

Two-Year Master Program (120 ECTS)

First Year

Compulsory courses

General Education

CHIM0015-3	<i>Analytical chemistry II, physical methods</i> - Gauthier EPPE	Q1	30	60	-	6
ELEC0431-2	<i>Electromagnetic energy conversion</i> (english language) - Christophe GEUZAINÉ - [15h Labo.]	Q2	30	15	[+]	5

CHIM0080-2	<i>Energy carriers and sustainable development</i> - Angélique LÉONARD	Q2	20	10	-	3
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Training in processes

CHIM0081-3	<i>Industrial Chemistry Processes, structure of chemical industry</i> - Angélique LÉONARD - [1d FW]	Q1	30	-	[+]	3
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CHIM0695-2	<i>Introduction to modeling of chemical systems</i> - Georges HEYEN - Suppl : MarieNoëlle DUMONT, Grégoire LÉONARD	Q1	20	45	-	5
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CHIM0696-1	<i>Static modeling and dynamics of large chemical systems</i> - N... - Suppl : Claude DODET, MarieNoëlle DUMONT, Georges HEYEN, Grégoire LÉONARD	Q2	30	30	-	5
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CHIM0694-3	<i>Industrial chemistry processes design</i> - Angélique LÉONARD, N... - Suppl : MarieNoëlle DUMONT, Grégoire LÉONARD	TA	10	60	-	5
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Chemical engineering training

CHIM0697-1	<i>Heterogeneous catalysis</i> (english language) - Nathalie JOB	Q2	15	30	-	3
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CHIM9277-1	<i>Chemical Reactor Engineering II</i> - Dominique TOYE	Q1	20	30	-	4
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CHIM0083-2	<i>Chemical engineering (unit physical operations and non-specific aspects of equipment)</i> - N... - Suppl : Michel CRINE		45	45	-	8
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Training in materials

CHIM0698-1	<i>Physical chemistry of interfaces</i> - Cédric GOMMES	Q1	15	15	-	3
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CHIM0675-1	<i>Macromolecular chemistry</i> - AnneSophie DUWEZ	Q1	20	20	-	3
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CHIM0676-1	<i>Polymerization processes</i> - Klaus KECK		20	-	-	2
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CHIM0666-2	<i>Inorganic materials : manufacturing procedures and propriety</i> - Stéphanie LAMBERT - [2d FW]	Q2	30	30	[+]	5
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Notice : Students who have, in their BAC studies, have already taken one or more compulsory courses in this Master's programme are obliged to replace them by other courses on the Faculty's programme; this choice must be approved by the President of the cycle's Jury.

Second year

Compulsory courses

ATFE0004-1	<i>Final Work (including an introduction to research methodology)</i> - COLLÉGIALITÉ	TA	-	-	-	25
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Notice : In any case, this course must have the approval of the cycle's Jury President.

Optional courses

Un cours à choisir parmi

[...] the courses of the University

[...] la liste restreinte ci-dessous :

LANG1957-1	<i>Dutch for Engeneering Students</i> (dutch language) - Claudine COLIN	TA	60	-	-	5
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LANG1958-1	<i>German for Engineering Students</i> (german language) - Françoise CARL	TA	60	-	-	5
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GEST3162-1	<i>Introduction to company management</i> (english language) - Michael GHILISSEN, François PICHULT, Thierry PIRONET, Didier VAN CAILLIE	Q2	25	25	-	5
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Choose one focus from the following :

Research Focus

Optional courses

Choose optional courses from the following, from maximum three modules, totaling 30 ECTS.

Sustainable development : energy and environment

CHIM0056-2	<i>Energy Aspects of Physical Unit Operations</i> - N... - Suppl : Laurent FRAIKIN, Angélique LÉONARD	Q1	15	-	-	2
CHIM0664-1	<i>Storing and converting energy electrochemically</i> - Nathalie JOB	Q1	15	15	-	3
CHIM0071-4	<i>Reduction of pollutants from combustion</i> - Angélique LÉONARD - [1d FW]	Q1	30	-	[+]	3
GEOL0281-3	<i>Environmental aspects of industrial and mining activities</i> - Stoyan GAYDARDZHIEV - [1,5d FW]	Q1	25	25	[+]	4
CHIM0011-2	<i>Environment Chemical Engineering</i> - - Suppl : Laurent FRAIKIN, Angélique LÉONARD	Q1	15	15	-	3

Biotechnology and Chemistry

CHIM0055-1	<i>Chemical Engineering of Polyphase Systems</i> - JeanMarc SCHWEITZER		20	30	-	4
CHIM0669-1	<i>Particular systems</i> - - Suppl : Dominique TOYE	Q1	15	15	-	3
CHIM0668-1	<i>Stirring and mixing</i> - Dominique TOYE	Q1	15	15	-	3
BIOC9240-1	<i>Microbial biotechnology</i> - Frank DELVIGNE		15	5	-	2

Procedures

CHIM0054-2	(pas organisé en 2014-2015) <i>Process design workshop : economic optimization</i> - N...		10	45	-	4
CHIM0074-2	<i>Seminars on industrial security</i> - JeanLuc BOZET, Angélique LÉONARD, Dominique TOYE - [2d FW]	Q1	15	-	[+]	2
CHIM0699-2	<i>Life cycle analysis - ecodesign</i> - Sandra BELBOOM, Angélique LÉONARD	Q1	10	30	-	3
GEOL0314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV	Q1	30	30	-	5
GEOL0315-1	<i>Waste and by products processing</i> (english language) - Stoyan GAYDARDZHIEV	Q1	30	30	-	5

Materials Science

CHIM0072-1	<i>Engineering of nanomaterials and divided materials</i> - Benoît HEINRICHS, Stéphanie LAMBERT	Q1	15	15	-	3
PHYS0038-2	<i>Physics of polymer materials, including plasturgy</i> - Klaus KECK, N...		30	-	-	3
MECA0462-2	<i>Materials selection</i> (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [1d FW]	Q1	30	30	[+]	5
BIOC0430-1	<i>Interaction of living material</i> - Christian GRANDFILS	Q1	25	-	-	3
MECA0516-1	<i>Mechanical properties of biologics and bioinspired materials</i> (english language) - Davide RUFFONI	Q1	15	15	-	3

Organising the materials

MECA0464-1	<i>Large deformation of solids</i> (english language) - JeanPhilippe PONTHOT	Q1	30	30	-	5
<i>Notice</i> : prérequis : MECA0023-1 et MECA0036-1						
MECA0023-1	<i>Advanced solid mechanics</i> (english language) - JeanPhilippe PONTHOT	Q1	30	30	-	5
<i>Notice</i> : prérequis : MECA0036-1						
MECA0473-1	<i>Metallic materials Engineering</i> - Jacqueline LECOMTEBECKERS	Q1	30	30	-	5
MECA0139-1	<i>Techniques of additive manufacturing and 3D printing</i> - Thierry DORMAL		30	-	-	5
<i>Notice</i> : prérequis : MECA0036-1						

Out of module

ASTG0022-1	<i>20 days of industrial internship, subjected to valuation</i> - Angélique LÉONARD - [20d Internship]	TA	-	-	[+]	4
ASTG0023-1	<i>40 days of industrial internship, subjected to valuation</i> - Angélique LÉONARD - [40d Internship]	TA	-	-	[+]	8

Professional focus in management

Notice : The specialisation in management will be taught for the last time in

2014-2015.

Compulsory courses

GEST3001-1	<i>People management and organisation</i> - Jocelyne ROBERT	Q1	24	24	-	4
GEST3002-1	<i>Human Resources</i> - Jocelyne ROBERT	Q1	24	-	-	2
GEST3003-1	<i>Competitive strategy in the marketplace</i> (english language) - Michael GHILISSEN	Q1	16	16	-	3
GEST3004-1	<i>Marketing (operations and management)</i> (english language) - Michael GHILISSEN	Q1	16	16	-	3
GEST3005-2	<i>Accountancy and Finance</i> - Jacques BERWART		24	24	-	4
GEST3006-1	<i>Operations and supply chain management I</i> (english language) - Yasemin ARDA	Q1	16	16	-	3
GSTG3001-1	<i>Business plan</i> - COLLÉGIALITÉ		-	30	-	4
GSTG3002-1	<i>Functional analysis of a company</i> - COLLÉGIALITÉ - [30h Internship]		-	-	[+]	4

Optional courses

Choose one of the following courses :

GEST3010-1	<i>Operations and supply chain management II</i> - Sabine LIMBOURG	Q1	16	16	-	3
GEST3011-2	<i>ICT for Business</i> - Alain DUBOIS	Q1	16	16	-	3
GEST3012-1	<i>Financial and actuarial modelling</i> - Louis ESCH	Q1	16	16	-	3

Adjusted programme for student of the Bachelors in Civil Engineering who have not taken the "Chemistry and Material Sciences" option

Students studying for the Bachelors in Civil Engineering who have not chosen the appropriate option :

- * must take all the so-called "prerequisite" courses hereafter, if they were not taken during the 1st cycle. These courses must be taken during the 1st year of the masters and some 1st-year compulsory courses must be rolled over to the 2nd year.
- * must subsequently reduce the number of courses they choose to take in the 2nd year of the masters. If all the "prerequisite" courses must be taken, it will be impossible for them to choose which courses they take.
- * cannot choose the professional "management" focus.

The program adapted by these students has to receive the preliminary agreement of the Jury.

Compulsory prerequisites

CHIM0605-2	<i>Chemistry and inorganic materials</i> - Bénédicte VERTRUYEN	Q2	30	-	-	3
CHIM0604-2	<i>Chemistry and organic materials</i> - Lionel DELAUDE	Q2	30	30	-	5
CHIM0012-5	<i>Chemical kinetics</i> - Nathalie JOB - [15h Proj.]	Q2	20	15	[+]	2
CHIM0022-2	<i>Transport phenomena</i> (english language) - Andreas PFENNIG	Q2	30	30	-	5
PHYS0904-4	<i>Physics of materials</i> - Jacqueline LECOMTEBECKERS - [1d FW]	Q2	30	30	[+]	5
CHIM0606-2	<i>Analytical Chemistry</i> - Gauthier EPPE	Q1	30	15	-	4
CHIM0009-3	<i>Applied chemical thermodynamics</i> - Nathalie JOB - [10h Proj.]	Q1	20	15	[+]	3
CHIM0023-3	<i>Chemical Engineering (Reactor Study), étude des réacteurs I</i> - Dominique TOYE	Q1	20	15	-	3

Adjusted programme for student of the Bachelors in Civil Engineering who have not taken the "Chemistry and Material Sciences" option

Second year

The programme is identical to that of the 2nd-year master in Chemical and Materials Engineering, within the limits of the remaining credits available after the refresher course.

Adjusted programme for bachelors in Chemical Sciences

This programme is defined in relation with the Bachelor in chemistry organised by the University of Liège's Faculty of Sciences.

It is likely to be greatly modified for students with a Bachelor in chemistry sciences from other institutions, depending on the knowledge, and courses not followed, whilst remaining within the limits of 75+60 ECTS.

First Year

Compulsory courses

MATH0066-1	<i>Complement of mathematics</i> - Patricia TOSSINGS	Q2	30	30	-	4
MECA0001-2	<i>Mechanics of materials</i> - JeanPierre JASPART - Suppl : Laurent DUCHENE - [2h Labo., 12h Proj.]	Q1	30	28	[+]	5
DROI0724-1	<i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ, Bernard VANBRABANT - Suppl : Daisy CHICHOYAN, Déborah GOL, Cécile VERCHEVAL	Q1	30	-	-	3
MECA0011-1	<i>Fluid Mechanics : Basics</i> - Michel PIROTON	Q2	30	30	-	5
PHYS0904-4	<i>Physics of materials</i> - Jacqueline LECOMTEBECKERS - [1d FW]	Q2	30	30	[+]	5
CHIM0012-5	<i>Chemical kinetics</i> - Nathalie JOB - [15h Proj.]	Q2	20	15	[+]	3
CHIM0022-2	<i>Transport phenomena</i> (english language) - Andreas PFENNIG	Q2	30	30	-	5
CHIM0009-3	<i>Applied chemical thermodynamics</i> - Nathalie JOB - [10h Proj.]	Q1	20	15	[+]	5
CHIM0023-3	<i>Chemical Engineering (Reactor Study), étude des réacteurs I</i> - Dominique TOYE	Q1	20	15	-	3
CHIM0697-1	<i>Heterogeneous catalysis</i> (english language) - Nathalie JOB	Q2	15	30	-	3
CHIM0698-1	<i>Physical chemistry of interfaces</i> - Cédric GOMMES	Q1	15	15	-	3
CHIM0080-2	<i>Energy carriers and sustainable development</i> - Angélique LÉONARD	Q2	20	10	-	3
CHIM0081-4	<i>Industrial Chemistry Processes, structure of chemical industry</i> - Angélique LÉONARD	Q1	30	-	-	3
CHIM0695-2	<i>Introduction to modeling of chemical systems</i> - Georges HEYEN - Suppl : MarieNoëlle DUMONT, Grégoire LÉONARD	Q1	20	45	-	5
CHIM0676-1	<i>Polymerization processes</i> - Klaus KECK		20	-	-	2
CHIM0666-2	<i>Inorganic materials : manufacturing procedures and propriety</i> - Stéphanie LAMBERT - [2d FW]	Q2	30	30	[+]	5

Second year

Compulsory courses

ATFE0004-1	<i>Final Work (including an introduction to research methodology)</i> - COLLÉGIALITÉ	TA	-	-	-	25
[...]	A course to be chosen from the university's programme of courses or from the restricted list below:					
LANG1957-1	<i>Dutch for Engeneering Students</i> (dutch language) - Claudine COLIN	TA	60	-	-	5
LANG1958-1	<i>German for Engineering Students</i> (german language) - Françoise CARL	TA	60	-	-	5
GEST3162-1	<i>Introduction to company management</i> (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE	Q2	25	25	-	5

Research Focus

Compulsory courses

CHIM0696-1	<i>Static modeling and dynamics of large chemical systems</i> - N... - Suppl : Claude DODET, MarieNoëlle DUMONT, Georges HEYEN, Grégoire LÉONARD	Q2	30	30	-	5
CHIM0694-3	<i>Industrial chemistry processes design</i> - Angélique LÉONARD, N... - Suppl : MarieNoëlle DUMONT, Grégoire LÉONARD	TA	10	60	-	5
CHIM9277-1	<i>Chemical Reactor Engineering II</i> - Dominique TOYE	Q1	20	30	-	4
CHIM0083-2	<i>Chemical engineering (unit physical operations and non-specific aspects of equipment)</i> - N... - Suppl : Michel CRINE		45	45	-	8

Optional courses

[...] Choose courses from the regular programme of the 2nd year of Master