Université de Liège

Study programmes 2013-2014
Faculty of Applied Sciences
Master in Mechanical Engineering, in-depth approach

First Year

Compulsory courses

		Th	Pr	Au	Cr
Mechanical design and production					
MECA0444-1	*Mechanical design* - JeanFrançois DEBONGNIE	30	30	-	**5**
APRI0005-3	*Integrated mechanical project* - Maarten ARNST, Eric BÉCHET, JeanLuc BOZET, Olivier BRULS, JeanFrançois DEBONGNIE, Pierre DUYSINX, Tristan GILET, Jean STUTO - [5d FW]	50	130	[+]	**15**
MECA0474-1	*Mechanical Computer-Aided-Design* (english language) - Eric BÉCHET	30	30	-	**5**
MECA0462-2	*Materials selection* (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [1d FW]	30	30	[+]	**5**
Management					
GEST3005-2	*Accountancy and Finance* - Jacques BERWART	24	24	-	**5**

Optional courses

Mecatronic

Choose at least 10 ECTS from the following courses :

MECA0504-1	*Industrial automation* - Olivier BRULS, Pierre DUYSINX	30	30	-	**5**
ELEN0074-1	*Sensors, microsensors and instrumentation* - Philippe VANDERBEMDEN	30	30	-	**5**
MECA0009-1	*Introduction to microtechnology* (english language) - Tristan GILET	30	30	-	**5**
SYST0003-1	*Linear control systems* (english language) - Eric BULLINGER	30	30	-	**5**

Computational mechanics

Choose at least 10 ECTS from the following courses :

MECA0029-1	*Theory of vibration* - JeanClaude GOLINVAL	30	30	-	**5**
MECA0023-1	*Inelastic behavior of solids* - JeanPhilippe PONTHOT	30	30	-	**5**
MECA0010-1	*Stochastic modelling* (english language) - Maarten ARNST	30	30	-	**5**
MECA0031-2	*Kinematics and Dynamics of Mechanisms* - Olivier BRULS	30	30	-	**5**

Optional courses

[...]	One course to be chosen from the optional classes in the 2nd Masters or other Masters programmes in the Faculty of Applied Sciences; this choice must be approved by the President of the Jury for that cycle.

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

MECA0036-1	*Finite Element Method* (english language) - JeanPhilippe PONTHOT	30	30	-	**5**
MECA0155-1	*Dynamics of Mechanical Systems* - JeanClaude GOLINVAL	30	30	-	**5**
MECA0012-5	*Solid mechanics* - Laurent DUCHENE	30	30	-	**5**
MECA0018-1	*Industrial Forming Processes* - JeanFrançois DEBONGNIE	30	30	-	**5**
MECA0002-1	*Applied Thermodynamics and Introduction to Heat Engines* - Olivier LÉONARD	30	30	-	**5**
MECA0445-1	*Heat transfer* - Pierre DEWALLEF, Vincent TERRAPON	30	30	-	**5**

Second Year

Compulsory courses

ATFE0013-1	*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*	-	-	-	**25**

to research methodology) - COLLÉGIALITÉ

Optional courses

Choose one of the following courses :

[...]	the courses of the University				
[...]	the courses 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.

Optional courses

Students choose courses totalling 30 ECTS from the optional courses list. With the approval of the Jury's President, students can choose 5 ECTS in the courses list of other masters of the Faculty of Applied Sciences.

Mechanical engineering					
MECA0067-1	*Special Technology Issues* - JeanFrançois DEBONGNIE	30	30	-	**5**
MECA0069-1	*Series Production Methods* - JeanFrançois DEBONGNIE	30	30	-	**5**
MECA0473-1	*Metallic materials Engineering* - Jacqueline LECOMTEBECKERS	30	30	-	**5**
MECA0138-1	*Welding and non-destructive tests* - Nathalie GERLACH, Adnen ben Mahmoud KECHAOU	30	30	-	**5**
MECA0139-2	*Rapid Prototyping* - Thierry DORMAL	10	10	-	**2,5**
MECA0035-1	*Lubrification and tribology* - JeanLuc BOZET	30	30	-	**5**
MECA0467-1	*Turbomachines* - Olivier LÉONARD	30	30	-	**5**
MECA0509-1	*Sustainable engineering processes* (english language) - Mustapha BELHABIB	15	30	-	**5**
MECA0051-2	*Total Quality Management* - JeanMichel COMPÈRE, JeanMarie RIGO	30	30	-	**5**
MECA0006-1	*Production systems of cold and heat* - Vincent LEMORT	30	30	-	**5**
CHIM0699-1	*Life cycle analysis - ecodesign* - Sandra BELBOOM, Angélique LÉONARD	10	20	-	**2,5**
Mecatronic					
ELEC0055-1	*Electronic control systems* (english language) - Paul BLEUS, Christophe GEUZAINE	30	30	-	**5**
INFO0064-1	*Embedded systems* (english language) - Bernard BOIGELOT	30	30	-	**5**
GBIO0012-2	*Biomechanics* (english language) - Liesbet GERIS - [1d FW]	30	30	[+]	**5**
GBIO0022-1	*Biomimetism* (english language) - Liesbet GERIS, Tristan GILET, Eric PARMENTIER	30	30	-	**5**
MECA0008-1	*Microfluidics* (english language) - Tristan GILET	30	30	-	**5**
PROT0430-2	*Biomedical robotics and active prostheses* - Olivier BRULS	30	30	-	**5**
MECA0460-1	*Introduction to safety and health at work on machines-tools. Risk analysis* - JeanMarie RIGO	15	15	-	**3**
Computational mechanics					
MECA0464-1	*Large deformation of solids* (english language) - JeanPhilippe PONTHOT	30	30	-	**5**
MECA0058-1	*Fracture mechanics, damage and fatigue* (english language) - Ludovic NOELS	30	30	-	**5**
MATH0462-1	*Discrete optimization* (english language) - Quentin LOUVEAUX - Suppl : Bertrand CORNÉLUSSE	30	30	-	**5**
MECA0062-1	*Vibration testing and experimental modal analysis* (english language) - JeanClaude GOLINVAL	30	30	-	**5**
MECA0470-1	*Alternative methods of modeling in continuum mechanics* - Maarten ARNST, Eric BÉCHET, Ludovic NOELS	20	40	-	**5**
INFO2046-1	*Computational Geometry* - Eric BÉCHET	30	30	-	**5**
MECA0027-1	*Structural and multidisciplinary optimization* - Pierre DUYSINX, Patricia TOSSINGS	30	30	-	**5**
Vehicles and transport					
MECA0041-1	*Internal Combustion Engines* - Philippe NGENDAKUMANA - [1,5d FW]	30	30	[+]	**5**
GCIV2166-1	*Fundamentals of transportation : sustainable tranport* (english language) - Mario COOLS	20	15	-	**2,5**
CNAV0020-1	*Introduction to naval construction* - André HAGE, Philippe RIGO	40	30	-	**5**
MECA0004-3	*Vehicle performance and behaviour* - Pierre DUYSINX	15	15	-	**2,5**
MECA0478-3	*Electric, hybrid and non-conventional propulsion systems* - Pierre DUYSINX Prerequisite MECA0004-3 Performances et comportement des véhicules	15	15	-	**2,5**
MECA0063-1	*Vehicle Architecture* - Pierre DUYSINX	30	30	-	**5**
[...]	Choose one course from the programme of the Faculty of Applied Sciences ; this choice must receive the approval of the cycle's Jury President.				