

Double bachelor programme Chemical Science and Engineering and Technische Natuurkunde 2026/2027

B1 (cohort 2026/2027)

Course code	Name	Coord.	Lang- uage	EC
Semester 1 (Sem 1)				5,5
202600315	Programming and Dataprocessing	AP	NL	4,0
202400587	Introduction to Electronic Practicals	AP	NL	1,5
Quartile 01 (1A)				19,5
202600370	Calculus 1	AP	NL	4,0
202100094	Dynamics and Relativity	AP	NL	4,5
202500477	Fundamentals of Chemistry	CSE	EN	8,5
202500478	Lab Course 1: Basic Skills & Synthesis	CSE	EN	2,5
Quartile 02 (1B)				17,5
202001224	Calculus 2	AP	EN	4,0
202100105	Thermodynamics	CSE	EN	4,5
202600450	Engineering Systems	AP	EN	4,0
202500502	Process Engineering	CSE	EN	5,0
Quartile 03 (2A)				19,5
202001232	Vector Calculus	AP	EN	2,0
202000682	Electromagnetics	AP	EN	5,0
202000683	Instrumentation	AP	NL	4,0
202000685	Project Electromagnetism and Measurements	AP	NL	3,0
202400758	Materials Science for DB CSE-TN	CSE	EN	4,5
202000684	Analytical Programming	AP	NL	1,0
Quartile 04 (2B)				20,5
202001211	Linear Algebra	AP	EN	3,0
202600451	Quantum Matter	AP	NL	4,0
202400795	Equilibria	CSE	EN	5,0
202600452	Project: Engineering Physics	AP	EN	1,5
202400796	Think like a researcher (Electrochemistry)	CSE	EN	7,0
Total EC first academic year				82,5

B2 (cohort 2025/2026)

Course code	Name	Coord.	Lang- uage	EC
Quartile 05 (1A)				20,0
202000691	Signals	AP	EN	4,0
202600003	Models	AP	EN	4,0
202600004	Project Signals, Models and Systems	AP	EN	3,0
202000734	Kinetics & Catalysis	CSE	EN	4,5
202300208	Industrial Chemistry & Processes	CSE	EN	4,0
202400612	Essential Skills I	CSE	EN	0,5
Quartile 06 (1B)				20,0
202200094	Quantum Mechanics 1	AP	EN	5,0
202200095	Hilbertruimte	AP	EN	3,0
202500504	Transport Phenomena	CSE	EN	7,5
202000739	Numerical Methods	CSE	EN	3,5
202500506	Practicum Transport Phenomena	CSE	EN	1,0
Quartile 07 (2A)				20,0
202000701	Introduction Solid State Physics	AP	EN	7,0
202600250	Statistical Physics	AP	EN	5,0
202600372	Organic & Bio-organic Chemistry	CSE	EN	6,0
202600373	Lab Course Org. & Bio-organic Chemistry	CSE	EN	2,0
Quartile 08 (2B)				21,0
202000706	Electrodynamics	AP	EN	6,0
	1 of 2 modules below	CSE	EN	15,0
CSE M8a Process Design				
202000745	Intr. Chemical Reaction Engineering	CSE	EN	4,0
202500560	Intr. Separation Methods	CSE	EN	4,0
202500561	Project Process Design	CSE	EN	7,0
CSE M8b Materials Science & Technology				
202000749	Chem. & Technol. of Inorganic Materials	CSE	EN	4,0
202500562	Chem. & Technol. of Organic Materials	CSE	EN	4,0
202500563	Advanced Materials Science & Project	CSE	EN	7,0
Total EC second academic year				81,0

B3 (cohort 2024/2025)

Course code	Name	Coord.	Lang- uage	EC
Quartile 09 (1A)				19
Minor Quartile 09				15
1 of 2 courses below				4
202000694	Classical Mechanics	AP	EN	4
202000695	Engineering Solid Mechanics	AP	EN	4
Quartile 10 (1B)				19,5
Minor Quartile 10				15
202000697	Optics Theory	AP	EN	4,5
Quartile 11 (2A)				19,0
202000755	Preparation Bachelor's assignment	CSE	EN	2,0
202500446 ¹	Ethics	CSE	EN	2,0
202300068	Statistics in Scientific Research	AP	NL	2,0
202400723	Essential Skills II	CSE	EN	1,0
202100250 ¹	Characterisation of Molecules & Materials	CSE	EN	4,0
202300163	Interface Science	CSE	EN	3,0
Electives 5 EC ²				5,0
193400111	Bionanotechnology	NT	EN	5,0
202500465	Biochemistry	CSE	EN	5,0
201300155	Process Equipment Design	CSE	EN	5,0
202100223	Computational Physics	AP	EN	2,5/5,0
202600002	Remote Control of Experiments	AP	EN	5,0
202000710	Material Science	AP	EN	5,0
202600001	Machine Learning	AP	EN	5,0
202001413	Soft Matter Physics	AP	EN	5,0
202000711	Technical Optics	AP	EN	5,0
Quartile 12 (2B)				15,0
202600456	Bachelor's Assignment CSE-TN	CSE/TN	EN	15,0
General Aspects (40%)				7,5
Scientific Aspects (60%)				7,5

Total EC third academic year **72,5**

¹ Instead of 202100250 Characterisation of Molecules & Materials it is also possible to replace
202300068 Statistics in Scientific research TN 2EC with 202500445 Ethics CSE 5EC

² In the event of bottlenecks in the study planning **and** in consultation with the AP study advisers, a choice can be made from the following replacement electives.

Course code	Course name	Contact	Quartile	Ecs
193530010	Nanophysics	Zandvliet	1A/Q1	5,0
202200044	Fundamentals of Photonics	Saive	1A/Q1	5,0
193570010	Advanced Fluid Mechanics	Huisman	1A/Q1	5,0
202100078	Quantum Information	Pinkse	1A/Q1	5,0
202200295	Laser Physics and Nonlinear Optics	Slot	1B/Q2	5,0
193570050	Advanced Quantum Mechanics	Filippi	1B/Q2	5,0
193565000	Capillarity Phenomena	Snoeijer	1B/Q2	5,0
202400605	Cooling Science and Technology	Vanapalli	2B/Q4	5,0
201800131	Numerical Methods for Engineers	Lammertir	2B/Q4	5,0
193500000	Biomedical Optics	Ghanbarz	2B/Q4	5,0