

BSc & MSc Nanobiology - TU Delft Courses for Exchange Students

An exchange in Nanobiology allows you of the freedom to design a personalized course package, however this may mean there is overlap especially if your plan includes courses from different years within the programme, or with electives from other programmes.

The Nanobiology courses take place either at TU Delft or the Erasmus MC (about a 30 minute train ride, or hour bike ride apart), this is also something to take into consideration when making your course plans. We highly recommend that you discuss your course choices with the programme coordinator or academic counsellor they can help make your plan more successful.

Please read the courses' pre-requisites [here](#) in order to determine whether the courses you select are a good fit for your educational background.

MSc Nanobiology elective courses 2023-2024 (compose a package of 30 EC)						
Course code	Course Name	Credits (EC)	Period			
			Q1	Q2	Q3	Q4
Core Nanobiology Courses						
NB4011	Analytical Mechanics	3				
NB4012	Stochastic Processes With Applications	3				
NB4020	High-Resolution Imaging	4				
NB4030	Engineering Genetic Information	3				
NB4040	Biology Of Cancer	4				
NB4050	Modeling Dynamical Systems	3				
NB4070	Soft Matter	6				
AP3163	Physics Of Biological Systems: Mathematical Modeling In Systems Biology	6				
NB4065	Academic Research Project*	18				
Nanobiology Electives						
NB4110	Geometry Of Physics	6				
NB4160	Engineering Of Living Systems	3				
NB4166	Molecular Virology and Immunology	3				
Nanobiology Electives From Other Programmes						
AP3021	Advanced Statistical Mechanics	6				
AP3032	Continuum Physics	6				
AP3122	Advanced Optical Imaging	6				
AP3132	Advanced Digital Image Processing	6				
AP3232	Medical Imaging Signals And Systems	6				
AP3371	Radiological Health Physics	6				
AP3582	Medical Physics Of Photon And Proton Therapy	6				
AP3831	Systems Engineering for Physicists	3				
BM41035	Biomaterials	4				
BM41050	Applied Experimental Methods: Medical Instruments	4				
BM41075	Regenerative Medicine	4				
BM41090	Computational Mechanics Of Tissues And Cells	6				
BM41155	3D Printing	4				
CH3682a	Reactors And Kinetics	6				
CS4220	Machine Learning 1	5				
CS4230	Machine Learning 2	5				
CS4255	Algorithms For Sequence-Based Bioinformatics	5				
CS4329	Recent Topics In Bioinformatics	5				
EE4650	Advanced Magnetic Resonance Imaging	5				

IFEEMCS4250	Statistical Learning for Engineers	4				
IN4086-14	Data Visualization	6				
LM3311	Green Chemistry And Sustainable Technology	3				
LM3432	Analysis Of Metabolic Networks	6				
LM3442	Metabolic Reprogramming	6				
LM3451	Bioprocess Integration	5				
LM3561	Ethical, Legal And Social Issues In Biotechnology	3				
LM3581NB	Metabolic Systems Biology*	3				
LM3601	Molecular Biotechnology And Genomics	6				
LM3611	Microbial Community Engineering	6				
LM3701	Advanced Enzymology	6				
LM3741	Fermentation Technology & Environmental Biotechnology	6				
LM3751	Transport & Separation	6				
LM3771	Protein Engineering	6				
ME41095	Bio Inspired Design	4				
ME45025	Introduction To Multiphase Flow	6				
ME45043	Advanced Fluid Dynamics	5				
ME46000	Nonlinear Mechanics	4				
ME46072	Nonlinear Dynamics	4				
SC42030	Control For High Resolution Imaging	3				
WI4011-17	Computational Fluid Dynamics	6				
WI4014TU	Numerical Analysis	6				
WI4019	Non-Linear Differential Equations	6				
WI4201	Scientific Computing	6				
WI4204	Advanced Modeling	6				
WI4205	Applied Finite Elements	6				
WI4212	Advanced Numerical Methods	6				
WI4430	Martingales, Brownian Motion	6				
WM0201TU-Eng	Technical Writing (Taught 4 Times Per Year)	2				
WM0320TU	Ethics And Engineering	3				
WM-ITAV-4010	Scientific Writing (Taught 2 Times Per Year)	2				

*NB4065 is an independent research project in a lab at TU Delft or Erasmus. You will be responsible for finding an appropriate supervisor, we will help you.

BSc Nanobiology courses Spring semester 2024 (compose a package of 30 EC)						
Identifier	Course name	Credits	Quarters			
			3a	3b	4a	4b
NB1016	Molecular Biology	3 EC				
NB1052	Journal Club 1	3 EC				
NB1072	Physical Biology of the Cell 1	3 EC				
NB1163	Lab Course Track B-1*	3 EC				
NB1120	Biomolecular Programming	3 EC				
NB1132	Biophysics	3 EC				
NB1143	Physics 1b	3 EC				
NB1211	Analysis 3	3 EC				
NB1230	Linear Algebra	3 EC				
NB2032	Evolutionary & Developmental biology	6 EC				
NB2081	Nanotechnology*	2 EC				
NB2161	Bioinformatics	4,5 EC				
NB2181	Computational science	3 EC				
NB2220	Statistical Physics	3 EC				
NB23XX	Imaging 1	5 EC				
NB23XX	Imaging 2	3.5 EC				
NB3014	A primer in Neural Networks	2,5 EC				

NB3015	Systems Neurobiology	2,5 EC				
NB3017	Quantum mechanics in Nanobiology-1	2,5 EC				
NB3018	Quantum mechanics in Nanobiology-2	2,5 EC				
NB3020	Genomics Technology in Breast Cancer Research	2,5 EC				
NB3021	Optics and its Application in Nanobiology	2,5 EC				
NB3022	Epigenetics	2,5 EC				
NB3023	Complex Human Genetics	2,5 EC				
NB3024	Advanced Math Topics	2,5 EC				

BSc Nanobiology courses Fall semester 2024 (compose a package of 30 EC)						
Identifier	Course name	Credits	Quarters			
			1a	1b	2a	2b
NB1012	Biochemistry	3 EC				
NB1022	Genetics	4 EC				
NB1031	Introduction to Studying Nanobiology	3 EC				
NB1102	Chemistry 1	3 EC				
NB1110	Chemistry 2	3 EC				
NB1140	Physics 1a	4 EC				
NB1201	Analysis 1	5 EC				
NB1206	Analysis 2	5 EC				
NB2011	Thermodynamics and Transport	3 EC				
NB2022	Philosophy and Ethics	3 EC				
NB1022	Evolutionary and Developmental Biology	6 EC				
NB2071	Physical Biology of the Cell 2	3 EC				
NB2141	Physics 2	3 EC				
NB2214	Electronic Instrumentation	6 EC				
NB2230	Biomolecular Structures and Functions	3 EC				
TN2545	Signals and Systems	6 EC				
NB-Mi-237	Minor: Collaborative Science for Biomedical Breakthroughs*	30 EC				

*this must be registered for during the minor registration period in Spring 2024 or discussed with the programme coordinator in advance.

Please also note that all links are to the courses offered in 2023-2024. The course offerings, study guides and time schedules may be subject to changes for the academic year 2024-2025.

For more information about the study programmes see:

[BSc Nanobiology](#)

[MSc Nanobiology](#)

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