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First Year

Compulsory courses

CHIM0603-1	<i>Chemistry</i> - Benoît HEINRICHES - [15h Labo.]	50	40	[+]	9
ECON0323-1	<i>First principles of economics</i> - Bernard JURION	30	-	-	3
INFO2009-2	<i>Introduction to computer science</i> - Benoît DONNET	20	25	-	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 - Suppl : Olivier BRULS, Frédéric NGUYEN	10	30	-	3

Engineering jobs and careers : compulsory seminars
A visit to a business

Notice : Compulsory business visits 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. However, student participation is a formal requirement.

Second Year

Compulsory courses

CHIM0286-1	<i>Rudiments of thermodynamics</i> - Benoît HEINRICHES	30	30	-	5
GENV0001-1	<i>Environmental Engineering</i> - Alain DASSARGUES, Benjamin DEWALS, Angélique LÉONARD	30	-	-	4
LANG0039-2	<i>English 2 (english language)</i> - Christine FILOT, ISLV	30	-	-	3
MATH0006-3	<i>Introduction to numerical analysis (english language)</i> - Quentin LOUVEAUX - Suppl : Christophe GEUZAINÉ	20	20	-	4
MATH0007-4	<i>Mathematical analysis II</i> - Françoise BASTIN	30	30	-	5
MECA0001-1	<i>Mechanics of materials</i> - JeanPierre JASPART	30	30	-	5
MECA0003-2	<i>Rational Mechanics</i> - Eric DELHEZ	20	30	-	4
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTTON	20	30	-	4
PHYS2022-2	<i>Physics 3 : Waves and quanta</i> - Geoffroy LUMAY	20	10	-	3
MATH0062-1	<i>Elements of probability calculus</i> - Louis WEHENKEL	15	15	-	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

PHYS0904-4	<i>Physics of materials</i> - Jacqueline LECOMTEBECKERS - [1d FW]	30	30	[+]	5
CHIM0680-1	<i>Introduction to industrial processes</i> - Dominique TOYE	10	15	-	2
CHIM0012-3	<i>Chemical Kinetics</i> - Nathalie JOB	20	15	-	3

Option Mechanics

MECA0445-1	<i>Heat transfer</i> - Pierre DEWALLEF, Vincent TERRAPON	30	30	-	5
MECA0012-5	<i>Solid mechanics</i> - Laurent DUCHENE	30	30	-	5

Option Physics

PHYS2026-1	<i>Physics 4 : Microscopic physics (part a : waves optics, part b : introduction to nuclear physics) - Ngoc Duy NGUYEN</i>	30	30	-	5
MECA0445-1	<i>Heat transfer - Pierre DEWALLEF, Vincent TERRAPON</i>	30	30	-	5

Option Electricity and Electronics

ELEC0053-2	<i>Electric circuits - Patricia ROUSSEAU</i>	30	30	-	5
ELEN0040-1	<i>Digital Electronics - Jacques DESTINÉ</i>	30	30	-	5

Option Computing

INFO0902-1	<i>Data structures and algorithms - Pierre GEURTS</i>	30	30	-	5
INFO0062-1	<i>Object-Oriented Programming - Bernard BOIGELOT</i>	30	30	-	5

Option Building

GCIV0184-5	<i>Building Materials - Luc COURARD - [1d FW]</i>	30	30	[+]	5
MECA0012-5	<i>Solid mechanics - Laurent DUCHENE</i>	30	30	-	5

Option Geological Engineering

GEOL0001-1	<i>Geology and Geology for Engineers - Alain DASSARGUES - [2d FW]</i>	35	25	[+]	5
GEOL0021-7	<i>Geophysical prospecting - Lucien HALLEUX, Frédéric NGUYEN - [5d FW]</i>	30	30	[+]	5

Option Biomedical Engineering

BIOC0002-1	<i>Biochemistry - Paulette CHARLIER</i>	30	30	-	5
GBIO0001-1	<i>Biophysics (english language) - Liesbet GERIS</i>	30	30	-	5

Option Architecture

ARCH0067-5	<i>Architectural History - Catherine ELSÉN</i>	45	-	-	5
GCIV2030-2	<i>Structural Design of Buildings - JeanMarie BLEUS</i>	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

DROI0724-1	<i>Law and engineering - Christine BIQUET, Jacques CLESSE, Pascale LECOCQ, Bernard VANBRABANT - Suppl : Daisy CHICHOYAN, Déborah GOL, Cécile VERCHEVAL</i>	30	-	-	2
GENV0002-1	<i>Sustainable energy (english language) - Pierre DEWALLEF, Damien ERNST, Christine FILOT, Nathalie JOB, Sigrid REITER</i>	30	-	-	3
MATH0487-1	<i>Elements of statistics - Louis WEHENKEL</i>	15	15	-	3
SYST0002-1	<i>Modelling and analysis systems - Rodolphe SEPULCHRE - Suppl : Erik QUAEGBEBEUR</i>	30	30	-	5
MATH0488-1	<i>Elements of stochastic processes - Maarten ARNST, Vincent DENOËL, Pierre GEURTS, Louis WEHENKEL</i>	10	20	-	2

Optional courses

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

Option Chemistry and Material Sciences

CHIM0022-2	<i>Introduction to Chemical Engineering - Michel CRINE</i>	30	30	-	5
CHIM0009-2	<i>Applied chemical thermodynamics - Nathalie JOB</i>	20	15	-	3
CHIM0023-3	<i>Chemical Engineering (Reactor Study) - Dominique TOYE</i>	20	15	-	3

CHIM0606-2 *Analytical Chemistry* - Gauthier EPPE 30 15 - 4

Option Mechanics

MECA0002-1 *Applied Thermodynamics and Introduction to Heat Engines* - Olivier LÉONARD 30 30 - 5
 MECA0155-1 *Dynamics of Mechanical Systems* - JeanClaude GOLINVAL 30 30 - 5
 PHYS0904-4 *Physics of materials* - Jacqueline LECOMTEBECKERS - [1d FW] 30 30 [+] 5

Option Physics

PHYS0211-3 *Quantum Mechanics* - John MARTIN 30 30 - 5
 ELEN0076-1 *Electromagnetism* - Patricia ROUSSEAUX, Benoît VANDERHEYDEN 30 30 - 5
 MECA0446-1 *Continuum Mechanics* - JeanPhilippe PONTHOT 30 30 - 5

Option Electricity and Electronics

ELEC0052-1 *Analysis and Design of Electrical Measuring Systems* - Philippe VANDERBEMDEN 30 30 - 5
 ELEC0431-1 *Electromagnetic energy conversion (english language)* - Christophe GEUZAIN 30 30 - 5
 ELEN0076-1 *Electromagnetism* - Patricia ROUSSEAUX, Benoît VANDERHEYDEN 30 30 - 5

Option Computing

INFO0012-1 *Computation structures (english language)* - Pierre WOLPER 30 30 - 5
 INFO0004-2 *Object-oriented programming projects (english language)* - Laurent MATHY 20 40 - 5
 INFO0009-1 *Database (general organisation)* - Pierre WOLPER 30 30 - 5

Option Building

GCIV0604-2 *Hydraulics* - Michel PIROTON 20 20 - 4
 GCIV0603-2 *Geotechnics and infrastructure* - Robert CHARLIER, JeanPol RADU - [1d FW] 30 30 [+] 5
 GCIV0097-1 *Steel and concrete constructions* - JeanPierre JASPART, Boyan MIHAYLOV 35 35 - 6

Option Geological Engineering

GEOL0020-7 *Mineral resources (english language)* - Eric PIRARD - [1d FW] 30 30 [+] 5
 GEOL0013-5 *Hydrogeology* - Alain DASSARGUES - [1d FW] 30 30 [+] 5
 GCIV0603-2 *Geotechnics and infrastructure* - Robert CHARLIER, JeanPol RADU - [1d FW] 30 30 [+] 5

Option Architecture

ARCH0070-1 *Architectural studio 2* - Catherine ELSÉN - 90 - 7
 ARCH0003-7 *Building construction techniques I, elements* - Shady ATTIA, N... - Suppl : Pierre LECLERCQ, Dimitri SCHMITZ - [2,5d FW] 30 30 [+] 5
 ARCH0069-1 *Project management I* - Pierre LECLERCQ, Dimitri SCHMITZ - [2,5d FW] 15 15 [+] 3

Option Biomedical Engineering

GBIO0002-1 *Genetics and molecular biology* - Franck DEQUIEDT, Michel GEORGES 30 30 - 5
 GBIO0020-1 *Physiology* - Philippe KOLH, Olivier PEULEN 30 30 - 5
 GBIO0005-1 *Introduction to neurosciences* - Shibeshih BELACHEW, Pierre MAQUET - Suppl : Pierre LEPRINCE, Gilles VANDEWALLE 30 30 - 5

Choose one advanced study option out of the following :

Option Chemistry and Material Sciences, further study

Prerequisite "Option Chimie et science des matériaux"
 CHIM0063-2 *General principles of biology and biochemistry* - Paulette CHARLIER 10 10 - 2
 CHIM0604-2 *Chemistry and organic materials* - Lionel DELAUDE 30 30 - 5
 CHIM0605-2 *Chemistry and inorganic materials* - Bénédicte VERTRUYEN 30 - - 3
 CHIM0681-1 *Combined Chemistry Laboratories* - Lionel DELAUDE, Gauthier EPPE, Bénédicte VERTRUYEN - 120 - 5

Option Mechanics (Advanced Study)

	<u>Prerequisite</u>	"Option Mécanique"				
MECA0018-1	<i>Industrial Forming Processes</i> - JeanFrançois DEBONGNIE		30	30	-	5
MECA0025-1	<i>Fluid Mechanics</i> - Eric DELHEZ		30	30	-	5
MECA0036-1	<i>Finite Element Method</i> (english language) - JeanPhilippe PONTHOT		30	30	-	5

Option Physics (Advanced Study)

	<u>Prerequisite</u>	"Option Physique"				
MECA0009-1	<i>Introduction to microtechnology</i> (english language) - Tristan GILET		30	30	-	5
PHYS0055-1	<i>Introduction to Condensed Matter Physics</i> - Matthieu VERSTRAETE		30	30	-	5
MECA0025-1	<i>Fluid Mechanics</i> - Eric DELHEZ		30	30	-	5

Option Electricity and Electronics (Advanced Study)

	<u>Prerequisite</u>	"Option Electricité et électronique"				
ELEN0070-1	<i>Signal processing</i> (english language) - Jacques VERLY		30	30	-	5
ELEN0075-1	<i>Analog Electronics</i> - Benoît VANDERHEYDEN		30	30	-	5
ELEN0008-1	<i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK		30	30	-	5

Option Computing (Advanced Study)

	<u>Prerequisite</u>	"Option Informatique"				
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT		30	30	-	5
INFO0010-1	<i>Introduction to computer networking</i> (english language) - Guy LEDUC		30	30	-	5
INFO0940-1	<i>Operating systems</i> (english language) - Laurent MATHY		30	30	-	5

Option Building (Advanced Study)

	<u>Prerequisite</u>	"Option Constructions"				
GCIV0607-2	<i>Structural mechanics</i> - JeanMarc FRANSSSEN		35	35	-	6
GCIV0608-1	<i>Integrated building projet</i> - Frédéric COLLIN, JeanFrançois DEMONCEAU, JeanMarc FRANSSSEN, JeanPierre JASPART, Boyan MIHAYLOV, Michel PIROTON		-	60	-	3
GEOL0001-3	<i>Geology and Geology for Engineers</i> - Alain DASSARGUES - [1d FW]		25	25	[+]	4
GCIV0623-2	<i>Experimental geotechnics</i> - Frédéric COLLIN, Séverine LEVASSEUR		10	10	-	2

Option Advanced Studies in Geological Engineering

	<u>Prerequisite</u>	"Option Génie géologique"				
META0431-2	<i>Mineral processing (processes)</i> - Stoyan GAYDARDZHIEV - [1d FW]		30	30	[+]	5
BIOL0212-1	<i>Introduction to environmental microbiology</i> - Monique CARNOL - Suppl : Olivier GUILLITTE		30	-	-	2
GEOL1026-1	<i>Complement of geology</i> - 1st part : <i>elements of mineralogy</i> - Frédéric HATERT - 2nd part : <i>Elements of Magmatic and metamorphic petrology</i> - Jacqueline VANDER AUWERA		20	20	-	5
GEOL0249-2	<i>Personal project work in documentary research</i> - Annick ANCEAU, Eric PIRARD		5	25	-	3

Biomedical engineering option, in-depth approach

	<u>Prerequisite</u>	"Option Génie biomédical"				
GBIO0021-1	<i>Practical work in biomedical engineering</i> - Eric BULLINGER, Liesbet GERIS		-	60	-	5

One of the following courses :

ELEN0040-1	<i>Digital Electronics</i> - Jacques DESTINÉ		30	30	-	5
MECA0012-5	<i>Solid mechanics</i> - Laurent DUCHENE		30	30	-	5
PHYS0904-4	<i>Physics of materials</i> - Jacqueline LECOMTEBECKERS - [1d FW]		30	30	[+]	5

One of the following courses :

INFO0062-1	<i>Object-Oriented Programming</i> - Bernard BOIGELOT		30	30	-	5
MECA0009-1	<i>Introduction to microtechnology</i> (english language) - Tristan GILET		30	30	-	5

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students can choose between the two courses below, that are specific to engineers.

- * 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.