Study programmes 2013-2014

Faculty of Applied Sciences

Master in Electro-mechanical Engineering, professional focus in sustainable car technologies

First Year

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

		Th	Pr	Au	Cr
ELEC0431-1	*Electromagnetic energy conversion* (english language) - Christophe GEUZAINE	30	30	-	**5**
ELEC0053-2	*Electric circuits* - Patricia ROUSSEAUX	30	30	-	**5**
MECA0445-1	*Heat transfer* - Pierre DEWALLEF, Vincent TERRAPON	30	30	-	**5**
MECA0012-5	*Solid mechanics* - Laurent DUCHENE	30	30	-	**5**
MECA0002-1	*Applied Thermodynamics and Introduction to Heat Engines* - Olivier LÉONARD	30	30	-	**5**
ELEC0052-1	*Analysis and Design of Electrical Measuring Systems* - Philippe VANDERBEMDEN	30	30	-	**5**

Compulsory courses

MECA0037-1	*Thermic and co-generation power stations* - Pierre DEWALLEF	30	30	-	**5**
MECA0046-1	*Heat exchangers*				**5**
	- Heat exchangers networks and rational use of energy - MarieNoëlle DUMONT	15	15	-	
	- Fundamental and constructive aspects - Vincent LEMORT, Philippe NGENDAKUMANA	15	15	-	
MECA0450-2	*Renewable energies* - Pierre DEWALLEF	15	15	-	**3**
CHIM0080-2	*Energy carriers and sustainable development* - Angélique LÉONARD	20	10	-	**3**
CHIM0071-3	*Reduction of pollutants from combustion* - Angélique LÉONARD	30	-	-	**3**
MECA0006-1	*Production systems of cold and heat* - Vincent LEMORT	30	30	-	**5**
MECA0045-1	*Thermofluid Quantity Measurement* - Philippe NGENDAKUMANA	30	30	-	**3**
MECA0041-1	*Internal Combustion Engines* - Philippe NGENDAKUMANA - [1,5d FW]	30	30	[+]	**5**
APRI0003-1	*Integrated project on energetics* - COLLÉGIALITÉ - [5d FW]	-	60	[+]	**5**
MECA0462-2	*Materials selection* (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [1d FW]	30	30	[+]	**5**
ELEC0014-3	*Electric Energy Transmission and Distribution* - JeanLouis LILIEN - [2,5d FW]	30	15	[+]	**4**
ELEC0029-2	*Analysis and operation of electric energy systems* - Thierry VAN CUTSEM	30	30	-	**4**
MECA0467-1	*Turbomachines* - Olivier LÉONARD	30	30	-	**5**
SYST0003-1	*Linear control systems* (english language) - Eric BULLINGER	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.

Second Year

Compulsory courses

ATFE2003-1	*Final work (including an internship or a placement in a research centre under the supervision of the teacher responsible for the final work and including an introduction to research methodology)* - COLLÉGIALITÉ	-	-	-	**25**

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	60	-	-	**5**

LANG1958-1	*German for Engineering Students* (german language) - Françoise CARL	60	-	-	**5**

In any case, this course must have the approval of the cycle's Jury President.

Compulsory courses

Module 1 : Vehicle dynamics and safety

MECA0492-2	*Vehicle dynamics* (english language) - Pierre DUYSINX	30	20	-	**4**
MECA0493-2	*Vehicle aerodynamics* (english language) - Grigorios DIMITRIADIS	15	10	-	**2**
MECA0494-3	*Driveline and braking systems* (english language) - JeanLuc BOZET, Olivier BRULS, Pierre DUYSINX	30	20	-	**4**
MECA0495-1	*Introduction to vehicle safety and body structure design* (english language) - Pierre DUYSINX, Ludovic NOELS	15	10	-	**2**
MECA0496-2	*Materials for automotive applications* (english language) - Jacqueline LECOMTEBECKERS, Ahmed RASSILI	30	20	-	**4**

Notice : Students who, during the 1st year of the master programme, have already followed a course that is equivalent to one of the courses offered in this specialisation, must substitute it with one or several courses chosen among the faculty's offering; these courses must be approved by the president of the panel for master studies.

Module 2 : Engine and electric propulsion systems

Notice : students who have already taken the course MECA0041-1 in the 1st Master have to remplace the course MECA0498-1 by another course, with the approval of the cycle's Jury President.

MECA0497-2	*Vehicle performance* (english language) - Pierre DUYSINX	15	10	-	**2**
MECA0498-2	*Internal combustion enignes* (english language) - Philippe NGENDAKUMANA	30	20	-	**4**
MECA0499-2	*Electric traction motors* (english language) - Johan GYSELINCK	15	10	-	**2**
MECA0500-2	*Hybrid electric and fuel cell vehicles* (english language) - Pierre DUYSINX, Nathalie JOB	30	20	-	**4**
MECA0501-1	*Thermal and Electrical Management of vehicles* (english language) - Vincent LEMORT	15	10	-	**2**