

First Year

Compulsory courses

| | | | | | |
|------------|---|----|----|-----|---|
| CHIM0603-1 | <i>Chemistry</i> - Benoît HEINRICHS - [15h Labo.] | 50 | 40 | [+] | 9 |
| ECON0323-1 | <i>First principles of economics</i> - Bernard JURION | 30 | - | - | 3 |
| INFO2009-1 | <i>Introduction to computer science</i> - - Suppl : Bernard BOIGELOT | 25 | 20 | - | 4 |
| INFO0061-3 | <i>Computers organization</i> - Bernard BOIGELOT | 25 | 20 | - | 5 |
| LANG0038-1 | <i>English</i> - Christine FILOT, ISLV | 60 | - | - | 5 |
| MATH0001-2 | <i>Graphic Communication</i> - Eric BÉCHET | 20 | 20 | - | 4 |
| MATH0002-3 | <i>Mathematical Analysis I</i> - Eric DELHEZ | 50 | 40 | - | 9 |
| MATH0003-1 | <i>Geometry</i> - Pierre LECOMTE | 25 | 15 | - | 4 |
| MATH0013-1 | <i>Algebra</i> - Eric DELHEZ | 30 | 20 | - | 5 |
| PHYS2020-1 | <i>Physics 1 : Mechanics</i> - Hervé CAPS | 20 | 20 | - | 4 |
| PHYS2021-1 | <i>Physics 2 : Electricity and electromagnetism</i> - Hervé CAPS | 30 | 30 | - | 5 |
| PROJ0001-1 | <i>Introduction to numerical methods and project</i> - Olivier BRULS, Quentin LOUVEAUX, Frédéric NGUYEN | 10 | 30 | - | 3 |

Engineering jobs and careers : compulsory seminars

A visit to a business

Notice : Compulsory business visits envisaged for the 2nd semester in 1st BAC and the 1st semester of BAC 2 are organised so that students can better become acquainted with the engineering professions and to help them choose their options and Masters. They are not graded and thus have no ECTS value.

Second year

Compulsory courses

| | | | | | |
|------------|---|----|----|---|---|
| CHIM0286-1 | <i>Rudiments of thermodynamics</i> - Benoît HEINRICHS | 30 | 30 | - | 5 |
| GENV0001-1 | <i>Environmental Engineering</i> - Alain DASSARGUES, Benjamin DEWALS, Angélique LÉONARD, Michel PIROTON | 30 | - | - | 2 |
| LANG0039-2 | <i>English 2 (english language)</i> - Christine FILOT, ISLV | 30 | - | - | 2 |
| MATH0006-2 | <i>Introduction to numerical analysis</i> - Quentin LOUVEAUX | 25 | 15 | - | 3 |
| MATH0007-4 | <i>Mathematical analysis II</i> - Françoise BASTIN | 30 | 30 | - | 5 |
| MECA0001-1 | <i>Solid mechanics</i> - Serge CESCOTTO - Suppl : Anne HABRAKEN | 30 | 30 | - | 5 |
| MECA0003-1 | <i>Rational Mechanics</i> - Eric DELHEZ | 30 | 30 | - | 5 |
| MECA0011-1 | <i>Fluid Mechanics : Basics</i> - Michel PIROTON | 30 | 30 | - | 5 |
| SYST0002-1 | <i>Linear systems</i> - Rodolphe SEPULCHRE | 30 | 30 | - | 5 |
| PHYS2022-1 | <i>Physics 3 : Waves and quanta</i> - Laurent DREESEN | 20 | 20 | - | 3 |

A visit to a business

Optional courses

Choose two of the following options :

Notice : One will be your minor option. The other, linked to your 3rd year further study option, will be your major option. Minor / major combinations must be endorsed by the Jury.

Option Chemistry and Material Sciences

| | | | | | |
|------------|--|----|----|---|---|
| CHIM0080-2 | <i>Energy carriers and sustainable development</i> - Angélique LÉONARD | 20 | 10 | - | 3 |
| CHIM0604-1 | <i>Chemistry and organic materials</i> - Christophe DETREMBLEUR | 30 | 60 | - | 7 |

Option Mechanics

| | | | | | |
|------------|--|----|----|---|---|
| MECA0002-1 | <i>Applied Thermodynamics and Introduction to Heat Engines</i> - Olivier LÉONARD | 30 | 30 | - | 5 |
| MECA0012-5 | <i>Mechanics of materials I</i> - Jean-Pierre JASPART | 30 | 30 | - | 5 |

Option Physics

PHYS2026-1 *Physics 4 : Microscopic physics (partime a : waves optics, partime b : introduction to nuclear physics)* - Ngoc Duy NGUYEN 30 30 - 5

MECA0012-5 *Mechanics of materials I* - Jean-Pierre JASPART 30 30 - 5

Option Electricity and Electronics

ELEC0053-2 *Electric circuits* - Patricia ROUSSEAU 30 30 - 5

ELEN0075-1 *Analog Electronics* - Benoît VANDERHEYDEN 30 30 - 5

Option Computing

INFO0902-1 *Data structures and algorithms* - N... - Suppl : Sébastien COLLETTE 30 30 - 5

INFO0062-1 *Object-Oriented Programming* - Bernard BOIGELOT 30 30 - 5

Option Building

GCIV0184-2 *Building Materials* - Luc COURARD 30 30 - 5

MECA0012-5 *Mechanics of materials I* - Jean-Pierre JASPART 30 30 - 5

Option Geological Engineering

GEOL0001-1 *Geology and Geology for Engineers* - Alain DASSARGUES - [2d FW] 35 25 [+] 5

GEOL0021-7 *Geophysical exploration* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW] 30 30 [+] 5

Option Biomedical Engineering

BIOC0002-1 *Biochemistry* - Paulette CHARLIER 30 30 - 5

GBIO0001-1 *Biophysics (english language)* - Liesbet GERIS 30 30 - 5

Option Architecture

ARCH0067-5 *Architecture and Urban Design History I* - Jean-Claude CORNESSE 45 - - 5

GCIV2030-2 *Structural Design of Buildings* - Thibaut BROGNEAUX, Jean-Claude CORNESSE 15 30 - 5

Notice : Students who follow options which have one or more courses in common complete their programme by choosing one or more courses from BAC programme for Engineering Sciences - Civil Engineering or language courses organised by the Ulg in other education pathways. The resulting programme must equal 60 credits and be approved by the Jury.

Third year

Compulsory courses

GEST0105-1 *Elements of Management : Social Aspects* - Annie CORNET 20 - - 2

MATH0008-2 *Introduction to probability and statistics (english language)* - Kristel VAN STEEN 15 15 - 3

Optional courses

The follow-up to the two options begun in the second year :

Option Chemistry and Material Sciences

CHIM0022-2 *Introduction to Chemical Engineering* - Michel CRINE 30 30 - 5

CHIM0009-1 *Applied chemical thermodynamics* - Georges HEYEN 30 30 - 5

CHIM0012-2 *Chemical Kinetics* - Jean-Paul PIRARD 30 30 - 5

CHIM0605-1 *Chemistry and inorganic materials* - Rudi CLOOTS 30 30 - 5

Option Mechanics

MECA0018-1 *Industrial Forming Processes* - Jean-François DEBONGNIE 30 30 - 5

MECA0445-1 *Transfers of heat and matter* - Michel HOGGE 30 30 - 5

MECA0155-1 *Dynamics of Mechanical Systems* - Jean-Claude GOLINVAL 30 30 - 5

MECA0036-1 *Finite Element Method* - Jean-Philippe PONTHOT 30 30 - 5

Option Physics

| | | | | | |
|------------|--|----|----|---|---|
| MECA0025-1 | <i>Fluid Mechanics</i> - Eric DELHEZ | 30 | 30 | - | 5 |
| PHYS0211-3 | <i>Quantum Mechanics</i> - John MARTIN | 30 | 30 | - | 5 |
| ELEN0076-1 | <i>Electromagnetism</i> - Patricia ROUSSEAU, Benoît VANDERHEYDEN | 30 | 30 | - | 5 |
| MECA0445-1 | <i>Transfers of heat and matter</i> - Michel HOGGE | 30 | 30 | - | 5 |

Option Electricity and Electronics

| | | | | | |
|------------|--|----|----|---|---|
| ELEN0040-1 | <i>Digital Electronics</i> - Jacques DESTINÉ | 30 | 30 | - | 5 |
| ELEC0052-1 | <i>Analysis and Design of Electrical Measuring Systems</i> - Philippe VANDERBEMDEN | 30 | 30 | - | 5 |
| ELEC0431-1 | <i>Electromagnetic energy transformation</i> - Christophe GEUZAINÉ | 30 | 30 | - | 5 |
| ELEN0008-1 | <i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK | 30 | 30 | - | 5 |

Option Computing

| | | | | | |
|------------|---|----|----|---|---|
| ELEN0040-1 | <i>Digital Electronics</i> - Jacques DESTINÉ | 30 | 30 | - | 5 |
| INFO0012-1 | <i>Computation Structures</i> - Pierre WOLPER | 30 | 30 | - | 5 |
| INFO0010-1 | <i>Introduction to Computer Networks</i> - Guy LEDUC | 30 | 30 | - | 5 |
| INFO0030-4 | <i>Programming Projects</i> - N... - Suppl : Pascal GRIBOMONT | 10 | 20 | - | 2 |
| INFO0004-1 | <i>Object-oriented programming project</i> - N... - Suppl : Guy LEDUC | 10 | 30 | - | 3 |

Option Building

| | | | | | |
|------------|---|----|----|---|---|
| MECA0442-1 | <i>Mechanics of materials II</i> - Serge CESCOTTO | 15 | 15 | - | 2 |
| GCIV0604-1 | <i>Hydraulics</i> - Michel PIROTON | 15 | 15 | - | 3 |
| GCIV0607-1 | <i>Structural mechanics</i> - Jean-Marc FRANSSSEN | 30 | 30 | - | 5 |
| GCIV0603-1 | <i>Geotechnics</i> - Robert CHARLIER | 30 | 30 | - | 5 |
| GCIV0097-1 | <i>Steel and concrete constructions I</i> - Jean-Pierre JASPART - Suppl : Soris DAN | 30 | 30 | - | 5 |

Option Geological Engineering

| | | | | | |
|------------|--|----|----|-----|---|
| GEOL0020-5 | <i>Mineral resources</i> - Eric PIRARD | 20 | 10 | - | 3 |
| GEOL0013-5 | <i>Hydrogeology</i> - Alain DASSARGUES - [1d FW] | 30 | 30 | [+] | 5 |
| GEOL0253-2 | <i>Spatial analysis of geo-environmental data</i> - Eric PIRARD | 20 | 20 | - | 3 |
| GEOL0274-1 | <i>Introduction to mineralogy, igneous and metamorphic petrology</i> - André-Mathieu FRANSOLETT, Jacqueline VANDER AUWERA | 30 | 30 | - | 4 |
| GEOL0275-1 | <i>Introduction to paleontology</i> - Emmanuelle JAVAUX | 10 | 10 | - | 2 |
| GEOL0249-2 | <i>Personal project work in documentary research</i> - Annick ANCEAU, Eric PIRARD | 5 | 25 | - | 3 |

Option Architecture

| | | | | | |
|------------|---|----|----|-----|---|
| ARCH0070-1 | <i>Workshops in architecture</i> - Pierre LECLERCQ | - | 90 | - | 8 |
| ARCH0071-2 | <i>Architecture and Urban Design History II</i> - Jean-Claude CORNESSE | 45 | - | - | 4 |
| ARCH0003-4 | <i>Method of construction of buildings I (Part 1)</i> - N... - Suppl : Mauro BACCARINI - [2,5d FW] | 30 | 30 | [+] | 5 |
| ARCH0069-1 | <i>Project management I</i> - N... - Suppl : Pierre LECLERCQ, Dimitri SCHMITZ - [2,5d FW] | 15 | 15 | [+] | 3 |

Option Biomedical Engineering

| | | | | | |
|------------|--|----|----|---|---|
| GBIO0002-1 | <i>Genetics and molecular biology</i> - Michel GEORGES, Joseph MARTIAL | 30 | 30 | - | 5 |
| GBIO0003-1 | <i>Molecular and cellular physiology</i> - Olivier PEULEN | 30 | 30 | - | 5 |
| GBIO0004-1 | <i>Physiology of the systems</i> - Philippe KOLH | 30 | 30 | - | 5 |
| GBIO0005-1 | <i>Introduction to neurosciences</i> - Shibeshih BELACHEW, Pierre MAQUET | 30 | 30 | - | 5 |

Choose one advanced study option out of the following :

Option Chemistry and Material Sciences (Advanced Study)

| | | | | | |
|------------|---|---|----|-----|---|
| | <u>Prerequisite</u> | "Option Chimie et sciences des matériaux" | | | |
| CHIM0606-1 | <i>Analytical Chemistry</i> - Gauthier EPPE | 30 | 60 | - | 6 |
| MECA0014-3 | <i>Introduction to Hydraulic machines and Compressors</i> - Olivier LÉONARD | 15 | 15 | - | 3 |
| PHYS0904-3 | <i>Physics of materials (part)</i> - Jacqueline LECOMTE#BECKERS - [1d FW] | 20 | 10 | [+] | 3 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ - | 30 | - | - | 3 |

Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT,
Cécile VERCHEVAL

Option Mechanics (Advanced Study)

| | <u>Prerequisite</u> | "Option Mécanique" | | | | |
|------------|--|--------------------|----|----|-----|---|
| MECA0444-1 | <i>Mechanical design</i> - Jean-François DEBONGNIE | | 30 | 30 | - | 5 |
| PHYS0904-4 | <i>Physics of materials</i> - Jacqueline LECOMTE#BECKERS - [1d FW] | | 30 | 30 | [+] | 5 |
| ELEN0061-2 | <i>Introduction to Stochastic Processes</i> - Louis WEHENKEL | | 15 | 15 | - | 2 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ - Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT, Cécile VERCHEVAL | | 30 | - | - | 3 |

Option Physics (Advanced Study)

| | <u>Prerequisite</u> | "Option Physique" | | | | |
|------------|--|-------------------|----|----|---|---|
| MECA0446-1 | <i>Continuum Mechanics</i> - Jean-Philippe PONTHOT | | 30 | 30 | - | 5 |
| ELEN0061-2 | <i>Introduction to Stochastic Processes</i> - Louis WEHENKEL | | 15 | 15 | - | 2 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ - Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT, Cécile VERCHEVAL | | 30 | - | - | 3 |
| PHYS0055-1 | <i>Introduction to Condensed Matter Physics</i> - Philippe GHOSEZ | | 30 | 30 | - | 5 |

Option Electricity and Electronics (Advanced Study)

| | <u>Prerequisite</u> | "Option Electricité et électronique" | | | | |
|------------|--|--------------------------------------|----|----|---|---|
| ELEN0070-1 | <i>Signal Processing</i> - Jacques VERLY | | 30 | 30 | - | 5 |
| ELEN0076-1 | <i>Electromagnetism</i> - Patricia ROUSSEAUX, Benoît VANDERHEYDEN | | 30 | 30 | - | 5 |
| ELEN0061-2 | <i>Introduction to Stochastic Processes</i> - Louis WEHENKEL | | 15 | 15 | - | 2 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ - Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT, Cécile VERCHEVAL | | 30 | - | - | 3 |

Option Computing (Advanced Study)

| | <u>Prerequisite</u> | "Option Informatique" | | | | |
|------------|--|-----------------------|----|----|---|---|
| INFO0054-1 | <i>Functional programming</i> - Pascal GRIBOMONT | | 30 | 30 | - | 5 |
| ELEN0008-1 | <i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK | | 30 | 30 | - | 5 |
| ELEN0061-2 | <i>Introduction to Stochastic Processes</i> - Louis WEHENKEL | | 15 | 15 | - | 2 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ - Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT, Cécile VERCHEVAL | | 30 | - | - | 3 |

Option Building (Advanced Study)

| | <u>Prerequisite</u> | "Option Constructions" | | | | |
|------------|--|------------------------|----|----|---|---|
| GCIV0099-1 | <i>Steel and concrete constructions II</i> - Jean-Pierre JASPART, N... | | 30 | 30 | - | 5 |
| GCIV0608-1 | <i>Integrated building projet</i> - Robert CHARLIER, Jean-Marc FRANSSSEN, Jean-Pierre JASPART, Michel PIROTTON | | - | 60 | - | 4 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ - Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT, Cécile VERCHEVAL | | 30 | - | - | 3 |
| GCIV0044-1 | <i>Land Transport Infrastructure Gauging</i> - Albert BOLLE | | 20 | 10 | - | 3 |

Option Advanced Studies in Geological Engineering

| | <u>Prerequisite</u> | "Option Génie géologique" | | | | |
|------------|--|---------------------------|----|----|-----|---|
| GCIV0603-1 | <i>Geotechnics</i> - Robert CHARLIER | | 30 | 30 | - | 5 |
| META0431-2 | <i>Mineral processing (processes)</i> - Stoyan GAYDARDZHIEV - [1d FW] | | 30 | 30 | [+] | 5 |
| BIOL0212-1 | <i>Introduction to environmental microbiology</i> - Monique CARNOL | | 30 | - | - | 2 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ - Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT, Cécile VERCHEVAL | | 30 | - | - | 3 |

Option Advanced Biomedical Science

| | <u>Prerequisite</u> | "Option Génie biomédical" | | | | |
|------------|--|---------------------------|----|----|---|---|
| ELEN0061-2 | <i>Introduction to Stochastic Processes</i> - Louis WEHENKEL | | 15 | 15 | - | 2 |
| DROI0724-1 | <i>Law and engineering</i> - Christine BIQUET, Jacques CLESSE, Pascale LECOQC - Suppl : Daisy CHICHOYAN, Déborah GOL, Bernard VANBRABANT, Cécile VERCHEVAL | | 30 | - | - | 3 |

[...] Choose two additional courses, not already followed, from the optional courses' programme of the Bachelor in engineering sciences, civil engineer orientation. This choice must be approved by the cycle's Jury President.

Notice : Les étudiants qui suivent des options ayant un (ou plusieurs) cours en commun complètent leur programme en choisissant un ou plusieurs cours inscrit(s) au programme d'autres options du programme de bachelier en Sciences de l'Ingénieur - Ingénieur civil ou des cours de langues étrangères organisés à l'ULg. En particulier, l'étudiant peut choisir parmi les deux cours ci-dessous, spécifiques aux ingénieurs

* LANG1957-1 *Dutch Engineering* (Mrs C. COLIN, 60h, 5 ECTS)

* LANG1958-1 *Germand Engineering* (Mrs F. CARL, 60 h, 5 ECTS)

The resulting programme must total at least 60 ECTS and must be approved by the cycle's Jury President.