

#### Block view of the study programme

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#### Block 1

##### Compulsory course

SMEM0024-1 *Final thesis* - COLLÉGIALITÉ TA - - - 15

##### Optional courses

In agreement with the Jury, choose courses for a total of 15 credits from :

ENVT0054-1	<i>Personal project (placement, final thesis seminar, workshop-project)</i> - COLLÉGIALITÉ	TA	-	-	-	15
ENVT0039-2	<i>Modes of environmental knowledge</i> - François MELARD	Q2	24	12	-	3
ENVT2027-3	<i>Application of teledetection and geographical information systems for environmental management</i> - Antoine DENIS, Bernard TYCHON	Q2	12	24	-	3
ENVT0050-1	<i>Industrial pollution</i> - Alain HANSON, AnneClaude ROMAIN	Q2	16	8	-	2
ENVT0051-1	<i>Environment assessment and management tools</i> - Alain HANSON, Nathalie SEMAL - Suppl : Stéphane MONFILS	Q2	18	30	-	4
ENVT3057-2	<i>Technologies and energy, Part 1 : Renewable and non-renewable energy resources</i> - - Suppl : Stéphane MONFILS	Q2	24	12	-	3
ENVT0867-1	<i>Environmental performance of buildings (english language)</i> - - Suppl : Stéphane MONFILS	Q2	20	20	-	4
SPOL2306-1	<i>Energy and territorial policies</i> - Part 1 : <i>European policies</i> - Maxime HABRAN - Part 2 : <i>Regional and local policies</i> - - Suppl : Stéphane MONFILS - Part 3 : <i>Prospective scenario</i> - Pierre M. STASSART	Q2	9	9	-	3
GEOG0664-1	<i>Land use planning and mobility</i> - Christophe BREUER, JeanMarie HALLEUX - [2d FW]	Q2	15	15	[+]	4
ENVT3016-1	<i>Environmental toxicology and health</i> - Part 1 : <i>Ecotoxicology and quantification of ecotoxicological risk</i> - Célia JOAQUIMJUSTO - Part 2 : <i>Environmental toxicology and health impacts</i> - Corinne CHARLIER	Q2	16	12	-	4
			8	12	-	

*Notice* : Replacing the course above with another course from the Master in Environmental Science and Management course may lead to timetable clashes. Students are strongly recommended only to go ahead with the replacement course if the timetables are compatible.

[...] the compulsory courses in the programme of block 1 of the Master in environmental science and management, with a specialised focus (maximum 6 ECTS)

**In agreement with the Jury, choose 30 course credits from one of the five modules below, 6 of which may be replaced by courses from the Master in environmental management sciences, 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

Choose courses totalling 30 ECTS out of the following :

ENVT0055-1	<i>Methodology and sampling</i> - AnneClaude ROMAIN	Q1	24	12	-	3
ENVT3020-1	<i>Tools for measuring environmental parameters : hydrosphere, geosphere - Land contamination and degradation and biosphere</i> - Johan DEROUANE, Célia JOAQUIMJUSTO, Yves MARNEFFE, Joost WELLENS	Q1	32	28	-	6
ENVT3021-1	<i>Tools for measuring environmental parameters : atmosphere</i>	Q1				7

	- <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	16	8	-	
ENVT3022-1	<i>Tools for measuring environmental parameters : energy flows</i> - Philippe ANDRE	Q1	20	16	- 3
ENVT3023-1	<i>Information representation</i>	Q1			4
	- <i>Part 1 : Indicators</i> - AnneClaude ROMAIN		8	8	-
	- <i>Part 2 : Identification of systems</i> - Philippe ANDRE		8	4	-
	- <i>Part 3 : Spatial information</i> - Antoine DENIS, N..., Bernard TYCHON		12	12	-
ENVT3024-1	<i>Environmental data processing</i> - N..., AnneClaude ROMAIN	Q1	24	24	- 4
ENVT3025-1	<i>Environment and health</i>	Q1			3
	- <i>Part 1 : Indoor air quality</i> - AnneClaude ROMAIN		8	8	-
	- <i>Part 2 : Waterborne diseases</i> - HenryMichel CAUCHIE, Leslie OGORZALY, Christian PENNY		9	3	-
	- <i>Part 3 : Impact on human health</i> - Martyna KUSKE		8	4	-
[...]	the courses in the programme of the Master in environmental science and management, with a specialised focus (maximum 6 ECTS)				

#### Societies-environments interfaces

Choose courses totalling 30 ECTS out of the following :

##### Science and Society

ENVT3026-1	<i>Social study of science and technology</i> - François MELARD - [24h SEM]	Q1	12	-	[+] 4
ENVT3027-1	<i>Biodiversity management practices</i> - Dorothée DENAYER	Q1	36	-	- 4
ENVT3028-1	<i>Citizen science</i> - François MELARD, Pierre M. STASSART	Q1	36	-	- 4

##### Governance and sustainable development

ENVT3029-1	<i>Public policy and action</i> - Sébastien BRUNET, Patrick STEYAERT	Q1	24	-	- 4
ENVT0040-2	<i>Transitions theory and management, Ecological transitions</i> - Pierre M. STASSART - [12h SEM]	Q1	24	24	[+] 4

##### Methodologies

ENVT3030-1	<i>Qualitative investigation techniques</i> - Nathalie SEMAL - [30h SEM]	Q1	12	-	[+] 4
ENVT0021-2	<i>Field training : case studies</i> - Dorothée DENAYER, Pierre M. STASSART - [12h SEM, 48h FW]	Q2	9	-	[+] 6

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#### Developing countries

Choose courses totalling 30 ECTS out of the following :

ENVT0063-2	<i>Social anthropology of conservation, Part 1: Conservation of biodiversity and sustainable development</i> - Dorothée DENAYER	Q1	18	-	- 2
ENVT0064-1	<i>Biodiversity stakes</i> - Alain HAMBURGERS - [8h FT]	Q1	10	6	[+] 1
ENVT2011-2	<i>Climatology</i> - Louis FRANÇOIS	Q1	20	-	- 2
ENVT0065-1	<i>Agrometeorology</i> - Bernard TYCHON	Q1	18	6	- 2
ENVT2009-1	<i>Sociology of development and the driving forces behind society in developing countries : economic and cultural viewpoints</i> - Fabio BERTI, Philippe LEBAILLY, Gautier PIROTTE	Q1	24	-	- 2
ENVT0066-1	<i>Environment and development: geopolitical, institutional, political and legal aspects</i> - Olivier DUPONT	Q1	24	-	- 2

ENV3035-1	<i>Wastewater treatment, production of drinking water and recovery of wastewater for irrigation</i> - Hassan EL HALOUANI, Hugues JUPSIN - [6h FT]	Q1	26	18	[+]	5
ENV3036-1	<i>Soil conservation</i> - Aurore DEGRÉ, Bernard TYCHON	Q1	24	12	-	3
GEOG0040-1	<i>The organisation of urban environments</i> - JeanMarie HALLEUX - [6h SEM]	Q1	15	-	[+]	2
ENV2063-3	<i>Waste management</i> - Luc MINNE - [6h FT]	Q1	18	-	[+]	2
ENV2028-2	<i>Food security and early warning systems</i> - Bernard TYCHON	Q1	12	12	-	2
ENV0736-2	<i>Management of development and communication projects</i> - N..., Bernard TYCHON, Joost WELLENS	Q1	12	12	-	2
ENV0067-1	<i>Communication and sustainable development</i> - N...	Q1	8	4	-	1
ENV2066-1	<i>Integrated management practices and participatory water resources</i> - JeanFrançois DELIÈGE, Joost WELLENS	Q1	12	12	-	2

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#### Integrated management of water resources

Choose courses totalling 30 ECTS out of the following :

ENV3055-1	<i>Environmental climatology, Part 1</i> - Bernard TYCHON	Q1	12	10	-	2
ENV3055-2	<i>Environmental climatology, Part 2</i> - Moussa EL JARROUDI	Q2	12	10	-	2
GEO1031-1	<i>Management of groundwater quantity and quality</i> - Serge BROUYÈRE, Philippe ORBAN - [1d FW]	Q2	24	24	[+]	5
ENV3038-1	<i>Management of hydrographic and hydraulic networks</i> - Pierre ARCHAMBEAU, Benjamin DEWALS, Sébastien ERPICUM, Michel PIROTON	Q1	30	24	-	5
ENV3039-1	<i>Sewage treatment and water treatment</i> - Hassan EL HALOUANI, Hugues JUPSIN	Q1	38	32	-	6
ENV3040-1	<i>Integrated and participative management of water resources</i> - Joost WELLENS	Q1	22	16	-	4
ENV3041-1	<i>Analysis and decision-making aid tools for integrated management of water resources</i> - JeanFrançois DELIÈGE	Q1	22	16	-	4
ENV0056-1	<i>Irrigation and water management</i> - N..., Joost WELLENS	Q1	22	16	-	2

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#### Renewable energies and sustainable buildings

Choose courses totalling 30 ECTS out of the following :

##### Production, distribution and storage of energy

ENV0068-1	<i>Exploitation of renewable energy</i> - Philippe ANDRE, Manfred GREGER	Q1	50	34	-	7
ENV0069-1	<i>Decentralised production and storage of energy</i> - Vincent HANUS, Olivier LOTTIN - Suppl : Olivier LOTTIN	Q1	24	12	-	3
ELEC0080-1	<i>Energy networks</i> - Partim 1 : <i>Les systèmes d'énergie électrique</i> - Damien ERNST - Partim 2 : <i>Les réseaux de chaleur</i> - Pierre DEWALLEF	Q1	24 6	12 6	- -	4

##### Energy and environmental performance of buildings

ENV3059-1	<i>Energy optimisation in construction and integrating renewable energies</i> - Philippe ANDRE - Suppl : Stéphane MONFILS	Q1	24	12	-	3
ENV3043-1	<i>Air conditioning in buildings</i> - Philippe ANDRE	Q1	36	36	-	6

ENVT0070-1 *Health and environmental impact of buildings* - AnneClaude ROMAIN - Q1 36 - - 3  
Suppl : Stéphane MONFILS

#### Energy systems and economic analysis

ENVT0071-1 *Project on renewable energy and energy-efficient buildings* - Q1 4 20 - 2  
Philippe ANDRE, Manfred GREGER, Vincent HANUS, Olivier LOTTIN -  
Suppl : Vincent HANUS, Olivier LOTTIN, Stéphane MONFILS

ENVT0072-1 *Technical and economic analysis of energy systems* - Q1 16 8 - 2  
Abdelhamid KHEIRI - Suppl : Abdelhamid KHEIRI

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**In agreement with the jury and for specific reasons, courses in the Master's program in environmental science and management may be replaced by courses in other programs.**

#### Bloc d'aménagement du programme de l'année

### Additional ECTS Master in environmental science and management - organized in Arlon (60 ECTS)

#### Optional courses

Depending on the student's prior education and with the agreement of the Jury, choose courses for a maximum of 45 credits from:

ENV3054-4	<i>Methodological Approach to Environmental Science</i> - Part 1: Analysis, expression and reflexivity - Ninfa GRECO, Nathalie SEMAL - Suppl : Stéphane MONFILS - Partim 2 : Project - N..., Nathalie SEMAL - Suppl : Stéphane MONFILS - [36h Mon. WS]	TA	24	24	-	6
ENV3054-2	<i>Methodological Approach to Environmental Science, Partim 2 : Project</i> - N..., Nathalie SEMAL - Suppl : Stéphane MONFILS - [36h Mon. WS]	Q2	-	12	[+]	3
LANG2972-1	<i>English 1</i> (english language) - Véronique DOPPAGNE, ISLV - Suppl : François PETIT	Q1	12	12	-	2
LANG2973-1	<i>English 2</i> (english language) - Véronique DOPPAGNE, ISLV - Suppl : François PETIT	Q2	12	12	-	2
ENV0062-1	<i>Introduction to chemistry and environmental biology</i> - Armélinda AGNELLO, Célia JOAQUIMJUSTO, AnneClaude ROMAIN	Q1	16	16	-	4
ENV0060-2	<i>Introduction to environmental sociology</i> - Part 1: Approaches in environmental sociology - François MELARD - Part 2: Introduction to field investigation - Nathalie SEMAL	Q1	8	8	-	4
ENV0053-1	<i>Seminar - Health and environment issues</i> - N..., Nathalie SEMAL	Q2	12	24	-	3
ENV0010-1	<i>Integrated approach to environmental issues</i> - Dorothée DENAYER, Claudia FALZONE, Samuel HENNAUT, Eleonore KIRSCH, AbdoulHamid MOHAMED SALLAH, N..., Nathalie SEMAL - [1d FW]	Q1	15	36	[+]	4
ENV00846-2	<i>Introduction to sustainable development</i> - Nathalie SEMAL, Pierre M. STASSART - [5h FW]	Q1	18	6	[+]	2
ENV0048-1	<i>Statistics applied to the environment</i> - Partim 1 : Introduction à la démarche statistique et statistique univariée - N... - Suppl : Laurent DE RUDDER - Partim 2 : Statistiques bivariées - N... - Suppl : Laurent DE RUDDER	Q1	12	12	-	3
ENV0049-1	<i>System analysis applied to environment</i> - Philippe ANDRE	Q1	16	8	-	2
ENV3044-1	<i>Scientific approaches to the environment</i> - Philippe ANDRE,	Q1	48	15	-	4

PPE, AnneClaude ROMAIN

ENVT3045-1	<i>Ecosystems : conditions, anthropic impacts and management</i> - Dorothee DENAYER, Célia JOAQUIMJUSTO - [2d FW]	Q1	26	6	[+]	<b>4</b>
ENVT3046-1	<i>Pressures on the underground</i> - Part 1 : <i>geological map</i> - Frédéric BOULVAIN - Part 2 : <i>groundwater</i> - Philippe ORBAN	Q1	4	12	-	<b>3</b>
SPOL0382-2	<i>Foundations of environmental policies/law</i> - Sylviane LEPRINCE	Q1	36	12	-	<b>4</b>
ECON0944-1	<i>Elements of economy for environmental sciences</i> - Nadia DE ZOTTI, Jérôme SCHOENMAECKERS	Q1	18	5	-	<b>2</b>
ECON0945-1	<i>Economy, energy and environment</i> - HenryJean GATHON, Axel GAUTIER, Bernard JURION	Q1	24	5	-	<b>2</b>