Block view of the study programme

		Or	Th	Pr	Au	Cr

Block 1

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

Periods 1 and 2

STE1.10 Core curriculum 1

GERE0015-1	*Group project* - Adrien MICHEZ - [150h AUTR]	Q1	4	-	[+]	**5**
HYDR0016-1	*Applied fluid mechanics and hydraulics* (english language) - Joost WELLENS	Q1	24	12	-	**4**
ENVT0045-1	*Geomatics and applied remote sensing, Introduction* - JeanFrançois BASTIN, Philippe LEJEUNE	Q1	16	22	-	**4**
GERE0037-1	*Modelling the dynamics of biosystems* - Bernard LONGDOZ, Benoît MERCATORIS	Q1	14	31	-	**5**
GEOP0003-2	*Origins, analysis and functions of soils* - Gilles COLINET, Aurore DEGRÉ, N... - Suppl : Stefaan DONDEYNE - [9h FT]	Q1	36	36	[+]	**9**

Common core courses

Choose courses totalling 5 ECTS from the following :

STE1.42 Elective courses 1

GERE0046-1	*Resource valorisation and circularity* - Gilles COLINET, Aurore DEGRÉ, Andrea DI MARIA - [6h FT]	Q2	21	18	[+]	**5**
GERE0047-1	*Construction: Structural, energy and environmental performance* - Andrea DI MARIA, Frédéric LEBEAU, Benoît MERCATORIS **Corequisite :** GERE0044-1 - Construction : matériaux, produits, systèmes et impacts environnementaux	Q2	30	15	-	**5**
GERE0048-1	*Solutions for conservation and protection of natural resources* (english language) - Gilles COLINET, Aurore DEGRÉ, Jeroen MEERSMANS, AnneClaude ROMAIN	Q2	24	21	-	**5**

Optional activities

RSTG0011-1	*Additional internship* - Pierre DELAPLACE	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**

Focus compulsory courses

Period 1 and 2

STE1.10 Core curriculum 1

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

STE1.10 Core curriculum 2

MANA0004-1	*Portfolio (Master)* - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Pierre DELAPLACE, Dorothée GOFFIN - [24h AUTR]	TA	-	-	[+]	**2**
LANG2956-1	*Practice of Scientific English for bioengineers (STE) (level B2+)* - Estelle MAYARD, Lelania SPERRAZZA - [36h AUTR] **Corequisite :** GEOP0003-2 - Genèse, analyse et fonctionnement des sols GERE0037-1 - Modélisation de la dynamique des biosystèmes	TA	-	12	[+]	**4**

Period 3

STE1.10 Core curriculum 3

GERE0040-1	*Modelling soil transfers* - Aurore DEGRÉ	Q2	6	12	-	**2**
GERE0019-1	*Grounds mechanic and geotechnology* - Frédéric COLLIN, Bertrand FRANÇOIS	Q2	21	21	-	**4**

Period 4

STE1.41 Field applications and visits

GERE0039-1	*Field applications and visits* - Gilles COLINET, Jeroen MEERSMANS - [23h FT]	Q2	1	-	[+]	**2**
GERE0038-1	*Energy systems and renewable energies* - Frédéric LEBEAU	Q2	18	18	-	**4**

Focus optional courses

Choose courses for a total of 8 credits (note, GERE0044-1 and GERE0045-1 cannot be taken together):

STE1.32 Optional courses 1

GERE0041-1	*Instrumentation: data acquisition* - Bernard HEINESCH	Q2	9	27	-	**4**
HYDR0015-1	*Irrigation* (english language) - Joost WELLENS - [3h FT]	Q2	13	20	[+]	**4**
GERE0044-1	*Construction: materials, products, systems and environmental impact* - Andrea DI MARIA, JeanFrançois RONDEAUX	Q2	27	12	-	**4**
GERE0045-1	*Terrestrial ecosystems functioning and C dynamics* - Bernard LONGDOZ, Jeroen MEERSMANS	Q2	18	24	-	**4**

Block 2

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

Periods 1 and 2

STE2.11 Environmental management

ECON2248-1	*Environmental economy* - Kevin MARÉCHAL	Q1	18	-	-	**2**
DROI1306-1	*Environmental law* - N..., Renaud SMAL	Q1	18	-	-	**2**

Periods 3 and 4

STE2.31 Final work and internship

RSTG0003-1	*Internship and professional relations* - Catherine COLAUX, Thomas DOGOT, Joost WELLENS	TA	12	-	-	**8**
RTFE2002-1	*Thesis in education environmental sciences and technologies* - Catherine CHARLES	Q2	-	-	-	**24**

Common core courses

Choose 3 courses of 4 credits from:

STE 2.11 Elective courses

GERE0026-1	*Autonomous navigation in the natural environment* - Benoît MERCATORIS - [6h AUTR]	Q1	18	18	[+]	**4**
INFO8008-2	*Multivaried analysis 2: data mining et machine learning* (english language) - *Introduction* - Yves BROSTAUX, Juan Antonio FERNANDEZ PIERNA, Hélène SOYEURT	Q1	9	18	-	**4**

	- *In-depth study* - Yves BROSTAUX, Juan Antonio FERNANDEZ PIERNA, Hélène SOYEURT **Prerequisite :** STAT1213-1 - Analyse multivariée 1 : exploration et structuration de données		3	6	-	
ENVT3060-1	*Very high resolution remote sensing applied to the management of natural environments, Introduction* - Philippe LEJEUNE, Adrien MICHEZ **Prerequisite :** ENVT0045-1 - Géomatique et télédétection appliquée	Q1	12	24	-	**4**
GERE0049-1	*Nature in the city* - Gilles COLINET, Aurore DEGRÉ, Grégory MAHY	Q1	12	24	-	**4**
GERE0050-1	*Nature-base solutions for climate change mitigation* (english language) - Andrea DI MARIA, Bernard HEINESCH, Jeroen MEERSMANS	Q1	24	12	-	**4**
[...]	or 4 credits from the list of alternative courses					
ENVT3050-1	*Quantification of ecosystem services* - Marc DUFRÊNE - [6h AUTR]	Q1	9	5	[+]	**2**
BIOD0001-3	*Biodiversity management* - Arnaud MONTY - [6h SEM]	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	Q2	 13 12 9	 13 - -	 - [+] -	**6**
VEGE0028-1	*Methods for managing plant health* - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, Haissam JIJAKLI, Sébastien MASSART, François VERHEGGEN	Q2	42	15	-	**6**
CHIM9321-1	*Immunology* - Bénédicte MACHIELS	Q2	27	-	-	**3**
ALIM0015-1	*Food sanitary safety* - Mohamed AYADI - [2h SEM]	Q1	16	6	[+]	**2**
ALIM0013-2	*Techniques for preparing and preserving foods* - *General concepts* - Christophe BLECKER - *In-depth study for bioengineers* - Christophe BLECKER	Q2	 21 3	 - -	 - -	**2**
BIOL2015-3	*Molecular biology* - Patrick FICKERS	Q2	24	-	-	**2**

Choose a module for a total of 4 credits from:

STE2.13 Applied soil and landscape analysis

GERE0051-1	*Applied soil and landscape analysis* - Gilles COLINET, Jeroen MEERSMANS	Q1	6	30	-	**4**

STE2.14 Agrivoltaic modelling: application of complex systems engineering

GERE0052-1	*Agrivoltaic modelling: application of complex systems engineering* - Frédéric LEBEAU - [6h AUTR] **Prerequisite :** GERE0038-1 - Systèmes énergétiques et énergies renouvelables	Q1	15	15	[+]	**4**

STE2.15 Hydrological engineering of landscapes

GERE0053-1	*Hydrological engineering of landscapes* - Aurore DEGRÉ, Adrien MICHEZ - [18h AUTR] **Prerequisite :** ENVT0045-1 - Géomatique et télédétection appliquée	Q1	9	9	[+]	**4**
[...]	or 4 credits from the list of alternative courses					
ENVT3050-1	*Quantification of ecosystem services* - Marc DUFRÊNE - [6h AUTR]	Q1	9	5	[+]	**2**
BIOD0001-3	*Biodiversity management* - Arnaud MONTY - [6h SEM]	Q1	18	-	[+]	**2**
VEGE0037-1	*Innovative system of plant production* - *Urban agriculture* - Haissam JIJAKLI - *Developmental physiology applied to plant productions* - Pierre DELAPLACE - [6h FT]	Q2	 13 12	 13 -	 - [+]	**6**

	- *Physical parameters control of plant productions in controlled conditions* - Vincent LEEMANS		9	-	-	
VEGE0028-1	*Methods for managing plant health* - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, Haissam JIJAKLI, Sébastien MASSART, François VERHEGGEN	Q2	42	15	-	**6**
CHIM9321-1	*Immunology* - Bénédicte MACHIELS	Q2	27	-	-	**3**
ALIM0015-1	*Food sanitary safety* - Mohamed AYADI - [2h SEM]	Q1	16	6	[+]	**2**
ALIM0013-2	*Techniques for preparing and preserving foods*	Q2				**2**
	- *General concepts* - Christophe BLECKER		21	-	-	
	- *In-depth study for bioengineers* - Christophe BLECKER		3	-	-	
BIOL2015-3	*Molecular biology* - Patrick FICKERS	Q2	24	-	-	**2**

Choose a module for a total of 4 credits from:

STE2.16 Phenotyping

GERE0054-1	*Phenotyping by imaging* - Vincent LEEMANS, Benoît MERCATORIS	Q1	18	18	-	**4**

STE2.17 Ecosystem exchanges - atmosphere, under climate change

GERE0034-1	*Exchanges between the ecosystem and the atmosphere as a result of climate change* - Bernard HEINESCH, Bernard LONGDOZ, Youri ROTHFUSS - [3h AUTR]	Q1	24	12	[+]	**4**

STE 2.18 Environmental quality improvement

GERE0055-1	*Soil remediation and water purification* - Gilles COLINET, Frank DELVIGNE - [10h AUTR]	Q1	24	8	[+]	**4**

[...] or 4 credits from the list of alternative courses

ENVT3050-1	*Quantification of ecosystem services* - Marc DUFRÊNE - [6h AUTR]	Q1	9	5	[+]	**2**
BIOD0001-3	*Biodiversity management* - Arnaud MONTY - [6h SEM]	Q1	18	-	[+]	**2**
VEGE0037-1	*Innovative system of plant production*	Q2				**6**
	- *Urban agriculture* - Haissam JIJAKLI		13	13	-	
	- *Developmental physiology applied to plant productions* - Pierre DELAPLACE - [6h FT]		12	-	[+]	
	- *Physical parameters control of plant productions in controlled conditions* - Vincent LEEMANS		9	-	-	
VEGE0028-1	*Methods for managing plant health* - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, Haissam JIJAKLI, Sébastien MASSART, François VERHEGGEN	Q2	42	15	-	**6**
CHIM9321-1	*Immunology* - Bénédicte MACHIELS	Q2	27	-	-	**3**
ALIM0015-1	*Food sanitary safety* - Mohamed AYADI - [2h SEM]	Q1	16	6	[+]	**2**
ALIM0013-2	*Techniques for preparing and preserving foods*	Q2				**2**
	- *General concepts* - Christophe BLECKER		21	-	-	
	- *In-depth study for bioengineers* - Christophe BLECKER		3	-	-	
BIOL2015-3	*Molecular biology* - Patrick FICKERS	Q2	24	-	-	**2**

Choose a language module from :

All year round

STE 2.31 English language

LANG2957-1	*Practice of specialized English in Sciences and Environmental Technologies: (level C1 - presentation)* - Estelle MAYARD, Lelania SPERRAZZA - [36h AUTR]	TA	-	12	[+]	**4**

STE 2.32 Dutch language

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

STE 2.33 Spanish language

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

Optional activity

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	Q2	12	28	-	**4**

Bloc d'aménagement du programme de l'année

Bridging courses Master in environmental bioengineering

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

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

Option Environmental Bioengineering

GERE0036-1	*Instrumentation: sensors and signals* - Benoît MERCATORIS **Corequisite :** MATH2016-1 - Mathématique générale et modélisation des systèmes dynamiques	Q2	24	24	-	**4**
HYDR0001-1	*General hydrology* - Aurore DEGRÉ	Q2	14	10	-	**2**
GERE0043-1	*Foundations of soil quality* - Gilles COLINET, Caroline DE CLERCK, Aurore DEGRÉ	Q2	18	6	-	**2**
INGE0001-2	*Strength of materials and elasticity* - *Introduction* - Laurent DUCHENE - *In-depth study* - Laurent DUCHENE	Q2	 24 12	 - -	 - -	**3**
PHYS3010-2	*Climate changes* - Bernard LONGDOZ	Q2	24	-	-	**2**
ENVT3129-1	*Evaluating sustainability* - Andrea DI MARIA - [2h SEM]	Q2	12	16	[+]	**3**

Option cours

Select 1 course from Environmental sciences and technologies subject :

AGRO0001-1	*Basic principles of agriculture and agroecology* - Pierre DELAPLACE, Benjamin DUMONT - Suppl : Christophe LACROIX - [4h Ex.]	Q2	16	4	[+]	**2**
INGE0002-1	*Refrigeration and drying* - Nicolas JACQUET, Paul MALUMBA KAMBA	Q2	18	6	-	**2**