

Block view of the study programme

Or Th Pr Au Cr

Block 1

To complete their curriculum, students must earn or validate the 75 credits of the compulsory courses (including the professional focus and the master thesis and Internship), and choose optional courses for 45 credits. Ideally, students enrolling in the master program should have acquired the skills and knowledge corresponding to the 40 credits in " Energy " offered as part of the bachelor program in engineering.

Compulsory courses from the core curriculum

MECA0450-3	<i>Renewable Energy System Design</i> (english language) - Pierre DEWALLEF - [24h Proj., 1d FW]	Q1	24	12	[+]	5
------------	---	----	----	----	-----	---

Optional courses from the core curriculum

Choose 15 credits in one of the two options

Conversion

MECA0037-1	<i>Thermal Power Plants and Combined Heat and Power</i> (english language) - Pierre DEWALLEF - [12h Proj.]	Q2	24	24	[+]	5
MECA0006-1	<i>Cooling and low-temperature heating systems</i> (english language) - Vincent LEMORT - [4h Proj., 1d FW]	Q2	26	26	[+]	5
MECA0532-1	<i>Turbomachines</i> - Koen HILLEWAERT	Q2	26	26	-	5

Corequisite :
MECA0025-3 - Mécanique des fluides

Networks

MATH0461-2	<i>Introduction to numerical optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	Q1	30	20	[+]	5
ELEN0445-1	<i>Microgrids</i> (english language) - Bertrand CORNÉLUSSE - [24h Proj., 1d FW]	Q2	18	18	[+]	5
ELEC0448-1	<i>Planning and operation of electric power and energy systems</i> (english language) - Bertrand CORNÉLUSSE, Damien ERNST, Louis WEHENKEL	Q2	26	26	-	5

Choose courses totaling 15 credits from the remaining option packages, within maximum 3 option packages, unless this is not feasible due to remedial courses. Courses from the remedial list should be selected as a priority if they have not yet been completed. Upon approval of the jury, 5 credits can be taken in the UNIC catalog or in the catalog of the university

[...] Upon approval by the jury, 5 credits can be chosen among the courses of the two professional foci, from an other programme at ULiège or from the UNIC course catalog

[...] The students can also choose courses from the non-selected option " Conversion " or " Networks " as elective courses in Block 1.

Remark : Electives may also be replaced by one or more courses from the undergraduate "energy" option for which competencies would not be acquired. the courses. ELEC0053-2, MECA0002-1 and SYST0022-1 are corequisite to some compulsory courses of the master program. They must be taken prioritarily, unless they were already taken as part of the bachelor in engineering, or unless the corresponding knowledge and skills have been acquired previously.

Remedial courses

ELEC0053-2	<i>Electric circuits</i> - Bertrand CORNÉLUSSE	Q2	26	26	-	5
SYST0022-1	<i>Linear Systems Design</i> (english language) - Guillaume DRION, Pierre SACRÉ - [15h Proj.]	Q2	26	26	[+]	5
MECA0002-1	<i>Applied Thermodynamics and Introduction to Heat Engines</i> - Vincent LEMORT	Q1	26	26	-	5
MECA0025-3	<i>Fluid Mechanics</i> - Eric DELHEZ - [30h Proj.]	Q2	26	26	[+]	5

Low carbon production sources

ENRG0002-1	<i>Wind Energy</i> (english language) - Thomas ANDRIANNE, Koen HILLEWAERT - [12h Proj.]	Q2	36	16	[+]	5
------------	---	----	----	----	-----	---

ENRG0003-1	<i>Hydropower</i> (english language) - Sébastien ERPICUM - [20h Proj., 1d FW]	Q2	26	26	[+]	5
GENU0018-3	<i>Introduction to Nuclear Engineering and Power Plant Technologies</i> (english language) - Pierre DEWALLEF	Q2	26	26	-	5

Energy in buildings, transport and mobility

ARCH3272-1	<i>Building performance simulation and monitoring</i> (english language) - Part 1 - Shady ATTIA - Part 2 - Shady ATTIA - [70h Proj.]	Q1	15	15	-	5
			15	25	[+]	
MECA0034-1	<i>Energy flexibility in buildings</i> (english language) - Vincent LEMORT	Q1	26	26	-	5
GEOL1046-1	<i>Geothermal energy</i> (english language) - Bertrand FRANÇOIS, Philippe ORBAN - [40h Proj., 1d FW]	Q2	18	15	[+]	5
MECA0527-1	<i>Electric, hybrid and fuel cell vehicles</i> (english language) - Pierre DUYSINX - [5h Labo., 15h Proj.]	Q1	30	10	[+]	5
GCIV0008-2	<i>Energy and transport</i> (english language) - Mario COOLS - [25h Proj.]	Q1	30	15	[+]	5
MECA0536-1	<i>Hydrogen technologies in mobility</i> (english language) - [10h Labo., 10h Proj., 2d FW]	Q1	40	-	[+]	5

Conversion technologies & Industry

MECA0032-1	<i>Flow in turbomachines</i> (english language) - Koen HILLEWAERT - [60h Proj.]	Q1	26	26	[+]	5
MECA0041-1	<i>Internal combustion engine</i> (english language) - Part 1 <i>Fundamental aspects</i> - Marc NÉLIS - [1d FW, 15h Proj.] - Part 2 <i>Application to propulsion</i> - Marc NÉLIS - [10h Proj., 0,5d FW]	Q2	15	15	[+]	5
			10	10	[+]	
ELEC0041-1	<i>Modelling and design of electromagnetic systems</i> (english language) - Christophe GEUZAINÉ	Q2	26	26	-	5
MECA0531-1	<i>Experimental Evaluation of Components and Processes</i> (english language) - [6h Labo., 14h Proj.]	Q1	23	17	[+]	5
ENRG0004-1	<i>CO2 capture, utilisation and storage</i> (english language) - Motiar RAHAMAN - [4d FW]	Q2	26	22	[+]	5
CHIM9330-1	<i>Management and safety of industrial processes</i> (english language) - Partim "Safety" - Angélique LÉONARD, Grégoire LÉONARD, Dominique TOYE, Dominique TOYE - [2d FW] - Partim "Management" - Angélique LÉONARD, Grégoire LÉONARD - [1d FW]	Q1	25	-	[+]	5
			15	-	[+]	

Decision making

ELEN0062-1	<i>Introduction to machine learning</i> (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	5
MATH0462-1	<i>Discrete optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	Q2	30	20	[+]	5
INFO8010-1	<i>Deep learning</i> (english language) - Gilles LOUPPE - [60h Proj.]	Q2	30	-	[+]	5
MQGE9007-1	<i>Advanced Modeling Techniques in Optimization</i> (english language) - Quentin LOUVEAUX, N...	Q1	30	-	-	5

Compulsory courses within the focus

CHIM0695-2	<i>Modelling of chemical & energy processes</i> (english language) - Grégoire LÉONARD	Q1	20	32	-	5
ELEC0055-3	<i>Element of power Electronics</i> (english language) - Part A - Fabrice FREBEL - Part B - Fabrice FREBEL	Q1	30	6	-	5
			-	20	-	
ELEC0447-1	<i>Analysis of electric power and energy systems</i> (english language) - Bertrand CORNÉLUSSE - [1d FW]	Q1	26	26	[+]	5

ENRG0001-1	<i>Energy challenge (including seminars)</i> (english language) - Bertrand CORNÉLUSSE, Pierre DEWALLEF, Samuel GENDEBIEN, Vincent LEMORT, Grégoire LÉONARD - [3d FW, 80h Proj.]	TA	30	-	[+]	10
------------	---	----	----	---	-----	-----------

Block 2

Compulsory courses from the core curriculum

CHIM0664-3	<i>Electrochemical energy conversion and storage</i> (english language) - <i>partim 1</i> - Nathalie JOB - <i>partim 3</i> - [3d FW]	Q1	15	-	-	5
			11	7	[+]	
GEST3162-1	<i>Principles of management</i> (english language) - Michaël PARMENTIER, Willem STANDAERT - [25h Proj.]	Q1	30	-	[+]	5
ATFE2003-1	<i>Master thesis and internship</i> - <i>Master thesis</i> - COLLÉGIALITÉ, Vincent LEMORT - [750h Proj.] - <i>Professional integration internship</i>	TA	-	-	[+]	30
			-	-	-	

Optional courses from the core curriculum

Choose 5 credits in one of the two options

Conversion

ENRG0005-1	<i>Power-to-fuel systems</i> (english language) - Motiar RAHAMAN - [4d FW]	Q1	26	22	[+]	5
------------	--	----	----	----	-----	----------

Networks

ENRG0006-1	<i>Energy Transition: Modeling and Scenario Analysis</i> (english language) - Xavier FETTWEIS, Sylvain QUOILIN	Q2	26	26	-	5
ELEC0449-1	<i>Practices and evolution of the electric power and energy industry</i> (english language) - Olivier BRONKART, Bertrand CORNÉLUSSE, Damien ERNST - [12h Proj., 6d FW]	Q2	18	18	[+]	5

Choose courses totaling 10 credits from the remaining option packages, within maximum 3 option packages, unless this is not feasible due to remedial courses. Courses from the remedial list should be selected as a priority if they have not yet been completed. Upon approval of the jury, 5 credits can be taken in the UNIC catalog or in the catalog of the university

[...] The students can also choose courses from the non-selected option " Conversion " or " Networks " as elective courses in Block 2.

Remark : Electives may also be replaced by one or more courses from the undergraduate "energy" option for which competencies would not be acquired. the courses. ELEC0053-2, MECA0002-1 and SYST0022-1 are corequisite to some compulsory courses of the master program. They must be taken prioritarily, unless they were already taken as part of the bachelor in engineering, or unless the corresponding knowledge and skills have been acquired previously.

Remedial courses

ELEC0053-2	<i>Electric circuits</i> - Bertrand CORNÉLUSSE	Q2	26	26	-	5
SYST0022-1	<i>Linear Systems Design</i> (english language) - Guillaume DRION, Pierre SACRÉ - [15h Proj.]	Q2	26	26	[+]	5
MECA0002-1	<i>Applied Thermodynamics and Introduction to Heat Engines</i> - Vincent LEMORT	Q1	26	26	-	5
MECA0025-3	<i>Fluid Mechanics</i> - Eric DELHEZ - [30h Proj.]	Q2	26	26	[+]	5

Low carbon production sources

ENRG0002-1	<i>Wind Energy</i> (english language) - Thomas ANDRIANNE, Koen HILLEWAERT - [12h Proj.]	Q2	36	16	[+]	5
ENRG0003-1	<i>Hydropower</i> (english language) - Sébastien ERPICUM - [20h Proj., 1d FW]	Q2	26	26	[+]	5
GENU0018-3	<i>Introduction to Nuclear Engineering and Power Plant Technologies</i> (english language) - Pierre DEWALLEF	Q2	26	26	-	5

Energy in buildings, transport and mobility

ARCH3272-1	<i>Building performance simulation and monitoring</i> (english language) - Part 1 - Shady ATTIA - Part 2 - Shady ATTIA - [70h Proj.]	Q1	15	15	-	5
			15	25	[+]	
MECA0034-1	<i>Energy flexibility in buildings</i> (english language) - Vincent LEMORT	Q1	26	26	-	5
GEOL1046-1	<i>Geothermal energy</i> (english language) - Bertrand FRANÇOIS, Philippe ORBAN - [40h Proj., 1d FW]	Q2	18	15	[+]	5
MECA0527-1	<i>Electric, hybrid and fuel cell vehicles</i> (english language) - Pierre DUYSINX - [5h Labo., 15h Proj.]	Q1	30	10	[+]	5
GCIV0008-2	<i>Energy and transport</i> (english language) - Mario COOLS - [25h Proj.]	Q1	30	15	[+]	5
MECA0536-1	<i>Hydrogen technologies in mobility</i> (english language) - [10h Labo., 10h Proj., 2d FW]	Q1	40	-	[+]	5

Conversion technologies & Industry

MECA0032-1	<i>Flow in turbomachines</i> (english language) - Koen HILLEWAERT - [60h Proj.]	Q1	26	26	[+]	5
MECA0041-1	<i>Internal combustion engine</i> (english language) - Part 1 Fundamental aspects - Marc NÉLIS - [1d FW, 15h Proj.] - Part 2 Application to propulsion - Marc NÉLIS - [10h Proj., 0,5d FW]	Q2	15	15	[+]	5
			10	10	[+]	
ELEC0041-1	<i>Modelling and design of electromagnetic systems</i> (english language) - Christophe GEUZAINÉ	Q2	26	26	-	5
MECA0531-1	<i>Experimental Evaluation of Components and Processes</i> (english language) - [6h Labo., 14h Proj.]	Q1	23	17	[+]	5
ENRG0004-1	<i>CO2 capture, utilisation and storage</i> (english language) - Motiar RAHAMAN - [4d FW]	Q2	26	22	[+]	5
CHIM9330-1	<i>Management and safety of industrial processes</i> (english language) - Partim "Safety" - Angélique LÉONARD, Grégoire LÉONARD, Dominique TOYE, Dominique TOYE - [2d FW] - Partim "Management" - Angélique LÉONARD, Grégoire LÉONARD - [1d FW]	Q1	25	-	[+]	5
			15	-	[+]	

Decision making

ELEN0062-1	<i>Introduction to machine learning</i> (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	5
MATH0462-1	<i>Discrete optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	Q2	30	20	[+]	5
INFO8010-1	<i>Deep learning</i> (english language) - Gilles LOUPPE - [60h Proj.]	Q2	30	-	[+]	5
MQGE9007-1	<i>Advanced Modeling Techniques in Optimization</i> (english language) - Quentin LOUVEAUX, N...	Q1	30	-	-	5

Compulsory courses within the focus

ELEC0018-1	<i>Energy markets and regulation</i> (english language) - Damien ERNST	Q1	39	13	-	5
------------	--	----	----	----	---	---