

#### 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 : 30Cr, B2 : 38Cr)

##### Periods 3 and 4

##### GFEN1.30 Core curriculum Q2

MANA0004-1	<i>Portfolio (Master)</i> - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR]	B1	Q2	-	-	[+]	2
LANG2959-1	<i>Practice of specialized English for forests and natural areas : part 1 (level B2+)</i> - Sophie DEPOTERRE, Estelle MAYARD - Suppl : Fiona THEWISSEN - [36h AUTR] <b>Corequisite :</b> FORE0010-1 - Science du bois FORE0008-2 - Analyse et valorisation stationnelles BIOD0007-1 - Méthodes d'analyse de la biodiversité FORE0025-1 - Expertise sylvicole	B1	TA	-	12	[+]	4

##### Period 3

##### GFEN1.31 Economics and environmental law

DROI0969-1	<i>Forestry law and environmental law</i> - Etienne ORBAN DE XIVRY	B1	Q2	24	-	-	2
ECON2255-4	<i>Forest and natural resources economics</i> - Gauthier LIGOT	B1	Q2	9	9	-	2
FORE0012-1	<i>Forest products supply chain</i> - Tom DE MIL - [3h SEM]	B1	Q2	9	6	[+]	2

##### GFEN1.32 Basic Forest Management Principles

FORE0009-1	<i>Sustainable management of tropical forests</i> - JeanLouis DOUCET	B1	Q2	36	-	-	3
FORE0005-3	<i>Multifunctional management of forests</i> - Philippe LEJEUNE - [4h SEM] <b>Corequisite :</b> ENVT0045-1 - Géomatique et télédétection appliquée FORE0004-3 - Dendrométrie et inventaires	B1	Q2	7	16	[+]	3

##### Period 4

##### GFEN1.41 Forestry

FORE0008-2	<i>Site analysis and valuation</i> - Hugues CLAESSENS - [15h FT] <b>Corequisite :</b> LANG2959-1 - Pratique de l'anglais de spécialité en Gestion des Forêts et des Espaces naturels : partie 1 (niveau B2+)	B1	Q2	6	12	[+]	3
FORE0025-1	<i>Expertise in silviculture</i> - Hugues CLAESSENS, Marc DUFRÈNE, Gauthier LIGOT - [16h FT] <b>Corequisite :</b> BIOD0001-3 - Gestion de la biodiversité FORE0008-2 - Analyse et valorisation stationnelles FORE0004-3 - Dendrométrie et inventaires ENVT3050-1 - Quantification des services écosystémiques LANG2959-1 - Pratique de l'anglais de spécialité en Gestion des Forêts et des Espaces naturels : partie 1 (niveau B2+)	B1	Q2	10	1	[+]	3

##### GFEN1.42 Management of natural ecosystems and landscapes

FORE0018-3	<i>Management of large fauna in temperate climate</i> - Alain LICOPPE - [7h FT]	B1	Q2	14	-	[+]	2
PAYS0001-2	<i>Ecological networks</i> - Marc DUFRÈNE, Grégory MAHY - [10h FT] <b>Corequisite :</b>	B1	Q2	6	2	[+]	2

	BIOD0001-3 - Gestion de la biodiversité								
FORE0003-2	<i>Participatory management of natural environments</i> - Cédric VERMEULEN - [9h AUTR]	B1	Q2	9	3	[+]			2
	<b>Corequisite :</b> BIOD0001-3 - Gestion de la biodiversité								

#### Periods 1 and 2

##### GFEN2.10 Group Project

FORE0028-1	<i>Group project</i> - JeanLouis DOUCET, Adeline FAYOLLE - [54h AUTR]	B2	Q1	-	-	[+]			6
	<b>Prerequisite :</b> FORE0004-3 - Dendrométrie et inventaires BIOD0007-1 - Méthodes d'analyse de la biodiversité								

#### Periods 3 and 4

##### GFEN2.31 Final work and internship

RTFE2009-1	<i>Thesis in forest and natural areas management</i> - Cédric VERMEULEN	B2	Q2	-	-	-			24
RSTG0004-1	<i>Internship and professional relations</i> - Hugues CLAESSENS, Catherine COLAUX, Thomas DOGOT, Didier VAN CAILLIE	B2	TA	12	-	-			8

#### Optional courses (B1 : 30Cr, B2 : 22Cr)

##### Single focus (B1 : 30Cr)

##### Professional Focus (B1 : 30Cr)

##### Period 1

##### GFEN1.11 Inventory and biodiversity management

ENVT3050-1	<i>Quantification of ecosystem services</i> - Marc DUFRÈNE - [6h AUTR]	B1	Q1	9	5	[+]			2
ECON2248-1	<i>Environmental economy</i> - Kevin MARÉCHAL	B1	Q1	18	-	-			2
BIOD0001-3	<i>Biodiversity management</i> - Arnaud MONTY - [6h SEM]	B1	Q1	18	-	[+]			2

##### GFEN1.12 Quantification of the natural resources

FORE0004-3	<i>Forest mensuration and forest inventory</i> - Adeline FAYOLLE, Gauthier LIGOT - [3h FT]	B1	Q1	15	18	[+]			4
PAYS0007-2	<i>Introduction to landscape analysis and modeling</i> - JeanFrançois BASTIN	B1	Q1	8	8	-			2

##### Period 2

##### GFEN1.21 Biodiversity analysis methods

BIOD0007-1	<i>Biodiversity analysis methods</i> - <i>Community</i> - Adeline FAYOLLE - [8h AUTR] - <i>Populations</i> - Arnaud MONTY	B1	Q1						6
	<b>Corequisite :</b> LANG2959-1 - Pratique de l'anglais de spécialité en Gestion des Forêts et des Espaces naturels : partie 1 (niveau B2+) BIOD0001-3 - Gestion de la biodiversité			12	12	[+]			
				15	9	-			

##### GFEN1.22 Geomatics applied to environmental management

ENVT0045-1	<i>Geomatics and applied remote sensing</i> - JeanFrançois BASTIN, Philippe LEJEUNE	B1	Q1	24	33	-			6
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##### GFEN1.23 Wood

FORE0010-1	<i>Wood science (english language)</i> - Tom DE MIL - [9h SEM, 2h FT]	B1	Q1	18	7	[+]			4
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FORE0036-1 *Timber anatomy and identification* - Benoît JOUREZ B1 Q1 10 10 - 2

Choose 3 modules from the elective courses : (B2 : 18Cr)

#### Period 1

##### GFEN2.11 Ecological engineering

PAYS0014-1 *Ecological engineering* - Marc DUFRÈNE, Grégory MAHY - [23h FT] B2 Q1 19 15 [+] 6

##### GFEN2.12 Forest Health

FORE0041-1 *Forest health* - Hugues CLAESSENS, Frédéric FRANCIS, Simon LHOEST, Sébastien MASSART - [10h FT] B2 Q1 40 7 [+] 6

##### GFEN2.13 Integrated management of wildlife

RAVT0003-1 *Management of large fauna in tropical areas* - Cédric VERMEULEN - [4h SEM, 3h FT] B2 Q1 9 2 [+] 2

###### Prerequisite :

BIOD0001-3 - Gestion de la biodiversité  
ENVT0045-1 - Géomatique et télédétection appliquée  
FORE0018-3 - Gestion de la grande faune en milieu tempéré  
PAYS0001-2 - Réseaux écologiques  
FORE0003-2 - Gestion participative des milieux naturels

RAVT0001-1 *Wildlife population inventory and modelling techniques* - Philippe LEJEUNE, Simon LHOEST B2 Q1 9 9 - 2

###### Prerequisite :

BIOD0007-1 - Méthodes d'analyse de la biodiversité  
FORE0004-3 - Dendrométrie et inventaires  
ENVT0045-1 - Géomatique et télédétection appliquée

RAVT0002-1 *Eco-ethology and wildlife conservation* - Fany BROTCORNE - [9h AUTR] B2 Q1 9 - [+] 2

##### GFEN2.14 Applied forestry

FORE0032-1 *Forestry itineraries* - Hugues CLAESSENS, Gauthier LIGOT - [30h FT] B2 Q1 6 - [+] 4

###### Prerequisite :

ENVT3050-1 - Quantification des services écosystémiques  
DROI0969-1 - Droit forestier et droit de l'environnement  
ECON2255-4 - Economie du patrimoine forestier et naturel  
FORE0012-1 - Mobilisation des produits forestiers  
FORE0008-2 - Analyse et valorisation stationnelles  
FORE0025-1 - Expertise sylvicole

FORE0033-1 *Forest genetic resources management* - Ludivine LASSOIS - [4h FT] B2 Q1 14 - [+] 2

##### GFEN2.15 Tropical forestry (Number of students limited - based on application file)

*Notice* : Module given abroad

FORE0042-1 *Tropical forestry* B2 Q1 6 18 - 6  
- *Certification of tropical forests* - JeanLouis DOUCET 12 12 -  
- *Tropical agroforestry* - JeanLouis DOUCET 12 12 -  
- *Applied tropical botany* - JeanLouis DOUCET

###### Prerequisite :

FORE0009-1 - Gestion durable des forêts tropicales

#### Period 2

##### GFEN2.21 Wood development

FORE0015-2 *Logging* - Tom DE MIL B2 Q1 6 12 - 2

###### Prerequisite :

ENVT0045-1 - Géomatique et télédétection appliquée

FORE0025-1 - Expertise sylvicole

FORE0043-1 *Wood industries* - Tom DE MIL, Benoît JOUREZ - [24h FT] B2 Q1 18 - [+] 4

**Prerequisite :**

FORE0036-1 - Anatomie et identification des bois

FORE0010-1 - Science du bois

**GFEN2.22 Aquatic environments management**

GESA0001-2 *Chemical and physico-chemical analysis of waters* - B2 Q1 6 12 - 2  
Giorgia PURCARO

FORE0017-1 *Ecology of fresh water organisms* B2 Q1 2  
- *Ecology and dynamics of fresh water fish populations* - 10 - -  
Michaël OVIDIO  
- *Aquatic macro-invertebrates and bioindications* - 9 - -  
Rudy CAPARROS MEGIDO, Frédéric FRANCIS

VEGE0021-1 *Animal communities and water quality* - Rudy CAPARROS MEGIDO, B2 Q1 4 14 - 2  
Frédéric FRANCIS

**GFEN2.23 Plants and towns**

PAYS0016-1 *Plants and towns* B2 Q1 3  
- *Agriculture and towns* - Haissam JIJAKLI - [12h FT] 8 - [+]  
- *Agriculture and towns: in depth* - Haissam JIJAKLI - [10h Mon. WS] - - [+]

**Prerequisite :**

BIOD0001-3 - Gestion de la biodiversité

PAYS0017-1 *Plants and towns* B2 Q1 3  
- *Biodiversity and towns* - Grégory MAHY - [11h Proj.] 16 - [+]  
- *Biodiversity and towns: advanced* - Grégory MAHY 8 - -

**Prerequisite :**

BIOD0001-3 - Gestion de la biodiversité

**GFEN 2.24 Very high-resolution remote sensing applied to the management of natural environments**

ENVT3060-1 *Very high resolution remote sensing applied to the management of natural environments* - Philippe LEJEUNE B2 Q1 18 36 - 6

**Corequisite :**

ENVT0045-1 - Géomatique et télédétection appliquée

**Periods 1 and 2**

**GFEN 2.25 Data mining & Machine learning**

STAT1213-1 *Multivariate analysis 1: data exploration and structuring* - B2 Q1 9 9 - 2  
Yves BROSTAUX

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

**Corequisite :**

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

[...] Possibility to choose between 2 and 6 credits from the following courses

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

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

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

VEGE0037-1 *Innovative system of plant production* B2 Q2 6  
- *Urban agriculture* - Haissam JIJAKLI 13 13 -  
- *Developmental physiology applied to plant productions* - 12 - [+]

	DELAPLACE - [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	B2	Q2	42	15	6
VEGE0036-1	<i>Tropical agroecology</i> - <i>Introduction</i> - Ludivine LASSOIS - Suppl : N... - [20h FT] - <i>Depth notions: part 1</i> - Ludivine LASSOIS - Suppl : Nicolas DESOIGNIES, N... - <i>Depth notions: part 2</i> - Ludivine LASSOIS - Suppl : Nicolas DESOIGNIES, N...	B2	Q2	-	-	6
				8	11	[+]
				8	10	-
CHIM9321-1	<i>Immunology</i> - Bénédicte MACHIELS	B2	Q2	27	-	4
ALIM0015-1	<i>Food sanitary safety</i> - Mohamed AYADI - [2h SEM]	B2	Q1	16	6	[+] 2
ALIM0013-2	<i>Techniques of food preservation</i> - Christophe BLECKER	B2	Q2	24	-	2
BIOL2015-3	<i>Molecular biology</i> - Patrick FICKERS	B2	Q2	24	-	2

**Choose a language module from : (B2 : 4Cr)**

#### Periods 3 and 4

#### GFEN 2.31 English language (B2 : 4Cr)

LANG2960-1	<i>Practice of specialized English for forests and natural areas : part 2 (level C1 - Presentation)</i> - Sophie DEPOTERRE, Estelle MAYARD - Suppl : Fiona THEWISSEN - [36h AUTR]	B2	TA	-	12	[+] 4
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**Corequisite :**

FORE0028-1 - Projet de groupe

#### All year round

#### GFEN 2.32 Dutch language (B2 : 4Cr)

LANG9914-1	<i>Dutch Intermediate Level (dutch language)</i> - Catherine PEETERS	B2	TA	18	18	- 4
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#### GFEN 2.33 Spanish language (B2 : 4Cr)

LANG9915-1	<i>Spanish - beginners</i> - Valérie COYETTE	B2	TA	18	18	- 4
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#### Optional activities (B1 : 14Cr, B2 : 4Cr)

RSTG0011-1	<i>Additional internship</i> - Aurore DEGRÉ	B1	TA	-	-	5
HULG9547-1	<i>French course for IN mobility students (S1)</i> - N...	B1	Q1	-	-	3
HULG9548-1	<i>French course for IN mobility students (S2)</i> - N...	B1	Q2	-	-	3
HULG9546-1	<i>Erasmus: integration weeks</i> - N...	B1	Q1	-	-	3
INFO9013-1	<i>Multivariate analysis 3: Data mining et Machine Learning: advanced (english language)</i> - Yves BROSTAU, David COLIGNON, Benoît MERCATORIS, Hélène SOYEURT	B2	Q2	12	28	- 4

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

## Additional ECTS Master in forests and natural areas engineering

#### Compulsory courses (B0 : 60Cr)

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

OGOT

GEST3773-1	<i>Management of quality</i> - Mohamed AYADI, Sébastien MASSART - [6h AUTR]	B0	Q1	18	-	[+]	2
STAT2004-1	<i>Applied statistics : First part</i> - Yves BROSTAUX	B0	Q1	12	12	-	2
STAT2005-1	<i>Applied statistic : Second part</i> - Yves BROSTAUX <b>Corequisite :</b> STAT2004-1 - Statistique appliquée : 1ère partie	B0	Q2	12	12	-	2
PSYC5897-3	<i>Team, organization and change</i> - Daniel FAULX, Véronique JANS, Tiber MANFREDINI - [44h SEM] <b>Corequisite :</b> GEST3028-2 - Comptabilité et gestion des entreprises GEST3773-1 - Gestion de la qualité MANA0003-1 - Portfolio (Bachelier)	B0	TA	4	-	[+]	2
MANA0003-1	<i>Portfolio (Bachelor)</i> - Yves BECKERS, Hugues CLAESSENS, Gilles COLINET, Aurore DEGRÉ, Dorothée GOFFIN - [24h AUTR] <b>Corequisite :</b> PSYC5897-3 - Equipe, organisation & changement	B0	TA	-	-	[+]	2
RSTG0008-1	<i>Internship (Bachelor)</i> - Hélène SOYEURT - [18h AUTR] <b>Corequisite :</b> GEST3773-1 - Gestion de la qualité GEST3028-2 - Comptabilité et gestion des entreprises PSYC5897-3 - Equipe, organisation & changement	B0	TA	6	-	[+]	2
BIOL2044-1	<i>Plant physiology</i> - Patrick DU JARDIN	B0	Q1	27	9	-	3
BIOL2013-2	<i>General microbiology, Introduction</i> - Patrick FICKERS, Philippe JACQUES	B0	Q1	16	8	-	2
ENVT2044-1	<i>General ecology</i> - Grégory MAHY, Arnaud MONTY	B0	Q1	24	-	-	2
INFO2038-1	<i>Computer science and algorithmic</i> - Hélène SOYEURT	B0	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	B0	Q1	24	24	-	4
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 POCHE - [60h AUTR] <b>Corequisite :</b> 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
HYDR0001-1	<i>General hydrology</i> - Aurore DEGRÉ	B0	Q2	14	10	-	2
<b>Option Forests and natural Areas Engineering</b>							
AGRO0001-1	<i>Basic principles of agriculture and agroecology</i> - Pierre DELAPLACE, Benjamin DUMONT - [4h FT]	B0	Q2	20	-	[+]	2
BIOL2015-3	<i>Molecular biology</i> - Patrick FICKERS <b>Corequisite :</b> BIOL2016-3 - Génétique générale	B0	Q2	24	-	-	2
BIOL2016-3	<i>General genetics</i> - Nicolas GENGLER, Ludivine LASSOIS - Suppl : Martine SCHROYEN <b>Corequisite :</b>	B0	Q2	12	12	-	2

BIOL2015-3 - Biologie moléculaire

FORE0021-2	<i>Tree species in temperate regions</i> - Arnaud MONTY	B0	Q2	12	12	-	2
FORE0022-3	<i>Ecological foundations of the silviculture</i> - Hugues CLAESSENS - [12h AUTR]	B0	Q2	12	2	[+]	2
INGE0001-4	<i>Strength of materials and elasticity, Introduction</i> - Laurent DUCHENE	B0	Q2	24	-	-	2
PAYS0006-2	<i>Landscape ecology concepts</i> - Jan BOGAERT	B0	Q2	12	12	-	2
PHYS3010-2	<i>Bioclimatology basis</i> - Bernard LONGDOZ - Suppl : Bernard HEINESCH	B0	Q2	24	-	-	2

**Optional activity (B0 : 5Cr)**

RSTG0012-1	<i>Additional internship</i> - Aurore DEGRÉ	B0	TA	-	-	-	5
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