Two-Year Master Program (120 ECTS)

First Year

Compulsory courses

General Education

CHIM0015-3	*Analytical chemistry II, physical methods* - Bernard GILBERT	30	60	-	**6**
ELEC0431-1	*Electromagnetic energy transformation* - Christophe GEUZAINE	30	30	-	**5**
LOGI0001-2	*Supply Chain Management, Supply Chain Management* - Daniel DE WOLF	30	-	-	**3**

Training in processes

CHIM0040-1	*Process design workshop : mass and energy balances* - Georges HEYEN	-	45	-	**3**
SYST0004-1	*Modelling of large chemical systems* - Georges HEYEN	30	45	-	**6**
CHIM0081-1	*Industrial Chemistry Processes* - Albert GERMAIN	45	30	-	**6**

Chemical engineering training

CHIM0024-1	*Applied Physical Chemistry* - Benoît HEINRICHS, Jean-Paul PIRARD	30	45	-	**6**
CHIM0023-2	*Chemical Engineering (Reactor Study)* - Dominique TOYE	40	45	-	**7**
CHIM0083-2	*Chemical Engineering (Unit Physical Operations and Non-Specific Aspects of Apparatuses)* - Michel CRINE	45	45	-	**8**

Training in materials

CHIM0665-1	*Macromolecular chemistry and procedures* - Anne-Sophie DUWEZ, Jean-Marie LIÉGEOIS	30	30	-	**5**
CHIM0666-1	*Inorganic materials: manufacturing procedures and propriety* - Rudi CLOOTS	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.

Second year

Compulsory courses

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

Choose one of the following focus :

Research Focus

Optional courses

Choose one option from the following :

Option Chemical Engineering

Choose 3 modules amongst the following 6 :

Energy and sustainable development

CHIM0056-2	*Energy Aspects of Physical Unit Operations* - Michel CRINE	15	-	-	**2**
CHIM0664-1	*Combustible batteries and micro-batteries* - N... - Suppl : André RAHIER (TELNAT)	15	15	-	**3**
CHIM0071-3	*Reduction of pollutants from combustion* - Angélique LÉONARD	30	-	-	**3**

CHIM0039-1	*Chemical Upgrading of Coal* - Jean-Paul PIRARD	15	-	-	**2**

Environment and security

CHIM0011-2	*Environment Chemical Engineering* - Michel CRINE	15	15	-	**3**
GEOL0281-1	*Environmental aspects of industrial and mining activities* - Stoyan GAYDARDZHIEV	20	20	-	**4**
CHIM0074-1	*Process Security* - Albert GERMAIN	15	15	-	**3**

Biotechnology

CHIM0059-1	*Industrial Microbiology* - Philippe THONART	15	-	-	**2**
CHIM0667-1	*Transport phenomena in complex media* - Dominique TOYE	18	24	-	**4**
CHIM0063-1	*General principles of biology and biochemistry* - André MATAGNE	15	-	-	**2**
CHIM0067-1	*Biochemical Reactors II* - Michel CRINE	15	-	-	**2**

Procedures

CHIM0054-2	*Process design workshop : economic optimization* - Georges HEYEN	10	45	-	**4**
CHIM0051-1	*Applied Chemistry - Polymers* - Jean-Marie LIÉGEOIS	15	15	-	**3**
SYST0011-2	*Dynamics and control of chemical systems* - Georges HEYEN	20	15	-	**3**

Chemistry (synthetic products) and formulas

CHIM0668-1	*Stirring and mixing* - Dominique TOYE	15	15	-	**3**
CHIM0055-1	*Chemical Engineering of Polyphase Systems* - Pierre MARCHOT	18	24	-	**4**
CHIM0669-1	*Particular systems* - Michel CRINE	15	15	-	**3**

Materials Science

CHIM0064-1	*Aerospace materials and composite materials* - Jean-Marie LIÉGEOIS	20	-	-	**3**
CHIM0072-1	*Interface Physical Chemistry* - José MARIEN	15	15	-	**3**
CHIM0038-1	*The physics of polymer materials, including plasturgy* - Jean-Marie LIÉGEOIS	18	24	-	**4**

Option Materials

Choose 3 modules amongst the following 6 :

Materials Science

CHIM0064-1	*Aerospace materials and composite materials* - Jean-Marie LIÉGEOIS	20	-	-	**3**
CHIM0072-1	*Interface Physical Chemistry* - José MARIEN	15	15	-	**3**
CHIM0038-1	*The physics of polymer materials, including plasturgy* - Jean-Marie LIÉGEOIS	18	24	-	**4**

Material Physics

ELEN0004-1	*The physics of semiconductor devices* - Benoît VANDERHEYDEN	30	30	-	**5**
PHYS0055-1	*Introduction to Condensed Matter Physics* - Jean-Pierre GASPARD	30	30	-	**5**

Metallic substances

MECA0473-1	*Metallic materials Engineering* - Jacqueline LECOMTE#BECKERS	30	30	-	**5**
MECA0462-1	*MECA0462: materials selection* - Jacqueline LECOMTE#BECKERS	30	30	-	**5**

Manufacturing and recycling of materials

GEOL0276-2	*Solid waste processing* - Stoyan GAYDARDZHIEV	20	20	-	**4**
CHIM0051-1	*Applied Chemistry - Polymers* - Jean-Marie LIÉGEOIS	15	15	-	**3**
MECA0139-1	*Rapid Prototyping* - Thierry DORMAL	30	-	-	**3**

Organising the materials

	Prerequisite MECA0443-2 CAO / Méthode des éléments finis				
MECA0464-1	*Large deformation of solids* - Jean-Philippe PONTHOT	30	30	-	**5**

MECA0023-1	*Advanced Solid Mechanics* - Jean-Philippe PONTHOT	30	30	-	**5**

Characterisation of materials

MATH0049-1	*Morphological Characterization of Unordered Systems* - Silvia BLACHER	30	30	-	**5**
BIOL0114-3	*Electronic microscopies* - Philippe COMPÈRE	45	15	-	**5**

Professional Focus

Compulsory courses

GEST3000-1	*First steps in an enterprise* - Robert NONDONFAZ, Bernard SURLEMONT	0,5	-	-	**2**
GEST3001-1	*Organization analysis* - Annie CORNET	-	-	-	**3**
GEST3002-1	*Human Resources Management* - Jocelyne ROBERT	16	-	-	**3**
GEST3003-1	*Competitive Strategy in the Marketplace* (english) - Michael GHILISSEN	16	-	-	**3**
GEST3004-1	*Marketing (operations and management)* (english) - Michael GHILISSEN	16	-	-	**3**
GEST3005-1	*Accountancy and Finance* - Jacques BERWART	24	-	-	**4**
GEST3006-1	*Production (Supply chain management)* (english) - Yasemin ARDA	45	-	-	**3**
GSTG3001-1	*Internship* - COLLÉGIALITÉ	-	-	-	**6**

Optional courses

Choose one of the following courses :

GEST3010-1	*Production 2 (Supply Chain Management 2nd part)* (english) - Robert NONDONFAZ	-	-	-	**3**
GEST3011-1	*ICT in the service of the company* - Alain DUBOIS	30	-	-	**3**
GEST3012-1	*Financial and actuarial modelling tools* - Louis ESCH	16	-	-	**3**

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

First Year

Compulsory courses

CHIM0605-1	*Chemistry and inorganic materials* - Rudi CLOOTS	30	30	-	**5**
CHIM0604-1	*Chemistry and organic materials* - Christophe DETREMBLEUR	30	60	-	**7**
CHIM0012-2	*Chemical Kinetics* - Jean-Paul PIRARD	30	30	-	**5**
CHIM0022-2	*Introduction to Chemical Engineering* - Michel CRINE	30	30	-	**5**
PHYS0904-2	*Physics of materials (partim)* - Jacqueline LECOMTE#BECKERS, Jean-Marie LIÉGEOIS	20	10	-	**3**
CHIM0024-1	*Applied Physical Chemistry* - Benoît HEINRICHS, Jean-Paul PIRARD	30	45	-	**6**
CHIM0009-1	*Applied chemical thermodynamics* - Georges HEYEN	30	30	-	**5**
ELEC0431-1	*Electromagnetic energy transformation* - Christophe GEUZAINE	30	30	-	**5**
LOGI0001-2	*Supply Chain Management, Supply Chain Management* - Daniel DE WOLF	30	-	-	**3**
CHIM0081-1	*Industrial Chemistry Processes* - Albert GERMAIN	45	30	-	**6**
CHIM0665-1	*Macromolecular chemistry and procedures* - Anne-Sophie DUWEZ, Jean-Marie LIÉGEOIS	30	30	-	**5**
CHIM0666-1	*Inorganic materials: manufacturing procedures and propriety* - Rudi CLOOTS	30	30	-	**5**

Second year

Compulsory courses

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

Research Focus

Compulsory courses

CHIM0040-1	*Process design workshop : mass and energy balances* - Georges HEYEN	-	45	-	**3**
SYST0004-1	*Modelling of large chemical systems* - Georges HEYEN	30	45	-	**6**
CHIM0015-3	*Analytical chemistry II, physical methods* - Bernard GILBERT	30	60	-	**6**
CHIM0023-2	*Chemical Engineering (Reactor Study)* - Dominique TOYE	40	45	-	**7**
CHIM0083-2	*Chemical Engineering (Unit Physical Operations and Non-Specific Aspects of Apparatuses)* - Michel CRINE	45	45	-	**8**

Adjusted programme for bachelors in Chemical Sciences

This programme is defined in relation with the BAC in chemistry sciences organised by the University of Liège's Faculty of Sciences.
It is likely to be greatly modified for students with a BAC in chemistry sciences from other institutions, in terms of the knowledge gained and the personalm project, whilst remaining within the limits of 75+60 credits.

First Year

Compulsory courses

MATH0002-4	*Mathematical Analysis I* - Eric DELHEZ	30	25	-	**4**
DROI0724-1	*law and engineering* - Pascale LECOCQ	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	*Solid mechanics* (english) - Serge CESCOTTO	30	30	-	**5**
PHYS0904-2	*Physics of materials (partim)* - Jacqueline LECOMTE#BECKERS, Jean-Marie LIÉGEOIS	20	10	-	**3**
CHIM0009-1	*Applied chemical thermodynamics* - Georges HEYEN	30	30	-	**5**
CHIM0024-1	*Applied Physical Chemistry* - Benoît HEINRICHS, Jean-Paul PIRARD	30	45	-	**6**
ELEC0431-1	*Electromagnetic energy transformation* - Christophe GEUZAINE	30	30	-	**5**
LOGI0001-2	*Supply Chain Management, Supply Chain Management* - Daniel DE WOLF	30	-	-	**3**
CHIM0081-1	*Industrial Chemistry Processes* - Albert GERMAIN	45	30	-	**6**
CHIM0665-1	*Macromolecular chemistry and procedures* - Anne-Sophie DUWEZ, Jean-Marie LIÉGEOIS	30	30	-	**5**
CHIM0666-1	*Inorganic materials: manufacturing procedures and propriety* - Rudi CLOOTS	30	30	-	**5**

Second year

Compulsory courses

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

Research Focus

Compulsory courses

CHIM0040-1	*Process design workshop : mass and energy balances* - Georges HEYEN	-	45	-	**3**
SYST0004-1	*Modelling of large chemical systems* - Georges HEYEN	30	45	-	**6**
CHIM0023-2	*Chemical Engineering (Reactor Study)* - Dominique TOYE	40	45	-	**7**
CHIM0083-2	*Chemical Engineering (Unit Physical Operations and Non-Specific Aspects of Apparatuses)* - Michel CRINE	45	45	-	**8**

Optional courses

[...]	A course to be chosen from the 2nd year of the regular masters programme