

#### Block view of the study programme

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#### Block 1

*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

##### Periods 3 and 4

##### GFEN1.30 Core curriculum Q2

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

LANG2959-1 *Practice of specialized English for forests and natural areas : part 1 (level B2+)* - Sophie DEPOTERRE, Estelle MAYARD - Suppl : Fiona THEWISSEN - [36h AUTR] TA - 12 [+] 4

##### Corequisite :

FORE0010-1 - Science du bois  
FORE0008-2 - Analyse et valorisation stationnelles  
BIOD0007-1 - Méthodes d'analyse de la biodiversité  
FORE0025-1 - Expertise sylvicole

##### Period 3

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

DROI0969-1 *Forestry law and environmental law* - Etienne ORBAN DE XIVRY Q2 24 - - 2

ECON2255-4 *Forest and natural resources economics* - Gauthier LIGOT Q2 9 9 - 2

FORE0012-1 *Forest products supply chain* - Tom DE MIL - [3h SEM] Q2 9 6 [+] 2

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

FORE0009-1 *Sustainable management of tropical forests* - JeanLouis DOUCET Q2 36 - - 3

FORE0005-3 *Multifunctional management of forests* - Philippe LEJEUNE - [4h SEM] Q2 7 16 [+] 3

##### Corequisite :

ENVT0045-1 - Géomatique et télédétection appliquée  
FORE0004-3 - Dendrométrie et inventaires

##### Period 4

##### GFEN1.41 Forestry

FORE0008-2 *Site analysis and valuation* - Hugues CLAESSENS - [15h FT] Q2 6 12 [+] 3

##### Corequisite :

LANG2959-1 - Pratique de l'anglais de spécialité en Gestion des Forêts et des Espaces naturels : partie 1 (niveau B2+)

FORE0025-1 *Expertise in silviculture* - Hugues CLAESSENS, Marc DUFRÈNE, Gauthier LIGOT - [16h FT] Q2 10 1 [+] 3

##### Corequisite :

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+)

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

FORE0018-3 *Management of large fauna in temperate climate* - Alain LICOPPE - [7h FT] Q2 14 - [+] 2

PAYS0001-2 *Ecological networks* - Marc DUFRÈNE, Grégory MAHY - [10h FT] Q2 6 2 [+] 2

##### Corequisite :

BIOD0001-3 - Gestion de la biodiversité

FORE0003-2 *Participatory management of natural environments* - Cédric VERMEULEN - Q2 9 3 [+] 2  
[9h AUTR]

**Corequisite :**

BIOD0001-3 - Gestion de la biodiversité

#### Optional courses

##### Single focus

##### Professional Focus

##### Period 1

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

ENV3050-1 *Quantification of ecosystem services* - Marc DUFRÈNE - [6h AUTR] Q1 9 5 [+] 2

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

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

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

FORE0004-3 *Forest mensuration and forest inventory* - Adeline FAYOLLE, Gauthier LIGOT - [3h FT] Q1 15 18 [+] 4

PAYS0007-2 *Introduction to landscape analysis and modeling* - JeanFrançois BASTIN Q1 8 8 - 2

##### Period 2

##### GFEN1.21 Biodiversity analysis methods

BIOD0007-1 *Biodiversity analysis methods* Q1 6  
- *Community* - Adeline FAYOLLE - [8h AUTR] 12 12 [+]  
- *Populations* - Arnaud MONTY 15 9 -

**Corequisite :**

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

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

ENV3045-1 *Geomatics and applied remote sensing* - JeanFrançois BASTIN, Philippe LEJEUNE Q1 24 33 - 6

##### GFEN1.23 Wood

FORE0010-1 *Wood science (english language)* - Tom DE MIL - [9h SEM, 2h FT] Q1 18 7 [+] 4

FORE0036-1 *Timber anatomy and identification* - Benoît JOUREZ Q1 10 10 - 2

#### Optional activities

RSTG0011-1 *Additional internship* - Aurore DEGRÉ 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

#### Block 2

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#### Compulsory courses

##### Periods 1 and 2

#### GFEN2.10 Group Project

FORE0028-1	<i>Group project</i> - JeanLouis DOUCET, Adeline FAYOLLE - [54h AUTR]	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	Q2	-	-	-	24
RSTG0004-1	<i>Internship and professional relations</i> - Hugues CLAESSENS, Catherine COLAUX, Thomas DOGOT, Didier VAN CAILLIE	TA	12	-	-	8

#### Optional courses

Choose 3 modules from the elective courses :

##### Period 1

#### GFEN2.11 Ecological engineering

PAYS0014-1	<i>Ecological engineering</i> - Marc DUFRÈNE, Grégory MAHY - [23h FT]	Q1	19	15	[+]	6
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#### GFEN2.12 Forest Health

FORE0041-1	<i>Forest health</i> - Hugues CLAESSENS, Frédéric FRANCIS, Simon LHOEST, Sébastien MASSART - [10h FT]	Q1	40	7	[+]	6
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#### GFEN2.13 Integrated management of wildlife

RAVT0003-1	<i>Management of large fauna in tropical areas</i> - Cédric VERMEULEN - [4h SEM, 3h FT]	Q1	9	2	[+]	2
	<b>Prerequisite :</b> 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	<i>Wildlife population inventory and modelling techniques</i> - Philippe LEJEUNE, Simon LHOEST	Q1	9	9	-	2
	<b>Prerequisite :</b> BIOD0007-1 - Méthodes d'analyse de la biodiversité FORE0004-3 - Dendrométrie et inventaires ENVT0045-1 - Géomatique et télédétection appliquée					

RAVT0002-1	<i>Eco-ethology and wildlife conservation</i> - Fany BROTCORNE - [9h AUTR]	Q1	9	-	[+]	2
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#### GFEN2.14 Applied forestry

FORE0032-1	<i>Forestry itineraries</i> - Hugues CLAESSENS, Gauthier LIGOT - [30h FT]	Q1	6	-	[+]	4
	<b>Prerequisite :</b> 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	<i>Forest genetic resources management</i> - Ludivine LASSOIS - [4h FT]	Q1	14	-	[+]	2
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#### GFEN2.15 Tropical forestry (Number of students limited - based on application file)

*Notice :* Module given abroad

FORE0042-1	<i>Tropical forestry</i>	Q1				6
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- <i>Certification of tropical forests</i> - JeanLouis DOUCET	6	18	-	
- <i>Tropical agroforestry</i> - JeanLouis DOUCET	12	12	-	
- <i>Applied tropical botany</i> - JeanLouis DOUCET	12	12	-	

**Prerequisite :**

FORE0009-1 - Gestion durable des forêts tropicales

**Period 2**

**GFEN2.21 Wood development**

FORE0015-2 *Logging* - Tom DE MIL 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] 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* - Giorgia PURCARO Q1 6 12 - 2

FORE0017-1 *Ecology of fresh water organisms* Q1 2

- *Ecology and dynamics of fresh water fish populations* - Michaël OVIDIO 10 - -

- *Aquatic macro-invertebrates and bioindications* - 9 - -

Rudy CAPARROS MEGIDO, Frédéric FRANCIS

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

Frédéric FRANCIS

**GFEN2.23 Plants and towns**

PAYS0016-1 *Plants and towns* Q1 3

- *Agriculture and towns* - Haïssam JIAKLI - [12h FT] 8 - [+]

- *Agriculture and towns: in depth* - Haïssam JIAKLI - [10h Mon. WS] - - [+]

**Prerequisite :**

BIOD0001-3 - Gestion de la biodiversité

PAYS0017-1 *Plants and towns* 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 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* - Yves BROSTAUX Q1 9 9 - 2

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

**Corequisite :**

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

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

GEP0010-1 *Soil quality evaluation* - Gilles COLINET Q2 14 13 - 3

ENVT3129-1	<i>Evaluating sustainability</i> - Andrea DI MARIA, Angélique LÉONARD - [2h SEM]	Q2	12	16	[+]	3
GERE0023-1	<i>Spatial analysis, organisation of grounds in the landscape and preservation of grounds</i> - Gilles COLINET, Aurore DEGRÉ, Jeroen MEERSMANS - [8h FT]	Q2	23	23	[+]	6
VEGE0037-1	<i>Innovative system of plant production</i> - <i>Urban agriculture</i> - Haissam JIJAKLI - <i>Developmental physiology applied to plant productions</i> - Pierre DELAPLACE - [6h FT] - <i>Physical parameters control of plant productions in controlled conditions</i> - Vincent LEEMANS	Q2	13 12	13 -	- [+]	6
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> - <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...	Q2	- 8 8	- 11 10	[+] - -	6
CHIM9321-1	<i>Immunology</i> - Bénédicte MACHIELS	Q2	27	-	-	4
ALIM0015-1	<i>Food sanitary safety</i> - Mohamed AYADI - [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> - Patrick FICKERS	Q2	24	-	-	2

#### Choose a language module from :

##### Periods 3 and 4

##### GFEN 2.31 English language

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] <b>Corequisite :</b> FORE0028-1 - Projet de groupe	TA	-	12	[+]	4
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##### All year round

##### GFEN 2.32 Langue néerlandaise

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

LANG9915-1	<i>Spanish - beginners</i> - Valérie COYETTE	TA	18	18	-	4
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#### Optional activity

INFO9013-1	<i>Multivariate analysis 3: Data mining et Machine Learning: advanced (english language)</i> - Yves BROSTAU, David COLIGNON, Benoît MERCATORIS, Hélène SOYEURT  <i>Notice :</i> INFO8001-1 prerequisite of the INFO9013-1 course	Q2	12	28	-	4
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#### Bloc d'aménagement du programme de l'année

### Additional ECTS Master in forests and natural areas engineering

#### Compulsory courses

GEST3028-2	<i>Accounting and management</i> - <i>General accounting</i> - Thomas DOGOT - <i>Management, green accounting and business plan</i> - Thomas DOGOT	Q1	12	12	-		<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 BROSTAU	Q1	12	12	-		<b>2</b>
STAT2005-1	<i>Applied statistic : Second part</i> - Yves BROSTAU <b>Corequisite :</b> STAT2004-1 - Statistique appliquée : 1ère partie	Q2	12	12	-		<b>2</b>
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)	TA	4	-	[+]		<b>2</b>
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	TA	-	-	[+]		<b>2</b>
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	TA	6	-	[+]		<b>2</b>
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, Adeline FAYOLLE, Benoît MERCATORIS	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, Fiona THEWISSEN - Suppl : John ALOBWEDE NGOME, Fiona THEWISSEN - [48h E-Lrng]	TA	-	24	[+]		<b>4</b>
INGE0008-1	<i>Multidisciplinary experimental project</i> - Yves BROSTAU, 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	TA	6	6	[+]		<b>6</b>
HYDR0001-1	<i>General hydrology</i> - Aurore DEGRÉ	Q2	14	10	-		<b>2</b>

#### Option Forests and natural Areas Engineering

AGRO0001-1	<i>Basic principles of agriculture and agroecology</i> - Pierre DELAPLACE, Benjamin DUMONT - [4h FT]	Q2	20	-	[+]		<b>2</b>
BIOL2015-3	<i>Molecular biology</i> - Patrick FICKERS <b>Corequisite :</b>	Q2	24	-	-		<b>2</b>

	BIOL2016-3 - Génétique générale					
BIOL2016-3	<i>General genetics</i> - Nicolas GENGLER, Ludivine LASSOIS - Suppl : Martine SCHROYEN <b>Corequisite :</b> BIOL2015-3 - Biologie moléculaire	Q2	12	12	-	2
FORE0021-2	<i>Tree species in temperate regions</i> - Arnaud MONTY	Q2	12	12	-	2
FORE0022-3	<i>Ecological foundations of the silviculture</i> - Hugues CLAESSENS - [12h AUTR]	Q2	12	2	[+]	2
INGE0001-4	<i>Strength of materials and elasticity, Introduction</i> - Laurent DUCHENE	Q2	24	-	-	2
PAYS0006-2	<i>Landscape ecology concepts</i> - Jan BOGAERT	Q2	12	12	-	2
PHYS3010-2	<i>Bioclimatology basis</i> - Bernard LONGDOZ - Suppl : Bernard HEINESCH	Q2	24	-	-	2
<b>Optional activity</b>						
RSTG0012-1	<i>Additional internship</i> - Aurore DEGRÉ	TA	-	-	-	5