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First Year

Compulsory courses

General Education

CHIM0015-3 *Analytical chemistry II, physical methods* - Gauthier EPPE Q1 30 60 - 6

ELEC0431-2 *Electromagnetic energy conversion (english language)* - Christophe GEUZAIN - [15h Labo.] Q2 30 15 [+] 5

CHIM0080-2 *Energy carriers and sustainable development* - Angélique LÉONARD Q2 20 10 - 3

Training in processes

CHIM0081-3 *Industrial Chemistry Processes, structure of chemical industry* - Angélique LÉONARD - [1d FW] Q1 30 - [+] 3

CHIM0695-2 *Introduction to modeling of chemical systems* - Georges HEYEN - Suppl : MarieNoëlle DUMONT, Grégoire LÉONARD Q1 20 45 - 5

CHIM0696-1 *Static modeling and dynamics of large chemical systems* - N... - Suppl : Claude DODET, MarieNoëlle DUMONT, Georges HEYEN, Grégoire LÉONARD Q2 30 30 - 5

CHIM0694-3 *Industrial chemistry processes design* - Angélique LÉONARD, N... - Suppl : MarieNoëlle DUMONT, Grégoire LÉONARD TA 10 60 - 5

Chemical engineering training

CHIM0697-1 *Heterogeneous catalysis (english language)* - Nathalie JOB Q2 15 30 - 3

CHIM9277-1 *Chemical Reactor Engineering II* - Dominique TOYE Q1 20 30 - 4

CHIM0083-2 *Chemical engineering (unit physical operations and non-specific aspects of equipment)* - N... - Suppl : Michel CRINE 45 45 - 8

Training in materials

CHIM0698-1 *Physical chemistry of interfaces* - Cédric GOMMES Q1 15 15 - 3

CHIM0675-1 *Macromolecular chemistry* - AnneSophie DUWEZ Q1 20 20 - 3

CHIM0676-1 *Polymerization processes* - Klaus KECK 20 - - 2

CHIM0666-2 *Inorganic materials : manufacturing procedures and propriety* - Stéphanie LAMBERT - [2d FW] Q2 30 30 [+] 5

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.

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 *Chemistry and inorganic materials* - Bénédicte VERTRUYEN Q2 30 - - 3

CHIM0604-2 *Chemistry and organic materials* - Lionel DELAUDE Q2 30 30 - 5

CHIM0012-5 *Chemical kinetics* - Nathalie JOB - [15h Proj.] Q2 20 15 [+] 2

CHIM0022-2 *Transport phenomena (english language)* - Andreas PFENNIG Q2 30 30 - 5

PHYS0904-4 *Physics of materials* - Jacqueline LECOMTEBECKERS - [1d FW] Q2 30 30 [+] 5

CHIM0606-2 *Analytical Chemistry* - Gauthier EPPE Q1 30 15 - 4

CHIM0009-3 *Applied chemical thermodynamics* - Nathalie JOB - [10h Proj.] Q1 20 15 [+] 3

CHIM0023-3 *Chemical Engineering (Reactor Study), étude des réacteurs I* - Dominique TOYE Q1 20 15 - 3

Compulsory courses

MATH0066-1 *Complement of mathematics* - Patricia TOSSINGS Q2 30 30 - 4

MECA0001-2 *Mechanics of materials* - JeanPierre JASPART - Suppl : Laurent DUCHENE - [2h Labo., 12h Proj.] Q1 30 28 [+] 5

DROI0724-1 *Law and engineering* - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ, Q1 30 - - 3

Bernard VANBRABANT - Suppl : Daisy CHICHOYAN, Déborah GOL,
Cécile VERCHEVAL

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

Compulsory courses

ATFE0004-1	<i>Final Work (including an introduction to research methodology)</i> - COLLÉGIALITÉ	TA	-	-	-	25
	<i>Notice</i> : 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
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

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.

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 - Stoyan GAYDARDZHIEV - [1,5d FW]</i>	Q1	25	25	[+]	4
CHIM0011-2	<i>Environment Chemical Engineering - - Suppl : Laurent FRAIKIN, Angélique LÉONARD</i>	Q1	15	15	-	3
Biotechnology and Chemistry						
CHIM0055-1	<i>Chemical Engineering of Polyphase Systems - JeanMarc SCHWEITZER</i>		20	30	-	4
CHIM0669-1	<i>Particular systems - - Suppl : Dominique TOYE</i>	Q1	15	15	-	3
CHIM0668-1	<i>Stirring and mixing - Dominique TOYE</i>	Q1	15	15	-	3
BIOC9240-1	<i>Microbial biotechnology - Frank DELVIGNE</i>		15	5	-	2
Procedures						
CHIM0054-2	<i>(pas organisé en 2014-2015) Process design workshop : economic optimization - N...</i>		10	45	-	4
CHIM0074-2	<i>Seminars on industrial security - JeanLuc BOZET, Angélique LÉONARD, Dominique TOYE - [2d FW]</i>	Q1	15	-	[+]	2
CHIM0699-2	<i>Life cycle analysis - ecodesign - Sandra BELBOOM, Angélique LÉONARD</i>	Q1	10	30	-	3
GEOL0314-1	<i>Mineral processing I - basics (english language) - Stoyan GAYDARDZHIEV</i>	Q1	30	30	-	5
GEOL0315-1	<i>Waste and by products processing (english language) - Stoyan GAYDARDZHIEV</i>	Q1	30	30	-	5
Materials Science						
CHIM0072-1	<i>Engineering of nanomaterials and divided materials - Benoît HEINRICHS, Stéphanie LAMBERT</i>	Q1	15	15	-	3
PHYS0038-2	<i>Physics of polymer materials, including plasturgy - Klaus KECK, N...</i>		30	-	-	3
MECA0462-2	<i>Materials selection (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [1d FW]</i>	Q1	30	30	[+]	5
BIOC0430-1	<i>Interaction of living material - Christian GRANDFILS</i>	Q1	25	-	-	3
MECA0516-1	<i>Mechanical properties of biologics and bioinspired materials (english language) - Davide RUFFONI</i>	Q1	15	15	-	3
Organising the materials						
MECA0464-1	<i>Large deformation of solids (english language) - JeanPhilippe PONTHOT</i> <i>Notice : prérequis : MECA0023-1 et MECA0036-1</i>	Q1	30	30	-	5
MECA0023-1	<i>Advanced solid mechanics (english language) - JeanPhilippe PONTHOT</i> <i>Notice : prérequis : MECA0036-1</i>	Q1	30	30	-	5
MECA0473-1	<i>Metallic materials Engineering - Jacqueline LECOMTEBECKERS</i>	Q1	30	30	-	5
MECA0139-1	<i>Techniques of additive manufacturing and 3D printing - Thierry DORMAL</i> <i>Notice : prérequis : MECA0036-1</i>		30	-	-	5
Out of module						
ASTG0022-1	<i>20 days of industrial internship, subjected to valuation - Angélique LÉONARD</i> <i>- [20d Internship]</i>	TA	-	-	[+]	4
ASTG0023-1	<i>40 days of industrial internship, subjected to valuation - Angélique LÉONARD</i> <i>- [40d Internship]</i>	TA	-	-	[+]	8

Compulsory courses

CHIM0696-1	<i>Static modeling and dynamics of large chemical systems - N... - Suppl : Claude DODET, MarieNoëlle DUMONT, Georges HEYEN, Grégoire LÉONARD</i>	Q2	30	30	-	5
CHIM0694-3	<i>Industrial chemistry processes design - Angélique LÉONARD, N... - Suppl : MarieNoëlle DUMONT, Grégoire LÉONARD</i>	TA	10	60	-	5
CHIM9277-1	<i>Chemical Reactor Engineering II - Dominique TOYE</i>	Q1	20	30	-	4

Compulsory courses

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

Optional courses

[...]

Choose courses from the regular programme of the 2nd year of Master