

## Cycle view of the study programme

B1 Or Th Pr Au Cr

### Focus optional courses (B2 : 27Cr)

#### Period 1 and 2

Choice n°1:

Choose one module from : (B2 : 6Cr)

#### CHIM2.11 Food supplements

GBLX0058-1	<i>Complement of food formulations engineering and sensory analysis</i> - Christophe BLECKER	B2	Q1	12	6	-	2
GBLX0059-2	<i>Logistics in food industry</i> - Mohamed AYADI - [3h FT, 4h SEM]	B2	Q1	9	6	[+]	2
GBLX0060-2	<i>Microbial ecology of water and wastewater</i> (english language) - Frank DELVIGNE - [2h SEM]	B2	Q1	7	9	[+]	2

#### CHIM2.12 From gene to protein

CHIM0716-1	<i>From gene to protein</i> - Magali DELEU, Patrick FICKERS, Sébastien MASSART, Martine SCHROYEN, Luc WILLEMS - [12h AUTR]	B2	Q1	12	24	[+]	6
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#### CHIM2.24 Extraction, purification, characterization and valuation of biosourced molecules

CHIM0722-1	<i>Extraction, purification, characterization and valorization of biosourced molecules</i> (english language) - Christian DAMBLON, MarieLaure FAUCONNIER, Manon GENVA, Loïc QUINTON, Aurore RICHEL	B2	Q1	4	36	-	6
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[...] Possibility to choose between 2 and 6 credits from the list of replacement courses

Choice n°2:

Choose one module from : (B2 : 9Cr)

#### CHIM2.14 Microbial biotechnology - applications

CHIM0719-1	<i>Microbial biotechnology - applications</i> (english language) - Frank DELVIGNE, Patrick FICKERS, Philippe JACQUES, Marc ONGENA - [96h Proj.]	B2	Q1	2	-	[+]	9
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#### CHIM2.15 Food Science

ALIM0006-1	<i>Food science</i> - Christophe BLECKER, Sabine DANTHINE - [6h AUTR]	B2	Q1	32	32	[+]	7
ALIM0018-1	<i>Food analysis</i> (english language) - Giorgia PURCARO	B2	Q1	3	15	-	2

[...] Possibility to choose between 2 and 6 credits from the list of replacement courses

Choice n°3:

Choose one module for 4 credits among: (B2 : 4Cr)

#### CHIM2.16 Chemical contaminants analysis and risks of explosions

CHIM0720-1	<i>Analysis of chemical contaminants</i> (english language) - Giorgia PURCARO - [2h AUTR]	B2	Q1	-	16	[+]	2
CHIM0692-1	<i>Risks of using phytopharmaceutical products and biocides</i> - Jeroen MEERSMANS - [6h SEM]	B2	Q1	12	-	[+]	2

#### CHIM2.17 Multivaried analysis

INFO8008-1	<i>Multivaried analysis 2: data mining and machine learning</i> (english language) - Yves BROSTAU, Juan Antonio FERNANDEZ PIERNA, Hélène SOYEURT	B2	Q1	12	26	-	4
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Notice : can only be chosen once in the curriculum

[...] Possibility to choose between 2 and 4 credits from the list of replacement courses

Choice no. 4:

Choose one module for 4 credits: (B2 : 4Cr)

**CHIM2.18 Chemistry of bioenergy production**

CHIM9316-1 *Chemistry of bioenergy production, Introduction* (english language) - B2 Q1 1 48 - 4  
Aurore RICHEL

**CHIM2.19 Applied immunology**

CHIM9325-1 *Applied immunology* - Malik HAMAÏDIA, Marc ONGENA, B2 Q1 12 24 - 4  
Luc WILLEMS

**CHIM2.20 Machine learning**

INFO8008-1 *Multivaried analysis 2: data mining and machine learning* (english language) - Yves BROSTAU, Juan Antonio FERNANDEZ PIERNA, B2 Q1 12 26 - 4  
Hélène SOYEURT

*Notice* : can only be chosen once in the curriculum

[...] Possibility to choose between 2 and 4 credits from the list of replacement courses

Choose a language module from : (B2 : 4Cr)

**Periods 3 and 4**

**CHIM 2.31 English (B2 : 4Cr)**

LANG2955-2 *Specialised English for chemistry and bio-industries (level C1 - Presentation)* - Sophie DEPOTERRE, Estelle MAYARD, B2 TA - 12 [+] 4  
Lelania SPERRAZZA, Fiona THEWISSEN - [36h AUTR]

**All year round**

**CHIM 2.32 Dutch (B2 : 4Cr)**

LANG9914-1 *Dutch Intermediate Level* (dutch language) - Catherine PEETERS B2 TA 18 18 - 4

**CHIM 2.33 Spanish (B2 : 4Cr)**

LANG9915-1 *Spanish - beginners* - Valérie COYETTE B2 TA 18 18 - 4

**Possibility to choose between 2 and 6 credits among the following courses, replacing the B2 elective courses:**

ENVT3129-1 *Evaluating sustainability* - Andrea DI MARIA, Angélique LÉONARD - B2 Q2 12 16 [+] 3  
[2h SEM]

ENVT3050-1 *Quantification of ecosystem services* - Marc DUFRÊNE - [6h AUTR] B2 Q1 9 5 [+] 2

BIOD0001-3 *Biodiversity management* - Arnaud MONTY - [6h SEM] B2 Q1 18 - [+] 2

VEGE0037-1 *Innovative system of plant production* B2 Q2 6  
- *Urban agriculture* - Haïssam JIJAKLI 13 13 -  
- *Developmental physiology applied to plant productions* - 12 - [+]  
Pierre DELAPLACE - [6h FT]  
- *Physical parameters control of plant productions in controlled conditions* - Vincent LEEMANS 9 - -

VEGE0028-1 *Methods for managing plant health* - Frédéric FRANCIS, B2 Q2 42 15 - 6  
Olivier GUELTON, Eric HAUBRUGE, François HENRIET,  
Haïssam JIJAKLI, Sébastien MASSART, François VERHEGGEN

*Notice* : The juries for the Masters in Bioengineering reserve the right not to organise specific classes if they are chosen by fewer than five students.

**Core curriculum compulsory courses (B1 : 60Cr, B2 : 33Cr)**

**Periods 1 and 2**
**CHIM1.10 Multivaried analysis**

STAT1213-1 *Multivariate analysis 1: data exploration and structuring* - Yves BROSTAUX B1 Q1 9 9 - 2

**CHIM1.11 Analytical Chemistry : instrumental techniques**

CHIM9246-2 *Chemical analysis : instrumental techniques (english language)* - Giorgia PURCARO - [5h SEM] B1 Q1 21 28 [+] 6

**CHIM1.12 Food preservation and safety**

ALIM0001-1 *Food hygiene* - Mohamed AYADI, Georges DAUBE - [2h SEM] B1 Q1 10 6 [+] 2

ALIM0015-1 *Food sanitary safety* - Mohamed AYADI - [2h SEM] B1 Q1 16 6 [+] 2

ALIM0017-1 *Agro-food engineering procedures* - Sabine DANTHINE, Nicolas JACQUET B1 Q1 24 24 - 4

**CHIM1.13 Applied genoproteomics**

CHIM0715-1 *Applied genoproteomics (english language)* - Magali DELEU, Patrick FICKERS, Sébastien MASSART, Luc WILLEMS - [6h AUTR] B1 Q1 18 - [+] 2

**CHIM1.14 Biological chemistry and processes engineering**

CHIM0718-1 *Biological chemistry and corresponding processes engineering, Introduction (english language)* - Aurore RICHEL - [2h FT] B1 Q1 16 23 [+] 5

**CHIM1.15 Nutrition**

ALIM0010-3 *Food, human nutrition and dietetics (english language)* - Jérôme BINDELLE B1 Q1 18 - - 2

**Corequisite :**

LANG2954-1 - Pratique de l'anglais scientifique de bioingénieur (CHIB) (niveau B2+)

**Periods 3 and 4**
**CHIM1.30 Core curriculum Q2**

MANA0004-1 *Portfolio (Master)* - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR] B1 TA - - [+] 2

LANG2954-1 *Practice of Scientific English for bioengineers (CHIB) (level B2+)* - Sophie DEPOTERRE, Estelle MAYARD, Lelania SPERRAZZA, Fiona THEWISSEN - [36h AUTR] B1 TA - 12 [+] 4

**Corequisite :**

CHIM9245-1 - Advanced chromatographic techniques

CHIM9254-1 - Practice of natural product chemistry

ALIM0010-3 - Food, human nutrition and dietetics

**CHIM1.31 Microbial processes and interactions**

CHIM0717-1 *Microbial processes and interactions (english language)* - Frank DELVIGNE, Patrick FICKERS, Philippe JACQUES, Marc ONGENA, JeanClaude TWIZERE - [9h AUTR] B1 Q2 57 18 [+] 8

**CHIM1.32 Engineering and scaling conservation procedures**

INGE0014-1 *Engineering and scaling conservation procedures* - Nicolas JACQUET, Paul MALUMBA KAMBA - [6h AUTR] B1 Q2 6 12 [+] 2

INGE0002-1 *Refrigeration and drying* - Nicolas JACQUET, Paul MALUMBA KAMBA B1 Q2 18 6 - 2

**CHIM1.33 Food industry technologies**

ALIM0012-1 *Technology of fats* - Sabine DANTHINE - [3h FT] B1 Q2 18 30 [+] 4

**Period 3**

**CHIM1.34 Food engineering**

ALIM0007-1	<i>Physical chemistry of formulations</i> - Christophe BLECKER	B1	Q2	16	8	-	2
ALIM0005-1	<i>Food formulations engineering</i> - Christophe BLECKER	B1	Q2	16	8	-	2

**CHIM1.35 Practical chemistry of natural substances**

CHIM9245-1	<i>Advanced chromatographic techniques</i> (english language) - Giorgia PURCARO	B1	Q2	15	3	-	2
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**Corequisite :**

LANG2954-1 - Pratique de l'anglais scientifique de bioingénieur (CHIB) (niveau B2+)

CHIM9246-2 - Chemical analysis : instrumental techniques

CHIM9254-1	<i>Practice of natural product chemistry</i> (english language) - Manon GENVA, Aurore RICHEL	B1	Q2	3	35	-	4
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**Corequisite :**

LANG2954-1 - Pratique de l'anglais scientifique de bioingénieur (CHIB) (niveau B2+)

**CHIM1.36 Immunology**

CHIM9321-1	<i>Immunology</i> - Bénédicte MACHIELS	B1	Q2	27	-	-	3
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**Period 4**

**AGRO2.30 Final work and internship**

RTFE2008-1	<i>Thesis in chemistry and bio-industries</i> - Giorgia PURCARO	B2	Q2	-	-	-	24
RSTG0002-1	<i>Internship and professional relations</i> - Catherine COLAUX, Thomas DOGOT, Patrick FICKERS	B2	TA	12	-	-	8

**CHIM2.10 Research project and entrepreneurship**

CHIM9324-1	<i>Research projects or entrepreneurship</i> - Philippe JACQUES - [8h AUTR]	B2	Q1	2	2	[+]	1
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**Optional activities (B1 : 14Cr, B2 : 4Cr)**

RSTG0011-1	<i>Additional internship</i> - Aurore DEGRÉ	B1	TA	-	-	-	5
HULG9547-1	<i>French course for IN mobility students (S1)</i> - N...	B1	Q1	-	-	-	3
HULG9548-1	<i>French course for IN mobility students (S2)</i> - N...	B1	Q2	-	-	-	3
HULG9546-1	<i>Erasmus: integration weeks</i> - N...	B1	Q1	-	-	-	3
INFO9013-1	<i>Multivariate analysis 3: Data mining et Machine Learning: advanced</i> (english language) - Yves BROSTAUX, David COLIGNON, Benoît MERCATORIS, Hélène SOYEURT	B2	Q2	12	28	-	4

Notice : INFO8001-1 prerequisite of the INFO9013-1 course

**Bridging courses Master in chemistry and bio-industries**

**Compulsory courses (B0 : 60Cr)**

**Common core courses**

GEST3028-2	<i>Accounting and management</i> - Thomas DOGOT	B0	Q1	22	26	-	4
GEST3773-1	<i>Management of quality</i> - Mohamed AYADI, Sébastien MASSART - [6h AUTR]	B0	Q1	18	-	[+]	2
STAT2004-1	<i>Applied statistics : First part</i> - Yves BROSTAUX	B0	Q1	12	12	-	2
STAT2005-1	<i>Applied statistic : Second part</i> - Yves BROSTAUX	B0	Q2	12	12	-	2

**Corequisite :**

	STAT2004-1 - Statistique appliquée : 1ère partie								
PSYC5897-3	<i>Team, organization and change</i> - Daniel FAULX, Véronique JANS, Tiber MANFREDINI - [44h SEM] <b>Corequisite :</b> MANA0003-1 - Portfolio (Bachelier) GEST3773-1 - Gestion de la qualité GEST3028-2 - Comptabilité et gestion des entreprises	B0	TA	4	-	[+]	2		
MANA0003-1	<i>Portfolio (Bachelor)</i> - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR] <b>Corequisite :</b> PSYC5897-3 - Equipe, organisation & changement	B0	TA	-	-	[+]	2		
RSTG0008-1	<i>Internship (Bachelor)</i> - Hélène SOYEURT - [18h AUTR] <b>Corequisite :</b> PSYC5897-3 - Equipe, organisation & changement GEST3028-2 - Comptabilité et gestion des entreprises GEST3773-1 - Gestion de la qualité	B0	TA	6	-	[+]	2		
BIOL2044-1	<i>Plant physiology</i> - Patrick DU JARDIN	B0	Q1	27	9	-	3		
BIOL2013-2	<i>General microbiology, Introduction</i> - Patrick FICKERS, Philippe JACQUES	B0	Q1	16	8	-	2		
ENVT2044-1	<i>General ecology</i> - Grégory MAHY, Arnaud MONTY	B0	Q1	24	-	-	2		
INFO2038-1	<i>Computer science and algorithmic</i> - Hélène SOYEURT	B0	Q1	2	22	-	2		
MATH2016-1	<i>General mathematics and modelling of dynamics systems</i> - Jérôme BINDELLE, Catherine CHARLES, Frank DELVIGNE, Benoît MERCATORIS - Suppl : Gauthier LIGOT	B0	Q1	24	24	-	4		
PHYS3036-1	<i>Environmental physics</i> - Bernard LONGDOZ	B0	Q1	18	18	-	3		
LANG2966-2	<i>English language: level 3</i> - Sophie DEPOTERRE, Estelle MAYARD, Lelania SPERRAZZA, Fiona THEWISSEN - [48h E-Lrng]	B0	TA	-	24	[+]	4		
INGE0008-1	<i>Multidisciplinary experimental project</i> - Yves BROSTAUX, Pierre DELAPLACE, Sébastien MASSART, Benoît MERCATORIS, Jacques MIGNON, Arnaud MONTY - [60h AUTR] <b>Corequisite :</b> ENVT2044-1 - Ecologie générale BIOL2044-1 - Physiologie végétale GEST3773-1 - Gestion de la qualité STAT2004-1 - Statistique appliquée : 1ère partie STAT2005-1 - Statistique appliquée : 2ème partie	B0	TA	6	6	[+]	6		
<b>Subject : Chemistry and bioindustry</b>									
BIAA0003-1	<i>Modelling physical and biological processes</i> - Frank DELVIGNE	B0	Q2	24	-	-	2		
BIOL2015-3	<i>Molecular biology</i> - Patrick FICKERS <b>Corequisite :</b> BIOL2016-3 - Génétique générale	B0	Q2	24	-	-	2		
BIOL2016-3	<i>General genetics</i> - Nicolas GENGLER, Ludivine LASSOIS <b>Corequisite :</b> BIOL2015-3 - Biologie moléculaire	B0	Q2	12	12	-	2		
BIOL2019-1	<i>Theoretical chemistry and physics applied to biomolecules structural analysis</i> - Christian DAMBLON, Loïc QUINTON	B0	Q2	24	24	-	4		
CHIM9269-2	<i>Catalysis</i> - MarieLaure FAUCONNIER - [2h AUTR]	B0	Q2	6	12	[+]	2		
CHIM9242-4	<i>Fundamentals of quantitative analytical chemistry</i> - Giorgia PURCARO	B0	Q2	16	32	-	4		
ALIM0013-2	<i>Techniques of food preservation</i> - Christophe BLECKER <b>Prerequisite :</b> BIAA0002-1 - Technologie agricole et alimentaire	B0	Q2	24	-	-	2		

**Optional activity (B0 : 5Cr)**

RSTG0012-1 *Additional internship* - Aurore DEGRÉ

B0 TA - - - 5