

## Block view of the study programme

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### Block 1

#### Focus compulsory courses

##### Periods 1 and 2

##### AGRO1.11 Rural economics and European and international policy.

ECON0942-1	<i>Rural economics and farm business management</i> - Philippe BURNY, Thomas DOGOT - [8h FT]	Q1	25	15	[+]	5
GEST3019-2	<i>Food policies and strategies</i> (english language) - Hossein AZADI - [3h FT] <b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)	Q1	9	15	[+]	3
STAT1213-1	<i>Multivariate analysis I: data exploration and structuring</i> - Yves BROSTAUX	Q1	9	9	-	2

##### AGRO1.12 General crop husbandry

VEGE0041-1	<i>Pest biology and ecology</i> - <i>Introduction</i> - Frédéric FRANCIS, François HENRIET, Sébastien MASSART - [8h AUTR] - <i>Depth notions</i> - Frédéric FRANCIS, François HENRIET, Sébastien MASSART - [10h AUTR] <b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)	Q1	34	6	[+]	5
VEGE0024-1	<i>General and applied phytotechnology in temperate and tropical settings</i> - Nicolas DESOIGNIES, Benjamin DUMONT - [5h FT]	Q1	39	4	[+]	5

##### AGRO1.13 Livestock systems

ANIM0029-1	<i>Foundations and dynamics of livestock systems</i> - Yves BECKERS, Jérôme BINDELLE, Martine SCHROYEN	Q1	54	-	-	6
ANIM0030-1	<i>Animal recording, breeding and reproduction in modern sustainable animal production system</i> (english language) - Nicolas GENGLER, Martine SCHROYEN - [4h FT] <b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)	Q1	22	10	[+]	4

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#### Core curriculum compulsory courses

##### Periods 3 and 4

##### AGRO1.30 Core curriculum Q2

MANA0004-1	<i>Portfolio (Master)</i> - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR]	TA	-	-	[+]	2
LANG2952-1	<i>Practice of Scientific English for bioengineers (AGRO) (level B2+)</i> - Sophie DEPOTERRE, Estelle MAYARD, Lelania SPERRAZZA - Suppl : Fiona THEWISSEN - [36h AUTR] <b>Corequisite :</b> GEST3019-2 - Food policies and strategies VEGE0041-1 - Biologie et écologie des bioagresseurs	TA	-	12	[+]	4
INFO9028-1	<i>Data Sciences</i> - JeanFrançois BASTIN, Yves BROSTAUX, Nicolas GENGLER, Hélène SOYEURT - [12h Pr.]	Q2	6	-	[+]	2
AGRO0026-1	<i>Integrated production systems</i> - Jérôme BINDELLE, Benjamin DUMONT, Haïssam JIAKLI	Q2	8	16	-	2
AGRO0027-1	<i>Excursion week</i> - Caroline DE CLERCK, Pierre DELAPLACE, Frédéric FRANCIS, Nicolas GENGLER, Martine SCHROYEN - [8h Pr., 32h FT]	Q2	-	-	[+]	2

**Common core courses**

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

**AGRO1.32 Livestock systems engineering**

ANIM0017-1	<i>Biotechnology aspects of livestock systems</i> - Yves BECKERS, Jérôme BINDELLE, Martine SCHROYEN	Q2	18	-	-	2
ANIM0025-1	<i>Feeding dairy cow</i> - Yves BECKERS	Q2	9	9	-	2
ANIM0024-1	<i>Breeding system for agroecology</i> - Yves BECKERS, Jérôme BINDELLE - [3h FT]	Q2	9	6	[+]	2

**AGRO 1.33 Agricultural policy, sociology and rural legislation**

SOCI2234-1	<i>Construction of public policies</i> - Laurence LAMBERT	Q2	18	-	-	2
ECON2247-1	<i>Agricultural policy</i> - Philippe BURNY - [4h SEM]	Q2	9	5	[+]	2
DROI0967-1	<i>Rural law</i> - Gaëtan GOISSE	Q2	18	-	-	2

**AGRO 1.34 Systemic approach to plant production in temperate regions**

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

**Corequisite :**

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

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

**AGRO 1.35 Biochemistry and animal pathology**

ANIM0012-1	<i>Farm animal immunology and pathology</i> (english language) - Martine SCHROYEN	Q2	18	-	-	2
	<b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)					
ANIM0005-1	<i>Functional biochemistry in health and disease</i> (english language) - Martine SCHROYEN	Q2	9	9	-	2
	<b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)					
ANIM0011-3	<i>Welfare and ethics in animal productions</i> (english language) - Nicolas GENGLER - [3h FT]	Q2	9	6	[+]	2
	<b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)					

**AGRO 1.36 Economics of development**

ECON2246-2	<i>Economics of developing countries</i> (english language) - Hossein AZADI - [16h SEM]	Q2	8	-	[+]	2
	<b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)					
ECON2254-2	<i>Tropical markets</i> (english language) - Hossein AZADI	Q2	9	9	-	2
	<b>Corequisite :</b> LANG2952-1 - Pratique de l'anglais scientifique de bioingénieur (AGRO) (niveau B2+)					
ECON2253-2	<i>Economics of development Seminar</i> - Hossein AZADI, Thomas DOGOT - [18h SEM]	Q2	-	-	[+]	2

**AGRO 1.37 Innovative systems of plant production**

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

**Choose 1 optional module no. 3 (period 4) :**

**AGRO 1.43 Economic decision support**

ECON2299-1 <i>Assistance in economic decision-making</i> - Yves BROSTAUX, Catherine CHARLES, Thomas DOGOT - [6h AUTR]	Q2	30	24	[+]	<b>6</b>
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**AGRO1.44 Bromatology and the cultivation of animal fodder**

ANIM0018-1 <i>Bromatology and grazing management</i> - Yves BECKERS, Jérôme BINDELLE - [7h FT]	Q2	37	13	[+]	<b>6</b>
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**AGRO 1.45 Plant protection methods**

VEGE0028-1 <i>Methods for managing plant health</i> - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, François HENRIET, Haissam JIJAKLI, Sébastien MASSART, François VERHEGGEN	Q2	42	15	-	<b>6</b>
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**Optional activities**

RSTG0011-1 <i>Additional internship</i> - Aurore DEGRÉ	TA	-	-	-	<b>5</b>
HULG9547-1 <i>French course for IN mobility students (S1)</i> - N...	Q1	-	-	-	<b>3</b>
HULG9548-1 <i>French course for IN mobility students (S2)</i> - N...	Q2	-	-	-	<b>3</b>
HULG9546-1 <i>Erasmus: integration weeks</i> - N...	Q1	-	-	-	<b>3</b>

**Block 2**

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**Core curriculum compulsory courses**

**Periods 1 and 2**

**AGRO2.10 Group project**

AGRO0020-1 <i>Group project</i> - Yves BECKERS - [36h AUTR]	Q1	-	-	[+]	<b>4</b>
GEST3020-1 <i>Conceiving and economics assessment of projects (english language)</i> - Hossein AZADI - [9h SEM]	Q1	9	-	[+]	<b>2</b>

**Periods 3 and 4**

**AGRO2.31 Final dissertation, training programme and English**

RTFE2007-1 <i>Thesis in agronomic sciences</i> - Yves BECKERS	Q2	-	-	-	<b>24</b>
RSTG0001-1 <i>Internship and professional relations</i> - Catherine COLAUX, Thomas DOGOT, Hélène SOYEURT	TA	12	-	-	<b>8</b>

**Common core courses**

**Periods 1 and 2**

Choose 3 modules from the 4 modules options :

**Option 1 of modules:**

**AGRO 2.11 Physiology, plant breeding and multiplication of cultivated plants**

VEGE0026-1 <i>Physiology, plant breeding and multiplication of cultivated plants</i> - <i>Physiology</i> - Pierre DELAPLACE - <i>Plant breeding</i> - <i>Diversity of plant genetic resources</i> - [7h FT]	Q1	7	5	-	<b>6</b>
		9	5	-	
		7	1	[+]	

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

**Prerequisite :**

VEGE0041-1 - Biologie et écologie des bioagresseurs

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

**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 Q1 12 26 - 4

**Prerequisite :**

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

INFO8009-1 *Bioinformatics* - Sébastien MASSART, Martine SCHROYEN 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 Q1 18 - - 2

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

**AGRO 2.14 Plant biotechnology**

VEGE0032-1 *Plant biotechnology* 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 Q1 54 - - 6

**Option 3 of modules:**

**AGRO 2.16 Applied economic analysis**

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

**Prerequisite :**

ECON0942-1 - Economie rurale et gestion des entreprises agricoles

GEST3019-2 - Food policies and strategies

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

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

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

**Prerequisite :**

ECON0942-1 - Economie rurale et gestion des entreprises agricoles

GEST3019-2 - Food policies and strategies

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

**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, François HENRIET, Haissam JIJAKLI, Sébastien MASSART, Jeroen MEERSMANS, François VERHEGGEN 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 Q1 27 27 - 6

**Prerequisite :**

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

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

**Module option 4 :**

**AGRO 2.19 Applied rural socioeconomics**

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

**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 Q1 24 33 - 6

**Prerequisite :**

VEGE0041-1 - Biologie et écologie des bioagresseurs

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

**AGRO 2.21 Feed & food**

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

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

[...] 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 - [2h SEM] Q2 12 16 [+] 3

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

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

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

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

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

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

**Choose one language module from:**

**Periods 3 and 4**

**AGRO 2.31 English language**

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

**Corequisite :**

AGRO0020-1 - Projet de groupe

**All year round**

**AGRO 2.32 Dutch language**

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

**AGRO 2.33 Spanish language**

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

**Optional activity**

INFO9013-1 *Multivariate 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**

**Bridging courses Master in agricultural bioengineering**

**Compulsory courses**

**Common core courses**

GEST3028-2	<i>Accounting and management</i> - Thomas DOGOT	Q1	22	26	-	<b>4</b>
GEST3773-1	<i>Management of quality</i> - Mohamed AYADI, Sébastien MASSART - [6h AUTR]	Q1	18	-	[+]	<b>2</b>
STAT2004-1	<i>Applied statistics : First part</i> - Yves BROSTAUX	Q1	12	12	-	<b>2</b>
STAT2005-1	<i>Applied statistic : Second part</i> - Yves BROSTAUX	Q2	12	12	-	<b>2</b>
	<b>Corequisite :</b> STAT2004-1 - Statistique appliquée : 1ère partie					
PSYC5897-3	<i>Team, organization and change</i> - Daniel FAULX, Véronique JANS, Tiber MANFREDINI - [44h SEM]	TA	4	-	[+]	<b>2</b>
	<b>Corequisite :</b> MANA0003-1 - Portfolio (Bachelier) GEST3773-1 - Gestion de la qualité GEST3028-2 - Comptabilité et gestion des entreprises					
MANA0003-1	<i>Portfolio (Bachelor)</i> - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR]	TA	-	-	[+]	<b>2</b>
	<b>Corequisite :</b> PSYC5897-3 - Equipe, organisation & changement					
RSTG0008-1	<i>Internship (Bachelor)</i> - Hélène SOYEURT - [18h AUTR]	TA	6	-	[+]	<b>2</b>
	<b>Corequisite :</b> PSYC5897-3 - Equipe, organisation & changement GEST3028-2 - Comptabilité et gestion des entreprises GEST3773-1 - Gestion de la qualité					
BIOL2044-1	<i>Plant physiology</i> - Patrick DU JARDIN	Q1	27	9	-	<b>3</b>
BIOL2013-2	<i>General microbiology, Introduction</i> - Patrick FICKERS, Philippe JACQUES	Q1	16	8	-	<b>2</b>
ENVT2044-1	<i>General ecology</i> - Grégory MAHY, Arnaud MONTY	Q1	24	-	-	<b>2</b>
INFO2038-1	<i>Computer science and algorithmic</i> - Hélène SOYEURT	Q1	2	22	-	<b>2</b>
MATH2016-1	<i>General mathematics and modelling of dynamics systems</i> - Jérôme BINDELLE, Catherine CHARLES, Frank DELVIGNE, Benoît MERCATORIS - Suppl : Gauthier LIGOT	Q1	24	24	-	<b>4</b>
PHYS3036-1	<i>Environmental physics</i> - Bernard LONGDOZ	Q1	18	18	-	<b>3</b>
LANG2966-2	<i>English language: level 3</i> - Sophie DEPOTERRE, Estelle MAYARD, Lelania SPERRAZZA, Fiona THEWISSEN - [48h E-Lrng]	TA	-	24	[+]	<b>4</b>
INGE0008-1	<i>Multidisciplinary experimental project</i> - Yves BROSTAUX, Pierre DELAPLACE, Sébastien MASSART, Benoît MERCATORIS, Jacques MIGNON, Arnaud MONTY - [60h AUTR]	TA	6	6	[+]	<b>6</b>
	<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					

**Course Agricultural Sciences**

AGRO0001-1	<i>Basic principles of agriculture and agroecology</i> - Pierre DELAPLACE, Benjamin DUMONT - [4h FT]	Q2	20	-	[+]	2
AGRO0002-1	<i>Fertilization and crop nutrition</i> - Caroline DE CLERCK, Patrick DU JARDIN, Benjamin DUMONT - [2h AUTR] <b>Corequisite :</b> BIOL2044-1 - Physiologie végétale AGRO0001-1 - Fondement d'agriculture et d'agroécologie	Q2	18	4	[+]	2
AGRO0021-1	<i>Introduction to cultivation techniques and levers</i> - Benjamin DUMONT , Ludivine LASSOIS - Suppl : Nicolas DESOIGNIES - [4h AUTR] <b>Corequisite :</b> AGRO0001-1 - Fondement d'agriculture et d'agroécologie	Q2	20	-	[+]	2
BIOL2015-3	<i>Molecular biology</i> - Patrick FICKERS <b>Corequisite :</b> BIOL2016-3 - Génétique générale	Q2	24	-	-	2
BIOL2016-3	<i>General genetics</i> - Nicolas GENGLER, Ludivine LASSOIS <b>Corequisite :</b> BIOL2015-3 - Biologie moléculaire	Q2	12	12	-	2
BIOL2018-1	<i>Animal nutrition</i> - Yves BECKERS	Q2	24	-	-	2
SPRA0001-1	<i>Sustainable breeding and zoogenetic resources</i> - Nicolas GENGLER - [4h FT] <b>Corequisite :</b> BIOL2016-3 - Génétique générale	Q2	20	-	[+]	2
BIOL2043-1	<i>Application of molecular biology and genetics</i> - Nicolas GENGLER, Martine SCHROYEN, Hervé VANDERSCHUREN, Luc WILLEMS <b>Corequisite :</b> BIOL2016-3 - Génétique générale	Q2	-	24	-	2
GERE0043-1	<i>Foundations of soil quality</i> - Gilles COLINET, Caroline DE CLERCK, Aurore DEGRÉ	Q2	18	6	-	2