

First Year

Compulsory courses

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

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

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| ELEC0431-1 | <i>Electromagnetic energy transformation</i> - Christophe GEUZAINÉ | 30 | 30 | - | 5 |
| ELEC0053-2 | <i>Electric circuits</i> - Patricia ROUSSEAU | 30 | 30 | - | 5 |
| MECA0445-1 | <i>Heat transfer</i> - Michel HOGGE | 30 | 30 | - | 5 |
| MECA0012-5 | <i>Solid mechanics</i> - Laurent DUCHENE | 30 | 30 | - | 5 |
| MECA0002-1 | <i>Applied Thermodynamics and Introduction to Heat Engines</i> - Olivier LÉONARD | 30 | 30 | - | 5 |
| ELEC0052-1 | <i>Analysis and Design of Electrical Measuring Systems</i> - Philippe VANDERBEMDEN | 30 | 30 | - | 5 |

Second Year

Compulsory courses

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| ATFE2003-1 | <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 |
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Optional courses

Choose one of the following courses :

- [...] the courses of the University of Liège
- [...] the list below.

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| 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 | <i>German Engineering (german language)</i> - Françoise CARL | 60 | - | - | 5 |

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

Compulsory courses

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| ELEC0018-1 | <i>Energy market</i> - Damien ERNST, Yvan HELLA | 45 | 15 | - | 5 |
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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

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| CHIM0039-1 | <i>Chemical Upgrading of Coal</i> - JeanPaul PIRARD | 15 | - | - | 2,5 |
| CHIM0664-1 | <i>Combustible batteries and micro-batteries</i> - Nathalie JOB | 15 | 15 | - | 2,5 |
| ELEC0039-1 | <i>Network Electromechanical Performance</i> - JeanLouis LILIEN | 30 | 30 | - | 5 |
| ELEC0041-1 | <i>Modeling and design of electromagnetic systems</i> - Patrick DULAR, Christophe GEUZAINÉ | 30 | 30 | - | 5 |
| ELEN0074-1 | <i>Sensors, microsensors and instrumentation</i> - Philippe VANDERBEMDEN | 30 | 30 | - | 5 |
| GENU0018-2 | <i>Nuclear Engineering and Nuclear Power Plant Technology</i> - Pierre DEWALLEF | 30 | 30 | - | 5 |
| MECA0032-1 | <i>Flow in Turbomachines</i> - Olivier LÉONARD | 30 | 30 | - | 5 |
| MECA0033-1 | <i>Heat and Material Transfer Modelling</i> - N... | 30 | 30 | - | 5 |
| MECA0124-1 | <i>Combustion Modelling</i> - Philippe NGENDAKUMANA | 30 | 30 | - | 5 |

Energy Systems

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| ARCH0117-1 | <i>Introduction to building thermals</i> - JeanMarie HAUGLUSTAINE | 15 | 15 | - | 2,5 |
| ELEC0055-1 | <i>Electronic control systems</i> - Paul BLEUS, Christophe GEUZAINÉ | 30 | 30 | - | 5 |
| ELEC0047-1 | <i>Power systems dynamics, control and stability</i> (english language) - Thierry VAN CUTSEM | 30 | 30 | - | 5 |
| ELEC0436-1 | <i>Energy Management Systems and optimal functions for electric power systems</i> - Patricia ROUSSEAUX | 30 | 30 | - | 5 |
| GCIV2057-2 | (pas organisé en 2012-2013) <i>Hydropower exploitation (part)</i> - Olivier LÉONARD | 15 | 15 | - | 2,5 |
| MATH0461-1 | <i>Introduction to numerical optimization</i> (english language) - Quentin LOUVEAUX | 30 | 30 | - | 5 |
| MECA0034-1 | <i>Rational use of energy in buildings</i> - Vincent LEMORT | 30 | 30 | - | 5 |
| MECA0478-1 | <i>Electric, hybrid and non-conventional propulsion systems</i> - Pierre DUYSINX | 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) | | | | |
| MECA0444-1 | <i>Mechanical design</i> - JeanFrançois DEBONGNIE | 30 | 30 | - | 5 |
| MECA0027-1 | <i>Structural and multidisciplinary optimization</i> - Pierre DUYSINX, Patricia TOSSINGS | 30 | 30 | - | 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.