

Double bachelor's curriculum

Chemical Science & Engineering and Technische Natuurkunde Cohort 2024-2025

Cohort 2024 curriculum total EC 236,5

B1 Academic year 2024-2025

Course code	Name	Coord.	Lang.	EC
Semester 1 (SEM1)				3
202300096	Programming and Dataprocessing ¹	TN	NL	3
Quartile 01 (1A)				19,5
202001215	Calculus 1	TN	EN	4,0
202100094	Dynamics and Relativity	TN	NL	4,5
202000722	Fundamentals of Chemistry	CSE	EN	8,5
202000723	Lab Course 1: Basic Skills & Synthesis	CSE	EN	2,5
Quartile 02 (1B)				17,5
202001224	Calculus 2	TN	EN	4,0
202100105	Thermodynamics	CSE	EN	4,5
202100106	Process Engineering	CSE	EN	5,0
202000726	Lab Course 2: Energy & Process Engineering	CSE	EN	2,5
202400***	Introduction to Electronic Practicals	TN	NL	1,5
Quartile 03 (2A)				19,5
202001232	Vector Calculus	TN	EN	2,0
202000682	Electromagnetics	TN	EN	5,0
202000683	Instrumentation	TN	NL	4,0
202000685	Project Electromagnetism and Measurements	TN	NL	3,0
202400***	Polymers	CSE	EN	1,5
202400***	Structures and Properties of Materials	CSE	EN	3,0
202000684	Analytical Programming	TN	NL	1,0
Quartile 04 (2B)				19,5
202001211	Linear Algebra	TN	EN	3,0
202000687	Quantum Matter	TN	NL	5,0
202000689	Engineering Systems	TN	NL	4,5
202000732	Think like a researcher (Electrochemistry)	CSE	EN	7,0
Total EC first academic year				79,0

¹ Programming and Dataprocessing is a 3 EC semester course. Grading is done in quartile 1B. The studyload spread is about 0.5 EC in Q1 and 2.5 EC in Q2.

B2 Academic year 2025-2026

Course code	Name	Coord.	Lang- uage	EC
Quartile 05 (1A)				19,5
202000691	Signals	TN	EN	4,0
202000692	Models	TN	EN	4,0
202000693	Project Signals, Models and Systems	TN	EN	3,0
202000734	Kinetics & Catalysis	CSE	EN	4,5
202300208	Industrial Chemistry & Processes	CSE	EN	4,0
Quartile 06 (1B)				20,0
202200094	Quantum Mechanics 1	TN	EN	5,0
202200095	Hilbertruimte	TN	EN	3,0
202000727	Transport Phenomena	CSE	EN	7,5
2025000**	Practical Project Transport Phenomena	CSE	EN	1,0
202000739	Numerical Methods	CSE	EN	3,5
Quartile 07 (2A)				21
202000701	Introduction Solid State Physics	TN	EN	7
202000702	Statistical Physics	TN	EN	6
202100249	Organic & Bio-organic Chemistry	CSE	EN	8
Quartile 08 (2B)				20,0
202000731	Equilibria	CSE	EN	5,0
	1 of 2 modules below	CSE	EN	15,0
	CSE M8a Process Design			
202000745	<i>Intr. Chemical Reaction Engineering</i>	CSE	EN	4,0
202000746	<i>Intr. Separation Methods</i>	CSE	EN	4,0
202000747	<i>Project Process Design</i>	CSE	EN	7,0
	CSE M8b Materials Science & Technology			
202000749	<i>Chem. & Technol. of Inorganic Materials</i>	CSE	EN	4,0
202000750	<i>Chem. & Technol. of Organic Materials</i>	CSE	EN	4,0
202000751	<i>Advanced Materials Science & Project</i>	CSE	EN	7,0
Total EC second academic year				80,5

B3 Academic year 2026-2027

Course code	Name	Coord.	Lang-	EC
Quartile 09 (1A)				19,0
<i>1 of 3 courses below</i>				4,0
202000694	Classical Mechanics	TN	EN	4,0
202000695	Engineering Solid Mechanics	TN	EN	4,0
202000644	Electronics	EE	EN	4,0
-	Minor Q1			15,0
Quartile 10 (1B)				19,5
202000697	Optics Theory	TN	EN	4,5
-	Minor Q2			15
Quartile 11 (2A)				17,5
202300067	Preparation Bachelor's Assignment	TN	EN	3,0
202000754	Ethics	CSE		2,5
202300068	Statistiek in Wetenschappelijk Onderzoek	TN	NL	2,0
***	Research	CSE		2,0
202300163	Interface Science	CSE	EN	3,0
Electives 5 EC				5,0
193400111	Bionanotechnology	NT	EN	5,0
193740050	Biochemistry	CSE	EN	5,0
201300155	Process Equipment Design	CSE	EN	5,0
202100223	Computational Physics	AP	EN	2.5/5.
202100225	Remote Control of Experiments	AP	EN	2,5/5,
202000710	Material Science	TN	EN	5,0
202100224	Machine Learning	AP	EN	3.0/5.
202001413	Soft Matter Physics	AP	EN	5,0
202000711	Technical Optics	TN	EN	5,0
Quartile 12 (2B)				21,0
202000706	Electrodynamics	TN	EN	6,0
202001433	Bachelor's Assignment CSE-TN	TN	EN	15,0
	<i>General Aspects (50%)</i>			7,5
	<i>Scientific Aspects (50%)</i>			7,5
Total EC third academic year				77,0