Block view of the study programme

			Or	Th	Pr	Au	Cr

Block 1

Depending on your educational background or depending on the focus, it is possible that the prerequisites / corequisites for the 1st year of the programme are presented in the block 2. You are therefore invited to read through the list of courses in block 2 even if you are registering for the first time in this master.

Within the framework of their Master in Electro-mechanical Engineering, all students must follow or validate the 65 credits of joint training (including placement and final year dissertation), the 25 credits of optional courses, and the 30 credits of the professional focus.
Ideally, students studying for the master¿s degree will have acquired the competences and knowledge corresponding to the 50 credits of technical courses specific to the field of 'Mechanics' and 'Electricity', taught within the framework of the Bachelor in Civil Engineering.

Compulsory courses

MECA0006-1	*Thermal Machines and Systems* - Vincent LEMORT - [4h Proj.]	Q1	26	26	[+]	**5**
CHIM9315-1	*Sustainable management of fuels: supply, synthesis and use* - Angélique LÉONARD, Grégoire LÉONARD	Q1	50	-	-	**5**
CHIM0695-2	*Introduction to the modelling of chemical processes* (english language) - Grégoire LÉONARD	Q1	20	32	-	**5**
ELEC0447-1	*Analysis of electric power and energy systems* (english language) - Bertrand CORNÉLUSSE, Louis WEHENKEL	Q1	26	26	-	**5**
MECA0450-3	*Renewable energies* (english language) - Pierre DEWALLEF - [24h Proj., 1d FW]	Q2	24	12	[+]	**5**
MECA0037-1	*Thermal power stations and cogeneration* - Pierre DEWALLEF - [12h Proj.] **Corequisite :** MECA0002-1 - Thermodynamique appliquée et introduction aux machines thermiques	Q2	24	24	[+]	**5**

Optional courses

Single focus

Professional focus in energetics

SYST0003-1	*Linear control systems* (english language) - *Theory* - Guillaume DRION - *Control system design in time domain and frequency domain* - Guillaume DRION - [6h Labo.]	Q1	26 -	6 20	- [+]	**5**
MECA0529-1	*Hydraulic turbomachines* - Koen HILLEWAERT - [8h Ex., 2h Labo.]	Q1	20	-	[+]	**3**
MECA0530-1	*Gas-powered turbomachines* - Koen HILLEWAERT - [6h Ex.]	Q2	24	-	[+]	**3**
MECA0041-2	*Internal combustion engine, Part 1 Fundamental aspects* (english language) - Marc NÉLIS - [1d FW, 15h Proj.] **Corequisite :** MECA0002-1 - Thermodynamique appliquée et introduction aux machines thermiques	Q2	15	15	[+]	**3**
ELEC0055-2	*Element of power Electronics , Part A* (english language) - Fabrice FREBEL	Q1	30	6	-	**3**
MECA0531-1	*Experimental Evaluation of Components and Processes* (english language) - Pierre DEWALLEF, Samuel GENDEBIEN, Vincent LEMORT	Q2	-	-	-	**3**
APRI0003-2	*Energetics Integrated Project* - Pierre DEWALLEF, Samuel GENDEBIEN, Vincent LEMORT - [5d FW] **Corequisite :** MECA0006-1 - Machines et systèmes thermiques MECA0450-3 - Renewable energies	TA	30	80	[+]	**10**

Block 2

Depending on your educational background or depending on the focus, it is possible that the prerequisites / corequisites for the 1st year of the programme are presented in the block 2. You are therefore invited to read through the list of courses in block 2

even if you are registering for the first time in this master.

Compulsory courses

ATFE2003-1	*Master thesis and internship* - *Master thesis* - COLLÉGIALITÉ, Pierre DEWALLEF - [750h Proj.] - *Professional integration internship* - Pierre DEWALLEF	TA				**30**
			-	-	[+]	
			-	-	-	
GEST3162-1	*Principles of management* (english language) - François PICHAULT, Willem STANDAERT - [25h Proj.]	Q1	30	-	[+]	**5**

Optional courses

Choose courses totalling 25 credits from the elective courses list.

Students who have not followed the courses CHIM00093, MECA0002-1, ELEC0053-2 and ELEC0431-2 from the bachelor of Science (Bsc) in engineering programme or acquired the equivalent knowledge and skills have to choose in priority these three courses in their study programme ; these courses are corequisites of compulsory courses of the master.

CHIM0009-3	*Applied Chemical Thermodynamics* - MarieNoëlle DUMONT, Nathalie JOB, Grégoire LÉONARD	Q2	26	26	-	**5**
MECA0002-1	*Applied Thermodynamics and Introduction to Heat Engines* - Vincent LEMORT	Q1	26	26	-	**5**
ELEC0053-2	*Electric circuits* - Bertrand CORNÉLUSSE	Q2	26	26	-	**5**
ELEC0431-2	*Electromagnetic energy conversion* (english language) - Christophe GEUZAINE - [15h Labo.]	Q2	30	15	[+]	**5**

Language courses

[...] Maximum five language course credits from among the list below or from among the ISLV courses in other faculties

LANG1957-1	*Dutch for Engineers, part 1* (dutch language) - Claudine COLIN	Q1	36	-	-	**3**
LANG2978-1	*Dutch for engineer, part 2* - Claudine COLIN **Corequisite :** LANG1957-1 - Néerlandais pour l'ingénieur, partim 1	Q2	24	-	-	**2**
LANG1958-1	*German for engineer, Part 1* (german language) - Françoise CARL	Q1	36	-	-	**3**
LANG2979-1	*German for engineers, part 2* - Françoise CARL, ISLV **Corequisite :** LANG1958-1 - Allemand pour l'ingénieur, partim 1	Q2	24	-	-	**2**

Power production, transport and distribution

CHIM0664-1	*Electrochemical energy conversion and storage* (english language) - Nathalie JOB - [15h Labo.]	Q1	15	-	[+]	**3**
GENU0018-3	*Nuclear Engineering and Nuclear Power Plant Technology* - Pierre DEWALLEF **Corequisite :** MECA0037-1 - Centrales thermiques et cogénération	Q1	26	26	-	**5**
MECA0033-1	(pas organisé en 2021-2022) *Heat and Material Transfer Modelling*	Q2	26	26	-	**5**
ELEN0445-1	*Microgrids* (english language) - Bertrand CORNÉLUSSE - [24h Proj., 1d FW]	Q1	18	18	[+]	**5**
MECA0041-3	*Internal combustion engine, Part 2 Application to propulsion* (english language) - Marc NÉLIS - [10h Proj., 0,5d FW]	Q2	10	10	[+]	**2**
PROJ0020-1	*Innovation for sustainable engineering* (english language) - Georges DE PELSEMAEKER, Pierre DUYSINX - [100h Proj.]	Q1	10	-	[+]	**5**

Rational use of energy

ARCH3272-2	*Building performance simulation and monitoring, Part 1* (english	Q1	15	15	-	**3**

	language) - Shady ATTIA					
MECA0034-1	*Rational use of energy in buildings* - Vincent LEMORT	Q2	26	26	-	**5**
ELEN0074-1	*Sensors, microsensors and instrumentation* (english language) - Philippe VANDERBEMDEN - [20h Labo.]	Q2	30	-	[+]	**5**
MECA0501-1	*Thermal Energy Management in vehicles* (english language) - Vincent LEMORT	Q1	15	10	-	**3**

Advanced modeling and simulation

ELEC0041-1	*Modelling and design of electromagnetic systems* (english language) - Christophe GEUZAINE	Q2	26	26	-	**5**
MECA0032-1	*Flow in turbomachines* (english language) - Koen HILLEWAERT - [60h Proj.]	Q1	26	26	[+]	**5**
MECA0124-1	*Combustion modelling*	Q1	26	26	-	**5**
MECA0514-1	*Introduction to dynamic modeling of thermal systems* (Odd years) **Corequisite :** MECA0006-1 - Machines et systèmes thermiques	Q1	15	15	-	**3**
MECA0515-1	*Advanced thermal systems* (english language) - Vincent LEMORT (Odd years) **Prerequisite :** MECA0006-1 - Machines et systèmes thermiques	Q2	15	15	-	**3**
MATH0461-2	*Introduction to numerical optimization* (english language) - Quentin LOUVEAUX - [25h Proj.]	Q1	30	20	[+]	**5**
MECA0027-1	*Structural and multidisciplinary optimization* (english language) - Pierre DUYSINX, Patricia TOSSINGS - [18h Proj.]	Q1	30	12	[+]	**5**

Other optional courses

ELEC0018-1	*Energy market* (english language) - Damien ERNST	Q1	39	13	-	**5**
MECA0462-2	*Materials selection* (english language) - Anne MERTENS, Davide RUFFONI - [30h Proj., 1d FW]	Q1	26	26	[+]	**5**
MECA0527-1	*Electric, hybrid and fuel cell vehicles* (english language) - Pierre DUYSINX - [5h Labo., 15h Proj.]	Q1	30	10	[+]	**5**
PROJ0011-2	*Personal student project* (english language) - Georges DE PELSEMAEKER, Pierre DUYSINX, Liesbet GERIS, Grégoire LÉONARD - [150h Proj.]	TA	-	-	[+]	**5**

[...] Choose one course from the course's programme of other master of the Faculty of Applied Sciences (with the approval of the cycle's Jusry president)

Bloc d'aménagement du programme de l'année

Additional ECTS Master in electro-mechanical engineering

Optional courses

Each student¿s programme will be determined by the jury depending on their prior training. If an applicant does not meet certain prerequisites, his or her programme may include up to 60 additional course credits essentially taken from the list below :

MECA0445-2	*Heat transfer* (english language) - Pierre DEWALLEF, Vincent TERRAPON - [4h Labo., 9h Proj.]	Q2	28	24	[+]	**5**
MECA0012-6	*Solid mechanics* - Laurent DUCHENE - [15h Proj.]	Q2	26	26	[+]	**5**
ELEC0052-2	*Analysis and Design of Electrical Measuring Systems* - Philippe VANDERBEMDEN - [24h Labo.]	Q1	30	6	[+]	**5**

MECA0025-3	*Fluid Mechanics* - Eric DELHEZ - [30h Proj.]	Q2	26	26	[+]	**5**
MECA0036-2	*Finite Element Method* (english language) - JeanPhilippe PONTHOT - [40h Proj.]	Q2	26	26	[+]	**5**
MECA0155-2	*Dynamics of mechanical systems* - JeanClaude GOLINVAL - [20h Proj.]	Q1	26	26	[+]	**5**
PHYS0904-4	*Physics of materials* - Luc COURARD, Anne MERTENS - [1d FW]	Q2	26	26	[+]	**5**
MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	Q1	20	20	-	**4**
MECA0001-2	*Mechanics of materials* - JeanPierre JASPART - [2h Labo., 12h Proj.]	Q1	27	25	[+]	**5**
LANG0039-2	*English 2, English for Engineering* (english language) - Véronique DOPPAGNE, Christine FILOT, ISLV - [20h Proj.]	TA	-	30	[+]	**3**

[...] Choose maximum 13 credits to complete the curriculum