

Cycle view of the study programme

B1 Or Th Pr Au Cr

Depending on your educational background or depending on the focus, it is possible that the prerequisites / corequisites for the 1st year of the programme are presented in the block 2. You are therefore invited to read through the list of courses in block 2 even if you are registering for the first time in this master.

Within the framework of their Master in Chemical and Materials Science Engineering, all students must follow or validate the 90 credits of joint training and the 30 credits of the professional focus.

Ideally, students studying for the master's degree will have acquired the competences and knowledge corresponding to the 40 credits of technical courses specific to the field of 'Chemical and Materials Science', taught within the framework of the Bachelor in Civil Engineering.

Compulsory courses (B1 : 60Cr, B2 : 30Cr)
Chemical engineering training

CHIM9299-1 *Physical Unit Operations I* (english language) - Andreas PFENNIG - [5h Labo.] B1 Q1 30 10 [+] 5

Corequisite :

CHIM0022-4 - Transport phenomena

CHIM9300-1 *Physical Unit Operations II* (english language) - Andreas PFENNIG - [5h Labo.] B1 Q2 30 10 [+] 4

Prerequisite :

CHIM0022-4 - Transport phenomena

Corequisite :

CHIM9299-1 - Physical Unit Operations I

CHIM9277-1 *Chemical reactor engineering* - Dominique TOYE - [15h Labo.] B1 Q1 30 10 [+] 5

CHIM0697-1 *Heterogeneous catalysis* (english language) - Nathalie JOB - [10h Proj.] B1 Q1 20 20 [+] 5

Corequisite :

CHIM0022-4 - Transport phenomena

Training in materials

CHIM0698-1 *Introduction to the Physical Chemistry of Nanomaterials* (english language) - Cédric GOMMES B1 Q2 20 10 - 3

CHIM9319-1 *Macromolecules and Polymerisation processes* (english language) - Antoine DEBUIGNE, Klaus KECKANTOINE - [10h Proj., 12h Labo.] B1 Q2 30 - [+] 5

CHIM0605-2 *Chemistry and inorganic materials* - Bénédicte VERTRUYEN - [3d Labo.] B1 Q2 30 - [+] 5

Training in processes

CHIM0695-2 *Introduction to the modelling of chemical processes* (english language) - Grégoire LÉONARD B1 Q1 20 32 - 5

Corequisite :

CHIM0009-3 - Thermodynamique chimique appliquée

CHIM0696-1 *Static and dynamic modelling of large chemical processes* (english language) - Grégoire LÉONARD - [1d FW] B1 Q2 20 32 [+] 4

Corequisite :

CHIM0695-2 - Introduction to the modelling of chemical processes

MECA0528-1 *Practical fluid mechanics for the process industry* (english language) - Koen HILLEWAERT - [4h Labo.] B1 Q2 35 7 [+] 4

Further training in chemistry

CHIM9284-3 *Analytical chemistry I - Chemical analysis methods* B1 5
 - *Theory* - Gauthier EPPE 26 - -
 - *Practice* - Gauthier EPPE - [26h QA Sess.] - - [+]
 - *Laboratories* - [5d Labo.] - - [+]

Integrated project

PROJ0012-1 *Integrated Project* (english language) - MarieNoëlle DUMONT, B1 TA 20 - [+] 10

GENDEBIEN, Nathalie JOB, Angélique LÉONARD, Grégoire LÉONARD,
Andreas PFENNIG, Dominique TOYE - [270h Proj., 1d FW]

Prerequisite :

CHIM0009-3 - Thermodynamique chimique appliquée

CHIM0022-4 - Transport phenomena

Corequisite :

CHIM9300-1 - Physical Unit Operations II

CHIM9299-1 - Physical Unit Operations I

CHIM9277-1 - Génie chimique (étude des réacteurs)

CHIM0697-1 - Heterogeneous catalysis

CHIM0696-1 - Static and dynamic modelling of large chemical processes

CHIM0695-2 - Introduction to the modelling of chemical processes

GEST3162-1	<i>Principles of management (english language)</i> - François PICHault, Willem STANDAERT - [25h Proj.]	B2	Q1	30	-	[+]	5
ATFE0004-1	<i>Master Thesis (including an introduction to research methodology)</i> - COLLÉGIALITÉ, Angélique LÉONARD - [750h Proj.]	B2	TA	-	-	[+]	25

Optional courses (B2 : 30Cr)

Choose one focus from the following : (B2 : 30Cr)

Specialised focus: Chemical Engineering (B2 : 30Cr)

Notice : Optional courses only take place if there are a minimum number of students registered.

Choose 30 credits from: (B2 : 30Cr)

Notice : students must carry out an internship within a company either through the ASTG0023-1 course or by including the internship in their final dissertation.

Chemical engineering bases

Notice : students who have not followed the courses CHIM0022-4, CHIM0009-3, CHIM9320-1 and CHIM0604-2 from the option "Chemistry and material sciences" from bachelor in civil engineering programme or acquired the equivalent knowledge and skills have to choose in priority these five courses in their study programme ; these courses are corequisites of compulsory courses of the master.

CHIM0022-4	<i>Transport phenomena (english language)</i> - Part A - Andreas PFENNIG - Part B - Andreas PFENNIG	B2	Q2	30	-	-	5
CHIM0009-3	<i>Applied Chemical Thermodynamics</i> - MarieNoëlle DUMONT, Nathalie JOB, Grégoire LÉONARD	B2	Q2	26	26	-	5
CHIM9320-1	<i>Introduction to chemical reaction engineering</i> - Nathalie JOB, Dominique TOYE	B2	Q1	24	24	-	5
CHIM0604-2	<i>Chemistry and organic materials</i> - Lionel DELAUDE	B2	Q2	33	19	-	5

Option cours

INGE0012-1	(pas organisé en 2022-2023) <i>Scientific research in engineering and its impact on innovation (english language)</i>	B2	Q2	26	26	-	5
ASTG0023-1	<i>Technical internship (8 weeks)</i> - Benoît HEINRICHS - [40d FW] Corequisite : GEST3162-1 - Principles of management	B2	TA	-	-	[+]	5
CHIM0664-1	<i>Electrochemical energy conversion and storage (english language)</i> - theory - Nathalie JOB - lab - Nathalie JOB - [15h Labo.]	B2	Q1	15	-	-	3
CHIM9315-1	<i>Sustainable management of fuels: supply, synthesis and use</i> - Angélique LÉONARD, Grégoire LÉONARD	B2	Q1	50	-	-	5

MECA0526-1	<i>High Temperature Processes in Recycling & Remanufacturing</i> (english language) - Anne MERTENS - [1d FW]	B2	Q1	26	26	[+]	5
CHIM9303-1	<i>Advanced Question in Chemical Engineering : water sanitation and sludge treatment</i> - Frank DELVIGNE, Stéphanie LAMBERT, Angélique LÉONARD, Dominique TOYE - [1d FW]	B2	Q1	20	15	[+]	3
CHIM0699-2	<i>Life cycle assessment - Ecodesign</i> (english language) - Angélique LÉONARD	B2	Q1	10	30	-	3
CHIM9309-1	<i>Process Intensification and Hybrid Processes</i> (english language) - Andreas PFENNIG	B2	Q1	25	8	-	3
MECA0450-3	<i>Renewable energies</i> (english language) - Pierre DEWALLEF - [24h Proj., 1d FW]	B2	Q2	24	12	[+]	5
CHIM0055-1	<i>Chemical Engineering of Polyphase Systems</i> - JeanMarc SCHWEITZER Corequisite : CHIM0697-1 - Heterogeneous catalysis CHIM9277-1 - Génie chimique (étude des réacteurs) CHIM9300-1 - Physical Unit Operations II	B2	Q1	20	30	-	4
CHIM0668-1	<i>Agitation and mixture</i> - Dominique TOYE - [5h Labo.] Corequisite : CHIM9277-1 - Génie chimique (étude des réacteurs)	B2	Q1	30	5	[+]	4
CHIM0054-2	<i>Introduction to economic analysis, application to industrial processes</i> (english language) - Grégoire LÉONARD - [90h Proj.] Prerequisite : PROJ0012-1 - Integrated Project	B2	Q1	10	-	[+]	4
CHIM9301-1	<i>Project management and engineering methods in the industry</i> (english language) - Grégoire LÉONARD - [1d FW] Prerequisite : PROJ0012-1 - Integrated Project	B2	Q1	20	15	[+]	4
CHIM0074-2	<i>Seminars on industrial security</i> - JeanLuc BOZET, Angélique LÉONARD, Dominique TOYE - [2d FW] Corequisite : CHIM9277-1 - Génie chimique (étude des réacteurs)	B2	Q1	15	-	[+]	2
PHYS0038-2	<i>Introduction into polymer physics including plasturgy</i> (english language) - Klaus KECKANTOINE	B2	Q1	30	-	-	3
CHIM0072-2	<i>Nanomaterials and divided materials engineering</i> - Benoît HEINRICHS, Stéphanie LAMBERT Corequisite : CHIM0698-1 - Introduction to the Physical Chemistry of Nanomaterials	B2	Q1	15	15	-	3

[...] Students may also choose up to 10 credits from courses in another master's programme in the Faculty.

Additional ECTS Master in chemical and materials science engineering

Optional courses (B0 : 60Cr)

Each student's programme will be determined by the jury depending on their prior training. If an applicant does not meet certain prerequisites, his or her programme may include up to 60 additional course credits essentially taken from the list below : (B0 : 60Cr)

Notice : students who have not followed the courses CHIM0022-4, CHIM0009-3, CHIM9320-1 and CHIM0604-2 from the option "Chemistry and material sciences" from bachelor in civil engineering programme or acquired the equivalent knowledge and skills have to choose in priority these five courses in their study programme ; these courses are corequisites of compulsory courses of the master.

MATH0066-1	<i>Complement of mathematics 2</i> - Patricia TOSSINGS	B0	Q2	26	26	-	4
CHIM0286-1	<i>Rudiments of thermodynamics</i> - Benoît HEINRICHS	B0	Q1	26	26	-	5
MECA0001-2	<i>Mechanics of materials</i> - JeanPierre JASPART - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTTON - [25h Proj.]	B0	Q2	20	30	[+]	4
CHIM9322-1	<i>Industrial chemistry processes: the structure of the chemical industry and the balance approach</i> - MarieNoëlle DUMONT, Angélique LÉONARD, Dominique TOYE - [1d FW]	B0	Q2	38	10	[+]	5
CHIM0604-2	<i>Chemistry and organic materials</i> - Lionel DELAUDE	B0	Q2	33	19	-	5
CHIM0022-4	<i>Transport phenomena (english language)</i> - Part A - Andreas PFENNIG - Part B - Andreas PFENNIG	B0	Q2	30	-	-	5
CHIM0009-3	<i>Applied Chemical Thermodynamics</i> - MarieNoëlle DUMONT, Nathalie JOB, Grégoire LÉONARD	B0	Q2	26	26	-	5
MATH0006-3	<i>Introduction to numerical analysis (english language)</i> - Quentin LOUVEAUX	B0	Q1	20	20	-	4
CHIM9320-1	<i>Introduction to chemical reaction engineering</i> - Nathalie JOB, Dominique TOYE	B0	Q1	24	24	-	5
CHIM9315-1	<i>Sustainable management of fuels: supply, synthesis and use</i> - Angélique LÉONARD, Grégoire LÉONARD	B0	Q1	50	-	-	5
[...]	Choose maximum 8 credit to complete the study programme						

Additional ECTS for students holding a Bachelor `s degree in chemistry

Compulsory courses (B0 : 42Cr)

MATH0066-1	<i>Complement of mathematics 2</i> - Patricia TOSSINGS	B0	Q2	26	26	-	4
CHIM0286-1	<i>Rudiments of thermodynamics</i> - Benoît HEINRICHS	B0	Q1	26	26	-	5
MECA0001-2	<i>Mechanics of materials</i> - JeanPierre JASPART - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTTON - [25h Proj.]	B0	Q2	20	30	[+]	4
CHIM9322-1	<i>Industrial chemistry processes: the structure of the chemical industry and the balance approach</i> - MarieNoëlle DUMONT, Angélique LÉONARD, Dominique TOYE - [1d FW]	B0	Q2	38	10	[+]	5
CHIM0022-4	<i>Transport phenomena (english language)</i> - Part A - Andreas PFENNIG - Part B - Andreas PFENNIG	B0	Q2	30	-	-	5
CHIM0009-3	<i>Applied Chemical Thermodynamics</i> - MarieNoëlle DUMONT, Nathalie JOB, Grégoire LÉONARD	B0	Q2	26	26	-	5
MATH0006-3	<i>Introduction to numerical analysis (english language)</i> - Quentin LOUVEAUX	B0	Q1	20	20	-	4
CHIM9320-1	<i>Introduction to chemical reaction engineering</i> - Nathalie JOB, Dominique TOYE	B0	Q1	24	24	-	5