

#### Cycle view of the study programme

B1 Or Th Pr Au Cr

Course to be intended in order to obtain de Master's degree in computer science and engineering.

#### Compulsory courses (B1 : 40Cr)

INFO0016-1	<i>Introduction to the theory of computation</i> (english language) - Quentin LOUVEAUX	B1	Q1	26	26	-	5
ELEN0062-1	<i>Introduction to machine learning</i> (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	B1	Q1	30	5	[+]	5
INFO0940-1	<i>Operating systems</i> (english language) - Laurent MATHY - [30h Proj.]	B1	Q2	30	6	[+]	5
PROJ0010-1	<i>Software project engineering and management</i> (english language) - Benoît DONNET, Bernard HAUZEUR, Guy LEDUC, Laurent MATHY - [280h Proj.]	B1	TA	20	-	[+]	10
PROJ0019-1	<i>End of studies project</i> (english language) - Laurent MATHY - [300h Proj.]	B1	TA	-	-	[+]	10
INFO0010-4	<i>Introduction to computer networking</i> (english language) - Guy LEDUC - [12h Labo., 40h Proj.]	B1	Q1	35	2	[+]	5

The three courses below can be taken during the bachelor's degree or master's degree in business engineering, or added to the third year of the master's programme.

MATH0002-4	<i>Mathematical analysis 1</i> - Eric DELHEZ	B1	Q1	22	22	-	4
MECA0003-2	<i>Rational Mechanics</i> - Eric DELHEZ	B1	Q1	20	30	-	4
SYST0002-2	<i>Introduction to signals and systems</i> - Guillaume DRION - [15h Proj.]	B1	Q1	26	26	[+]	5

#### Optional courses (B1 : 30Cr)

##### Choose one focus from the following : (B1 : 30Cr)

##### Professional focus: "Computer systems security" (B1 : 30Cr)

INFO0031-1	<i>Network Engineering</i> (english language) - Benoît DONNET, Guy LEDUC - [12h Labo., 30h Proj.]	B1	Q2	30	-	[+]	5
INFO0045-3	<i>Introduction to computer security</i> (english language) - Benoît DONNET - [10h Labo., 30h Proj.]	B1	Q1	30	6	[+]	5

Choose courses totalling 20 credits out of the following : (B1 : 20Cr)

INFO0064-2	<i>Embedded systems</i> (english language) - Bernard BOIGELOT	B1	Q1	25	20	-	3
INFO2055-1	<i>Embedded systems project</i> (english language) - Bernard BOIGELOT - [60h Proj.]	B1	Q2	-	-	[+]	2
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (english language) - Laurent MATHY - [90h Proj.]	B1	Q1	15	10	[+]	5
INFO0056-1	<i>Securing Networks</i> (english language) - Guy LEDUC - [12h Labo., 30h Proj.] (Even years)	B1	Q2	30	-	[+]	5
INFO0939-1	<i>High performance scientific computing</i> (english language) - Christophe GEUZAIN - Suppl : David COLIGNON - [20h Proj.]	B1	Q1	30	15	[+]	5
INFO8002-1	<i>Large-scale data systems</i> (english language) - [45h Proj.] (Odd years)	B1	Q1	25	10	[+]	5
INFO8012-1	<i>Digital Forensics</i> (english language) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (Even years)	B1	Q2	30	-	[+]	5
INFO8011-1	<i>Network infrastructures</i> (english language) - Benoît DONNET, Guy LEDUC, Laurent MATHY - [8h Labo., 30h Proj.]	B1	Q1	30	-	[+]	5
INFO8013-1	<i>Advanced Computer Security</i> (english language) - [20h Labo., 30h Proj.] (Odd years)	B1	Q1	20	-	[+]	5

##### Professional focus: "Intelligent systems" (B1 : 30Cr)

### Master of Science (MSc) in Computer Science and Engineering (double degree programme with HEC)

INFO8010-1	<i>Deep learning</i> (english language) - Gilles LOUPPE - [55h Proj.]	B1	Q2	25	10	[+]	<b>5</b>
SYST0003-1	<i>Linear control systems</i> (english language) - <i>Theory</i> - Guillaume DRION - <i>Control system design in time domain and frequency domain</i> - Guillaume DRION - [6h Labo.]	B1	Q1	26	6	-	<b>5</b>
				-	20	[+]	

Choose courses totalling 20 credits out of the following : (B1 : 20Cr)

ELEN0016-2	<i>Computer vision</i> (english language) - Marc VAN DROOGENBROECK - [50h Proj.]	B1	Q1	30	10	[+]	<b>5</b>
INFO0948-2	<i>Introduction to intelligent robotics</i> (english language) - Pierre SACRÉ - [80h Proj.]	B1	Q2	30	4	[+]	<b>5</b>
INFO2049-1	<i>Web and Text Analytics</i> (english language) - Ashwin ITTOO	B1	Q1	30	-	-	<b>5</b>
GBIO0002-1	<i>Genetics and bioinformatics</i> (english language) - Franck DEQUIEDT, Kristel VAN STEEN - [15h Proj.]	B1	Q1	30	15	[+]	<b>5</b>
DROI1357-1	<i>European law, (big) data and artificial intelligence applications seminar</i> (english language) - - Suppl : Ljupcho GROZDANOVSKI	B1	Q1	24	-	-	<b>5</b>
INFO8003-1	<i>Optimal decision making for complex problems</i> (english language) - Damien ERNST - [45h Proj.]	B1	Q2	25	10	[+]	<b>5</b>
INFO8004-1	<i>Advanced Machine learning</i> (english language) - Pierre GEURTS, Gilles LOUPPE, Louis WEHENKEL - [45h Proj.]	B1	Q2	25	-	[+]	<b>5</b>
INFO9014-1	<i>Knowledge representation and reasoning</i> (english language) - Christophe DEBRUYNE	B1	Q2	24	20	-	<b>5</b>
INFO8006-1	<i>Introduction to artificial intelligence</i> (english language) - Gilles LOUPPE - [45h Proj.]	B1	Q1	25	20	[+]	<b>5</b>