

## Two-Year Master Program (120 ECTS)

### First Year

#### Compulsory courses

SYST0003-1	<i>Linear control systems</i> - Damien ERNST, Rodolphe SEPULCHRE	30	30	-	<b>5</b>
INFO0009-1	<i>Introduction to Data Bases</i> - Pierre WOLPER	30	30	-	<b>5</b>
INFO0025-1	<i>Compilers and Compiler Writers</i> - Pierre-Arnoul DE MARNEFFE	30	30	-	<b>5</b>
INFO0063-1	<i>Object-Oriented Software Engineering</i> - Bernard BOIGELOT	30	30	-	<b>5</b>
INFO0016-1	<i>Introduction to the Theory of Computation (english)</i> - Pierre WOLPER	30	30	-	<b>5</b>
MATH0461-1	<i>Intorduction to optimization</i> - Quentin LOUVEAUX	30	30	-	<b>5</b>
INFO0051-1	<i>Artificial Intelligence Logics</i> - Pascal GRIBOMONT	30	30	-	<b>5</b>
INFO0006-1	<i>Information Structure</i> - Tri-An BANH	30	30	-	<b>5</b>
INFO0004-1	<i>Programming Language Internals</i> - Justus PIATER - Suppl : Guy LEDUC	30	30	-	<b>5</b>
INFO0031-1	<i>Computer Network Architectures and Multimedia</i> - Guy LEDUC	30	30	-	<b>5</b>
ELEN0060-1	<i>Information and Coding Theory</i> - Louis WEHENKEL	30	30	-	<b>5</b>

*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.

#### Optional courses

Choose 1 of the three courses, not taken during the BAC programme, amongst :

ELEN0075-1	<i>Analog Electronics</i> - Benoît VANDERHEYDEN	30	30	-	<b>5</b>
ELEN0008-1	<i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK	30	30	-	<b>5</b>
ELEN0070-1	<i>Signal Processing</i> - Jacques VERLY	30	30	-	<b>5</b>

### Second year

#### Compulsory courses

ATFE0015-1	<i>Final Work (including an introduction to methodology and research)</i> - COLLÉGIALITÉ	-	-	-	<b>25</b>
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#### Optional courses

[...] A general course to be chosen from the University's programmes of courses ; this choice must be approved by the cycle's President of the Jury

#### Choose one of the following focus :

#### Research Focus

#### Optional courses

Choose courses totalling 30 ECTS out of the following :

INFO0036-1	<i>Advanced Algorithmics</i> - Pierre-Arnoul DE MARNEFFE	30	30	-	<b>5</b>
ELEN0017-1	<i>Analysis and Design of Telecommunications Systems</i> - Marc VAN DROOGENBROECK	30	30	-	<b>5</b>
ELEN0062-1	<i>Applied Inductive Learning</i> - Pierre GEURTS, Louis WEHENKEL	30	30	-	<b>5</b>
GBIO0009-1	<i>Bio-informatics</i> - Kristel VAN STEEN	30	30	-	<b>5</b>
GBIO0010-1	<i>Bioinstrumentation</i> - Jacques DESTINÉ	30	30	-	<b>5</b>
INFO0045-2	<i>Cryptography and Computer Security</i> - Tri-An BANH	30	30	-	<b>5</b>
ELEN0018-1	<i>Electroacoustics</i> - Jean-Jacques EMBRECHTS	30	30	-	<b>5</b>
INFO0056-1	<i>Managing and Securing Computer Networks</i> - Guy LEDUC	30	30	-	<b>5</b>
GBIO0008-1	<i>Medical imaging</i> - Christophe PHILLIPS	30	30	-	<b>5</b>

ELEN0002-1	<i>Introduction to Audio and Video Techniques</i> - Jean-Jacques EMBRECHTS	30	30	-	5
ELEN0037-1	<i>Microelectronics. Analysis and CAD of integrated circuits</i> - Jacques DESTINÉ	30	30	-	5
ELEN0038-1	<i>Microsystems</i> - Jacques DESTINÉ	30	30	-	5
MATH0042-1	<i>Stochastic Systems Modeling</i> - Tri-An BANH	30	30	-	5
GBIO0011-1	<i>Biological systems modeling</i> - Pierre DAUBY, Rodolphe SEPULCHRE	30	30	-	5
INFO0014-1	<i>Computer Systems Performance Evaluation</i> - Tri-An BANH	30	30	-	5
INFO0939-1	<i>High-performance scientific calculation / High performance scientific computing</i> (english) - Christophe GEUZAINÉ	30	30	-	5
MATH0462-1	<i>Discrete optimization</i> - Quentin LOUVEAUX	30	30	-	5
INFO0049-1	<i>Knowledge Representation</i> - Pascal GRIBOMONT	30	30	-	5
INFO0065-1	<i>Seminar on Intrusion Systems</i> - Marc DACIER	10	50	-	5
INFO0050-1	<i>Expert Systems</i> - Pascal GRIBOMONT	30	30	-	5
SYST0017-1	<i>Non linear systems</i> - Rodolphe SEPULCHRE	30	30	-	5
ELEN0019-1	<i>Treatment of the audio signals: principles and experiments</i> - Jean-Jacques EMBRECHTS	30	30	-	5
ELEN0016-1	<i>Digital Image Processing</i> - Marc VAN DROOGENBROECK	30	30	-	5
ELEN0071-1	<i>Digital Signal Processing</i> - Jacques VERLY	30	30	-	5
ELEN0072-1	<i>Statistical Signal Processing</i> - Jacques VERLY	30	30	-	5
INFO0060-1	<i>Concurrent System Verification and Temporal Logic</i> - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER	30	30	-	5
INFO0013-1	(pas organisé en 2008-2009) <i>Computer vision</i> (english) - Justus PIATER	30	30	-	5
ELEN0442-1	<i>Introduction to statistical training</i> - Pierre GEURTS, Louis WEHENKEL	30	30	-	5
ASTG0020-1	<i>Placement</i> - COLLÉGIALITÉ	-	-	-	10

Notice : Students who have, in their BAC studies, already taken one or more option courses found in this list must not take them again.

## Professional Focus

### Compulsory courses

GEST3000-1	<i>First steps in an enterprise</i> - Robert NONDONFAZ, Bernard SURLEMONT	0,5	-	-	2
GEST3001-1	<i>Organization analysis</i> - Annie CORNET	-	-	-	3
GEST3002-1	<i>Human Resources Management</i> - Jocelyne ROBERT	16	-	-	3
GEST3003-1	<i>Competitive Strategy in the Marketplace</i> (english) - Michael GHILISSEN	16	-	-	3
GEST3004-1	<i>Marketing (operations and management)</i> (english) - Michael GHILISSEN	16	-	-	3
GEST3005-1	<i>Accountancy and Finance</i> - Jacques BERWART	24	-	-	4
GEST3006-1	<i>Production (Supply chain management)</i> (english) - Yasemin ARDA	45	-	-	3
GSTG3001-1	<i>Internship</i> - COLLÉGIALITÉ	-	-	-	6

### Optional courses

Choose one of the following courses :

GEST3010-1	<i>Production 2 (Supply Chain Management 2nd part)</i> (english) - Robert NONDONFAZ	-	-	-	3
GEST3011-1	<i>ICT in the service of the company</i> - Alain DUBOIS	30	-	-	3
GEST3012-1	<i>Financial and actuarial modelling tools</i> - Louis ESCH	16	-	-	3

## Adjusted programme for student of the Bachelors in Civil Engineering who have not taken the "Computer" option

### 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 adapted programme for these students must first gain be approved by the Jury.

### Compulsory prerequisites

Study programmes 2008-2009  
Faculty of Applied Sciences  
Master in Computer Engineering

ELEN0040-1	<i>Digital Electronics</i> - Jacques DESTINÉ	30	30	-	<b>5</b>
INFO0010-1	<i>Introduction to Computer Networks</i> - Guy LEDUC	30	30	-	<b>5</b>
INFO0012-1	<i>Computation Structures</i> - Pierre WOLPER	30	30	-	<b>5</b>
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT	30	30	-	<b>5</b>
INFO0062-1	<i>Object-Oriented Programming</i> - Bernard BOIGELOT	30	30	-	<b>5</b>
INFO0064-1	<i>Embedded Systems</i> - Bernard BOIGELOT	30	30	-	<b>5</b>
INFO0902-1	<i>Data Structures and Algorithms</i> - Justus PIATER - Suppl : Bernard BOIGELOT	30	30	-	<b>5</b>