Aalto University School of Chemical Engineering - subject to change!

Course list, Academic year 2026-2027 (updated November 6 2026)

• A link to the course description in Sisu is in the course code
• Always read course descriptions in MyCourses (https://mycourses.aalto.fi/) and check details in Sisu (sisu.aalto.fi) when the semester starts - changes to this list are possible!
• Level: UG = bachelor, G = master. Bachelor level students can choose master level courses as long as the prerequisites are fulfilled.
• As an exchange student, you should choose at least 2/3 of the courses from the field of study you are applying for. In the School of Chemical Engineering, you can choose from all the courses offered in this school, they are considered one field. In addition, you may choose language courses and courses taught by the other schools in the fields of technology and science.
• The courses may have required prerequisites or limited vacancies and priority arrangements, no guarantee on admittance can be offered.
• The extent of the courses is given in ECTS (= European Credit Transfer System) credits. One credit corresponds to 27 hours of work, including lectures and other forms of instruction, exercises, seminars and independent work at home and in the library. The scope of a course can be 1-15 credits depending on the content of the course.
• A full study load is approximately 1600 hours per academic year which equals to 60 ECTS = 60 cr
• Periods I and II refer to teaching periods of the autumn term, and periods III and IV and V refer to the teaching periods of the spring term.
• For some courses, the teacher checks the prerequisites. For all others, students are responsible for checking themselves that the prerequisites are fulfilled.
• There are some changes in the course selection every year. Check the latest information from Sisu (sisu.aalto.fi).

Ø Not available for exchange students
\# Limited space on course
^ All students must complete the course CHEM-A1030 Laboratory and Chemical Safety (1cr) OR alternatively CHEM-E0111 Laboratory Safety Practices at CHEM (0 cr)

~ Bachelor level courses ~

	Course code	Name(en)	Level	ECTS	Semester	Period
^	CHEM-A1030	Laboratory and Chemical safety	UG, G	1	Autumn, Spring, Summer	I - Summer
^	CHEM-E0111	Laboratory Safety Practices at CHEM	UG, G	0	Autumn, Spring, Summer	I - Summer
	CHEM-A1211	Principles of General Chemistry	UG	5	Autumn	I
	CHEM-A1290	Fundamentals of Organic Chemistry	UG	5	Spring	IV
	CHEM-C1230	Principles of Physical Chemistry	UG	5	Autumn	I
Ø	CHEM-C1240	General Chemistry Laboratory Course	UG	5	Autumn	II
	CHEM-C1300	Fundamental Biosciences	UG	5	Spring	III - IV
	CHEM-C2140	Process Control and Automation	UG	5	Spring	III - IV
	CHEM-C2150	Process Design	UG	5	Spring	III - IV
	CHEM-C2310	Bioprocess Technology	UG	5	Autumn	I - II
	CHEM-C2330	Biochemistry	UG	5	Autumn (only 2026-2027), Spring	I (only 2026-2027), IV-V
	CHEM-C2350	Bioproducts Opportunities	UG	5	Spring	III - IV
	CHEM-C2360	Basics of Biopolymers	UG	5	Spring	III - IV
	CHEM-C2395	Introduction to mammalian cell laboratory	UG	1	Autumn, Spring, (Summer implementation not open to exchange students)	II, V
	CHEM-C2470	Forests, Wood and Carbon	UG	5	Autumn, Spring	I, V
	CHEM-C2480	Metallurgical Engineering and Technical Analysis of Lifecycle and Sustainability	UG	5	Autumn, Spring	I - II, III-V
	CHEM-C2490	Battery Engineering: Materials and Recycling	UG	5	Autumn, Spring	I - II, III-V
#	CHEM-C2630	Designing with Biomass	UG	3	Autumn	II
Ø	CHEM-C3000	Research Project in Chemical Engineering	UG	5-10	Autumn, Spring, Summer	I - Summer
Ø	CHEM-C3230	Molecular Quantum Mechanics	UG	5	Autumn	I
	CHEM-C3410	Nanomaterials	UG	5	Autumn	I - II
#	CHEM-C3420	Basics of Polymer Technology	UG	5	Autumn	I - II

~ Master level courses ~

Ø	CHEM-E0112	Scientific Article Exercise	G	1	Autumn	I
	CHEM-E0113	Introduction to MATLAB and Python	G	2	Autumn	I
Ø	CHEM-E0115	Planning and Execution of a Biorefinery Investment Project	G	5	Autumn	I - II
	CHEM-E0200	Textile Finishing	G	5	Autumn	I - II
	CHEM-E0205	Textile Coloration	G	5	Spring	III - IV
	CHEM-E0215	Textile Fibres	G	5	Autumn	I - II
#	CHEM-E0225	Exploring Textiles: Workshop in Production and Analysis	G	5	Spring	V
	CHEM-E1115	Biomass Fractionation I	G	5	Spring	III
#	CHEM-E1125	Biomass Fractionation II	G	5	Spring	IV - V
	CHEM-E1130	Catalysis	G	5	Spring	III
#	CHEM-E1170	Introduction to Sustainability in the Bioeconomy	G	5	Autumn	I - II
#	CHEM-E1175	Sustainability Assessments for Bioproducts	G	5	Spring	IV - V
#	CHEM-E1180	Plant Resources	G	5	Autumn	I
	CHEM-E1210	Bioproduct Mill Recovery Processes	G	5	Autumn	II
	CHEM-E2100	Polymer Synthesis	G	5	Autumn	I
	CHEM-E2121	Surface Chemistry of Bio-based Materials	G	5	Autumn	I
#	CHEM-E2122	Fibre Processes	G	5	Autumn	II
Ø	CHEM-E2123	Characterization of Bio-based Materials	G	5	Autumn	I - II
	CHEM-E2126	Introduction to the Packaging Value Chain	G	5	Spring	III
	CHEM-E2127	Applied Mechanics of Wood Materials	G	5	Spring	IV
#	CHEM-E2128	Wood Science Laboratory	G	5	Spring	IV
	CHEM-E2129	Nanocellulose Technology	G	5	Spring	III - IV
#	CHEM-E2130	Polymer Properties	G	5	Autumn	II
#	CHEM-E2145	Polymer Reaction Engineering	G	5	Spring	III - IV
#	CHEM-E2165	Computer Aided Visualization and Scientific Presentation	G	3-5	Spring	IV - V
#	CHEM-E2170	Advanced Wood Science	G	5	Autumn, Spring	II - III
#	CHEM-E2205	Materials for a World in Transition	G	5	Spring	III
	CHEM-E2225	Wood Material Science	G	5	Spring	III
#	CHEM-E2230	Packaging Surface Modification and Coating	G	5	Autumn	II
	CHEM-E2235	Wood Products and Processes	G	5	Spring	V
#	CHEM-E2240	Fiber Engineering Project Course - 2026-2027 No teaching	G	5	Autumn	2026-2027 No teaching | 2027-2028 I - II
	CHEM-E3111	Cell Engineering	G	5	Autumn	II
Ø	CHEM-E3112	Laboratory Course in Molecular Biotechnology	G	5	Autumn	I - II
#	CHEM-E3115	Industrial Biotechnology	G	5	Spring	III
Ø	CHEM-E3116	Laboratory Course in Industrial Biotechnology	G	5	Spring	IV
	CHEM-E3117	Enzyme technology	G	5	Spring	IV
	CHEM-E3121	Microbial Physiology	G	5	Autumn	II
Ø	CHEM-E3122	Laboratory Course in Advanced Molecular Biotechnology	G	5	Spring	IV - V
	CHEM-E3150	Biophysical Chemistry	G	5	Spring	III
	CHEM-E3190	Metabolism	G	5	Autumn	I

#	CHEM-E3205	Bioprocess Optimization and Simulation - 2027-2028 No teaching	G	5	Autumn	2026-2027 I | 2027-2028 no teaching
#	CHEM-E4102	Laboratory Work in Organic Chemistry	G	5	Spring	III
#	CHEM-E4105	Nanochemistry and Nanoengineering	G	5	Autumn	I
	CHEM-E4106	Electrochemistry	G	5	Spring	III
	CHEM-E4108	Modern Methods in Metal Catalysis	G	5	Spring	III
	CHEM-E4111	Chemical Structure and Reactivity	G	5	Autumn	I
Ø	CHEM-E4112	Research Techniques	G	5	Autumn	I
Ø	CHEM-E4113	Learning, Thesis, and Career	G	1	Autumn, Spring	I-IV
Ø	CHEM-E4114	Computational Methods	G	5	Autumn	I - II
	CHEM-E4116	Synthesis Strategies and Design	G	5	Spring	III-IV (updated Nov 6)
#	CHEM-E4118	AI for Chemistry and Materials Science	G	5	Autumn	I - II
#	CHEM-E4119	Laboratory Work in Electrochemistry and Physical Chemistry	G	5	Spring	IV - V
	CHEM-E4121	Research Project in Chemistry and Materials Science I (requires arrangements before enroling to the course - not guaranteed)	G	5	Autumn, Spring	I - Summer
	CHEM-E4122	Research Project in Chemistry and Materials Science II (requires arrangements before enroling to the course - not guaranteed)	G	5	Autumn, Spring	I - Summer
	CHEM-E4126	Atomic-level Modelling Using Computational Chemistry Methods	G	5	Spring	III
#	CHEM-E4141	Electrochemical Engineering	G	5	Autumn	I
Ø	CHEM-E4151	Advanced Inorganic Chemistry	G	5	Autumn	II
	CHEM-E4155	Solid State Chemistry	G	5	Spring	IV
Ø	CHEM-E4158	Laboratory Work in Solid State Chemistry	G	5	Spring	IV-V
	CHEM-E4170	Advanced Organic Chemistry	G	5	Autumn	II
#	CHEM-E4192	Autonomous Laboratories	G	5	Autumn	I - II
	CHEM-E4206	Organic Chemistry Literature Club	G	5	Autumn	II
	CHEM-E4210	Molecular Thermodynamics	G	5	Autumn	II
	CHEM-E4215	Functional Inorganic Materials	G	5	Autumn	II
	CHEM-E4240	Industrial Organic Chemistry	G	5	Spring	IV
#	CHEM-E4255	Electrochemical Energy Conversion	G	5	Autumn	II
	CHEM-E5105	Powder Metallurgy and Composites	G	5	Autumn	I
	CHEM-E5115	Microfabrication	G	5	Spring	IV - V
#	CHEM-E5140	Materials Characterization, laboratory course	G	5	Spring	IV - V
	CHEM-E5155	Soft Materials Modelling	G	5	Spring	IV
#	CHEM-E5160	Functional Soft Materials	G	5	Spring	III
#	CHEM-E5165	Group Project in Soft Materials Design	G	5	Spring	IV-V
	CHEM-E5170	Surfaces and Films	G	5	Autumn	I - II
#	CHEM-E5175	Materials Engineering by Thin Films	G	5	Spring	III
	CHEM-E5180	Vacuum Science and Technology	G	5	Autumn	II
	CHEM-E6100	Fundamentals of Chemical Thermodynamics	G	5	Autumn	II
	CHEM-E6105	Thermodynamics of Solutions	G	5	Spring	2026-2027 III | 2027-2028 III
	CHEM-E6111	Engineering principles for metallurgical processes	G	5	Autumn	I
	CHEM-E6140	Fundamentals of Minerals Engineering and Recycling	G	5	Autumn	I
	CHEM-E6145	Unit Operations in Mineral Processing and Recycling	G	5	Spring	III
	CHEM-E6160	Fundamentals of Pyrometallurgy	G	5	Autumn	II
	CHEM-E6165	Unit Processes in Pyrometallurgy	G	5	Spring	III - IV
	CHEM-E6180	Fundamentals of Hydrometallurgy	G	5	Autumn	II
	CHEM-E6185	Applied Electrochemistry and Corrosion	G	5	Spring	III - IV
	CHEM-E6210	Individual Research Project (requires arrangements before enroling to the course - not guaranteed)	G	5-10	Autumn, Spring	I - V
	CHEM-E6210001	Individual Research Project (requires arrangements before enroling to the course - not guaranteed)	G	5-10	Autumn, Spring	I - V
#	CHEM-E6215	Circular Economy Design Forum	G	5	Spring	IV - V
	CHEM-E6225	Technical Innovation Project	G	10	Autumn	I - II
#	CHEM-E6230	Recycling Technologies	G	5	Autumn	II
	CHEM-E6240	Material Engineering for a Circular Future	G	5	Autumn (only 2027-2028), Spring	II (only 2027-2028), IV
Ø	CHEM-E7120	Laboratory Project in Chemical Engineering	G	5	Spring	III - V
#	CHEM-E7121	Separation Processes 1	G	5	Autumn	I - II
Ø	CHEM-E7122	Statistical Data Treatment	G	2	Autumn	I
Ø	CHEM-E7125	Experimental Assignments in Chemical Engineering	G	2-5	Autumn, Spring	I - V
#	CHEM-E7126	Separation Processes 2	G	5	Spring	III
Ø	CHEM-E7127	Principles of Plant and Process Design	G	5	Spring	IV - V
	CHEM-E7130	Process Modeling	G	5	Autumn	I - II
	CHEM-E7135	Reactor Design	G	5	Spring	III - IV
	CHEM-E7150	Reaction Engineering	G	5	Autumn	II
#	CHEM-E7151	Production Planning and Optimization	G	5	Autumn	I
#	CHEM-E7152	Industrial Planning Optimization	G	3-5	Spring, Summer	V - Summer
	CHEM-E7160	Fluid Flow in Process Units	G	5	Spring	IV - V
Ø	CHEM-E7172	Chemical Safety and Legislation	G	2	Spring	IV
#	CHEM-E7190	Process Dynamics and Control	G	5	Autumn	II
Ø	CHEM-E7210	Capstone Project for Plant Design	G	5	Autumn	I - II
#	CHEM-E7215	Special Course in Process Systems Engineering	G	5	Spring	IV
	CHEM-E7220	Process Safety and Risk Management	G	5	Autumn	I - II
#	CHEM-E7225	Advanced Process Control	G	5	Spring	III
	CHEM-E8100	Organic Structural Analysis	G	5	Autumn	I
	CHEM-E8120	Cell Biology	G	5	Autumn	I
	CHEM-E8125	Synthetic Biology	G	5	Spring	IV - V
	CHEM-E8135	Microfluidics and BioMEMS	G	5	Spring	III - IV
	CHEM-EF	Final Project (note! Requires special arrangements, not guaranteed)	G	10-30	Autumn, Spring	I - V