

## One-year master program (60 ECTS)

### Refresher courses (organised in Gembloux Agro-Bio Tech) for students who choose the courses of the module "biological methods of effluents recovery"

Depending on the previous training of the student and with the approval of the Board of Studies, choose, if necessary, courses totalling maximum 12 ECTS from :

CHIB0010-1	<i>Basis of physical chemistry applied to environment</i> - Magali DELEU	-	-	-	2
HYDR0001-1	<i>General Hydrology</i> - Aurore DEGRÉ	24	-	-	2
HYDR0002-1	<i>Water flow in soils</i> - Aurore DEGRÉ	24	-	-	2
HYDR0006-2	<i>Modelling of transfers in soils, 1st part</i> - Aurore DEGRÉ	12	12	-	2
HYDR0011-1	<i>Ecohydrology</i> - Aurore DEGRÉ - [6h FT]	12	6	[+]	2
CHIM9249-1	<i>Microbial ecology</i> - Frank DELVIGNE	18	6	-	2
CHIM9248-1	<i>Basic principles of wastewater treatments</i> - Frank DELVIGNE	24	-	-	2
BIOL2013-2	<i>General microbiology, 1st part</i> - Micheline VANDENBOL	16	8	-	2
BIOL2013-3	<i>General microbiology, 2nd part</i> - Micheline VANDENBOL	16	8	-	2
BIOI0001-1	<i>Industrial microbiology</i> - Philippe THONART	24	-	-	2
ALIM0001-1	<i>Food hygiene</i> - Daniel PORTETELLE, Marianne SINDIC	18	6	-	2
ANIM0004-2	<i>Microbial biochemistry and physiology</i> - Micheline VANDENBOL - [2h AUTR]	12	10	[+]	2

### Compulsory course

SMEM0024-1	<i>Final thesis</i> - COLLÉGIALITÉ	-	-	-	15
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### Optional courses

With the approval of the Board of Studies, choose courses totalling 15 ECTS from the 4 themed modules below, 5 ECTS may be replaced by compulsory courses from the programme of the 1st Master in Environmental Management, professional focus :

#### Energy issues

ENVT0867-1	<i>Environmental performance of buildings</i> - JeanMarie HAUGLUSTAINE	20	20	-	3
ENVT0019-2	<i>Energy balance and CO2 emissions on a building life-cycle</i>				3
	- <i>Part 1 : Buildings to be built</i> - Philippe ANDRE, JeanMarie HAUGLUSTAINE	20	20	-	
	- <i>Part 2 : Existing buildings</i> - Philippe ANDRE, JeanMarie HAUGLUSTAINE	20	20	-	
SPOL2306-1	<i>Policy of Energy</i>				4
	- <i>Part 1 : Policies to reduce emissions</i> - Quentin MICHEL - Suppl : Maxime HABRAN	9	9	-	
	- <i>Part 2 : Regional and local policies</i> - JeanMarie HAUGLUSTAINE	9	9	-	

#### Instruments for governance

ENVT0013-1	<i>Assessment tools (impact assessment, LCA)</i> - Alain HANSON, Nathalie SEMAL	30	20	-	3
ENVT0014-2	<i>Multicriteria analysis</i> - JeanJacques BOREUX	15	15	-	2
ENVT0015-2	<i>Tools of environmental management (EMS, prospective)</i> - Nathalie SEMAL, Pierre M. STASSART	24	12	-	3
ENVT3015-1	<i>Analysis of project and communication</i> - MarieClaire BILOCQ, Dorothee DENAYER, N...	8	16	-	2

#### Environment, risks and health

ENVT3016-1	<i>Environmental toxicology and health</i>				6
	- <i>Part 1 : Ecotoxicology and quantification of ecotoxicological risk</i> - Célia JOAQUIMJUSTO	24	18	-	
	- <i>Part 2 : Environmental toxicology and health impacts</i> - Corinne CHARLIER	12	18	-	
ENVT3017-1	<i>Risk management and health</i>				4
	- <i>Part 1 : Introduction to risk management</i> - N..., Pierre OZER	12	12	-	
	- <i>Part 2 : Microbiological risk</i> - HenryMichel CAUCHIE	12	12	-	

#### Lang management

ENVT3018-1	<i>Mobility and sustainable development</i> - Pierre LANNOY	12	12	-	2
ENVT2027-2	<i>Application of teledetection and geographical information systems for environmental management</i> - Bernard TYCHON	16	32	-	4
ARCH3257-1	<i>Spatial planning</i> - Jacques TELLER	20	30	-	4

With the approval of the Board of Studies, choose the 30 ECTS from one of the 6 modules below, 5 ECTS may be replaced by compulsory courses from the programme of the 1st Master in Environmental Management, professional focus :

*Notice* : if students later wish to follow a Masters 120, they cannot enrol for the focus corresponding to the 30 credits chosen.

#### Environmental Monitoring

ENVT3019-1	<i>Data collection and processing</i>				<b>5</b>
	- <i>Part 1 : Methodology and selection of samples</i> - AnneClaude ROMAIN	24	12	-	
	- <i>Part 2 : Data processing tools</i> - N... - Suppl : Bakary DJABY	12	12	-	
ENVT3020-1	<i>Tools for measuring environmental parameters : hydrosphere, geosphere and biosphere</i>				<b>5</b>
	- <i>Part 1 : Hydrosphere</i> - N... - Suppl : Vincent DEBBAUT, Khadija SOSSEY ALAOUI	12	12	-	
	- <i>Part 2 : Geosphere</i> - Vincent DEBBAUT	8	4	-	
	- <i>Part 3 : Biosphere including landscape</i> - HenryMichel CAUCHIE	12	12	-	
ENVT3021-1	<i>Tools for measuring environmental parameters : atmosphere</i>				<b>7</b>
	- <i>Part 1 : Ambient air quality</i> - AnneClaude ROMAIN	24	12	-	
	- <i>Part 2 : Odors from the environment</i> - AnneClaude ROMAIN	16	8	-	
	- <i>Part 3 : Noise</i> - JeanJacques EMBRECHTS	16	8	-	
	- <i>Part 4 : Ionizing and non ionizing radiations</i> - Véronique BEAUVOIS, AnneSophie CARNOY (GRAMME)	16	8	-	
ENVT3022-1	<i>Tools for measuring environmental parameters : energy flows</i> - Philippe ANDRE	20	16	-	<b>3</b>
ENVT3023-1	<i>Information representation</i>				<b>4</b>
	- <i>Part 1 : Indicators</i> - AnneClaude ROMAIN	8	4	-	
	- <i>Part 2 : Analysis of systems as a method of data management</i> - Philippe ANDRE	8	4	-	
	- <i>Part 3 : Spatial information</i> - Bernard TYCHON	12	12	-	
ENVT3024-1	<i>Introduction to the decision-making aid under the Bayesian paradigm</i> - JeanJacques BOREUX	24	24	-	<b>3</b>
ENVT3025-1	<i>Environment and health</i>				<b>3</b>
	- <i>Part 1 : Indoor air quality</i> - AnneClaude ROMAIN	8	8	-	
	- <i>Part 2 : Waterborne diseases</i> - HenryMichel CAUCHIE	9	3	-	
	- <i>Part 3 : Impact on human health</i> - Martyna KUSKE	8	4	-	

#### Societies-environments interfaces

ENVT3026-1	<i>Social study of science and technology</i> - François MELARD	30	18	-	<b>4</b>
ENVT3027-1	<i>Biodiversity management practices</i> - Dorothee DENAYER, Catherine MOUGENOT, Lucienne STRIVAY	30	6	-	<b>3</b>
ENVT3028-1	<i>Citizen science</i> - François MELARD, Pierre M. STASSART	18	18	-	<b>3</b>
ENVT3029-1	<i>Public policy</i> - Pierre M. STASSART, Patrick STEYAERT	18	18	-	<b>3</b>
ENVT0040-2	<i>Theory and interim management</i> - Pierre M. STASSART	24	24	-	<b>4</b>
ENVT3030-1	<i>Qualitative investigation techniques</i> - Dorothee DENAYER, François MELARD, N..., Nathalie SEMAL, Pierre M. STASSART	27	45	-	<b>6</b>
ENVT3031-1	<i>Environmental communication issues</i> - Nathalie SEMAL	12	12	-	<b>2</b>
ENVT3032-1	<i>Mapping of knowledge on the web</i> - Aurore FRANÇOIS, N... - Suppl : François MELARD	6	18	-	<b>2</b>
ENVT0021-2	<i>Case Study</i> - Dorothee DENAYER, François MELARD, N..., Nathalie SEMAL, Pierre M. STASSART	4	32	-	<b>3</b>

#### Developing countries

ENVT3033-1	<i>Biodiversity and development</i> - Dorothee DENAYER, Alain HAMBURGERS	18	18	-	<b>3</b>
ENVT2011-1	<i>Climatology and agrometeorology</i> - Michel ERPICUM, Bernard TYCHON	48	-	-	<b>4</b>
ENVT3034-1	<i>Geopolitics and social development</i> - Philippe LEBAILLY, Gautier PIROTTE	24	24	-	<b>4</b>
ENVT3035-1	<i>Sewage treatment and drinking water production</i> - Hugues JUPSIN, Fouad ZOUHIR	30	24	-	<b>4</b>
ENVT3036-1	<i>Soil conservation</i> - Gilles COLINET, Pierre OZER	24	12	-	<b>3</b>
ENVT2061-1	<i>Organisation of urban space</i> - Claude FELTZ - [12h SEM]	12	-	[+]	<b>2</b>
ENVT2063-3	<i>Waste management</i> - Luc MINNE, Philippe THONART	24	-	-	<b>2</b>
ENVT2028-2	<i>Food security and early warning systems</i> - René GOMMES, Bernard TYCHON	18	18	-	<b>3</b>
ENVT3037-1	<i>Project and communication conception and design</i> - MarieClaire BILOCC, Bakary DJABY	18	18	-	<b>3</b>
ENVT2066-1	<i>Integrated management practices and participatory water resources</i>	12	12	-	<b>2</b>

#### Integrated management of water resources

ENVT0032-2	<i>Environmental climatology</i> - Bakary DJABY, Moussa EL JARROUDI, Bernard TYCHON	30	24	-	<b>5</b>
GEOL1031-1	<i>Management of groundwater quantity and quality</i> - Serge BROUYÈRE, Philippe ORBAN	30	24	-	<b>5</b>
ENVT3038-1	<i>Management of hydrographic and hydraulic networks</i> - Pierre ARCHAMBEAU, Benjamin DEWALS, Sébastien ERPICUM, Michel PIROTON	30	24	-	<b>5</b>

ENVT3039-1	<i>Sewage treatment and water treatment</i> - Hugues JUPSIN, Fouad ZOUHIR	30	24	-	5
ENVT3040-1	<i>Integrated and participative management of water resources</i> - N... - Suppl : Khadija SOSSEY ALAOUI	30	24	-	5
ENVT3041-1	<i>Analysis and decision-making aid tools for integrated management of water resources</i> - N... - Suppl : Bernard TYCHON	30	24	-	5
<b>Renewable energy</b>					
MECA0459-1	<i>Applied thermodynamics. Energy conversion techniques. Thermic power stations</i> - Ahmed RASSILI	20	20	-	3
ENVT3042-1	<i>Energy management in buildings</i> - Philippe ANDRE, JeanMarie HAUGLUSTAINE	24	12	-	3
ELEC0432-2	<i>Electric power system</i> - JeanLouis LILIE	24	12	-	3
MECA0457-2	<i>Combustion. Technical and environmental aspects</i> - Philippe NGENDAKUMANA	18	6	-	2
ENVT0866-2	<i>Atmospheric pollution. Management of gaseous waste</i> - Angélique LÉONARD, AnneClaude ROMAIN	18	18	-	3
MECA0453-3	<i>Optimal use of energy in systems and processes</i> - Michel FEIDT	18	24	-	3
ENVT3043-1	<i>Air conditioning in buildings</i> - Philippe ANDRE	24	24	-	5
ENVT0874-3	<i>Non conventional energy technologies and promotion of renewable energy</i> - Philippe ANDRE, Manfred GREGER, Olivier LOTTIN	54	48	-	8
<b>Biological methods of waste recovery (course organised in Gembloux)</b>					
ENVT2055-1	<i>Ecosystem deterioration</i> - Roger PAUL	12	-	-	2
GESA0014-1	<i>Life cycle analysis</i> - Angélique LÉONARD	12	12	-	2
GESA0006-1	<i>Practical aspects of physico-chemical wastewater treatment</i> - Philippe THONART	-	36	-	3
GESA0007-1	<i>Fundamental processes of physico-chemical wastewater treatment</i> - Philippe THONART	24	-	-	2
GESA0008-1	<i>Wastewater treatment microbiology</i> - Frank DELVIGNE	15	9	-	2
GESA0009-1	<i>Practical aspects of biological wastewater treatments</i> - Frank DELVIGNE - [27h FT]	3	6	[+]	3
GESA0010-1	<i>Fundamental processes of biological wastewater treatment</i> - Frank DELVIGNE	24	-	-	2
GESA0011-1	<i>Unit operations in industrial water treatment</i> - N...	12	-	-	2
CHIM9225-1	<i>Gas effluents processing</i> - JeanMarc ALDRIC	14	-	-	2
GESA0015-1	<i>Waste recovery : latest developments</i> - Philippe THONART - [20h SEM]	20	20	[+]	5
ENVT2053-1	<i>Physical aspects of waste management</i> - Luc MINNE - [3h FT]	21	-	[+]	2
GESA0013-1	<i>Soil remediation</i> - Bruno CAMPANELLA, Gilles COLINET, Jacqueline DESTAIN - [6h SEM]	30	-	[+]	3

## Two-Year Master Program (120 ECTS)

### First Year

#### Compulsory courses

##### Cross-disciplinary activities

ENVT0010-1	<i>Integrated approach to environmental issues</i> - Dorothee DENAYER, François MELARD, AnneClaude ROMAIN, Nathalie SEMAL	15	36	-	4
ENVT0846-2	<i>Introduction to Sustainable Development</i> - Pierre M. STASSART	18	6	-	2
ENVT0849-2	<i>Collection and treatment of environmental information including systems analysis</i> - Philippe ANDRE, AnneClaude ROMAIN	18	18	-	3
ENVT0039-2	<i>Modes of environmental knowledge</i> - François MELARD	24	12	-	3
ENVT3044-1	<i>Scientific approaches to the environment</i> - Philippe ANDRE, JeanJacques BOREUX, Gauthier EPPE, N..., AnneClaude ROMAIN	60	15	-	6

##### Environment and resources

ENVT3045-1	<i>Ecosystems : conditions, resources and impact of anthropic activities, Part 1 : conditions, resources, impacts and management</i> - Célie JOAQUIMJUSTO, Emmanuël SÉRUSIAUX	51	18	-	5
ENVT3045-2	<i>Ecosystems : conditions, resources and impact of anthropic activities, part 2 : industrial activities, transport and emission reduction technologies</i> - Angélique LÉONARD, Roberto RENZONI	18	6	-	2
ENVT3046-1	<i>Natural resources (water, energy) and humain pressure</i> - Part 1 : <i>Geological map</i> - Frédéric BOULVAIN - Part 2 : <i>Groundwater</i> - Philippe ORBAN	4	12	-	3
ENVT3046-2	<i>Natural resources (water, energy) and humain pressure, Part 3 : Energy resources</i> - JeanMarie HAUGLUSTAINE	16	8	-	3

### Society and environment

SPOL0382-2	<i>Foundations of environmental policies/law</i> - Sylviane LEPRINCE	36	12	-	4
ECON2270-1	<i>Environmental economy, Part 1 : Elements of economy for environmental sciences</i> - Nadia DE ZOTTI	18	5	-	2
ECON2270-2	<i>Environmental economy, Part 2 : Economy and environment</i> - HenryJean GATHON, Axel GAUTIER, Michel HERMANS, Bernard JURION	24	5	-	3

### Optional courses

#### Optional themes modules

With the agreement of the council of studies choose a module among the following :

#### Energy issues

ENVT0867-1	<i>Environmental performance of buildings</i> - JeanMarie HAUGLUSTAINE	20	20	-	3
ENVT0019-2	<i>Energy balance and CO2 emissions on a building life-cycle</i>				4
	- Part 1 : Buildings to be built - Philippe ANDRE, JeanMarie HAUGLUSTAINE	20	20	-	
	- Part 2 : Existing buildings - Philippe ANDRE, JeanMarie HAUGLUSTAINE	20	20	-	
SPOL2306-1	<i>Policy of Energy</i>				3
	- Part 1 : Policies to reduce emissions - Quentin MICHEL - Suppl : Maxime HABRAN	9	9	-	
	- Part 2 : Regional and local policies - JeanMarie HAUGLUSTAINE	9	9	-	

#### Instruments for governance

ENVT0013-1	<i>Assessment tools (impact assessment, LCA)</i> - Alain HANSON, Nathalie SEMAL	30	20	-	3
ENVT0014-2	<i>Multicriteria analysis</i> - JeanJacques BOREUX	15	15	-	2
ENVT0015-2	<i>Tools of environmental management (EMS, prospective)</i> - Nathalie SEMAL, Pierre M. STASSART	24	12	-	3
ENVT3015-1	<i>Analysis of project and communication</i> - MarieClaire BILOCQ, Dorothée DENAYER, N...	8	16	-	2

With the approval of the Board of Studies, choose one module from :

#### Environment, risks and health

ENVT3016-1	<i>Environmental toxicology and health</i>				6
	- Part 1 : Ecotoxicology and quantification of ecotoxicological risk - Célia JOAQUIMJUSTO	24	18	-	
	- Part 2 : Environmental toxicology and health impacts - Corinne CHARLIER	12	18	-	
ENVT3017-1	<i>Risk management and health</i>				4
	- Part 1 : Introduction to risk management - N..., Pierre OZER	12	12	-	
	- Part 2 : Microbiological risk - HenryMichel CAUCHIE	12	12	-	

#### Lang management

ENVT3018-1	<i>Mobility and sustainable development</i> - Pierre LANNOY	12	12	-	2
ENVT2027-2	<i>Application of teledetection and geographical information systems for environmental management</i> - Bernard TYCHON	16	32	-	4
ARCH3257-1	<i>Spatial planning</i> - Jacques TELLER	20	30	-	4

#### Notice :

students wishing to specialise in Renewable Energy in the second year must take, in the second year, 30 credits from the "Energy" course specialising in "Buildings" at the University of Luxembourg in the context of the partnership agreement established between the two universities. The 30 credits to be followed at the ULg during the

first semester will be chosen,  
with the approval of the Board of  
Studies, on the basis of the first  
year programme.

**Specific refresher courses (organised in Gembloux Agro-Bio Tech) for students who wish to choose the professional focus in biological methods of effluents recovery in the 2nd year**

Depending on the previous training of the student and with the approval of the Board of Studies, choose, if necessary, courses totalling maximum 12 ECTS from :

CHIB0010-1	<i>Basis of physical chemistry applied to environment</i> - Magali DELEU	-	-	-	<b>2</b>
HYDR0001-1	<i>General Hydrology</i> - Aurore DEGRÉ	24	-	-	<b>2</b>
HYDR0002-1	<i>Water flow in soils</i> - Aurore DEGRÉ	24	-	-	<b>2</b>
HYDR0006-2	<i>Modelling of transfers in soils, 1st part</i> - Aurore DEGRÉ	12	12	-	<b>2</b>
HYDR0011-1	<i>Ecohydrology</i> - Aurore DEGRÉ - [6h FT]	12	6	[+]	<b>2</b>
CHIM9249-1	<i>Microbial ecology</i> - Frank DELVIGNE	18	6	-	<b>2</b>
CHIM9248-1	<i>Basic principles of wastewater treatments</i> - Frank DELVIGNE	24	-	-	<b>2</b>
BIOL2013-2	<i>General microbiology, 1st part</i> - Micheline VANDENBOL	16	8	-	<b>2</b>
BIOL2013-3	<i>General microbiology, 2nd part</i> - Micheline VANDENBOL	16	8	-	<b>2</b>
BIOI0001-1	<i>Industrial microbiology</i> - Philippe THONART	24	-	-	<b>2</b>
ALIM0001-1	<i>Food hygiene</i> - Daniel PORTETELLE, Marianne SINDIC	18	6	-	<b>2</b>
ANIM0004-2	<i>Microbial biochemistry and physiology</i> - Micheline VANDENBOL - [2h AUTR]	12	10	[+]	<b>2</b>

**Second year**

*Notice* : the list of refresher courses aimed at students who have direct access to the 2nd year of the Masters with a possible addition to the programme is available from the Board of Studies or from the student services of the Faculty of Sciences.

**Compulsory courses**

ENVT0023-1	<i>Professional work placement</i> - COLLÉGIALITÉ, Pierre M. STASSART	-	45	-	<b>3</b>
SMEM0041-1	<i>Personal project</i>				<b>27</b>
	- <i>internship</i> - COLLÉGIALITÉ	-	-	-	
	- <i>final thesis</i> - COLLÉGIALITÉ	-	-	-	

**Choose one focus from the following :**

**Professional focus in monitoring of the environment**

**Compulsory courses**

ENVT3019-1	<i>Data collection and processing</i>				<b>5</b>
	- <i>Part 1 : Methodology and selection of samples</i> - AnneClaude ROMAIN	24	12	-	
	- <i>Part 2 : Data processing tools</i> - N... - Suppl : Bakary DJABY	12	12	-	
ENVT3020-1	<i>Tools for measuring environmental parameters : hydrosphere, geosphere and biosphere</i>				<b>5</b>
	- <i>Part 1 : Hydrosphere</i> - N... - Suppl : Vincent DEBBAUT, Khadija SOSSEY ALAOU	12	12	-	
	- <i>Part 2 : Geosphere</i> - Vincent DEBBAUT	8	4	-	
	- <i>Part 3 : Biosphere including landscape</i> - HenryMichel CAUCHIE	12	12	-	
ENVT3021-1	<i>Tools for measuring environmental parameters : atmosphere</i>				<b>7</b>
	- <i>Part 1 : Ambient air quality</i> - AnneClaude ROMAIN	24	12	-	
	- <i>Part 2 : Odors from the environment</i> - AnneClaude ROMAIN	16	8	-	
	- <i>Part 3 : Noise</i> - JeanJacques EMBRECHTS	16	8	-	

	- Part 4 : Ionizing and non ionizing radiations - Véronique BEAUVOIS, AnneSophie CARNOY (GRAMME)	16	8	-	
ENVT3022-1	Tools for measuring environmental parameters : energy flows - Philippe ANDRE	20	16	-	3
ENVT3023-1	Information representation				4
	- Part 1 : Indicators - AnneClaude ROMAIN	8	4	-	
	- Part 2 : Analysis of systems as a method of data management - Philippe ANDRE	8	4	-	
	- Part 3 : Spatial information - Bernard TYCHON	12	12	-	
ENVT3024-1	Introduction to the decision-making aid under the Bayesian paradigm - JeanJacques BOREUX	24	24	-	3
ENVT3025-1	Environment and health				3
	- Part 1 : Indoor air quality - AnneClaude ROMAIN	8	8	-	
	- Part 2 : Waterborne diseases - HenryMichel CAUCHIE	9	3	-	
	- Part 3 : Impact on human health - Martyna KUSKE	8	4	-	

**Professional focus in society interfaces**

**Compulsory courses**

**Science and Society**

ENVT3026-1	Social study of science and technology - François MELARD	30	18	-	4
ENVT3027-1	Biodiversity management practices - Dorothée DENAYER, Catherine MOUGENOT, Lucienne STRIVAY	30	6	-	3
ENVT3028-1	Citizen science - François MELARD, Pierre M. STASSART	18	18	-	3

**Governance and sustainable development**

ENVT3029-1	Public policy - Pierre M. STASSART, Patrick STEYAERT	18	18	-	3
ENVT0040-2	Theory and interim management - Pierre M. STASSART	24	24	-	4

**Methodology**

ENVT3030-1	Qualitative investigation techniques - Dorothée DENAYER, François MELARD, N..., Nathalie SEMAL, Pierre M. STASSART	27	45	-	6
ENVT3031-1	Environmental communication issues - Nathalie SEMAL	12	12	-	2
ENVT3032-1	Mapping of knowledge on the web - Aurore FRANÇOIS, N... - Suppl : François MELARD	6	18	-	2

**Fieldwork**

ENVT0021-2	Case Study - Dorothée DENAYER, François MELARD, N..., Nathalie SEMAL, Pierre M. STASSART	4	32	-	3
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**Professional focus in developing countries**

**Compulsory courses**

ENVT3033-1	Biodiversity and development - Dorothée DENAYER, Alain HAMBUECKERS	18	18	-	3
ENVT2011-1	Climatology and agrometeorology - Michel ERPICUM, Bernard TYCHON	48	-	-	4
ENVT3034-1	Geopolitics and social development - Philippe LEBAILLY, Gautier PIROTTE	24	24	-	4
ENVT3035-1	Sewage treatment and drinking water production - Hugues JUPSIN, Fouad ZOUHIR	30	24	-	4
ENVT3036-1	Soil conservation - Gilles COLINET, Pierre OZER	24	12	-	3
ENVT2061-1	Organisation of urban space - Claude FELTZ - [12h SEM]	12	-	[+]	2
ENVT2063-3	Waste management - Luc MINNE, Philippe THONART	24	-	-	2
ENVT2028-2	Food security and early warning systems - René GOMMES, Bernard TYCHON	18	18	-	3
ENVT3037-1	Project and communication conception and design - MarieClaire BILOCQ, Bakary DJABY	18	18	-	3
ENVT2066-1	Integrated management practices and participatory water resources	12	12	-	2

**Professional focus in integrated management of water resources**

**Compulsory courses**

ENVT0032-2	Environmental climatology - Bakary DJABY, Moussa EL JARROUDI, Bernard TYCHON	30	24	-	5
GEOL1031-1	Management of groundwater quantity and quality - Serge BROUYÈRE, Philippe ORBAN	30	24	-	5
ENVT3038-1	Management of hydrographic and hydraulic networks - Pierre ARCHAMBEAU, Benjamin DEWALS, Sébastien ERPICUM, Michel PIROTON	30	24	-	5
ENVT3039-1	Sewage treatment and water treatment - Hugues JUPSIN, Fouad ZOUHIR	30	24	-	5

ENVT3040-1	<i>Integrated and participative management of water resources</i> - N... - Suppl : Khadija SOSSEY ALAOUI	30	24	-	<b>5</b>
ENVT3041-1	<i>Analysis and decision-making aid tools for integrated management of water resources</i> - N... - Suppl : Bernard TYCHON	30	24	-	<b>5</b>

**Professional focus in renewable energy**

**Compulsory courses**

MECA0459-1	<i>Applied thermodynamics. Energy conversion techniques. Thermic power stations</i> - Ahmed RASSILI	20	20	-	<b>3</b>
ENVT3042-1	<i>Energy management in buildings</i> - Philippe ANDRE, JeanMarie HAUGLUSTAINE	24	12	-	<b>3</b>
ELEC0432-2	<i>Electric power system</i> - JeanLouis LILIE	24	12	-	<b>3</b>
MECA0457-2	<i>Combustion. Technical and environmental aspects</i> - Philippe NGENDAKUMANA	18	6	-	<b>2</b>
ENVT0866-2	<i>Atmospheric pollution. Management of gaseous waste</i> - Angélique LÉONARD, AnneClaude ROMAIN	18	18	-	<b>3</b>
MECA0453-3	<i>Optimal use of energy in systems and processes</i> - Michel FEIDT	18	24	-	<b>3</b>
ENVT3043-1	<i>Air conditioning in buildings</i> - Philippe ANDRE	24	24	-	<b>5</b>
ENVT0874-3	<i>Non conventional energy technologies and promotion of renewable energy</i> - Philippe ANDRE, Manfred GREGER, Olivier LOTTIN	54	48	-	<b>8</b>

*Notice* : students wishing to choose the focus in renewable energy must have taken, in the first year (2nd semester), 30 ECTS from "Energy" specialising in "Buildings" at the University of Luxembourg in the context of the partnership agreement established between the two universities.

**Professional focus in biological methods of effluents recovery (organized in Gembloux Agro-Bio Tech)**

**Compulsory courses**

ENVT2055-1	<i>Ecosystem deterioration</i> - Roger PAUL	12	-	-	<b>2</b>
GESA0014-1	<i>Life cycle analysis</i> - Angélique LÉONARD	12	12	-	<b>2</b>
GESA0006-1	<i>Practical aspects of physico-chemical wastewater treatment</i> - Philippe THONART	-	36	-	<b>3</b>
GESA0007-1	<i>Fundamental processes of physico-chemical wastewater treatment</i> - Philippe THONART	24	-	-	<b>2</b>
GESA0008-1	<i>Wastewater treatment microbiology</i> - Frank DELVIGNE	15	9	-	<b>2</b>
GESA0009-1	<i>Practical aspects of biological wastewater treatments</i> - Frank DELVIGNE - [27h FT]	3	6	[+]	<b>3</b>
GESA0010-1	<i>Fundamental processes of biological wastewater treatment</i> - Frank DELVIGNE	24	-	-	<b>2</b>
GESA0011-1	<i>Unit operations in industrial water treatment</i> - N...	12	-	-	<b>2</b>
CHIM9225-1	<i>Gas effluents processing</i> - JeanMarc ALDRIC	14	-	-	<b>2</b>
GESA0015-1	<i>Waste recovery : latest developments</i> - Philippe THONART - [20h SEM]	20	20	[+]	<b>5</b>
ENVT2053-1	<i>Physical aspects of waste management</i> - Luc MINNE - [3h FT]	21	-	[+]	<b>2</b>
GESA0013-1	<i>Soil remediation</i> - Bruno CAMPANELLA, Gilles COLINET, Jacqueline DESTAIN - [6h SEM]	30	-	[+]	<b>3</b>

*Notice* :  
students wishing to specialise in biological methods of effluents recovery will have followed, if necessary according to their previous programme, in the 1st year, specific refresher courses for maximum 12 credits.