Chemical Science & Engineering
Electives

Please Note: In addition to these elective courses, it is also possible to choose courses from a CSE-specialisation or profile as electives . Be sure to review the curricula of the specialisations for more options. You can also choose a non-CSE course as your elective.

Electives must meet the following requirements:

1.They are master's level subjects.

2. Students meet the prior knowledge requirements stated in the Osiris Catalogue.

3. The courses align with the specialisation requirements as outlined in the EER (available at utwente.nl/cse).

Legend	Electives	Non-CSE Electives

Electives scheduled — Year 1

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Multi-component Mass Transport (5 EC; Benes)		Labcourse SPT (2.5 EC; Kersten)	
		Project Organic Materials (5 EC; Hempenius)	Numerical Methods for Engineers (5 EC; Lammertink)
Advanced Colloids and Interfaces (5 EC; Wood)	Advanced Molecular Separations (5 EC, de Vos/Schuur)	Advanced Organic Chemistry (5 EC; Jonkheijm)	Industrial Separation Technology (4 EC; Benes)
Advanced Catalysis (5 EC, Lefferts/Mul)	Organic Materials & Polymer Science (5 EC; Wurm)	Inorganic Materials Science (5EC; Baeumer)	Electrocatalysis: Materials and Spectroscopy (5 EC; Katsoukis)
Transport Phenomena (5 EC; Mahmoudi)	Electrochemistry: fundamentals and techniques (5 EC; Altomare)	Polymer Physics (5 EC, de Beer)	Polymer Synthesis and Characterization of Functional Macromolecules (5 EC, Wurm)
	Lab on a chip (5 EC, Berendsen)	Advanced Ceramics (5 EC, Pizzoccaro-Zilmay)	Biochemistry (5 EC, Bijman)
	Advanced Drug Delivery and Nanomedicine (5 EC, Prakash)	Process Equipment Design (5 EC; Bramer)	X-ray Characterisation for S&T (5 EC, Makhotkin)
	Biomedical Materials Engineering (5 EC, Grijpma/Poot)	Elastomer Science & Engineering (5 EC, Blume)	
	Cost Management & Engineering (5 EC; Joosten)	Sustainable Nanotechnology (5 EC; Susarrey Arce)	
			3D bioprinting (5 EC, Rouwkema)
			Experiments in Soft Matter (5 EC; De Beer)

2,5 EC Topics — Year 1

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Entrepreneurial Toolbox for Engineers (Fernandez)	Ion Transport in Fluids (Wood e.a.)	Chem. Process Analysis (Susarrey Arce)	Process Optimization (Zondervan)
Systems Chemistry (Wong)	Design and simulation of chemical batch processes (Franke)	Advanced Reaction Kinetics (Faria)	Membrane Processes (Lammertink/De Vos/Benes)
Electrification of Chemical Process Ind. [ECPI] (Van der Ham)	Nano and Surface Chemistry (Nijhuis)	Smart biomaterials (Paez)	Membrane Materials (Lammertink/De Vos/Benes)
		Scaling-up in Chemical Engineering (Brilman)	Machine Learning in Chemistry (Franke)
		Physical Organic Chemistry (Huskens)	Materials Science of Batteries (Huijben, Kaghazchi, Elshof)
		Electrochemical Engineering (Banerjee)	Sustainable Organic Chemistry (Wurm)
			Exergy Analysis (Van der Ham)

Electives n.s. — Year 1

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Capita Selecta Research Group (5 EC)			
Contract Research (5 EC)			
Sustainable Chemicals (2,5 EC; Ruiz Ramiro)			
Sustainable Fuels (2,5 EC; Ruiz Ramiro)			
Theory of Phase Equilibria (5 EC; van der Hoef)			
Polymers & Material Science Practice (3 EC; Hempenius)			