need to have priorⁱ to joining the Nanobiology program. If there are a series of courses usually leading up to a level, we only list the top level, expecting that you will have had the foundational courses for those advanced levels.

Use this to identify which courses you've taken already that covered these topics. Together we'll identify what Bridging program courses you'll need to take to cover all topics.

New Table:

Category	Topic	Previous coursework	Bridging program
Physics	Classical mechanics		
Physics	Electricity and magnetism		
Physics	Microscopy and Optics		
Physics	(Classical) Statistical Physics		
Physics	Electronic Instrumentation (practical)		
Biology	Biology Laboratory (practical)		
Biology	Genetics and genetic networks		
Biology	Cell Physiology		
Biology	Developmental Biology		
Biology	Molecular Biology		
Biology	Quantitative Evolutionary Biology		
Chemistry	Biochemistry		
Chemistry	Organic Chemistry,		
Mathematics	Calculus of multiple variables		
Mathematics	Linear algebra		
Mathematics	Fourier series and transforms		
Mathematics	Differential Equations		
Mathematics	Statistics		
Data Analysis	Bioinformatics		
Data Analysis	Image Analysis		
Data Analysis	Signal Processing		
Computer Programming	Python (preferred) or MatLab		
Computer Programming	Computational Science (practical)		
Academic Skills	Scientific Writing, and presentations		
Academic Skills	Research Methods		
Academic Skills	Scientific and Research Ethics		

ⁱ Students may take up to 9 EC of coursework for background knowledge during their Master's programme.