Two years programme (120 crédits)

First year (Full English)

Compulsory Courses

		Or	Th	Pr	Au	Cr
INFO0085-1	*Compilers* - Pierre GEURTS - [75h Proj.]	Q2	25	-	[+]	**5**
INFO0063-1	*Object-oriented software engineering* (english language) - Bernard BOIGELOT - [30h Proj.]	Q1	30	24	[+]	**5**
INFO0016-1	*Introduction to the theory of computation* (english language) - Pierre WOLPER	Q1	30	30	-	**5**
MATH0462-1	*Discrete optimization* (english language) - Quentin LOUVEAUX - [25h Proj.]	Q1	30	20	[+]	**5**
INFO0051-1	*Logic* (english language) - Pascal GRIBOMONT - [10h Proj.]	Q1	30	25	[+]	**5**
ELEN0060-2	*Information and coding theory* (english language) - Louis WEHENKEL - [30h Proj.]	Q2	30	15	[+]	**5**
GEST3162-1	*Introduction to company management* (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE	Q2	25	25	-	**5**
PROJ0010-1	*Integrated software project, including fundamentals in project management* (english language) - JeanLouis BINOT, Bernard BOIGELOT, Benoît DONNET, Guy LEDUC, Laurent MATHY - [290h Proj.]	TA	10	-	[+]	**10**

Optional courses

Students will choose one of the options below and will carry it on during the second year.

"Computer systems and networks" option

INFO0031-1	*Computer network architectures and multimedia* (english language) - Guy LEDUC - [6h Labo., 25h Proj.]	Q1	35	-	[+]	**5**
INFO0045-3	*Introduction to computer security* (english language) - Benoît DONNET - [8h Labo., 30h Proj.]	Q2	30	10	[+]	**5**

Students will choose 5 credits in the following list :

INFO0064-3	*Embedded systems* (english language) - Bernard BOIGELOT - [60h Proj.]	Q1	30	30	[+]	**5**
INFO0941-1	*Network measurement and monitoring* (english language) - Benoît DONNET - [60h Proj.]	Q2	20	-	[+]	**5**
INFO2051-1	*Object-oriented programming on mobile devices* (english language) - Laurent MATHY - [90h Proj.]	Q2	15	10	[+]	**5**
INFO0056-1	*Managing and securing computer networks* (english language) - Guy LEDUC - [12h Labo., 55h Proj.]	Q2	30	-	[+]	**5**
ELEN0062-1	*Applied Inductive Learning* (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	**5**

"Intelligent Systems" option

ELEN0062-1	*Applied Inductive Learning* (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	**5**

Students will choose 10 credits in the following list :

INFO0064-3	*Embedded systems* (english language) - Bernard BOIGELOT - [60h Proj.]	Q1	30	30	[+]	**5**
ELEN0016-2	*Digital image and video processing* (english language) - Marc VAN DROOGENBROECK - [20h Proj.]	Q1	30	10	[+]	**5**
INFO0948-2	*Introduction to intelligent robotics* (english language) - Renaud DETRY - [80h Proj.]	Q2	30	4	[+]	**5**
INFO0049-1	*Knowledge representation* (english language) - Pascal GRIBOMONT - [50h Proj.]	Q2	30	25	[+]	**5**
INFO2049-1	*Web and Text Analytics* (english language) - Ashwin ITTOO - [90h Proj.]	Q2	15	5	[+]	**5**
INFO2046-2	*Computational geometry* (english language) - Eric BÉCHET - [90h Proj.]	TA	30	-	[+]	**5**
MECA0031-2	*Kinematics and dynamics of mechanisms* (english language) -	Q2	30	30	-	**5**

Second year (Full English)

Compulsory Courses

ATFE0015-1	*Master thesis* (english language) - COLLÉGIALITÉ - [750h Proj.]	TA	-	-	[+]	**25**
[...]	With the agreement of the jury, students may choose 5 credits in any course programme of the University.					

Choose a focus among :

Research Focus

Optional courses

Students choose 30 credits in the following list :

Computer science

INFO0026-3	*Computer graphics* (english language) - Eric BÉCHET - [45h Proj.]	Q2	30	30	[+]	**5**
INFO0027-2	*Programming techniques* (english language) - Laurent MATHY - [70h Proj.]	Q2	30	24	[+]	**5**
INFO0049-1	*Knowledge representation* (english language) - Pascal GRIBOMONT - [50h Proj.]	Q2	30	25	[+]	**5**
INFO0050-1	*Constraint programming* (english language) - Pascal GRIBOMONT - [80h Proj.]	Q1	15	10	[+]	**5**
INFO0056-1	*Managing and securing computer networks* (english language) - Guy LEDUC - [12h Labo., 55h Proj.]	Q2	30	-	[+]	**5**
INFO0060-1	*Concurrent system verification and temporal logic* (english language) - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER - [20h Proj.]	Q2	30	10	[+]	**5**
INFO0939-1	*High performance scientific computing* (english language) - Christophe GEUZAINE - [20h Proj.]	Q1	30	15	[+]	**5**
INFO2046-2	*Computational geometry* (english language) - Eric BÉCHET - [90h Proj.]	TA	30	-	[+]	**5**
INFO0941-1	*Network measurement and monitoring* (english language) - Benoît DONNET - [60h Proj.]	Q2	20	-	[+]	**5**
INFO0948-2	*Introduction to intelligent robotics* (english language) - Renaud DETRY - [80h Proj.]	Q2	30	4	[+]	**5**
INFO2051-1	*Object-oriented programming on mobile devices* (english language) - Laurent MATHY - [90h Proj.]	Q2	15	10	[+]	**5**
INFO2049-1	*Web and Text Analytics* (english language) - Ashwin ITTOO - [90h Proj.]	Q2	15	5	[+]	**5**

Signal processing

ELEN0002-2	*Introduction to audio and video techniques* (english language) - JeanJacques EMBRECHTS - [6h Labo.]	Q1	30	20	[+]	**5**
ELEN0016-2	*Digital image and video processing* (english language) - Marc VAN DROOGENBROECK - [20h Proj.]	Q1	30	10	[+]	**5**
ELEN0019-2	*Audio signal processing : principles and experiments* (english language) - JeanJacques EMBRECHTS - [24h Labo., 30h Proj.]	Q1	5	-	[+]	**5**
ELEN0071-1	*Digital Signal Processing* (english language) - Jacques VERLY - [40h Proj.]		45	15	[+]	**5**
ELEN0072-1	*Statistical signal processing* (english language) - Jacques VERLY - [40h Proj.]		45	15	[+]	**5**

Biomedical engineering

GBIO0008-2	*Medical imaging* (english language) - Christophe PHILLIPS - [8h Labo., 1d FW]	Q2	33	12	[+]	**5**
GBIO0009-1	*Bioinformatics* (english language) - Kristel VAN STEEN	Q1	30	30	-	**5**
GBIO0029-1	*Bioelectronics* (english language) - Michael KRAFT		30	30	-	**5**

Applied mathematics and modelling

MATH0461-2	*Introduction to numerical optimization* (english language) - Quentin LOUVEAUX - [25h Proj.]	Q2	30	20	[+]	**5**
ELEN0062-1	*Applied Inductive Learning* (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	**5**

Electronics

ELEN0017-1	*Analysis and Design of Telecommunications Systems* (english language) - Marc VAN DROOGENBROECK	Q1	30	30	-	**5**
ELEN0078-2	*Acoustics and electroacoustics* (english language) - JeanJacques EMBRECHTS - [6h Labo.]	Q2	30	22	[+]	**5**
ELEN0037-1	*Microelectronics and IC design* (english language) - Michael KRAFT		30	30	-	**5**
ELEN0038-1	*Integrated electronics of microsystems* (english language) - Michael KRAFT		30	30	-	**5**

Internships and projects

Notice : The two internships below are mutually exclusive.

ASTG0021-1	*Entreprise Internship* (english language) - Guy LEDUC - [300h Proj.]	TA	-	-	[+]	**10**
ASTG9005-1	*Research Internship* (english language) - Guy LEDUC - [300h Proj.]	TA	-	-	[+]	**10**
PROJ0011-1	*Personal student project* (english language) - COLLÉGIALITÉ - [150h Proj.]	TA	-	-	[+]	**5**

Notice : Students cannot choose courses that they have already passed successfully during their bachelor studies.

Management Focus

Notice : The specialisation in management will be taught for the last time in 2014-2015.

Compulsory courses

GEST3001-1	*People management and organisation* - Jocelyne ROBERT	Q1	24	24	-	**4**
GEST3002-1	*Human Resources* - Jocelyne ROBERT	Q1	24	-	-	**2**
GEST3003-1	*Competitive strategy in the marketplace* (english language) - Michael GHILISSEN	Q1	16	16	-	**3**
GEST3004-1	*Marketing (operations and management)* (english language) - Michael GHILISSEN	Q1	16	16	-	**3**
GEST3005-2	*Accountancy and Finance* - Jacques BERWART		24	24	-	**4**
GEST3006-1	*Operations and supply chain management I* (english language) - Yasemin ARDA	Q1	16	16	-	**3**
GSTG3001-1	*Business plan* - COLLÉGIALITÉ		-	30	-	**4**
GSTG3002-1	*Functional analysis of a company* - COLLÉGIALITÉ - [30h Internship]		-	-	[+]	**4**

Optional courses

Choose one of the following courses :

GEST3010-1	*Operations and supply chain management II* - Sabine LIMBOURG	Q1	16	16	-	**3**
GEST3011-2	*ICT for Business* - Alain DUBOIS	Q1	16	16	-	**3**
GEST3012-1	*Financial and actuarial modelling* - Louis ESCH	Q1	16	16	-	**3**

Adapted programme for bachelors in engineering without a major in computer science

Bachelors who have not chosen computer science as major option :

* must take all the so-called "prerequisite" courses hereafter, if they were not taken during 1st cycle. These courses must be taken during 1st year of the masters and some 1st-year compulsory courses must be rolled aver 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 optional courses

Prerequisite courses

ELEN0040-1	*Digital Electronics* - Michael KRAFT - Suppl : Patricia ROUSSEAUX	Q2	30	30	-	**5**
INFO0010-4	*Introduction to computer networking* (english language) - Guy LEDUC - [40h Proj.]	Q2	35	15	[+]	**5**
INFO0012-2	*Computation structures* (english language) - Pierre WOLPER - [40h Proj.]	Q1	30	25	[+]	**5**
INFO0054-1	*Functional programming* - Pascal GRIBOMONT - [15h Proj.]	Q2	30	25	[+]	**5**
INFO0062-1	*Object-Oriented Programming* - Bernard BOIGELOT - [20h Proj.]	Q2	30	24	[+]	**5**
INFO0004-2	*Object-oriented programming projects* (english language) - Laurent MATHY - [90h Proj.]	Q1	20	-	[+]	**5**

INFO0902-1	*Data structures and algorithms* - Pierre GEURTS - [40h Proj.]	Q2	30	20	[+]	**5**
INFO0940-1	*Operating systems* (english language) - Laurent MATHY - [80h Proj.]	Q2	30	6	[+]	**5**