

Cycle view of the study programme

B1 Or Th Pr Au Cr

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.

Compulsory courses (B1 : 6Cr, B2 : 38Cr)

Periods 3 and 4

AGRO1.30 Core curriculum Q2

MANA0004-1 *Portfolio (Master)* - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothee GOFFIN - [24h AUTR] B1 Q2 - - [+] 2

LANG2952-1 *Practice of specialized English in agriculture: Part 1 (level B2+)* - Sophie DEPOTERRE, Estelle MAYARD - Suppl : Fiona THEWISSEN - [36h AUTR] B1 TA - 12 [+] 4

Corequisite :

VEGE0041-1 - Biologie et écologie des bioagresseurs
GEST3019-2 - Food policies and strategies

Periods 1 and 2

AGRO2.10 Group project

AGRO0020-1 *Group project* - Yves BECKERS - [36h AUTR] B2 Q1 - - [+] 4

GEST3020-1 *Conceiving and economics assessment of projects (english language)* - Hossein AZADI - [9h SEM] B2 Q1 9 - [+] 2

Periods 3 and 4

AGRO2.31 Final dissertation, training programme and English

RTFE2007-1 *Thesis in agronomic sciences* - Yves BECKERS B2 Q2 - - - 24

RSTG0001-1 *Internship and professional relations* - Catherine COLAUX, Thomas DOGOT, Hélène SOYEURT, Didier VAN CAILLIE B2 TA 12 - - 8

Optional courses (B1 : 54Cr, B2 : 22Cr)

Single focus (B1 : 30Cr)

Professional Focus (B1 : 30Cr)

Periods 1 and 2

AGRO1.11 Rural economics and European and international policy.

ECON0942-1 *Rural economics and farm business management* - Philippe BURNY, Thomas DOGOT - [8h FT] B1 Q1 25 15 [+] 5

GEST3019-2 *Food policies and strategies (english language)* - Hossein AZADI - [3h FT] B1 Q1 9 15 [+] 3

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

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

AGRO1.12 General crop husbandry

VEGE0041-1 *Pest biology and ecology* B1 Q1 5
- *Introduction* - Caroline DE CLERCK, Frédéric FRANCIS, Eric HAUBRUGE, Sébastien MASSART, François VERHEGGEN - [8h AUTR] 34 6 [+]

- *Depth notions* - Caroline DE CLERCK, Frédéric FRANCIS, Eric HAUBRUGE, Sébastien MASSART, François VERHEGGEN - [10h AUTR] - - [+]

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

VEGE0024-1 *General and applied phytotechnology in temperate and tropical settings* - Nicolas DESOIGNIES, Benjamin DUMONT - [5h FT] B1 Q1 39 4 [+] 5

AGRO1.13 Livestock systems

ANIM0029-1 *Foundations and dynamics of livestock systems* - Yves BECKERS, Jérôme BINDELLE, Martine SCHROYEN B1 Q1 54 - - 6

ANIM0030-1 *Animal recording, breeding and reproduction in modern sustainable animal production system (english language)* - Nicolas GENGLER, Martine SCHROYEN - [4h FT] B1 Q1 22 10 [+] 4

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

Choose one module from the courses with options no. 1 (period 3): (B1 : 1Nbr)

AGRO1.32 Livestock systems engineering (B1 : 6Cr)

ANIM0017-1 *Biotechnology aspects of livestock systems* - Yves BECKERS, Jérôme BINDELLE, Martine SCHROYEN - [9h FT] B1 Q2 27 - [+] 4

ANIM0025-1 *Feeding dairy cow* - Yves BECKERS B1 Q2 9 9 - 2

AGRO 1.33 Agricultural policy, sociology and rural legislation (B1 : 6Cr)

SOCI2234-1 *Construction of public policies* - AnneCatherine DALCQ, Juliette RENARD B1 Q2 18 - - 2

ECON2247-1 *Agricultural policy* - Philippe BURNY - [4h SEM] B1 Q2 9 5 [+] 2

DROI0967-1 *Rural law* - Gaëtan GOISSE B1 Q2 18 - - 2

AGRO 1.34 Tropical agroecology (B1 : 6Cr)

VEGE0036-1 *Tropical agroecology* B1 Q2 6
 - *Introduction* - Ludivine LASSOIS - Suppl : N... - [20h FT] - - [+] 6
 - *Depth notions: part 1* - Ludivine LASSOIS - Suppl : 8 11 -
 Nicolas DESOIGNIES, N...
 - *Depth notions: part 2* - Ludivine LASSOIS - Suppl : 8 10 -
 Nicolas DESOIGNIES, N...

Choose one module from the courses with options no. 2 (period 3): (B1 : 1Nbr)

AGRO 1.35 Biochemistry and animal pathology (B1 : 6Cr)

ANIM0012-1 *Farm animal immunology and pathology (english language)* - Martine SCHROYEN B1 Q2 18 - - 2

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

ANIM0005-1 *Functional biochemistry in health and disease (english language)* - Martine SCHROYEN B1 Q2 9 9 - 2

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

ANIM0016-1 *Milk technology* - Mohamed AYADI - [2h FT] B1 Q2 15 3 [+] 2

AGRO 1.36 Economics of development (B1 : 6Cr)

ECON2246-2 *Economics of developing countries (english language)* - Hossein AZADI - [16h SEM] B1 Q2 8 - [+] 2

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

ECON2254-2 *Tropical markets (english language)* - Hossein AZADI B1 Q2 9 9 - 2

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

ECON2253-2 *Economics of development Seminar* - Hossein AZADI, Thomas DOGOT - [18h SEM] B1 Q2 - - [+] 2

AGRO 1.37 Innovative systems of plant production (B1 : 6Cr)

VEGE0037-1 *Innovative system of plant production* B1 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 - -

Choose 1 module from the optional courses n° 3 (period 4) (B1 : 1Nbr)

AGRO 1.41 Human - animal - society (B1 : 6Cr)

ANIM0024-1 *Breeding system for agroecology* - Yves BECKERS, Jérôme BINDELLE - [3h FT] B1 Q2 9 6 [+] 2

ANIM0011-3 *Welfare and ethics in animal productions* (english language) - Nicolas GENGLER - [3h FT] B1 Q2 9 6 [+] 2

Corequisite :

LANG2952-1 - Pratique de l'anglais de spécialité en sciences agronomiques : partie 1 (niveau B2+)

ENVT3061-1 *Agrobiodiversity, ecosystemic and landscape services, Introduction* - Marc DUFRÈNE, Kevin MARÉCHAL - [8h AUTR] B1 Q2 16 - [+] 2

AGRO 1.42 Systemic approach to plant production in temperate regions (B1 : 6Cr)

VEGE0027-1 *Systematic approach to plant production in temperate regions* B1 Q2 6
 - *Plant sciences and different field crop and production species* - 28 - [+]
 Benjamin DUMONT - [6h Ex.]
 - *Implementation of technical pathways under real conditions* - - 12 [+]
 Benjamin DUMONT - [3h FT]
 - *Evaluation and optimisation of production systems* - - 9 -
 Benjamin DUMONT

Corequisite :

VEGE0024-1 - Phytotechnie générale et appliquée en milieux tempérés et tropicaux

Choose 1 optional module n°4 (period 4): (B1 : 1Nbr)

AGRO 1.43 Economic decision support (B1 : 6Cr)

ECON2299-1 *Assistance in economic decision-making* - Yves BROSTAUX, Catherine CHARLES, Thomas DOGOT - [6h AUTR] B1 Q2 30 24 [+] 6

AGRO1.44 Bromatology and the cultivation of animal fodder (B1 : 6Cr)

ANIM0018-1 *Bromatology and grazing management* - Yves BECKERS, Jérôme BINDELLE - [7h FT] B1 Q2 37 13 [+] 6

AGRO 1.45 Plant protection methods (B1 : 6Cr)

VEGE0028-1 *Methods for managing plant health* - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, Haïssam JIJAKLI, Ludvine LASSOIS, Sébastien MASSART, François VERHEGGEN B1 Q2 42 15 - 6

Periods 1 and 2

Choose 3 modules from the 4 modules options : (B2 : 18Cr)

Option 1 of modules:

AGRO 2.11 Physiology, plant breeding and multiplication of cultivated plants

VEGE0026-1 *Physiology, plant breeding and multiplication of cultivated plants* B2 Q1 6
 - *Physiology* - Pierre DELAPLACE 7 5 -
 - *Plant breeding* - Hervé VANDERSCHUREN 9 5 -

- *Diversity of plant genetic resources* - Hervé VANDERSCHUREN - [7h FT] 7 1 [+]

- *Multiplication of cultivated plants* - Hervé VANDERSCHUREN - [2h FT] 9 5 [+]

Prerequisite :

VEGE0024-1 - Phytotechnie générale et appliquée en milieux tempérés et tropicaux

VEGE0041-1 - Biologie et écologie des bioagresseurs

AGRO 2.12 Data mining & Machine learning

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

Prerequisite :

STAT1213-1 - Analyse multivariée 1 : exploration et structuration de données

INFO8009-1 *Bioinformatics* - Sébastien MASSART, Martine SCHROYEN B2 Q1 9 9 - 2

Module option 2 :

AGRO 2.13 Market and supply analysis

ECON2251-3 *Food value chains analysis, Introduction* (english language) - Hossein AZADI B2 Q1 18 - - 2

ECON2252-2 *Marketing and consumer market research* - Alain DECROP B2 Q1 36 - - 4

AGRO 2.14 Plant biotechnology

VEGE0032-1 *Plant biotechnology* B2 Q1 6
 - *Molecular plant biotechnology* - Hervé VANDERSCHUREN 9 5 -
 - *Exercise of plant biotechnology* - Hervé VANDERSCHUREN - 14 -
 - *Biology applied to pest prevention* - Frédéric FRANCIS 7 7 -
 - *Biology applied to phytopathology* - Sébastien MASSART 3 12 -

AGRO 2.15 Smart Farming

AGRO0023-1 *Smart farming* - JeanFrançois BASTIN, Jérôme BINDELLE, Benjamin DUMONT B2 Q1 54 - - 6

Option 3 of modules:

AGRO 2.16 Applied economic analysis

ECON2298-3 *Transition and new economic models* - Kevin MARÉCHAL B2 Q1 9 9 - 2

Prerequisite :

STAT1213-1 - Analyse multivariée 1 : exploration et structuration de données

GEST3019-2 - Food policies and strategies

ECON0942-1 - Economie rurale et gestion des entreprises agricoles

ECON2250-1 *International economics* (english language) - Hossein AZADI - [12h AUTR] B2 Q1 6 - [+ 2

ECON2248-1 *Environmental economy* - Kevin MARÉCHAL B2 Q1 18 - - 2

Prerequisite :

STAT1213-1 - Analyse multivariée 1 : exploration et structuration de données

GEST3019-2 - Food policies and strategies

ECON0942-1 - Economie rurale et gestion des entreprises agricoles

AGRO 2.17 Applied strategies for the integrated management of pests and weeds

VEGE0042-1 *Integrated and agroecological protection of crops* - Frédéric FRANCIS, Eric HAUBRUGE, Haïssam JIJAKLI, Ludvine LASSOIS, Sébastien MASSART, Jeroen MEERSMANS, François VERHEGGEN - Suppl : François HENRIET B2 Q1 29 28 - 6

AGRO 2.18 Advanced animal genetics, genomics and biodiversity

ANIM0031-1 *Advanced animal genetics, genomics and biodiversity* (english language) - Nicolas GENGLER B2 Q1 27 27 - 6

Prerequisite :

ANIM0029-1 - Fondements et dynamiques des systèmes d'élevage

ANIM0030-1 - Animal recording, breeding and reproduction in modern sustainable animal production system

Module option 4 :

AGRO 2.19 Applied rural socioeconomics

ECON2273-1 *Applied rural socioeconomics* - Yves BROSTAUX, Thomas DOGOT - B2 Q1 10 43 [+] 6
[4h SEM]

Prerequisite :

STAT1213-1 - Analyse multivariée 1 : exploration et structuration de données

AGRO 2.20 Chemical, biological and environmental risks related to plant productions

VEGE0034-1 *Chemical, biological and environmental risks related to plant productions* - Patrick DU JARDIN, Benjamin DUMONT, Jeroen MEERSMANS, François VERHEGGEN B2 Q1 24 33 - 6

Prerequisite :

VEGE0024-1 - Phytotechnie générale et appliquée en milieux tempérés et tropicaux

VEGE0041-1 - Biologie et écologie des bioagresseurs

AGRO 2.21 Feed & food

ANIM0019-1 *Current issues in breeding systems* - Yves BECKERS B2 Q1 5 31 - 4

ALIM0010-3 *Food, human nutrition and dietetics* (english language) - Jérôme BINDELLE B2 Q1 18 - - 2

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

GEOP0010-1 *Soil quality evaluation* - Gilles COLINET B2 Q2 14 13 - 3

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

GERE0023-1 *Spatial analysis, organisation of grounds in the landscape and preservation of grounds* - Gilles COLINET, Aurore DEGRÉ, Jeroen MEERSMANS - [8h FT] B2 Q2 23 23 [+] 6

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

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

CHIM9321-1 *Immunology* - Bénédicte MACHIELS B2 Q2 27 - - 3

ALIM0015-1 *Food sanitary safety* - Mohamed AYADI - [2h SEM] B2 Q1 16 6 [+] 2

ALIM0013-2 *Techniques of food preservation* - Christophe BLECKER B2 Q2 24 - - 2

BIOL2015-3 *Molecular biology* - Patrick FICKERS B2 Q2 24 - - 2

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

Periods 3 and 4

AGRO 2.31 English language (B2 : 4Cr)

LANG2953-1 *Practice of specialized English for agricultural sciences : part 2 (level C1 - Presentation)* - Sophie DEPOTERRE, Estelle MAYARD - Suppl : Fiona THEWISSEN - [36h AUTR] B2 TA - 12 [+] 4

Corequisite :

RTFE2007-1 - Travail de fin d'études en sciences agronomiques

All year round

AGRO 2.32 Dutch language (B2 : 4Cr)

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

AGRO 2.33 Spanish language (B2 : 4Cr)

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

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

RSTG0011-1 *Additional internship* - Aurore DEGRÉ 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 B2 Q2 12 28 - 4

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

Additional ECTS Master in agricultural bioengineering

Compulsory courses (B0 : 60Cr)

Common core courses

GEST3028-2 *Accounting and management*
- *General accounting* - Thomas DOGOT B0 Q1 12 12 - 4
- *Management, green accounting and business plan* - Thomas DOGOT 10 14 -

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 B0 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] B0 TA 4 - [+] 2
Corequisite :
GEST3028-2 - Comptabilité et gestion des entreprises
GEST3773-1 - Gestion de la qualité
MANA0003-1 - Portfolio (Bachelier)

MANA0003-1 *Portfolio (Bachelor)* - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR] B0 TA - - [+] 2
Corequisite :
PSYC5897-3 - Equipe, organisation & changement

RSTG0008-1 *Internship (Bachelor)* - Hélène SOYEURT - [18h AUTR] B0 TA 6 - [+] 2
Corequisite :
GEST3773-1 - Gestion de la qualité
GEST3028-2 - Comptabilité et gestion des entreprises
PSYC5897-3 - Equipe, organisation & changement

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* - B0 Q1 24 24 - 4

INDELLE, Catherine CHARLES, Frank DELVIGNE, Adeline FAYOLLE,
Benoît MERCATORIS

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, Fiona THEWISSEN - Suppl : Fiona THEWISSEN - [48h E-Lrng]	B0	TA	-	24	[+]	4
INGE0008-1	<i>Multidisciplinary experimental project</i> - Yves BROSTAUX, Pierre DELAPLACE, Sébastien MASSART, Benoît MERCATORIS, Arnaud MONTY, Bernard POCHET - [60h AUTR] Corequisite : STAT2005-1 - Statistique appliquée : 2ème partie STAT2004-1 - Statistique appliquée : 1ère partie GEST3773-1 - Gestion de la qualité BIOL2044-1 - Physiologie végétale ENVT2044-1 - Ecologie générale	B0	TA	6	6	[+]	6

Course Agricultural Sciences

AGRO0001-1	<i>Basic principles of agriculture and agroecology</i> - Pierre DELAPLACE, Benjamin DUMONT - [4h FT]	B0	Q2	20	-	[+]	2
AGRO0002-1	<i>Fertilization and crop nutrition</i> - Caroline DE CLERCK, Patrick DU JARDIN, Benjamin DUMONT - [2h AUTR] Corequisite : AGRO0001-1 - Fondement d'agriculture et d'agroécologie BIOL2044-1 - Physiologie végétale	B0	Q2	18	4	[+]	2
AGRO0021-1	<i>Introduction to cultivation techniques and levers</i> - Benjamin DUMONT , Ludivine LASSOIS - Suppl : Nicolas DESOIGNIES - [4h AUTR] Corequisite : AGRO0001-1 - Fondement d'agriculture et d'agroécologie	B0	Q2	20	-	[+]	2
BIOL2015-3	<i>Molecular biology</i> - Patrick FICKERS Corequisite : BIOL2016-3 - Génétique générale	B0	Q2	24	-	-	2
BIOL2016-3	<i>General genetics</i> - Nicolas GENGLER, Ludivine LASSOIS - Suppl : Martine SCHROYEN Corequisite : BIOL2015-3 - Biologie moléculaire	B0	Q2	12	12	-	2
BIOL2018-1	<i>Animal nutrition</i> - Yves BECKERS	B0	Q2	24	-	-	2
SPRA0001-1	<i>Sustainable breeding and zoogenetic resources</i> - Nicolas GENGLER - [4h FT] Corequisite : BIOL2016-3 - Génétique générale	B0	Q2	20	-	[+]	2
BIOL2043-1	<i>Application of molecular biology and genetics</i> - Nicolas GENGLER, Ludivine LASSOIS, Martine SCHROYEN, Hervé VANDERSCHUREN, Luc WILLEMS Corequisite : BIOL2016-3 - Génétique générale	B0	Q2	-	24	-	2
INGE0002-1	<i>Refrigeration and drying</i> - Nicolas JACQUET, Paul MALUMBA KAMBA	B0	Q2	18	6	-	2