Cycle view of the study programme

		Bl	Or	Th	Pr	Au	Cr
Compulsory courses (B1 : 30Cr, B2 : 30Cr)							
Mechanical design and production							
MECA0444-1	*Mechanical design* - JeanFrançois DEBONGNIE	B1	Q1	30	30	-	**5**
APRI0005-3	*Integrated mechanical project* - Maarten ARNST, Eric BÉCHET, JeanLuc BOZET, Olivier BRULS, JeanFrançois DEBONGNIE, Pierre DUYSINX, Tristan GILET, Jean STUTO - [250h Proj., 5d FW] **Corequisite :** MECA0444-1 - Conception mécanique MECA0474-1 - Mechanical Computer-Aided-Design MECA0462-2 - Materials selection *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.	B1	TA	50	-	[+]	**15**
MECA0474-1	*Mechanical computer-Aided-Design* (english language) - Eric BÉCHET - [30h Proj.]	B1	Q1	30	30	[+]	**5**
MECA0462-2	*Materials selection* (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [30h Proj., 1d FW]	B1	Q1	30	30	[+]	**5**
Management							
GEST3162-1	*Principles of management* (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE	B2	Q1	25	25	-	**5**
Dissertation							
ATFE0013-1	*Final thesis* - COLLÉGIALITÉ	B2	TA	-	-	-	**25**
Optional courses (B1 : 30Cr, B2 : 30Cr)							
Choose courses totalling 30 ECTS out of the following : (B1 : 30Cr)							
[...]	Minimum 10 ECTS from the list Mecatronic 1						
MECA0504-1	*Industrial automation* - Olivier BRULS, Pierre DUYSINX - [30h Labo.]	B1	Q2	30	-	[+]	**5**
ELEN0074-1	*Sensors, microsensors and instrumentation* (english language) - Philippe VANDERBEMDEN - [20h Labo.]	B1	Q2	30	-	[+]	**5**
MECA0009-2	*Introduction to microtechnology* (english language) - Tristan GILET - [8h Labo., 22h Proj.]	B1	Q2	12	12	[+]	**5**
SYST0003-1	*Linear control systems* (english language) - Guillaume DRION - [6h Labo.]	B1	Q1	30	30	[+]	**5**
[...]	Minimum 10 ECTS from the list Computational mechanics 1						
[...]	Courses to choose from the optional courses of the master						
Choose one focus from the following : (B2 : 30Cr)							
Research Focus (B2 : 30Cr)							
[...]	Choose one intership amongst :						
ASTG0116-1	*Observation internship* - Pierre DEWALLEF **Corequisite :** GEST3162-1 - Principles of management	B2	TA	-	-	-	**3**
ASTG0117-1	*Integration internship* - Pierre DEWALLEF **Corequisite :** ATFE0013-1 - Travail de fin d'études	B2	TA	-	-	-	**5**

GEST3162-1 - Principles of management

Choose courses totalling 25 ECTS from the following : (B2 : 25Cr)

[...] Maximum 5 credits to be chosen from the language courses programme organised by ISLV in other faculties or from the restricted Language Courses list

LANG1957-1	*Dutch for Engineers, part 1* (dutch language) - Claudine COLIN	B2	Q1	36	-	-	**3**
LANG2978-1	*Dutch for engineer, part 2* - Claudine COLIN **Corequisite :** LANG1957-1 - Néerlandais pour l'ingénieur, partim 1	B2	Q2	24	-	-	**2**
LANG1958-1	*German for engineer, Part 1* (german language) - Françoise CARL	B2	Q1	36	-	-	**3**
LANG2979-1	*German for engineers, part 2* - Françoise CARL, ISLV **Corequisite :** LANG1958-1 - Allemand pour l'ingénieur, partim 1	B2	Q2	24	-	-	**2**

[...] Maximum 25 ECTS from the optional courses lists Mecatronic 1, Mecatronic 2, Computational mechanics 1, Computational mechanics 2, Mechanical engineering and vehicles and transports

MECA0504-1	*Industrial automation* - Olivier BRULS, Pierre DUYSINX - [30h Labo.]	B1	Q2	30	-	[+]	**5**
ELEN0074-1	*Sensors, microsensors and instrumentation* (english language) - Philippe VANDERBEMDEN - [20h Labo.]	B1	Q2	30	-	[+]	**5**
MECA0009-2	*Introduction to microtechnology* (english language) - Tristan GILET - [8h Labo., 22h Proj.]	B1	Q2	12	12	[+]	**5**
SYST0003-1	*Linear control systems* (english language) - Guillaume DRION - [6h Labo.]	B1	Q1	30	30	[+]	**5**

[...] Maximum 5 credits in the list of courses from other master¿s degrees in the faculty of Applied Sciences

Professional focus in sustainable automotive engineering (B2 : 30Cr)

ASTG0117-1	*Integration internship* - Pierre DEWALLEF **Corequisite :** ATFE0013-1 - Travail de fin d'études GEST3162-1 - Principles of management	B2	TA	-	-	-	**5**

Vehicle dynamics and safety

MECA0492-2	*Vehicle dynamics* (english language) - Pierre DUYSINX **Corequisite :** MECA0493-2 - Vehicle aerodynamics MECA0494-3 - Driveline and braking systems MECA0495-1 - Introduction to vehicle safety and body structure design MECA0496-2 - Materials for automotive applications	B2	Q1	25	15	-	**3**
MECA0493-2	*Vehicle aerodynamics* (english language) - - Suppl : Pierre DUYSINX, Vincent TERRAPON **Corequisite :** MECA0492-2 - Vehicle dynamics MECA0494-3 - Driveline and braking systems MECA0495-1 - Introduction to vehicle safety and body structure design MECA0496-2 - Materials for automotive applications	B2	Q1	15	10	-	**2**
MECA0494-3	*Driveline and braking systems* (english language) - Olivier BRULS, Pierre DUYSINX **Corequisite :** MECA0492-2 - Vehicle dynamics MECA0493-2 - Vehicle aerodynamics MECA0495-1 - Introduction to vehicle safety and body structure design MECA0496-2 - Materials for automotive applications	B2	Q1	25	15	-	**3**

MECA0495-1	*Introduction to vehicle safety and body structure design* (english language) - Pierre DUYSINX, Ludovic NOELS **Corequisite :** MECA0492-2 - Vehicle dynamics MECA0493-2 - Vehicle aerodynamics MECA0494-3 - Driveline and braking systems MECA0497-2 - Vehicle performance	B2	Q1	15	10	-	**2**
MECA0496-2	*Materials for automotive applications* (english language) - Jacqueline LECOMTEBECKERS, Ahmed RASSILI **Corequisite :** MECA0492-2 - Vehicle dynamics MECA0493-2 - Vehicle aerodynamics MECA0494-3 - Driveline and braking systems MECA0495-1 - Introduction to vehicle safety and body structure design	B2	Q1	25	15	-	**3**

Engine and electric propulsion systems

MECA0497-2	*Vehicle performance* (english language) - Pierre DUYSINX **Corequisite :** MECA0498-2 - Internal combustion engines MECA0499-2 - Electric traction motors MECA0500-2 - Hybrid electric and fuel cell vehicles MECA0501-1 - Thermal and Electrical Management of vehicles	B2	Q1	15	10	-	**2**
MECA0498-2	*Internal combustion engines* (english language) - Philippe NGENDAKUMANA **Corequisite :** MECA0497-2 - Vehicle performance MECA0499-2 - Electric traction motors MECA0500-2 - Hybrid electric and fuel cell vehicles MECA0501-1 - Thermal and Electrical Management of vehicles	B2	Q1	25	15	-	**3**
MECA0499-2	*Electric traction motors* (english language) - Johan GYSELINCK **Corequisite :** MECA0497-2 - Vehicle performance MECA0498-2 - Internal combustion engines MECA0500-2 - Hybrid electric and fuel cell vehicles MECA0501-1 - Thermal and Electrical Management of vehicles	B2	Q1	15	10	-	**2**
MECA0500-2	*Hybrid electric and fuel cell vehicles* (english language) - Pierre DUYSINX, Nathalie JOB **Corequisite :** MECA0497-2 - Vehicle performance MECA0498-2 - Internal combustion engines MECA0499-2 - Electric traction motors MECA0501-1 - Thermal and Electrical Management of vehicles	B2	Q1	25	15	-	**3**
MECA0501-1	*Thermal and Electrical Management of vehicles* (english language) - Vincent LEMORT **Corequisite :** MECA0497-2 - Vehicle performance MECA0498-2 - Internal combustion engines MECA0499-2 - Electric traction motors MECA0500-2 - Hybrid electric and fuel cell vehicles	B2	Q1	15	10	-	**2**

Notice : Students who, during the block 1 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.

Computational mechanics 1

MECA0029-1	*Theory of vibration* (english language) - JeanClaude GOLINVAL - [30h Proj.]	B1	Q1	30	30	[+]	**5**

MECA0031-2	*Kinematics and dynamics of mechanisms* (english language) - Olivier BRULS - [40h Proj.]	B1	Q2	30	20	[+]	**5**
MECA0023-1	*Advanced solid mechanics* (english language) - JeanPhilippe PONTHOT - [20h Proj.]	B1	Q1	30	30	[+]	**5**
MECA0010-1	*Scholastic modelling* (english language) - Maarten ARNST - [28h Proj.]	B1	Q2	16	16	[+]	**5**
Mechanical engineering							
MECA0067-1	*Special Technology Issues* - JeanFrançois DEBONGNIE	B2	Q1	30	30	-	**5**
MECA0069-1	*Series Production Methods* - JeanFrançois DEBONGNIE - [4h Labo.]	B2	Q2	30	26	[+]	**5**
MECA0473-1	*Metallic materials Engineering* - Jacqueline LECOMTEBECKERS	B2	Q1	30	30	-	**5**
MECA0138-1	*Welding and non-destructive tests* - Nathalie GERLACH, Adnen ben Mahmoud KECHAOU - [30h Labo.]	B2	Q1	30	-	[+]	**5**
MECA0139-1	*Techniques of additive manufacturing and 3D printing* - Thierry DORMAL	B2	Q1	15	15	-	**3**
MECA0035-1	*Lubrification and tribology* - JeanLuc BOZET	B2	Q1	30	30	-	**5**
MECA0467-1	*Turbomachines* - Olivier LÉONARD	B2	Q2	30	30	-	**5**
MECA0509-1	*Sustainable engineering processes* (english language) - Georges PELSEMAEKER	B2		15	30	-	**5**
MECA0051-2	*QSHE Management (Quality - Safety - Health - Environment)* - JeanMichel COMPÈRE, Pierre DEWALLEF	B2	Q1	30	30	-	**5**
MECA0006-1	*Production system of coldness and low temperature heat* - Vincent LEMORT - [4h Proj.]	B2	Q1	30	30	[+]	**5**
CHIM0699-2	*Life cycle analysis - ecodesign* - Sandra BELBOOM, Angélique LÉONARD	B2	Q1	10	30	-	**3**
MECA0502-1	*Mechanics of composites* (english language) - Michaël BRUYNEEL	B2	Q1	30	30	-	**5**
Mecatronic 2							
ELEC0055-1	*Electronic control systems* (english language) - Fabrice FREBEL, Christophe GEUZAINE	B2	Q1	30	30	-	**5**
MECA0517-1	*Advanced industrial robotics* (english language) - Olivier BRULS - [10h Proj.]	B2	Q2	30	20	[+]	**5**
INFO0948-2	*Introduction to intelligent robotics* (english language) - Renaud DETRY - [80h Proj.]	B2	Q2	30	4	[+]	**5**
INFO0064-2	*Embedded systems* (english language) - Bernard BOIGELOT	B2	Q1	25	20	-	**3**
INFO2055-1	*Embedded systems project* (english language) - Bernard BOIGELOT - [60h Proj.]	B2	Q2	-	-	[+]	**2**
GBIO0012-2	*Biomechanics* (english language) - Davide RUFFONI - [1d FW]	B2	Q1	30	30	[+]	**5**
GBIO0022-1	*Biomimetism* (english language) - Philippe COMPÈRE, Liesbet GERIS, Tristan GILET, Eric PARMENTIER, Davide RUFFONI - [45h Proj.]	B2	TA	15	-	[+]	**5**
MECA0008-1	*Microfluidics* (english language) - Tristan GILET - [16h Labo., 14h Proj.]	B2	Q1	22	8	[+]	**5**
PROT0430-3	*Biomedical robotics and active prostheses* - Olivier BRULS	B2	Q1	15	10	-	**2**
MTRA2008-2	*Safety at work : technology and prevention* - N...	B2		15	15	-	**3**
Computational mechanics 2							
MECA0464-1	*Large deformation of solids* (english language) - JeanPhilippe PONTHOT - [60h Proj.]	B2	Q1	30	30	[+]	**5**
MECA0058-1	*Fracture mechanics, damage and fatigue* (english language) - Ludovic NOELS - [75h Proj.]	B2	Q1	30	10	[+]	**5**

MECA0062-1	*Vibration testing and experimental modal analysis* (english language) - JeanClaude GOLINVAL - [30h Proj.] **Prerequisite :** MECA0029-1 - Theory of vibration	B2	Q1	30	30	[+]	**5**
MECA0470-1	*New methodsin computational mechanics* (english language) - Maarten ARNST, Eric BÉCHET, Ludovic NOELS - [40h Proj.]	B2	Q2	20	-	[+]	**5**
INFO2046-2	*Computational geometry* (english language) - Eric BÉCHET - [95h Proj.]	B2	Q1	25	-	[+]	**5**
MECA0027-1	*Structural and multidisciplinary optimization* - Pierre DUYSINX, Patricia TOSSINGS - [18h Proj.]	B2	Q1	30	12	[+]	**5**
INFO0939-1	*High performance scientific computing* (english language) - Christophe GEUZAINE - [20h Proj.]	B2	Q1	30	15	[+]	**5**
MATH0024-1	*Modelling with partial differential equations* - Maarten ARNST - [25h Proj.]	B2	Q1	30	20	[+]	**5**
MATH0471-2	*Multiphysics integrated computational project* (english language) - Romain BOMAN, Christophe GEUZAINE - [30h Proj.] **Corequisite :** MATH0024-1 - Modelling with partial differential equations INFO0939-1 - High performance scientific computing	B2	TA	20	-	[+]	**5**

Vehicles and transport

MECA0041-1	*Internal combustion engine* - Philippe NGENDAKUMANA - [1,5d FW, 20h Proj.]	B2	Q2	30	30	[+]	**5**
GCIV2066-1	*Fundamentals of transportation : transport planning* (english language) - Mario COOLS	B2	Q1	15	15	-	**2**
CNAV0020-1	*Introduction to naval construction* - André HAGE, Philippe RIGO	B2	Q1	40	30	-	**5**
MECA0004-3	*Vehicles performances ans behaviour* - Pierre DUYSINX - [6h Labo., 12h Proj.]	B2	Q2	30	12	[+]	**5**
MECA0478-4	*Electric, hybrid and non-conventional propulsion systems* - Pierre DUYSINX - [6h Labo., 16h Proj.]	B2	Q1	30	8	[+]	**5**
MECA0063-1	*Vehicle Architecture* - Pierre DUYSINX - [30h Proj.] **Corequisite :** MECA0004-3 - Performances et comportement des véhicules	B2	Q2	30	-	[+]	**5**

Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en ingénieur civil mécanicien, à finalité spécialisée en technologies durables en automobile" en 2014-2015

Optional courses (B1 : 30Cr)

Choose one focus from the following : (B1 : 30Cr)

Professional focus in sustainable automotive engineering (B1 : 30Cr)

ASTG0117-1	*Integration internship* - Pierre DEWALLEF	B1	TA	-	-	-	**5**

Vehicle dynamics and safety

MECA0492-2	*Vehicle dynamics* (english language) - Pierre DUYSINX	B1	Q1	25	15	-	**3**
MECA0493-2	*Vehicle aerodynamics* (english language) - - Suppl : Pierre DUYSINX, Vincent TERRAPON	B1	Q1	15	10	-	**2**
MECA0494-3	*Driveline and braking systems* (english language) - Olivier BRULS, Pierre DUYSINX	B1	Q1	25	15	-	**3**

MECA0495-1	*Introduction to vehicle safety and body structure design* (english language) - Pierre DUYSINX, Ludovic NOELS	B1	Q1	15	10	-	**2**
MECA0496-2	*Materials for automotive applications* (english language) - Jacqueline LECOMTEBECKERS, Ahmed RASSILI	B1	Q1	25	15	-	**3**

Engine and electric propulsion systems

MECA0497-2	*Vehicle performance* (english language) - Pierre DUYSINX	B1	Q1	15	10	-	**2**
MECA0498-2	*Internal combustion engines* (english language) - Philippe NGENDAKUMANA	B1	Q1	25	15	-	**3**
MECA0499-2	*Electric traction motors* (english language) - Johan GYSELINCK	B1	Q1	15	10	-	**2**
MECA0500-2	*Hybrid electric and fuel cell vehicles* (english language) - Pierre DUYSINX, Nathalie JOB	B1	Q1	25	15	-	**3**
MECA0501-1	*Thermal and Electrical Management of vehicles* (english language) - Vincent LEMORT	B1	Q1	15	10	-	**2**

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Compulsory courses (B1 : 30Cr)

ATFE0013-1	*Final thesis* - COLLÉGIALITÉ	B1	TA	-	-	-	**25**
GEST3162-1	*Principles of management* (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE	B1	Q1	25	25	-	**5**

Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en ingénieur civil mécanicien, à finalité approfondie" en 2014-2015

Optional courses (B1 : 30Cr)

Choose one focus from the following : (B1 : 30Cr)

Research Focus (B1 : 30Cr)

[...] Choose 1 compulsory internship

Choose courses totalling 25 ECTS from the following : (B1 : 25Cr)

[...] Maximum 5 credits to be chosen from the language courses programme organised by ISLV in other faculties or from the restricted list below

[...] Maximum 25 ECTS from the optional courses list

[...] Maximum 5 credits in the list of courses from other master¿s degrees in the faculty of Applied Sciences

Compulsory courses (B1 : 30Cr)

ATFE0013-1	*Final thesis* - COLLÉGIALITÉ	B1	TA	-	-	-	**25**
GEST3162-1	*Principles of management* (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE	B1	Q1	25	25	-	**5**