

First year

1	2	3	4
Chemistry	Process Technology	Materials Science	Physical & Analytical Chemistry
Mathematics A, B1 - sets, logic - basic calculus	Mathematics B2 - differential equations - complex numbers	Mathematics C1 - linear algebra	Mathematics D1 - apply partial derivatives - double, triple integrals
Fundamentals of Chemistry - (in)organic structures - reactivity - organic reactions - polymers (synthesis) - research project (incl. lab)	Thermodynamics - phases, basic laws - Carnot cycles - Maxwell relationships	Materials Science - quantum phenomena - inorganic mat. science - polymers (physical prop.) - research project	Equilibria - chemical potential - acid-base - electrochemistry - phase behaviour
Lab Course 1 safety & basic skills	Lab Course 2 energy & process techn.	Lab Course 3 materials	Analytical Chemistry - spectroscopy, chromatograph. - project - analysis lab
15 EC	15 EC	15 EC	15 EC

Second year

5	6	7	8a	8b Materials Science & Technology
Industrial Processes	Physical Transport	Molecules & Materials	Process Design	
Mathematics D2 - integral theorems	Physical Transport Phenomena (PTP) - fluid dynamics - heat transfer - mass transfer	(Bio)organic chemistry - organic chemistry - bio-organic chemistry - synthesis lab course	Intro. Chemical Reaction Engineering - single phase reactions - idealized reactor models	Advanced Materials Science - atomic structures & composition of materials
Kinetics & Catalysis - kinetics & homogeneous, heterogeneous, biocatalysis - characterisation			Intro Separation Methods - equilibria separations - rate based separations - lab course	Chemistry & Technology of Inorganic Materials - relationship structure, synthesis, properties
Industrial Chemistry & Processes - processes & products - industrial catalysis	Lab Course PTP	Colloid- & Nano chemistry - colloid chemistry - nanochemistry - project (incl. lab)	Project Process Design - process design - process safety - process control - process economy	Chemistry & Technology of Organic Materials - relationship structure, synthesis, properties
Design Project Sustainable Processes - alternative routes - social-ecologic life cycle	Project Numerical Modelling - numerical mathematics - Matlab programming			Project Materials S&T
15EC	15EC	15EC	15EC	15EC

Third year

9 Minor 1	10 Minor 2	11 Intro Bachelor Assignment	12 Bachelor Assignment
<p>Minor Module</p> <ul style="list-style-type: none"> - UT module - exchange semester - teaching qualification 	<p>Minor Module</p> <ul style="list-style-type: none"> -UT module - exchange semester - teaching qualification 	<p>Research & Science</p> <ul style="list-style-type: none"> - scientific reasoning - modelling <p>Society</p> <ul style="list-style-type: none"> - ethics <p>Preparation Assignment</p> <ul style="list-style-type: none"> - lit. study & project set-up <p>Elective</p> <ul style="list-style-type: none"> - process equipment design - biochemistry - study tour preparation 	<p>Research Project Assignment</p> <ul style="list-style-type: none"> - problem analysis - lab work - result analysis - report & presentation
15EC	15EC	15EC	15EC