Cycle view of the study programme

		Bl	Or	Th	Pr	Au	Cr

Notice : The Master's juries in bioengineering reserve the right not to organise elective courses if they are selected 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	B1	Q1	18	6	-	**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 **Corequisite :** LANG2954-1 - Pratique de l'anglais scientifique de bioingénieur (CHIB) (niveau B2+)	B1	Q1	18	-	-	**2**

Periods 3 and 4

CHIM1.30 Core curriculum Q2

MANA0004-1	*Portfolio (Master)* - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Pierre DELAPLACE, Dorothée GOFFIN - [24h AUTR]	B1	TA	-	-	[+]	**2**
LANG2954-1	*Practice of Scientific English for bioengineers (CHIB) (level B2+)* - Estelle MAYARD, Lelania SPERRAZZA - [36h AUTR] **Corequisite :** CHIM9245-1 - Advanced chromatographic techniques CHIM9254-1 - Practice of natural product chemistry ALIM0010-3 - Food, human nutrition and dietetics	B1	TA	-	12	[+]	**4**

CHIM1.31 Microbial processes and interactions

CHIM9334-1	*Bioprocess engineering* (english language) - Frank DELVIGNE	B1	Q2	24	18	-	**4**
CHIM9335-1	*Downstream processing operations* - Patrick FICKERS	B1	Q2	20	4	-	**2**
CHIM9336-1	*Applied microbial ecology* (english language) - Marc ONGENA	B1	Q2	20	4	-	**2**

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	*Physical chemistry of formulations* - Christophe BLECKER	B1	Q2	16	8	-	**2**
ALIM0005-1	*Food formulations engineering* - Christophe BLECKER	B1	Q2	16	8	-	**2**

CHIM1.35 Practical chemistry of natural substances

CHIM9245-1	*Advanced chromatographic techniques* (english language) - Giorgia PURCARO **Corequisite :** LANG2954-1 - Pratique de l'anglais scientifique de bioingénieur (CHIB) (niveau B2+) CHIM9246-2 - Chemical analysis : instrumental techniques	B1	Q2	15	3	-	**2**
CHIM9254-1	*Practice of natural product chemistry* (english language) - Manon GENVA **Corequisite :** LANG2954-1 - Pratique de l'anglais scientifique de bioingénieur (CHIB) (niveau B2+)	B1	Q2	3	35	-	**4**

CHIM1.36 Immunology

CHIM9321-1	*Immunology* - N...	B1	Q2	27	-	-	**3**

Period 4

AGRO2.30 Final work and internship

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

CHIM2.10 Research project and entrepreneurship

CHIM9324-1	*Research projects or entrepreneurship* - Philippe JACQUES - [8h AUTR]	B2	Q1	2	2	[+]	**1**

Optional activities (B1 : 14Cr, B2 : 4Cr)

RSTG0011-1	*Additional internship* - Pierre DELAPLACE	B1	TA	-	-	-	**5**
HULG9547-1	*French course for IN mobility students (S1)* - N...	B1	Q1	-	-	-	**3**
HULG9548-1	*French course for IN mobility students (S2)* - N...	B1	Q2	-	-	-	**3**
HULG9546-1	*Erasmus: integration weeks* - N...	B1	Q1	-	-	-	**3**
INFO9013-1	*Multivaried analysis 3: Data mining et Machine Learning: advanced* (english language) - Yves BROSTAUX, David COLIGNON, Benoît MERCATORIS, Hélène SOYEURT *Notice* : INFO8008-2: prerequisite for the course INFO9013-1	B2	Q2	12	28	-	**4**

Focus optional courses (B2 : 27Cr)

Period 1 and 2

Choice n°1:

Choose one of the following modules : (B2 : 6Cr)

CHIM2.11 Food supplements (B2 : 6Cr)

Choose courses totalling 7 ECTS from the following : (B2 : 6Cr)

GBLX0058-1	*Complement of food formulations engineering and sensory analysis* - Christophe BLECKER	B2	Q1	12	6	-	**2**
GBLX0059-2	*Logistics in food industry* - Mohamed AYADI - [3h FT, 4h SEM]	B2	Q1	9	6	[+]	**2**
GBLX0060-2	*Food and environmental biotechnology* (english language) - Frank DELVIGNE - [2h SEM]	B2	Q1	7	9	[+]	**2**

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

CHIM2.12 From gene to protein (B2 : 6Cr)

CHIM0716-1	*From gene to protein* - Magali DELEU, Patrick FICKERS, Malik HAMAÏDIA, Sébastien MASSART, Martine SCHROYEN, Luc WILLEMS - [12h AUTR]	B2	Q1	12	24	[+]	**6**

CHIM2.24 Extraction, purification, characterization and valuation of biosourced molecules (B2 : 6Cr)

CHIM0722-1	*Extraction, purification, characterization and valorization of biosourced molecules* (english language) - Christian DAMBLON, MarieLaure FAUCONNIER, Manon GENVA, Loïc QUINTON	B2	Q1	4	36	-	**6**

Choice n°2:

Choose one of the following modules : (B2 : 9Cr)

CHIM2.14 Microbial biotechnology - applications (B2 : 9Cr)

CHIM0719-1	*Microbial biotechnology - applications* (english language) - Frank DELVIGNE, Patrick FICKERS, Philippe JACQUES, Marc ONGENA - [96h Proj.]	B2	Q1	2	-	[+]	**9**

CHIM2.15 Food Science (B2 : 9Cr)

Choose courses totalling 9 ECTS from the following : (B2 : 9Cr)

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

[...] Choice of between 2 and 9 credits from the list of replacement courses.

Choice n°3:

Choose one of the following modules : (B2 : 4Cr)

CHIM2.16 Chemical contaminants analysis and risks of explosions (B2 : 4Cr)

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

CHIM2.17 Multivaried analysis (B2 : 4Cr)

INFO8008-2	*Multivaried analysis 2: data mining et machine learning* (english language) - *Introduction* - Yves BROSTAUX, Juan Antonio FERNANDEZ PIERNA, Hélène SOYEURT - *In-depth study* - Yves BROSTAUX, Juan Antonio FERNANDEZ PIERNA, Hélène SOYEURT *Notice* : can only be chosen once in the curriculum	B2	Q1 9 3	 18 6	 - -		**4**

Choice no. 4:

Choose one of the following modules : (B2 : 4Cr)

CHIM2.18 Chemistry of bioenergy production (B2 : 4Cr)

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

CHIM2.19 Applied immunology (B2 : 4Cr)

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

CHIM2.20 Machine learning (B2 : 4Cr)

INFO8008-2	*Multivaried analysis 2: data mining et machine learning* (english language) - *Introduction* - Yves BROSTAUX, Juan Antonio FERNANDEZ PIERNA, Hélène SOYEURT - *In-depth study* - Yves BROSTAUX, Juan Antonio FERNANDEZ PIERNA, Hélène SOYEURT *Notice* : can only be chosen once in the curriculum	B2	Q1 9 3	 18 6	 - -		**4**

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

All year round

CHIM 2.31 English (B2 : 4Cr)

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

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**

Replacement courses:

ENVT3129-1	*Evaluating sustainability* - Andrea DI MARIA - [2h SEM]	B2	Q2	12	16	[+]	**3**
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* - *Urban agriculture* - Haissam JIJAKLI - *Developmental physiology applied to plant productions* - Pierre DELAPLACE - [6h FT] - *Physical parameters control of plant productions in controlled conditions* - Vincent LEEMANS	B2	Q2 13 12 9	 13 - -	 - [+] -		**6**
VEGE0028-1	*Methods for managing plant health* - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, François HENRIET, Haissam JIJAKLI, Sébastien MASSART, François VERHEGGEN	B2	Q2	42	15	-	**6**

Bridging courses Master in chemistry and bio-industries

Compulsory courses (B0 : 60Cr)

Common core courses

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

STAT2005-1	*Applied statistic : Second part* - Yves BROSTAUX **Corequisite :** STAT2004-1 - Statistique appliquée : 1ère partie	B0	Q2	12	12	-	**2**
PSYC5897-3	*Team, organization and change* - Audrey BABIC, Tiber MANFREDINI, Elise SEGHERS - [44h SEM] **Corequisite :** MANA0003-1 - Portfolio (Bachelier) GEST3773-1 - Gestion de la qualité GEST3028-2 - Comptabilité et gestion des entreprises	B0	TA	4	-	[+]	**2**
MANA0003-1	*Portfolio (Bachelor)* - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Pierre DELAPLACE, Dorothée GOFFIN - [24h AUTR] **Corequisite :** PSYC5897-3 - Equipe, organisation & changement	B0	TA	-	-	[+]	**2**
RSTG0008-1	*Internship (Bachelor)* - Hélène SOYEURT - [18h AUTR] **Corequisite :** PSYC5897-3 - Equipe, organisation & changement GEST3028-2 - Comptabilité et gestion des entreprises GEST3773-1 - Gestion de la qualité	B0	TA	6	-	[+]	**2**
BIOL2044-1	*Plant physiology* - Patrick DU JARDIN	B0	Q1	27	9	-	**3**
BIOL2013-2	*General microbiology, Introduction* - Patrick FICKERS, Philippe JACQUES	B0	Q1	16	8	-	**2**
ENVT2044-1	*General ecology* - Grégory MAHY, Arnaud MONTY	B0	Q1	24	-	-	**2**
INFO2038-1	*Computer science and algorithmic* - Hélène SOYEURT	B0	Q1	2	22	-	**2**
MATH2016-1	*General mathematics and modelling of dynamics systems* - Jérôme BINDELLE, Catherine CHARLES, Frank DELVIGNE, Gauthier LIGOT, Benoît MERCATORIS	B0	Q1	24	24	-	**4**
PHYS3036-1	*Environmental physics* - Bernard LONGDOZ	B0	Q1	18	18	-	**3**
LANG2966-2	*English language: level 3* - Lelania SPERRAZZA - [48h E-Lrng]	B0	TA	-	24	[+]	**4**
INGE0008-1	*Multidisciplinary experimental project* - Yves BROSTAUX, Pierre DELAPLACE, Sébastien MASSART, Benoît MERCATORIS, Jacques MIGNON, Arnaud MONTY - [60h AUTR] **Corequisite :** 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**

Chemistry and bio-industries

BIAA0003-1	*Modelling physical and biological processes* - Frank DELVIGNE	B0	Q2	24	-	-	**2**
BIOL2015-3	*Molecular biology* - Patrick FICKERS **Corequisite :** BIOL2016-3 - Génétique générale	B0	Q2	24	-	-	**2**
BIOL2016-3	*General genetics* - Nicolas GENGLER, Ludivine LASSOIS **Corequisite :** BIOL2015-3 - Biologie moléculaire	B0	Q2	12	12	-	**2**
BIOL2019-1	*Theoretical chemistry and physics applied to biomoleculs structural analysis* - Christian DAMBLON, Loïc QUINTON	B0	Q2	24	24	-	**4**
CHIM9269-2	*Catalysis* - MarieLaure FAUCONNIER - [2h AUTR]	B0	Q2	6	12	[+]	**2**
CHIM9242-4	*Fundamentals of quantitative analytical chemistry* - Giorgia PURCARO	B0	Q2	16	32	-	**4**
ALIM0013-2	*Techniques for preparing and preserving foods*	B0	Q2				**2**

	- *General concepts* - Christophe BLECKER			21	-	-
	- *In-depth study for bioengineers* - Christophe BLECKER			3	-	-
	Prerequisite : BIAA0002-1 - Technologie agricole et alimentaire					

Optional activity (B0 : 5Cr)

RSTG0012-1	*Additional internship* - Pierre DELAPLACE	B0	TA	-	-	-	**5**