

Block view of the study programme

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Block 1

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.

Cours obligatoires du tronc commun

Periods 1 and 2

CHIM1.10 Multivaried analysis

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

CHIM1.11 Analytical Chemistry : instrumental techniques

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

CHIM1.12 Food preservation and safety

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

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

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

CHIM1.13 Applied genoproteomics

CHIM0715-1 *Applied genoproteomics* (english language) - Magali DELEU, Patrick FICKERS, Sébastien MASSART, Luc WILLEMS - [6h AUTR] 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] Q1 16 23 [+] 5

CHIM1.15 Nutrition

ALIM0010-3 *Food, human nutrition and dietetics* (english language) - Jérôme BINDELLE 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] TA - - [+] 2

LANG2954-1 *Practice of Scientific English for bioengineers (CHIB) (level B2+)* - Sophie DEPOTERRE - [36h AUTR] 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] 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] Q2 6 12 [+] 2

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

CHIM1.33 Food industry technologies

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

Period 3

CHIM1.34 Food engineering

ALIM0007-1 *Physical chemistry of formulations* - Christophe BLECKER Q2 16 8 - 2

ALIM0005-1 *Food formulations engineering* - Christophe BLECKER Q2 16 8 - 2

CHIM1.35 Practical chemistry of natural substances

CHIM9245-1 *Advanced chromatographic techniques (english language)* - Giorgia PURCARO Q2 15 3 - 2

Corequisite :

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

CHIM9246-2 - Chemical analysis : instrumental techniques

CHIM9254-1 *Practice of natural product chemistry (english language)* - Manon GENVA, Aurore RICHEL Q2 3 35 - 4

Corequisite :

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

CHIM1.36 Immunology

CHIM9321-1 *Immunology* - Bénédicte MACHIELS Q2 27 - - 3

Optional activities

RSTG0011-1 *Additional internship* - Aurore DEGRÉ TA - - - 5

HULG9547-1 *French course for IN mobility students (S1)* - N... Q1 - - - 3

HULG9548-1 *French course for IN mobility students (S2)* - N... Q2 - - - 3

HULG9546-1 *Erasmus: integration weeks* - N... Q1 - - - 3

Block 2

Cours au choix de la finalité

Period 1 and 2

Choice n°1:

Choose one module from :

CHIM2.11 Food supplements

GBLX0058-1 *Complement of food formulations engineering and sensory analysis* - Christophe BLECKER Q1 12 6 - 2

GBLX0059-2 *Logistics in food industry* - Mohamed AYADI - [3h FT, 4h SEM] Q1 9 6 [+] 2

GBLX0060-2 *Microbial ecology of water and wastewater (english language)* - Frank DELVIGNE - [2h SEM] Q1 7 9 [+] 2

CHIM2.12 From gene to protein

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

CHIM2.24 Extraction, purification, characterization and valuation of biosourced molecules

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

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

Choice n°2:

Choose one module from :

CHIM2.14 Microbial biotechnology - applications

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

CHIM2.15 Food Science

ALIM0006-1 *Food science* - Christophe BLECKER, Sabine DANTHINE - [6h AUTR] Q1 32 32 [+] 7

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

Choice n°3:

Choose one module for 4 credits among:

CHIM2.16 Chemical contaminants analysis and risks of explosions

CHIM0720-1 *Analysis of chemical contaminants* (english language) - Giorgia PURCARO - [2h AUTR] Q1 - 16 [+] 2

CHIM0692-1 *Risks of using phytopharmaceutical products and biocides* - Jeroen MEERSMANS - [6h SEM] Q1 12 - [+] 2

CHIM2.17 Multivaried analysis

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

Notice : can only be chosen once in the curriculum

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

Choix n° 4 :

Choose one module for 4 credits:

CHIM2.18 Chemistry of bioenergy production

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

CHIM2.19 Applied immunology

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

CHIM2.20 Machine learning

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

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 :

Periods 3 and 4

CHIM 2.31 English

LANG2955-2 *Pratique de l'anglais de spécialité en chimie et bio-industries (niveau C1 - Présentation)* - Sophie DEPOTERRE, Estelle MAYARD - [36h AUTR] TA - 12 [+] 4

All year round

CHIM 2.32 Dutch

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

CHIM 2.33 Spanish

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

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Cours obligatoires du tronc commun

Period 4

AGRO2.30 Final work and internship

RTFE2008-1 *Thesis in chemistry and bio-industries* - Giorgia PURCARO Q2 - - - 24

RSTG0002-1 *Internship and professional relations* - Catherine COLAUX, Thomas DOGOT, Patrick FICKERS TA 12 - - 8

CHIM2.10 Research project and entrepreneurship

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

Optional activity

INFO9013-1 *Multivaried analysis 3: Data mining et Machine Learning: advanced (english language)* - Yves BROSTAUX, David COLIGNON, Benoît MERCATORIS, Hélène SOYEURT Q2 12 28 - 4

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

Bloc d'aménagement du programme de l'année

Additional ECTS Master in chemistry and bio-industries

Compulsory courses

Common core courses

GEST3028-2 *Accounting and management* - Thomas DOGOT Q1 22 26 - 4

GEST3773-1 *Management of quality* - Mohamed AYADI, Sébastien MASSART - [6h AUTR] Q1 18 - [+] 2

STAT2004-1 *Applied statistics : First part* - Yves BROSTAUX Q1 12 12 - 2

STAT2005-1 *Applied statistic : Second part* - Yves BROSTAUX Q2 12 12 - 2

Corequisite :

STAT2004-1 - Statistique appliquée : 1ère partie

PSYC5897-3 *Team, organization and change* - Daniel FAULX, Véronique JANS, Tiber MANFREDINI - [44h SEM] TA 4 - [+] 2

Corequisite :

MANA0003-1 - Portfolio (Bachelier)

GEST3773-1 - Gestion de la qualité

GEST3028-2 - Comptabilité et gestion des entreprises

MANA0003-1 *Portfolio (Bachelor)* - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR] TA - - [+] 2

Corequisite :

PSYC5897-3 - Equipe, organisation & changement

RSTG0008-1 *Internship (Bachelor)* - Hélène SOYEURT - [18h AUTR] TA 6 - [+] 2

Corequisite :

PSYC5897-3 - Equipe, organisation & changement

GEST3028-2 - Comptabilité et gestion des entreprises

GEST3773-1 - Gestion de la qualité

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|------------|---|----|----|----|-----|---|
| BIOL2044-1 | <i>Plant physiology</i> - Patrick DU JARDIN | Q1 | 27 | 9 | - | 3 |
| BIOL2013-2 | <i>General microbiology, Introduction</i> - Patrick FICKERS, Philippe JACQUES | Q1 | 16 | 8 | - | 2 |
| ENVT2044-1 | <i>General ecology</i> - Grégory MAHY, Arnaud MONTY | Q1 | 24 | - | - | 2 |
| INFO2038-1 | <i>Computer science and algorithmic</i> - Hélène SOYEURT | Q1 | 2 | 22 | - | 2 |
| MATH2016-1 | <i>General mathematics and modelling of dynamics systems</i> - Jérôme BINDELLE, Catherine CHARLES, Frank DELVIGNE, Adeline FAYOLLE, Benoît MERCATORIS - Suppl : Gauthier LIGOT | Q1 | 24 | 24 | - | 4 |
| PHYS3036-1 | <i>Environmental physics</i> - Bernard LONGDOZ | Q1 | 18 | 18 | - | 3 |
| LANG2966-2 | <i>English language: level 3</i> - Sophie DEPOTERRE, Estelle MAYARD, Fiona THEWISSEN - [48h E-Lrng] | TA | - | 24 | [+] | 4 |
| INGE0008-1 | <i>Multidisciplinary experimental project</i> - 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 | TA | 6 | 6 | [+] | 6 |

Subject : Chemistry and bioindustry

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|------------|--|----|----|----|-----|---|
| BIAA0003-1 | <i>Modelling physical and biological processes</i> - Frank DELVIGNE | Q2 | 24 | - | - | 2 |
| BIOL2015-3 | <i>Molecular biology</i> - Patrick FICKERS Corequisite : BIOL2016-3 - Génétique générale | Q2 | 24 | - | - | 2 |
| BIOL2016-3 | <i>General genetics</i> - Nicolas GENGLER, Ludivine LASSOIS Corequisite : BIOL2015-3 - Biologie moléculaire | Q2 | 12 | 12 | - | 2 |
| BIOL2019-1 | <i>Theoretical chemistry and physics applied to biomolecules structural analysis</i> - Christian DAMBLON, Loïc QUINTON | Q2 | 24 | 24 | - | 4 |
| CHIM9269-2 | <i>Catalysis</i> - MarieLaure FAUCONNIER - [2h AUTR] | Q2 | 6 | 12 | [+] | 2 |
| CHIM9242-4 | <i>Fundamentals of quantitative analytical chemistry</i> - Giorgia PURCARO | Q2 | 16 | 32 | - | 4 |
| ALIM0013-2 | <i>Techniques of food preservation</i> - Christophe BLECKER Prerequisite : BIAA0002-1 - Technologie agricole et alimentaire | Q2 | 24 | - | - | 2 |

Optional activity

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|------------|---|----|---|---|---|---|
| RSTG0012-1 | <i>Additional internship</i> - Aurore DEGRÉ | TA | - | - | - | 5 |
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Possibility to choose between 2 and 6 credits among the following courses, replacing the B2 elective courses:

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|------------|---|----|----|----------|---------|----------|---|
| ENVT3129-1 | <i>Evaluating sustainability</i> - Andrea DI MARIA, Angélique LÉONARD - [2h SEM] | Q2 | 12 | 16 | [+] | 3 | |
| ENVT3050-1 | <i>Quantification of ecosystem services</i> - Marc DUFRÈNE - [6h AUTR] | Q1 | 9 | 5 | [+] | 2 | |
| BIOD0001-3 | <i>Biodiversity management</i> - Arnaud MONTY - [6h SEM] | Q1 | 18 | - | [+] | 2 | |
| VEGE0037-1 | <i>Innovative system of plant production</i> - <i>Urban agriculture</i> - Haïssam JIAKLI - <i>Developmental physiology applied to plant productions</i> - Pierre DELAPLACE - [6h FT] - <i>Physical parameters control of plant productions in controlled conditions</i> - Vincent LEEMANS | Q2 | | 13 12 | 13 - | - [+] | 6 |
| VEGE0028-1 | <i>Methods for managing plant health</i> - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, François HENRIET, Haïssam JIAKLI, Sébastien MASSART, | Q2 | 42 | 15 | - | 6 | |

Study programmes 2024-2025

Gembloux Agro-Bio Tech

Master in bioengineering: chemistry and bio-industries, professional focus

François VERHEGGEN