Université de Liège

Study programmes 2013-2014
Faculty of Applied Sciences
Master in Chemical Engineering and Materrial Sciences, in-depth approach

First Year

Compulsory courses

		Th	Pr	Au	Cr
General Education					
CHIM0015-3	*Analytical chemistry II, physical methods* - Gauthier EPPE	30	60	-	**6**
ELEC0431-1	*Electromagnetic energy conversion* (english language) - Christophe GEUZAINE	30	30	-	**5**
CHIM0080-2	*Energy carriers and sustainable development* - Angélique LÉONARD	20	10	-	**3**
Training in processes					
CHIM0081-3	*Industrial Chemistry Processes, structure of chemical industry* - Angélique LÉONARD - [1d FW]	30	-	[+]	**3**
CHIM0695-1	*Introduction to modeling of chemical systems* - N... - Suppl : Grégoire LÉONARD	30	30	-	**5**
CHIM0696-1	*Static modeling and dynamics of large chemical systems* - N...	30	30	-	**5**
CHIM0694-1	*Industrial chemistry processes design* - Angélique LÉONARD, N... - Suppl : Grégoire LÉONARD	20	45	-	**5**
Chemical engineering training					
CHIM0697-1	*Heterogeneous catalysis* - Nathalie JOB	15	30	-	**3**
CHIM0023-4	*Chemical Engineering (Reactor Study)* - Dominique TOYE	20	30	-	**4**
CHIM0083-2	*Chemical engineering (unit physical operations and non-specific aspects of equipment)* - Michel CRINE	45	45	-	**8**
Training in materials					
CHIM0675-1	*Macromolecular chemistry* - AnneSophie DUWEZ	20	20	-	**3**
CHIM0676-1	*Polymerization processes* - Eric MARTIN	20	-	-	**2**
CHIM0666-2	*Inorganic materials : manufacturing procedures and propriety* - Stéphanie LAMBERT - [2d FW]	30	30	[+]	**5**
CHIM0698-1	*Physical chemistry of interfaces* - Cédric GOMMES	15	15	-	**3**

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 courses

CHIM0605-2	*Chemistry and inorganic materials* - Bénédicte VERTRUYEN	30	-	-	**3**
CHIM0604-2	*Chemistry and organic materials* - Lionel DELAUDE	30	30	-	**5**
CHIM0012-4	*Chemical Kinetics* - Nathalie JOB	20	-	-	**2**
CHIM0022-2	*Introduction to Chemical Engineering* - Michel CRINE	30	30	-	**5**
PHYS0904-5	*Physics of materials* - Jacqueline LECOMTEBECKERS	30	30	-	**5**
CHIM0606-2	*Analytical Chemistry* - Gauthier EPPE	30	15	-	**4**
CHIM0009-2	*Applied chemical thermodynamics* - Nathalie JOB	20	15	-	**3**
CHIM0023-3	*Chemical Engineering (Reactor Study)* - Dominique TOYE	20	15	-	**3**

Compulsory courses

MATH0066-1	*Complement of mathematics* - Patricia TOSSINGS	30	30	-	**4**
DROI0724-1	*Law and engineering* - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ, Bernard VANBRABANT - Suppl : Daisy CHICHOYAN, Déborah GOL, Cécile VERCHEVAL	30	-	-	**3**
MECA0011-1	*Fluid Mechanics : Basics* - Michel PIROTTON	30	30	-	**5**
CHIM0022-2	*Introduction to Chemical Engineering* - Michel CRINE	30	30	-	**5**
MECA0001-1	*Mechanics of materials* - JeanPierre JASPART	30	30	-	**5**
PHYS0904-4	*Physics of materials* - Jacqueline LECOMTEBECKERS - [1d FW]	30	30	[+]	**5**

CHIM0012-3	*Chemical Kinetics* - Nathalie JOB	20	15	-	**3**
CHIM0009-1	*Applied chemical thermodynamics* - Nathalie JOB	30	30	-	**5**
CHIM0023-3	*Chemical Engineering (Reactor Study)* - Dominique TOYE	20	15	-	**3**
CHIM0697-1	*Heterogeneous catalysis* - Nathalie JOB	15	30	-	**3**
CHIM0698-1	*Physical chemistry of interfaces* - Cédric GOMMES	15	15	-	**3**
CHIM0080-2	*Energy carriers and sustainable development* - Angélique LÉONARD	20	10	-	**3**
CHIM0081-3	*Industrial Chemistry Processes, structure of chemical industry* - Angélique LÉONARD - [1d FW]	30	-	[+]	**3**
CHIM0695-1	*Introduction to modeling of chemical systems* - N... - Suppl : Grégoire LÉONARD	30	30	-	**5**
CHIM0676-1	*Polymerization processes* - Eric MARTIN	20	-	-	**2**
CHIM0666-2	*Inorganic materials : manufacturing procedures and propriety* - Stéphanie LAMBERT - [2d FW]	30	30	[+]	**5**

Second Year

Compulsory courses

ATFE0004-1	*Final Work (including an introduction to research methodology)* - COLLÉGIALITÉ	-	-	-	**25**

Optional courses

[...] A general course to be chosen from the University's programmes of courses ; this choice must be approved by the cycle's President of the Jury

Compulsory courses

ATFE0004-1	*Final Work (including an introduction to research methodology)* - COLLÉGIALITÉ	-	-	-	**25**

Optional courses

Choose one of the following courses :

[...] the short list below.

LANG1957-1	*Dutch for Engeneering Students* (dutch language) - Claudine COLIN	60	-	-	**5**
LANG1958-1	*German for Engineering Students* (german language) - Françoise CARL	60	-	-	**5**

[...] University of Liege programme courses

In any case, this course must have the approval of the cycle's Jury President.

Compulsory courses

CHIM0695-1	*Introduction to modeling of chemical systems* - N... - Suppl : Grégoire LÉONARD	30	30	-	**5**
CHIM0696-1	*Static modeling and dynamics of large chemical systems* - N...	30	30	-	**5**
CHIM0694-2	*Industrial chemistry processes design (workshop part)* - Angélique LÉONARD, N... - Suppl : Grégoire LÉONARD	-	30	-	**2**
CHIM0023-4	*Chemical Engineering (Reactor Study)* - Dominique TOYE	20	30	-	**4**
CHIM0083-2	*Chemical engineering (unit physical operations and non-specific aspects of equipment)* - Michel CRINE	45	45	-	**8**

Optional courses

[...] One or several courses to be chosen from the 2nd year of the regular masters programme

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. With the approval of the President of the cycle's Jury, one of the optional courses may be chosen in another programme of the ULg.

Sustainable development : energy and environment

CHIM0056-2	*Energy Aspects of Physical Unit Operations* - Michel CRINE	15	-	-	**2**
CHIM0664-1	*Combustible batteries and micro-batteries* - Nathalie JOB	15	15	-	**3**
CHIM0011-2	*Environment Chemical Engineering* - Michel CRINE	15	15	-	**3**
CHIM0071-3	*Reduction of pollutants from combustion* - Angélique LÉONARD	30	-	-	**3**
GEOL0281-3	*Environmental aspects of industrial and mining activities* - Stoyan GAYDARDZHIEV - [1,5d FW]	25	25	[+]	**4**

Biotechnology and Chemistry					
CHIM0059-1	*Industrial Microbiology* - Philippe THONART	15	-	-	**2**
CHIM0067-1	*Biochemical Reactors II* - Michel CRINE	15	-	-	**2**
CHIM0055-1	*Chemical Engineering of Polyphase Systems* - JeanMarc SCHWEITZER	18	24	-	**4**
CHIM0669-1	*Particular systems* - Michel CRINE	15	15	-	**3**
CHIM0668-1	*Stirring and mixing* - Dominique TOYE	15	15	-	**3**
Procedures					
CHIM0054-2	*Process design workshop : economic optimization* - N... - Suppl : Grégoire LÉONARD	10	45	-	**4**
CHIM0074-2	*Seminars on industrial security* - JeanLuc BOZET, Angélique LÉONARD, Dominique TOYE - [10h SEM, 2d FW]	-	-	[+]	**2**
CHIM0699-1	*Life cycle analysis - ecodesign* - Sandra BELBOOM, Angélique LÉONARD	10	20	-	**2**
GEOL0314-1	*Mineral processing I - basics* (english language) - Stoyan GAYDARDZHIEV	30	30	-	**5**
GEOL0315-1	*Waste and by products processing* (english language) - Stoyan GAYDARDZHIEV	30	30	-	**5**
Materials Science					
CHIM0064-1	(pas organisé en 2013-2014) *Aerospace materials and composite materials*	20	-	-	**2**
CHIM0072-1	*Engineering of nanomaterials and divided materials* - Benoît HEINRICHS, Stéphanie LAMBERT	15	15	-	**3**
PHYS0038-1	*Physics of polymer materials, including plasturgy* - Eric MARTIN, N...	20	20	-	**4**
MECA0462-2	*Materials selection* (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [1d FW]	30	30	[+]	**5**
BIOC0430-1	*Interaction of living material* - Christian GRANDFILS	25	-	-	**3**
MECA0516-1	(pas organisé en 2013-2014) *Characterization of biological material*	-	-	-	**3**
Out of module					
ASTG0022-1	*20 days of industrial internship, subjected to valuation* - N... - [20d Internship]	-	-	[+]	**4**
ASTG0023-1	*40 days of industrial internship, subjected to valuation* - N... - [40d Internship]	-	-	[+]	**8**
Organising the materials					
MECA0464-1	*Large deformation of solids* (english language) - JeanPhilippe PONTHOT Prerequisite MECA0036-1 Finite Element Method MECA0023-1 Comportement non linéaire des solides	30	30	-	**5**
MECA0023-1	*Inelastic behavior of solids* - JeanPhilippe PONTHOT Prerequisite MECA0036-1 Finite Element Method	30	30	-	**5**
MECA0473-1	*Metallic materials Engineering* - Jacqueline LECOMTEBECKERS	30	30	-	**5**
MECA0139-1	*Rapid Prototyping* - Thierry DORMAL Prerequisite MECA0036-1 Finite Element Method	30	-	-	**5**

Compulsory courses

CHIM0696-1	*Static modeling and dynamics of large chemical systems* - N...	30	30	-	**5**
CHIM0694-1	*Industrial chemistry processes design* - Angélique LÉONARD, N... - Suppl : Grégoire LÉONARD	20	45	-	**5**
CHIM0023-4	*Chemical Engineering (Reactor Study)* - Dominique TOYE	20	30	-	**4**

Compulsory courses

CHIM0696-1	*Static modeling and dynamics of large chemical systems* - N...	30	30	-	**5**
CHIM0694-1	*Industrial chemistry processes design* - Angélique LÉONARD, N... - Suppl : Grégoire LÉONARD	20	45	-	**5**
CHIM0023-4	*Chemical Engineering (Reactor Study)* - Dominique TOYE	20	30	-	**4**
CHIM0083-2	*Chemical engineering (unit physical operations and non-specific aspects of equipment)* - Michel CRINE	45	45	-	**8**

Optional courses

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