

## First Year

### Compulsory courses

MECA0023-1	<i>Inelastic behavior of solids</i> - Jean-Philippe PONTHOT	30	30	-	5
MECA0475-1	<i>Integrated design</i> - Jean-Luc BOZET	20	40	-	5
APRI0005-1	<i>Integrated mechanical project</i> - COLLÉGIALITÉ, Pierre DUYSINX - [5d FW]	-	60	[+]	5
MECA0444-1	<i>Mechanical design</i> - Jean-François DEBONGNIE	30	30	-	5
MECA0038-1	<i>Measurement uncertainties and dimensional metrology</i> - Maarten ARNST	30	30	-	5
MECA0474-1	<i>CAD in mechanical engineering</i> - Eric BÉCHET, Eric BÉCHET	30	30	-	5
MECA0069-1	<i>Series Production Methods</i> - Jean-François DEBONGNIE	30	30	-	5
MECA0004-1	<i>Vehicle performance and behaviour</i> - Pierre DUYSINX	30	30	-	5
PHYS0904-4	<i>Physics of materials</i> - Jacqueline LECOMTE#BECKERS - [1d FW]	30	30	[+]	5
MECA0462-2	<i>Materials selection</i> - Jacqueline LECOMTE#BECKERS - [1d FW]	30	30	[+]	5
MECA0029-1	<i>Mechanical Vibrations</i> - Jean-Claude GOLINVAL	30	30	-	5
MECA0467-1	<i>Turbomachines</i> - Olivier LÉONARD	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 following list of option courses; this choice must be approved by the President of the cycle's Jury.

### List of option courses

MATH0461-1	<i>Introduction to numerical optimization (english language)</i> - Quentin LOUVEAUX	30	30	-	5
CNAV0020-1	<i>Introduction to naval construction</i> - André HAGE, Jean MARCHAL, Philippe RIGO	40	30	-	5
MECA0041-1	<i>Internal Combustion Engines</i> - Philippe NGENDAKUMANA - [1,5d FW]	30	30	[+]	5
MECA0031-2	<i>Kinematics and Dynamics of Mechanisms</i> - Olivier BRULS	30	30	-	5

### 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	<i>Finite Element Method</i> - Jean-Philippe PONTHOT	30	30	-	5
MECA0155-1	<i>Dynamics of Mechanical Systems</i> - Jean-Claude GOLINVAL	30	30	-	5
MECA0012-5	<i>Mechanics of materials I</i> - Jean-Pierre JASPART	30	30	-	5
MECA0018-1	<i>Industrial Forming Processes</i> - Jean-François DEBONGNIE	30	30	-	5
MECA0002-1	<i>Applied Thermodynamics and Introduction to Heat Engines</i> - Olivier LÉONARD	30	30	-	5
MECA0445-1	<i>Transfers of heat and matter</i> - Michel HOGGE	30	30	-	5

## Second Year

### Compulsory courses

ATFE0013-1	<i>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)</i> - COLLÉGIALITÉ	-	-	-	25
------------	--	---	---	---	----

### Optional courses

Choose one of the following courses :

[...]	the courses of the University				
[...]	the courses below.				
ECON0207-1	<i>Industrial Economics</i> - Axel GAUTIER	30	15	-	5
LOGI0011-1	<i>Supply Chain Management (english language)</i> - Sabine LIMBOURG	45	-	-	5
LANG1957-1	<i>Dutch Engineering (dutch language)</i> - Claudine COLIN	60	-	-	5

LANG1958-1 *German Engineering* (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**

MECA0491-1	<i>Technical english</i> (english language) - FOREM	15	15	-	2
MECA0492-1	<i>Vehicle dynamics</i> (english language) - Pierre DUYSINX	15	25	-	3
MECA0493-1	<i>Vehicle aerodynamics</i> (english language) - Grigorios DIMITRIADIS	15	25	-	3
MECA0494-1	<i>Driveline and braking systems</i> (english language) - Jean-Luc BOZET, Olivier BRULS, Pierre DUYSINX	15	15	-	2
MECA0495-1	<i>Introduction to vehicle safety</i> (english language) - Pierre DUYSINX, Ludovic NOELS	15	10	-	2
MECA0496-1	<i>Materials for automotive applications</i> (english language) - Jacqueline LECOMTE#BECKERS, Ahmed RASSILI	15	25	-	3

**Module 2 : Engine and electric propulsion systems**

MECA0497-1	<i>Vehicle performance</i> (english language) - Pierre DUYSINX	15	15	-	2
MECA0498-1	<i>Internal combustion engines</i> (english language) - Philippe NGENDAKUMANA	30	30	-	5
MECA0499-1	<i>Electric traction motors</i> (english language) - Johan GYSELINCK	15	25	-	3
MECA0500-1	<i>Hybrid electric and fuel cell vehicles</i> (english language) - Pierre DUYSINX, Nathalie JOB	15	25	-	3
MECA0501-1	<i>Control Systems for Automotive powertrains</i> (english language) - Pierre DUYSINX	15	15	-	2