First Year

Compulsory courses

		Or	Th	Pr	Au	Cr
MECA0037-1	*Thermic and co-generation power stations* - Pierre DEWALLEF, Angélique LÉONARD	Q2	30	30	-	**5**
MECA0046-1	*Heat exchangers*	Q1				**5**
	- *Heat exchangers networks and rational use of energy* - MarieNoëlle DUMONT	15	15	-		
	- *Fundamental and constructive aspects* - Philippe NGENDAKUMANA	15	15	-		
MECA0450-3	*Renewable energies* - Pierre DEWALLEF	Q1	30	30	-	**5**
CHIM0071-4	*Reduction of pollutants from combustion* - Angélique LÉONARD - [1d FW]	Q1	30	-	[+]	**3**
MECA0006-1	*Production systems of cold and heat* - Vincent LEMORT	Q1	30	30	-	**5**
MECA0041-1	*Internal Combustion Engines* - Philippe NGENDAKUMANA - [1,5d FW]	Q2	30	30	[+]	**5**
APRI0003-2	*Integrated project on energetics* - COLLÉGIALITÉ - [5h FW]	TA	30	90	[+]	**9**
	Notice : If the president of the cycle¿s panel agrees, in particular regarding the technical content, the master¿s integrated project can be part of an interdisciplinary project (e.g. project engineer, Eurobot, Eco-Shell Marathon, etc.). It is possible to have done the project between the third year of the bachelor¿s degree and the second year of the master's.					
MECA0462-2	*Materials selection* (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [1d FW]	Q1	30	30	[+]	**5**
ELEC0014-3	*Electric Energy Transmission and Distribution* - JeanLouis LILIEN - [2,5d FW]	Q1	30	15	[+]	**4**
ELEC0029-2	*Electric power systems analysis and operation* (english language) - Thierry VAN CUTSEM	Q2	30	30	-	**4**
MECA0467-1	*Turbomachines* - Olivier LÉONARD		30	30	-	**5**
SYST0003-1	*Linear control systems* (english language) - Rodolphe SEPULCHRE - Suppl : Raphaël FONTENEAU	Q1	30	30	-	**5**
	Notice : Students who have, in their BAC studies, have already taken one or more compulsory courses in this Master's programme are obliged to replace them by other courses on the Faculty's programme; this choice must be approved by the President of the cycle's Jury.					

Students studying for the Bachelors in Civil Engineering who have not chosen the appropriate option :

* must take all the so-called "prerequisite" courses hereafter, if they were not taken during the 1st cycle. These courses must be taken during the 1st year of the masters and some 1st-year compulsory courses must be rolled over to the 2nd year.
* must subsequently reduce the number of courses they choose to take in the 2nd year of the masters. If all the "prerequisite" courses must be taken, it will be impossible for them to choose which courses they take.
* cannot choose the professional "management" focus.

The program adapted by these students has to receive the preliminary agreement of the Jury.

Compulsory prerequisites

ELEC0431-2	*Electromagnetic energy conversion* (english language) - Christophe GEUZAINE - [15h Labo.]	Q2	30	15	[+]	**5**
ELEC0053-2	*Electric circuits* - Patricia ROUSSEAUX	Q2	30	30	-	**5**
MECA0445-2	*Heat transfer* - Pierre DEWALLEF, Vincent TERRAPON - [4h Labo., 9h Proj.]	Q2	30	26	[+]	**5**
MECA0012-6	*Solid mechanics* - Laurent DUCHENE - [15h Proj.]	Q2	30	30	[+]	**5**
MECA0002-1	*Applied Thermodynamics and Introduction to Heat Engines* - Olivier LÉONARD	Q1	30	30	-	**5**
ELEC0052-1	*Analysis and Design of Electrical Measuring Systems* - Philippe VANDERBEMDEN	Q1	30	30	-	**5**

Second Year

Compulsory courses

ATFE2003-1	*Final work (including an internship or a placement in a research centre under*	-	-	-		**25**

the supervision of the teacher responsible for the final work and including an introduction to research methodology) - COLLÉGIALITÉ

Optional courses

Choose one of the following courses :

[...]	the courses of the University of Liege					
[...]	the list below.					
LANG1957-1	*Dutch for Engeneering Students* (dutch language) - Claudine COLIN	TA	60	-	-	**5**
LANG1958-1	*German for Engineering Students* (german language) - Françoise CARL	TA	60	-	-	**5**

Compulsory courses

ELEC0018-1	*Energy Market* (english language) - Damien ERNST	Q1	45	15	-	**5**

Optional courses

Choose courses totaling 25 ECTS from the optional courses list. With the approval of the Jury's President, students can choose 5 ECTS from the courses list of other Masters of the Faculty of Applied Sciences.

Equipment and energetic components						
CHIM0664-1	*Storing and converting energy electrochemically* - Nathalie JOB	Q1	15	15	-	**2,5**
ELEC0039-1	*Network Electromechanical Performance* - JeanLouis LILIEN	TA	30	30	-	**5**
ELEC0041-1	*Modelling and design of electromagnetic systems* (english language) - Patrick DULAR, Christophe GEUZAINE	TA	30	30	-	**5**
ELEN0074-1	*Sensors, microsensors and instrumentation* (english language) - Philippe VANDERBEMDEN	Q2	30	30	-	**5**
GENU0018-3	*Nuclear Engineering and Nuclear Power Plant Technology* - Pierre DEWALLEF	Q1	15	15	-	**2,5**
MECA0033-1	*Heat and Material Transfer Modelling* - N...		30	30	-	**5**
MECA0124-1	*Combustion Modelling* - Philippe NGENDAKUMANA	Q1	30	30	-	**5**
Energy Systems						
ARCH0117-1	*Introduction to building thermals* - JeanMarie HAUGLUSTAINE		15	15	-	**2,5**
ELEC0055-1	*Electronic control systems* (english language) - Christophe GEUZAINE	Q1	30	30	-	**5**
ELEC0047-1	*Power systems dynamics, control and stability* (english language) - Thierry VAN CUTSEM	Q1	30	30	-	**5**
ELEC0436-1	*Energy Management Systems and optimal functions for electric power systems* - Patricia ROUSSEAUX	Q1	30	30	-	**5**
MATH0461-2	*Introduction to numerical optimization* (english language) - Quentin LOUVEAUX - [25h Proj.]	Q2	30	20	[+]	**5**
MECA0034-1	*Rational use of energy in buildings* - Vincent LEMORT	Q1	30	30	-	**5**
MECA0478-4	*Electric, hybrid and non-conventional propulsion systems* - Pierre DUYSINX	Q1	30	30	-	**5**
MECA0514-1	*Introduction to dynamic modeling of thermal systems* - Sylvain QUOILIN		15	15	-	**2,5**
MECA0515-1	*High tech machines and thermal systems* - Vincent LEMORT		15	15	-	**2,5**
Optional courses						
MECA0444-1	*Mechanical design* - JeanFrançois DEBONGNIE	Q1	30	30	-	**5**
MECA0027-1	*Structural and multidisciplinary optimization* - Pierre DUYSINX, Patricia TOSSINGS	Q1	30	30	-	**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)					
Courses out of modules						
ASTG9003-1	*Observation placement* - Pierre DEWALLEF	TA	-	-	-	**3**
ASTG9004-1	*Traineeship* - Pierre DEWALLEF	TA	-	-	-	**5**
GEST3162-1	*Introduction to company management* (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE	Q2	25	25	-	**5**

Notice : Students who have, in their BAC studies, already taken one or more option courses found in this list must not take them again.