

Block view of the study programme

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Block 1

Compulsory courses

Periods 1 and 2

STE1.10 Core curriculum 1

| | | | | | | |
|------------|---|----|----|----|-----|---|
| GERE0015-1 | <i>Group project</i> - JeanThomas CORNELIS - Suppl : Marie DINCHER - [180h AUTR] | Q1 | 4 | - | [+] | 6 |
| HYDR0012-1 | <i>Fluid transport and distribution</i> (english language) - Joost WELLENS Corequisite : LANG2956-1 - Pratique de l'anglais de spécialité en Sciences et Technologies de l'environnement : partie 1 (niveau B2+) | Q1 | 11 | 10 | - | 2 |
| ENVT0045-1 | <i>Geomatics and applied remote sensing</i> - JeanFrançois BASTIN, Philippe LEJEUNE | Q1 | 24 | 33 | - | 6 |
| GEOP0003-2 | <i>Pedogenesis, international referential of classification and soil hydrodynamics</i> - JeanThomas CORNELIS, Aurore DEGRÉ - Suppl : Marie DINCHER - [6h FT] Corequisite : LANG2956-1 - Pratique de l'anglais de spécialité en Sciences et Technologies de l'environnement : partie 1 (niveau B2+) | Q1 | 31 | 26 | [+] | 6 |

Optional courses

Single focus

Professional Focus

Periods 1 and 2

STE1.10 Core curriculum 1

| | | | | | | |
|------------|--|----|----|----|-----|---|
| STAT1213-1 | <i>Multivariate analysis 1: data exploration and structuring</i> - Yves BROSTAUX | Q1 | 9 | 9 | - | 2 |
| GERE0019-1 | <i>Grounds mechanic and geotechnology</i> - Frédéric COLLIN, Bertrand FRANÇOIS | Q1 | 21 | 21 | - | 4 |
| INGE0004-2 | <i>Construction processes</i> - JeanFrançois RONDEAUX - [4h FT] | Q1 | 20 | 12 | [+] | 3 |

STE1.10 Core curriculum 2

| | | | | | | |
|------------|---|----|---|----|-----|---|
| MANA0004-1 | <i>Portfolio (Master)</i> - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Marianne SINDIC - [24h AUTR] | Q2 | - | - | [+] | 2 |
| LANG2956-1 | <i>Practice of specialized English in environment sciences and technologies : Part 1 (level B2+)</i> - Sophie DEPOTERRE, Estelle MAYARD - Suppl : Annabel FOREST, Fiona THEWISSEN - [36h AUTR] Corequisite : HYDR0012-1 - Fluid transport and distribution GERE0037-1 - Modélisation des transferts dans les biosystèmes GEOP0003-2 - Pédogenèse, référentiels internationaux de classification et hydrodynamique des sols | Q2 | - | 12 | [+] | 4 |

Period 3

STE1.10 Core curriculum 3

| | | | | | | |
|------------|---|----|----|----|---|---|
| GERE0037-1 | <i>Modelling of transfers in biosystems</i> - Aurore DEGRÉ, Bernard LONGDOZ, Benoît MERCATORIS Corequisite : LANG2956-1 - Pratique de l'anglais de spécialité en Sciences et Technologies de l'environnement : partie 1 (niveau B2+) | Q2 | 20 | 37 | - | 6 |
|------------|---|----|----|----|---|---|

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|------------|--|----|----|----|---|---|
| GEP0010-1 | <i>Soil quality evaluation</i> - Gilles COLINET | Q2 | 14 | 13 | - | 3 |
| GERE0038-1 | <i>Energy systems and renewable energies</i> - Frédéric LEBEAU | Q2 | 18 | 18 | - | 4 |

Period 4

STE1.45 Field applications and visits

| | | | | | | |
|------------|--|----|---|---|-----|---|
| GERE0039-1 | <i>Field applications and visits</i> - Gilles COLINET, Jeroen MEERSMANS - [23h FT] | Q2 | 1 | - | [+] | 2 |
|------------|--|----|---|---|-----|---|

Choose one module from the optional courses n°1 (block 1) :

STE1.41 Spatial analysis, soil organisation in the landscape and soil conservation

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|------------|---|----|----|----|-----|---|
| GERE0023-1 | <i>Spatial analysis, organisation of grounds in the landscape and preservation of grounds</i> - Gilles COLINET, Aurore DEGRÉ, Jeroen MEERSMANS - [8h FT] Corequisite : LANG2956-1 - Pratique de l'anglais de spécialité en Sciences et Technologies de l'environnement : partie 1 (niveau B2+) GEP0003-2 - Pédogenèse, référentiels internationaux de classification et hydrodynamique des sols | Q2 | 23 | 23 | [+] | 6 |
|------------|---|----|----|----|-----|---|

STE1.42 Theory of structural calculations

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|------------|--|----|----|----|---|---|
| GERE0021-1 | <i>Theory of structural calculations</i> - Laurent DUCHENE, JeanMarc FRANSEN | Q2 | 29 | 28 | - | 6 |
|------------|--|----|----|----|---|---|

Choose one module totalling 4 credits from :

STE1.43 Irrigation

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|------------|---|----|----|----|-----|---|
| HYDR0015-1 | <i>Irrigation (english language)</i> - Joost WELLENS - [3h FT] Corequisite : LANG2956-1 - Pratique de l'anglais de spécialité en Sciences et Technologies de l'environnement : partie 1 (niveau B2+) | Q2 | 13 | 20 | [+] | 4 |
|------------|---|----|----|----|-----|---|

STE1.44 Rural engineering technologies

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|------------|--|----|----|---|-----|---|
| GERE0028-2 | <i>Building physics and special techniques</i> - Frédéric LEBEAU - [3h AUTR] | Q2 | 9 | 6 | [+] | 2 |
| GERE0007-3 | <i>Digital electronics</i> - Bernard HEINESCH | Q2 | 16 | 8 | - | 2 |

Optional activities

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

Block 2

Compulsory courses

Periods 1 and 2

STE2. Environmental law

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|------------|--|----|----|---|---|---|
| DROI1306-1 | <i>Environmental law</i> - Martin LAUWERS, Renaud SMAL | Q1 | 18 | - | - | 2 |
|------------|--|----|----|---|---|---|

Periods 3 and 4

STE2.31 Final work and internship

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|------------|--|----|----|---|---|----|
| RSTG0003-1 | <i>Internship and professional relations</i> - Catherine COLAUX, Thomas DOGOT, Didier VAN CAILLIE, Joost WELLENS | TA | 12 | - | - | 8 |
| RTFE2002-1 | <i>Thesis in education environmental sciences and technologies</i> - Catherine CHARLES | Q2 | - | - | - | 24 |

Optional courses

Periods 1 and 2

Choose courses totalling 4 ECTS from the following :

STE 2.12 Environmental Techniques and Data Mining

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|------------|--|----|----|----|-----|---|
| CHIM9248-1 | <i>Wastewater engineering</i> (english language) - Frank DELVIGNE | Q1 | 18 | - | - | 2 |
| GEST3020-1 | <i>Conceiving and economic assessment of project : food crop and agroforestry</i> - Baudouin MICHEL - [9h SEM] | Q1 | 9 | - | [+] | 2 |
| ENVT2053-1 | <i>Waste management</i> - Luc MINNE - [4h FT] | Q1 | 14 | - | [+] | 2 |
| INFO8008-1 | <i>Multivaried analysis 2: data mining and machine learning</i> (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

Choose one module totalling 6 credits from :

STE 2.13 Practical evaluation of grounds and water resources

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|------------|--|----|----|----|-----|---|
| GERE0025-1 | <i>Practical evaluation of grounds and water resources</i> - Gilles COLINET, Aurore DEGRÉ, Jeroen MEERSMANS, Youri ROTHFUSS - [19h AUTR] | Q1 | 19 | 19 | [+] | 6 |
|------------|--|----|----|----|-----|---|

Prerequisite :
GEOP0010-1 - Evaluation de la qualité des sols

STE2.14 Automation in agriculture

| | | | | | | |
|------------|---|----|----|----|-----|---|
| GERE0026-1 | <i>Automatic</i> - Benoît MERCATORIS - [6h AUTR] | Q1 | 6 | 6 | [+] | 2 |
| GERE0027-1 | <i>Microcontrollers Base</i> - Bernard HEINESCH - [6h AUTR] | Q1 | 3 | 15 | [+] | 2 |
| GERE0024-1 | <i>Digital eco-design</i> - Frédéric LEBEAU | Q1 | 12 | 12 | - | 2 |

Choose one module totalling 6 credits from :

STE2.15 Environmental remediation

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|------------|---|----|----|---|-----|---|
| ENVT2049-2 | <i>Introduction to environmental assessment</i> - Angélique LÉONARD - [9h AUTR] | Q1 | 9 | - | [+] | 2 |
| ECON2248-1 | <i>Environmental economy</i> - Kevin MARÉCHAL | Q1 | 18 | - | - | 2 |
| GERE0029-1 | <i>Ground remediation</i> - Gilles COLINET - [10h FT] | Q1 | 6 | 8 | [+] | 2 |

STE2.16 Precision agriculture

| | | | | | | |
|------------|--|----|---|---|-----|---|
| GERE0030-1 | <i>Image analysis</i> (english language) - Vincent LEEMANS | Q1 | 9 | 9 | - | 2 |
| GERE0031-1 | <i>Support systems for decision</i> (english language) - Vincent LEEMANS - [6h AUTR] | Q1 | 6 | 6 | [+] | 2 |

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

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|------------|---|----|---|---|---|---|
| GERE0032-1 | <i>Robotic applications</i> - Benoît MERCATORIS | Q1 | 9 | 9 | - | 2 |
|------------|---|----|---|---|---|---|

Corequisite :
GERE0026-1 - Automatique
GERE0027-1 - Base des microcontrôleurs

Choose one module totalling 6 credits from :

GFEN 2.17 Very high-resolution remote sensing applied to the management of natural environments

| | | | | | | |
|------------|---|----|----|----|---|---|
| ENVT3060-1 | <i>Very high resolution remote sensing applied to the management of natural environments</i> - Philippe LEJEUNE | Q1 | 18 | 36 | - | 6 |
|------------|---|----|----|----|---|---|

Prerequisite :
ENVT0045-1 - Géomatique et télédétection appliquée

STE2.18 Ecosystem exchanges - atmosphere, under climate change

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|------------|--|----|----|----|-----|----------|
| GERE0034-1 | <i>Exchanges between the ecosystem and the atmosphere as a result of climate change</i> - Bernard HEINESCH, Bernard LONGDOZ, Youri ROTHFUSS - [3h AUTR] | Q1 | 14 | 40 | [+] | 6 |
|------------|--|----|----|----|-----|----------|

STE2.19 Integrated project on hydrogeophysics

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|------------|---|----|---|----|---|----------|
| GERE0035-1 | <i>Integrated project on hydrogeophysics</i> (english language) - Frédéric NGUYEN | Q1 | 4 | 38 | - | 6 |
|------------|---|----|---|----|---|----------|

STE2.20 Controlled environment agriculture

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|------------|---|----|---|----|---|----------|
| GERE0033-1 | <i>Controlled environment agriculture</i> - Frédéric LEBEAU | Q1 | 9 | 27 | - | 6 |
|------------|---|----|---|----|---|----------|

Choose a language module from :

Periods 3 and 4

STE 2.31 English language

| | | | | | | |
|------------|---|----|---|----|-----|----------|
| LANG2957-1 | <i>Practice of specialized english in sciences and environmental technologies : part 2 (level C1 - presentation)</i> - Sophie DEPOTERRE, Estelle MAYARD - Suppl : Annabel FOREST, Fiona THEWISSEN - [36h AUTR] | TA | - | 12 | [+] | 4 |
|------------|---|----|---|----|-----|----------|

Corequisite :

RTFE2002-1 - Travail de fin d'études en sciences et technologies de l'environnement

All year round

STE 2.32 Dutch language

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|------------|---|----|----|----|---|----------|
| LANG9914-1 | <i>Dutch - intermediate</i> - Catherine PEETERS | TA | 18 | 18 | - | 4 |
|------------|---|----|----|----|---|----------|

STE 2.33 Spanish language

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|------------|--|----|----|----|---|----------|
| LANG9915-1 | <i>Spanish - beginners</i> - Valérie COYETTE | TA | 18 | 18 | - | 4 |
|------------|--|----|----|----|---|----------|

Optional activity

| | | | | | | |
|------------|---|----|----|----|---|----------|
| INFO9013-1 | <i>Multivaried analysis 3: Data mining et Machine Learning: advanced</i> (english language) - Yves BROSTAU, David COLIGNON, Benoît MERCATORIS, Héléne 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 environmental bioengineering

Compulsory courses

| | | | | | | | |
|--|--|----|----|----|-----|----------|----------|
| GEST3028-2 | <i>Accounting and management</i> - <i>General accounting</i> - Thomas DOGOT, Philippe LEBAILLY - <i>Management, green accounting and business plan</i> - Thomas DOGOT, Philippe LEBAILLY | Q1 | | 12 | 12 | - | 4 |
| GEST3773-1 | <i>Management of quality</i> - Mohamed AYADI, Sébastien MASSART - [6h AUTR] | Q1 | 18 | - | [+] | 2 | |
| STAT2004-1 | <i>Applied statistics : First part</i> - Yves BROSTAU | Q1 | 12 | 12 | - | 2 | |
| STAT2005-1 | <i>Applied statistic : Second part</i> - Yves BROSTAU | Q2 | 12 | 12 | - | 2 | |
| Corequisite : | | | | | | | |
| STAT2004-1 - Statistique appliquée : 1ère partie | | | | | | | |
| PSYC5897-3 | <i>Team, organization and change</i> - Daniel FAULX, Véronique JANS, Tiber MANFREDINI - [44h SEM] | TA | 4 | - | [+] | 2 | |

Corequisite :

GEST3028-2 - Comptabilité et gestion des entreprises

GEST3773-1 - Gestion de la qualité

MANA0003-1 - Portfolio (Bachelier)

| | | | | | | |
|------------|---|----|----|----|-----|---|
| MANA0003-1 | <i>Portfolio (Bachelor)</i> - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Marianne SINDIC - [24h AUTR] | TA | - | - | [+] | 2 |
| | Corequisite : PSYC5897-3 - Equipe, organisation & changement | | | | | |
| RSTG0008-1 | <i>Internship (Bachelor)</i> - Hélène SOYEURT - [18h AUTR] | TA | 6 | - | [+] | 2 |
| | Corequisite : GEST3773-1 - Gestion de la qualité GEST3028-2 - Comptabilité et gestion des entreprises PSYC5897-3 - Equipe, organisation & changement | | | | | |
| BIOL2044-1 | <i>Plant physiology</i> - Patrick DU JARDIN | Q1 | 27 | 9 | - | 3 |
| BIOL2013-2 | <i>General microbiology</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 | 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 - Suppl : Ivan DOSEN, Annabel FOREST - [48h E-Lrng] | TA | - | 24 | [+] | 4 |
| INGE0008-1 | <i>Multidisciplinary experimental project</i> - Yves BROSTAUX, Pierre DELAPLACE, Sébastien MASSART, Benoît MERCATORIS, Arnaud MONTY, Bernard POCHE - [60h AUTR] | TA | 6 | 6 | [+] | 6 |
| | 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 | | | | | |

Option Environmental Bioengineering

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|------------|---|----|----|----|---|---|
| GEOP0002-2 | <i>Edaphology</i> - Aurore DEGRÉ | Q2 | 18 | 6 | - | 2 |
| GEOP0011-1 | <i>Edaphology - In-depth study</i> - Aurore DEGRÉ, Youri ROTHFUSS | Q2 | 5 | 5 | - | 1 |
| GERE0036-1 | <i>Environmental metrology</i> - Benoît MERCATORIS | Q2 | 24 | 24 | - | 4 |
| | Corequisite : MATH2016-1 - Mathématique générale et modélisation des systèmes dynamiques | | | | | |
| HYDR0001-1 | <i>General hydrology</i> - Aurore DEGRÉ | Q2 | 14 | 10 | - | 2 |
| HYDR0007-3 | <i>Fluid mechanics</i> - Michel PIROTTON | Q2 | 14 | 10 | - | 2 |
| INGE0001-2 | <i>Strength of materials and elasticity</i> - <i>Introduction</i> - Laurent DUCHENE - <i>In-depth study</i> - Laurent DUCHENE | Q2 | | | | 3 |
| | | | 24 | - | - | |
| | | | 12 | - | - | |
| PHYS3010-2 | <i>Bioclimatology basis</i> - Bernard LONGDOZ | Q2 | 24 | - | - | 2 |

Option cours

Select 1 course from Environmental sciences and technologies subject :

| | | | | | | |
|------------|---|----|----|---|-----|---|
| AGRO0001-1 | <i>Basic principles of agriculture and agroecology</i> - Benjamin DUMONT, Ludvine LASSOIS - [4h FT] | Q2 | 20 | - | [+] | 2 |
| INGE0002-1 | <i>Refrigeration and drying</i> - Nicolas JACQUET, Paul MALUMBA KAMBA | Q2 | 18 | 6 | - | 2 |

Possibility (via the student affairs office) to choose between 2 and 6 ECTS among the following courses, replacing the

B2 elective courses:

| | | | | | | |
|------------|---|----|----|----|-----|----------|
| ENVT3050-1 | <i>Quantification of ecosystem services</i> - Marc DUFRÊNE - [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> | Q2 | | | | 6 |
| | - <i>Urban agriculture</i> - Haissam JIJAKLI | | 13 | 13 | - | |
| | - <i>Developmental physiology applied to plant productions</i> - Pierre DELAPLACE | | 12 | - | [+] | |
| | - [6h FT] | | | | | |
| | - <i>Physical parameters control of plant productions in controlled conditions</i> - Vincent LEEMANS | | 9 | - | - | |
| VEGE0028-1 | <i>Methods for managing plant health</i> - Frédéric FRANCIS, Olivier GUELTON, Eric HAUBRUGE, Haissam JIJAKLI, Ludivine LASSOIS, Sébastien MASSART, François VERHEGGEN | Q2 | 42 | 15 | - | 6 |
| VEGE0036-1 | <i>Tropical agroecology</i> | Q2 | | | | 6 |
| | - <i>Introduction</i> - Ludivine LASSOIS - [20h FT] | | - | - | [+] | |
| | - <i>Depth notions</i> - Ludivine LASSOIS | | 16 | 21 | - | |
| CHIM9321-1 | <i>Immunology</i> - Benjamin G. DEWALS, Laurent GILLET, Alain VANDERPLASSCHEN, Hervé VANDERSCHUREN | Q1 | 33 | - | - | 4 |
| ALIM0015-1 | <i>Food sanitary safety</i> - Mohamed AYADI, Marianne SINDIC - [2h SEM] | Q1 | 16 | 6 | [+] | 2 |
| ALIM0013-2 | <i>Techniques of food preservation</i> - Christophe BLECKER | Q2 | 24 | - | - | 2 |
| BIOL2015-3 | <i>Molecular biology</i> - Luc WILLEMS | Q2 | 24 | - | - | 2 |