

## Vue bloc du programme des cours

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### Bloc 1

Depending on your track record or your professional/research focus, some prerequisites/corequisites of your first year program might appear in bloc 2. You are therefore invited to go through the list of courses suggested in bloc 2 even if you enroll for the first time in this master program.

#### Compulsory courses

INFO0085-1	<i>Compilers</i> (anglais) - Pascal FONTAINE - [75h Proj.] <b>Corequis :</b> INFO0016-1 - Introduction to the theory of computation INFO0902-1 - Structures des données et algorithmes INFO0012-2 - Computation structures INFO0940-1 - Operating systems	Q2	25	-	[+]	<b>5</b>
ELEN0062-1	<i>Introduction to machine learning</i> (anglais) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	<b>5</b>
INFO0016-1	<i>Introduction to the theory of computation</i> (anglais) - Quentin LOUVEAUX	Q1	26	26	-	<b>5</b>
ELEN0060-2	<i>Information and coding theory</i> (anglais) - Louis WEHENKEL - [30h Proj.]	Q2	30	15	[+]	<b>5</b>
PROJ0010-1	<i>Software project engineering and management</i> (anglais) - Benoît DONNET, Bernard HAUZEUR, Guy LEDUC, Laurent MATHY - [280h Proj.] <b>Prérequis :</b> INFO0062-1 - Object-oriented programming <b>Corequis :</b> INFO0010-4 - Introduction to computer networking	TA	20	-	[+]	<b>10</b>
GEST3162-1	<i>Principles of management</i> (anglais) - François PICHault, Willem STANDAERT - [25h Proj.]	Q1	30	-	[+]	<b>5</b>

#### Optional courses

Choose one focus among the three below :

##### Professional focus on "Computer systems security"

Students choosing this focus shall select, in addition to 10 credits of compulsory courses, 50 credits of elective courses inside or outside the focus. However, for his/her whole master program (block 1 and block 2), a total of 20 credits of options must be taken inside the focus. The regulation allows students to choose elective courses during the block of their choice, in accordance with the prerequisites and co-requisites. Students must also be attentive to schedule constraints.

##### Compulsory courses

INFO0031-1	<i>Network Engineering</i> (anglais) - Benoît DONNET, Guy LEDUC - [12h Labo., 30h Proj.] <b>Corequis :</b> INFO0010-4 - Introduction to computer networking	Q2	30	-	[+]	<b>5</b>
INFO0045-3	<i>Introduction to computer security</i> (anglais) - Benoît DONNET - [10h Labo., 30h Proj.] <b>Corequis :</b> INFO0902-1 - Structures des données et algorithmes INFO0010-4 - Introduction to computer networking	Q1	30	6	[+]	<b>5</b>

##### Choose 5 credits in the following list :

INFO0064-2	<i>Embedded systems</i> (anglais) - Bernard BOIGELOT	Q1	25	20	-	<b>3</b>
INFO2055-1	<i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.] <b>Corequis :</b> INFO0064-2 - Embedded systems	Q2	-	-	[+]	<b>2</b>
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) -	Q1	15	10	[+]	<b>5</b>

	MATHY - [90h Proj.]							
INFO0056-1	<i>Securing Networks</i> (anglais) - Guy LEDUC - [12h Labo., 30h Proj.] (années paires) <b>Corequis :</b> INFO0045-3 - Introduction to computer security INFO0010-4 - Introduction to computer networking	Q2	30	-	[+]	5		
INFO0939-1	<i>High performance scientific computing</i> (anglais) - Christophe GEUZAIN - [20h Proj.]	Q1	30	15	[+]	5		
INFO8002-1	<i>Topics in Distributed Systems</i> (anglais) - Bernard BOIGELOT, Christophe DEBRUYNE, Pascal FONTAINE, Guy LEDUC, Laurent MATHY - [35h Proj.] (années impaires)	Q2	30	-	[+]	5		
INFO8012-1	<i>Digital Forensics</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années paires) <b>Corequis :</b> INFO0940-1 - Operating systems INFO0085-1 - Compilers INFO0010-4 - Introduction to computer networking	Q2	30	-	[+]	5		
INFO8011-1	<i>Network infrastructures</i> (anglais) - Benoît DONNET, Guy LEDUC, Laurent MATHY - [8h Labo., 30h Proj.] <b>Corequis :</b> INFO0010-4 - Introduction to computer networking	Q1	30	-	[+]	5		
INFO8013-1	<i>Advanced Computer Security</i> (anglais) - Benoît DONNET, Laurent MATHY - [20h Labo., 30h Proj.] (années impaires) <b>Corequis :</b> INFO0045-3 - Introduction to computer security	Q2	20	-	[+]	5		
INFO9016-1	<i>Advanced Databases</i> (anglais) - Christophe DEBRUYNE - [20h Proj.]	Q2	24	20	[+]	5		

#### Professional focus on "Intelligent Systems"

Students choosing this focus shall select, in addition to 5 credits of compulsory courses, 55 credits of elective courses inside or outside the focus. However, for his/her whole master program (block 1 and block 2), a total of 25 credits of options must be taken inside the focus. The regulation allows students to choose elective courses during the block of their choice, in accordance with the prerequisites and co-requisites. Students must also be attentive to schedule constraints.

#### Compulsory courses

INFO8010-1	<i>Deep learning</i> (anglais) - Gilles LOUPPE - [60h Proj.]	Q2	30	-	[+]	5		
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Choose 10 credits in the following list :

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

INFO9015-1 - Logic for Computer Science

INFO9023-1 *Machine Learning Systems Design* (anglais) - Thomas VRANCKEN - Q2 17 - - [+] 5  
[17h Labo., 18h Proj.]

**Corequis :**

ELEN0062-1 - Introduction to machine learning

#### Professional focus on "Management"

Students choosing this focus shall select, in addition to 27 credits of compulsory courses, 33 credits of elective courses inside or outside the focus. One of the 3 language courses belonging to the focus must necessarily be chosen as an option in either block 1 or block 2, for 3 credits. The regulation allows students to choose elective courses during the block of their choice, in accordance with the prerequisites and co-requisites. Students must also be attentive to schedule constraints.

**Students who intend to take the "Financial Engineering" focus in the Business Engineering Master, must take "GEST0832-4 Marchés Financiers", as the 5-credit free option course in this programme, prior to joining the Business Engineering Master.**

#### Compulsory courses

FINA0001-1 *Analyse des états financiers et financement de l'entreprise* - Wouter TORSIN Q2 45 - - 5

TECH0763-2 *Technologies industrielles* - Sabine DANTHINE, Brigitte EVRARD, Angélique LÉONARD, Dominique TOYE Q1 45 - - 5

LOGI0010-1 *Supply Chain Management* (anglais) - Yasemin ARDA Q2 45 - - 5

Choose 10 credits in the lists below :

[...] With the agreement of the jury, choose 5 credits in any course programme of the University or from the UNIC course catalog.

#### Computer Science foundation courses

**The following courses are corequisite to some compulsory courses of the master program. They must be taken as a priority, unless they were already taken as part of the bachelor in computer science, or unless the corresponding knowledge and skills have been acquired previously (Are involved in these courses bachelors in "Informatique de gestion" and "Informatique et systèmes who must take these courses during the block 1").**

MATH0500-1 *Introduction à l'algorithmique numérique* - Quentin LOUVEAUX - [6h Labo., 45h Proj.] Q1 24 14 [+] 5

INFO0902-1 *Structures des données et algorithmes* - Pierre GEURTS - [40h Proj.] Q2 26 20 [+] 5

INFO0010-4 *Introduction to computer networking* (anglais) - Guy LEDUC - [12h Labo., 40h Proj.] Q1 32 2 [+] 5

INFO0012-2 *Computation structures* (anglais) - Pascal FONTAINE, Laurent MATHY - [40h Proj.] Q1 26 26 [+] 5

INFO0940-1 *Operating systems* (anglais) - Laurent MATHY - [30h Proj.] Q2 30 6 [+] 5

INFO8006-1 *Introduction to artificial intelligence* (anglais) - Gilles LOUPPE - [45h Proj.] Q1 25 20 [+] 5

#### Computer systems security

INFO0031-1 *Network Engineering* (anglais) - Benoît DONNET, Guy LEDUC - [12h Labo., 30h Proj.] Q2 30 - [+] 5

INFO0045-3 *Introduction to computer security* (anglais) - Benoît DONNET - [10h Labo., 30h Proj.] Q1 30 6 [+] 5

**Corequis :**

INFO0902-1 - Structures des données et algorithmes

INFO0012-2 - Computation structures

INFO0010-4 - Introduction to computer networking

INFO0056-1 *Securing Networks* (anglais) - Guy LEDUC - [12h Labo., 30h Proj.] (années paires) Q2 30 - [+] 5

	<b>Corequis :</b> INFO0045-3 - Introduction to computer security INFO0010-4 - Introduction to computer networking							
INFO0939-1	<i>High performance scientific computing</i> (anglais) - Christophe GEUZAINÉ - [20h Proj.]	Q1	30	15	[+]	5		
INFO8002-1	<i>Topics in Distributed Systems</i> (anglais) - Bernard BOIGÉLOT, Christophe DEBRUYNE, Pascal FONTAINE, Guy LEDUC, Laurent MATHY - [35h Proj.] (années impaires)	Q2	30	-	[+]	5		
INFO8012-1	<i>Digital Forensics</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années paires) <b>Corequis :</b> INFO0085-1 - Compilers INFO0010-4 - Introduction to computer networking INFO0940-1 - Operating systems	Q2	30	-	[+]	5		
INFO8011-1	<i>Network infrastructures</i> (anglais) - Benoît DONNET, Guy LEDUC, Laurent MATHY - [8h Labo., 30h Proj.] <b>Corequis :</b> INFO0010-4 - Introduction to computer networking	Q1	30	-	[+]	5		
INFO8013-1	<i>Advanced Computer Security</i> (anglais) - Benoît DONNET, Laurent MATHY - [20h Labo., 30h Proj.] (années impaires) <b>Corequis :</b> INFO0045-3 - Introduction to computer security	Q2	20	-	[+]	5		
<b>Intelligent Systems</b>								
INFO8010-1	<i>Deep learning</i> (anglais) - Gilles LOUPPE - [60h Proj.] <b>Corequis :</b> ELEN0062-1 - Introduction to machine learning	Q2	30	-	[+]	5		
ELEN0016-2	<i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]	Q1	30	10	[+]	5		
INFO0948-2	<i>Introduction to intelligent robotics</i> (anglais) - Pierre SACRÉ - [80h Proj.]	Q2	30	4	[+]	5		
INFO9015-1	<i>Logic for Computer Science</i> (anglais) - Pascal FONTAINE	Q1	24	20	-	5		
INFO2049-1	<i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO <b>Corequis :</b> ELEN0062-1 - Introduction to machine learning	Q1	30	-	-	5		
GBIO0002-1	<i>Genetics and bioinformatics</i> (anglais) - Franck DEQUIEDT, Kristel VAN STEEN - [15h Proj.]	Q1	30	15	[+]	5		
INFO8004-1	<i>Advanced Machine learning</i> (anglais) - Pierre GEURTS, Gilles LOUPPE, Louis WEHENKEL - [20h Proj.] <b>Corequis :</b> ELEN0062-1 - Introduction to machine learning INFO8010-1 - Deep learning	Q2	25	-	[+]	5		
INFO9014-1	<i>Knowledge representation and reasoning</i> (anglais) - Christophe DEBRUYNE - [45h Proj.] <b>Corequis :</b> INFO9015-1 - Logic for Computer Science	Q2	24	20	[+]	5		
<b>Other optional courses</b>								
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]	Q1	15	10	[+]	5		
INFO0064-2	<i>Embedded systems</i> (anglais) - Bernard BOIGÉLOT	Q1	25	20	-	3		
INFO2055-1	<i>Embedded systems project</i> (anglais) - Bernard BOIGÉLOT - [60h Proj.] <b>Corequis :</b> INFO0064-2 - Embedded systems	Q2	-	-	[+]	2		
INFO0060-1	<i>Introduction to computer systems verification</i> (anglais) - Bernard BOIGÉLOT, Pascal FONTAINE - [20h Proj.]	Q2	20	20	[+]	5		

**Corequis :**

INFO0016-1 - Introduction to the theory of computation

INFO9015-1 - Logic for Computer Science

MECA0524-1 *CAD & Geometric Algorithms* - Eric BÉCHET - [60h Proj.] Q1 20 20 [+] 5

GBIO0009-1 *Topics in bioinformatics (anglais)* - Kristel VAN STEEN - [35h Proj.] Q1 25 15 [+] 5

**Prérequis :**

GBIO0002-1 - Genetics and bioinformatics

MATH0461-2 *Introduction to numerical optimization (anglais)* - Quentin LOUVEAUX - [25h Proj.] Q1 30 20 [+] 5

MATH0462-1 *Discrete optimization (anglais)* - Quentin LOUVEAUX - [25h Proj.] Q2 30 20 [+] 5

**Corequis :**

MATH0500-1 - Introduction à l'algorithmique numérique

GBIO0030-1 *Computational approaches to statistical genetics (anglais)* - Kristel VAN STEEN - [35h Proj.] Q2 25 15 [+] 5

**Prérequis :**

GBIO0002-1 - Genetics and bioinformatics

GBIO0031-1 *Learning from genomic data (anglais)* - Kristel VAN STEEN - [150h Proj.] Q2 - - [+] 5

**Prérequis :**

GBIO0002-1 - Genetics and bioinformatics

INFO9012-1 *Parallel Programming (anglais)* - Pascal FONTAINE Q2 25 25 - 5

INFO9015-1 *Logic for Computer Science (anglais)* - Pascal FONTAINE Q1 24 20 - 5

INFO9016-1 *Advanced Databases (anglais)* - Christophe DEBRUYNE - [20h Proj.] Q2 24 20 [+] 5

INFO9023-1 *Machine Learning Systems Design (anglais)* - Thomas VRANCKEN - [17h Labo., 18h Proj.] Q2 17 - [+] 5

**Corequis :**

ELEN0062-1 - Introduction to machine learning

#### Bloc 2

Depending on your track record or your professional/research focus, some prerequisites/corequisites of your first year program might appear in bloc 2. You are therefore invited to go through the list of courses suggested in bloc 2 even if you enroll for the first time in this master program.

#### Compulsory courses

ATFE0002-1 *Master thesis (anglais)* - COLLÉGIALITÉ, Laurent MATHY - [750h Proj.] TA - - [+] 25

#### Optional courses

Choose one focus among the three below :

##### Professional focus on "Computer systems security"

Choose 15 credits in the following list :

INFO0064-2 *Embedded systems (anglais)* - Bernard BOIGELOT Q1 25 20 - 3

INFO2055-1 *Embedded systems project (anglais)* - Bernard BOIGELOT - [60h Proj.] Q2 - - [+] 2

**Corequis :**

INFO0064-2 - Embedded systems

INFO2051-1 *Object-oriented programming on mobile devices (anglais)* - Laurent MATHY - [90h Proj.] Q1 15 10 [+] 5

INFO0056-1 *Securing Networks (anglais)* - Guy LEDUC - [12h Labo., 30h Proj.] (années paires) Q2 30 - [+] 5

**Corequis :**

INFO0045-3 - Introduction to computer security

INFO0010-4 - Introduction to computer networking

INFO0939-1	<i>High performance scientific computing</i> (anglais) - Christophe GEUZAIN - [20h Proj.]	Q1	30	15	[+]	5
INFO8002-1	<i>Topics in Distributed Systems</i> (anglais) - Bernard BOIGELOT, Christophe DEBRUYNE, Pascal FONTAINE, Guy LEDUC, Laurent MATHY - [35h Proj.] (années impaires)	Q2	30	-	[+]	5
INFO8012-1	<i>Digital Forensics</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années paires) <b>Corequis :</b> INFO0940-1 - Operating systems INFO0085-1 - Compilers INFO0010-4 - Introduction to computer networking	Q2	30	-	[+]	5
INFO8011-1	<i>Network infrastructures</i> (anglais) - Benoît DONNET, Guy LEDUC, Laurent MATHY - [8h Labo., 30h Proj.] <b>Corequis :</b> INFO0010-4 - Introduction to computer networking	Q1	30	-	[+]	5
INFO8013-1	<i>Advanced Computer Security</i> (anglais) - Benoît DONNET, Laurent MATHY - [20h Labo., 30h Proj.] (années impaires) <b>Corequis :</b> INFO0045-3 - Introduction to computer security	Q2	20	-	[+]	5
INFO9016-1	<i>Advanced Databases</i> (anglais) - Christophe DEBRUYNE - [20h Proj.]	Q2	24	20	[+]	5

#### Professional focus on "Intelligent Systems"

Choose 15 credits in the following list :

ELEN0016-2	<i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]	Q1	30	10	[+]	5
INFO0948-2	<i>Introduction to intelligent robotics</i> (anglais) - Pierre SACRÉ - [80h Proj.]	Q2	30	4	[+]	5
INFO2049-1	<i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO	Q1	30	-	-	5
GBIO0002-1	<i>Genetics and bioinformatics</i> (anglais) - Franck DEQUIEDT, Kristel VAN STEEN - [15h Proj.]	Q1	30	15	[+]	5
DROI1357-1	<i>European law, (big) data and artificial intelligence applications seminar</i> (anglais) - - Suppl : Ljupcho GROZDANOVSKI	Q1	24	-	-	5
INFO8003-1	<i>Optimal decision making for complex problems</i> (anglais) - Damien ERNST - [45h Proj.]	Q2	25	10	[+]	5
INFO8004-1	<i>Advanced Machine learning</i> (anglais) - Pierre GEURTS, Gilles LOUPPE, Louis WEHENKEL - [20h Proj.]	Q2	25	-	[+]	5
INFO9014-1	<i>Knowledge representation and reasoning</i> (anglais) - Christophe DEBRUYNE - [45h Proj.] <b>Corequis :</b> INFO9015-1 - Logic for Computer Science	Q2	24	20	[+]	5
INFO9023-1	<i>Machine Learning Systems Design</i> (anglais) - Thomas VRANCKEN - [17h Labo., 18h Proj.] <b>Corequis :</b> ELEN0062-1 - Introduction to machine learning	Q2	17	-	[+]	5

#### Professional focus on "Management"

##### Compulsory courses

ERAS0011-1	<i>Business Simulation</i> (anglais) - Anne CHANTEUX - [50h TD]	Q1	-	-	[+]	2
GRHO0001-4	<i>Gestion stratégique des ressources humaines</i> - François PICHAULT	Q1	45	-	-	5
DROI2003-2	<i>Gestion juridique générale de l'entreprise</i> - <i>Droit des sociétés</i> - Laurent STAS DE RICHELLE - <i>Droit fiscal</i> - Isabelle RICHELLE - [5h Conf.]	Q2	25	-	-	5
			25	-	[+]	

# Programme des cours 2023-2024

## Faculté des Sciences Appliquées

### Master en sciences informatiques, à finalité

Choose one of the three following courses :

LANG1936-1	<i>Néerlandais élémentaire 1</i> - Fanny NSITA	Q2	30	-	-	<b>3</b>
LANG1933-1	<i>Allemand élémentaire 1</i> - Marie MAWHIN	TA	30	-	-	<b>3</b>
LANG1934-1	<i>Espagnol élémentaire 1</i> - Alexis ALVAREZ BARBOSA, Alba BALLESTA MARTÍNEZ	TA	30	-	-	<b>3</b>

Choose 20 credits in the lists below :

[...] With the agreement of the jury, choose 5 credits in any course programme of the University or from the UNIC course catalog.

#### Computer Science foundation courses

##### Computer systems security

INFO0031-1	<i>Network Engineering</i> (anglais) - Benoît DONNET, Guy LEDUC - [12h Labo., 30h Proj.]	Q2	30	-	[+]	<b>5</b>
INFO0045-3	<i>Introduction to computer security</i> (anglais) - Benoît DONNET - [10h Labo., 30h Proj.] <b>Corequis :</b> INFO0902-1 - Structures des données et algorithmes INFO0012-2 - Computation structures INFO0010-4 - Introduction to computer networking	Q1	30	6	[+]	<b>5</b>
INFO0056-1	<i>Securing Networks</i> (anglais) - Guy LEDUC - [12h Labo., 30h Proj.] (années paires) <b>Corequis :</b> INFO0045-3 - Introduction to computer security INFO0010-4 - Introduction to computer networking	Q2	30	-	[+]	<b>5</b>
INFO0939-1	<i>High performance scientific computing</i> (anglais) - Christophe GEUZAINÉ - [20h Proj.]	Q1	30	15	[+]	<b>5</b>
INFO8002-1	<i>Topics in Distributed Systems</i> (anglais) - Bernard BOIGELOT, Christophe DEBRUYNE, Pascal FONTAINE, Guy LEDUC, Laurent MATHY - [35h Proj.] (années impaires)	Q2	30	-	[+]	<b>5</b>
INFO8012-1	<i>Digital Forensics</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années paires) <b>Corequis :</b> INFO0085-1 - Compilers INFO0010-4 - Introduction to computer networking INFO0940-1 - Operating systems	Q2	30	-	[+]	<b>5</b>
INFO8011-1	<i>Network infrastructures</i> (anglais) - Benoît DONNET, Guy LEDUC, Laurent MATHY - [8h Labo., 30h Proj.] <b>Corequis :</b> INFO0010-4 - Introduction to computer networking	Q1	30	-	[+]	<b>5</b>
INFO8013-1	<i>Advanced Computer Security</i> (anglais) - Benoît DONNET, Laurent MATHY - [20h Labo., 30h Proj.] (années impaires) <b>Corequis :</b> INFO0045-3 - Introduction to computer security	Q2	20	-	[+]	<b>5</b>

##### Intelligent Systems

INFO8010-1	<i>Deep learning</i> (anglais) - Gilles LOUPPE - [60h Proj.] <b>Corequis :</b> ELEN0062-1 - Introduction to machine learning	Q2	30	-	[+]	<b>5</b>
ELEN0016-2	<i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]	Q1	30	10	[+]	<b>5</b>
INFO0948-2	<i>Introduction to intelligent robotics</i> (anglais) - Pierre SACRÉ - [80h Proj.]	Q2	30	4	[+]	<b>5</b>
INFO9015-1	<i>Logic for Computer Science</i> (anglais) - Pascal FONTAINE	Q1	24	20	-	<b>5</b>
INFO2049-1	<i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO	Q1	30	-	-	<b>5</b>

	<b>Corequis :</b> ELEN0062-1 - Introduction to machine learning						
GBIO0002-1	<i>Genetics and bioinformatics</i> (anglais) - Franck DEQUIEDT, Kristel VAN STEEN - [15h Proj.]	Q1	30	15	[+]	<b>5</b>	
INFO8004-1	<i>Advanced Machine learning</i> (anglais) - Pierre GEURTS, Gilles LOUPPE, Louis WEHENKEL - [20h Proj.]	Q2	25	-	[+]	<b>5</b>	
	<b>Corequis :</b> ELEN0062-1 - Introduction to machine learning INFO8010-1 - Deep learning						
INFO9014-1	<i>Knowledge representation and reasoning</i> (anglais) - Christophe DEBRUYNE - [45h Proj.]	Q2	24	20	[+]	<b>5</b>	
	<b>Corequis :</b> INFO9015-1 - Logic for Computer Science						
<b>Other optional courses</b>							
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]	Q1	15	10	[+]	<b>5</b>	
INFO0064-2	<i>Embedded systems</i> (anglais) - Bernard BOIGELOT	Q1	25	20	-	<b>3</b>	
INFO2055-1	<i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]	Q2	-	-	[+]	<b>2</b>	
	<b>Corequis :</b> INFO0064-2 - Embedded systems						
INFO0060-1	<i>Introduction to computer systems verification</i> (anglais) - Bernard BOIGELOT, Pascal FONTAINE - [20h Proj.]	Q2	20	20	[+]	<b>5</b>	
	<b>Corequis :</b> INFO0016-1 - Introduction to the theory of computation INFO9015-1 - Logic for Computer Science						
MECA0524-1	<i>CAD &amp; Geometric Algorithms</i> - Eric BÉCHET - [60h Proj.]	Q1	20	20	[+]	<b>5</b>	
GBIO0009-1	<i>Topics in bioinformatics</i> (anglais) - Kristel VAN STEEN - [35h Proj.]	Q1	25	15	[+]	<b>5</b>	
	<b>Prérequis :</b> GBIO0002-1 - Genetics and bioinformatics						
MATH0461-2	<i>Introduction to numerical optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]	Q1	30	20	[+]	<b>5</b>	
MATH0462-1	<i>Discrete optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]	Q2	30	20	[+]	<b>5</b>	
	<b>Corequis :</b> MATH0500-1 - Introduction à l'algorithmique numérique						
GBIO0030-1	<i>Computational approaches to statistical genetics</i> (anglais) - Kristel VAN STEEN - [35h Proj.]	Q2	25	15	[+]	<b>5</b>	
	<b>Prérequis :</b> GBIO0002-1 - Genetics and bioinformatics						
GBIO0031-1	<i>Learning from genomic data</i> (anglais) - Kristel VAN STEEN - [150h Proj.]	Q2	-	-	[+]	<b>5</b>	
	<b>Prérequis :</b> GBIO0002-1 - Genetics and bioinformatics						
INFO9012-1	<i>Parallel Programming</i> (anglais) - Pascal FONTAINE	Q2	25	25	-	<b>5</b>	
INFO9015-1	<i>Logic for Computer Science</i> (anglais) - Pascal FONTAINE	Q1	24	20	-	<b>5</b>	
INFO9016-1	<i>Advanced Databases</i> (anglais) - Christophe DEBRUYNE - [20h Proj.]	Q2	24	20	[+]	<b>5</b>	
INFO9023-1	<i>Machine Learning Systems Design</i> (anglais) - Thomas VRANCKEN - [17h Labo., 18h Proj.]	Q2	17	-	[+]	<b>5</b>	
	<b>Corequis :</b> ELEN0062-1 - Introduction to machine learning						
<b>Internships and projects (maximum 15 credits)</b>							
ASTG9005-1	<i>Research Internship</i> (anglais) - Benoît DONNET - [300h Proj.]	TA	-	-	[+]	<b>10</b>	
	<b>Prérequis :</b>						



	PROJ0010-1 - Software project engineering and management						
ASTG0021-1	<i>Technical company internship</i> (anglais) - Laurent MATHY - [300h Proj.]	TA	-	-	[+]	10	
	<b>Prérequis :</b> PROJ0010-1 - Software project engineering and management						
	<i>Remarque :</i> the two company internships are mutually exclusive						
PROJ0011-1	<i>Personal student project</i> (anglais) - Bernard BOIGELOT, COLLÉGIALITÉ - [150h Proj.]	TA	-	-	[+]	5	

**Bloc d'aménagement du programme de l'année**

**Crédits supplémentaires Master en sciences informatiques (pour les étudiants qui n'ont pas obtenu un Bachelier en sciences informatiques)**

Students that are admitted to the master of science in Computer Science without having obtained a degree of bachelor in Computer Science must add to their programme the following list of courses, to be taken in the first year of the master.

**Compulsory courses**

INFO9012-1	<i>Parallel Programming</i> (anglais) - Pascal FONTAINE	Q2	25	25	-	5	
INFO0062-1	<i>Object-oriented programming</i> (anglais) - Bernard BOIGELOT - [20h Proj.]	Q2	25	20	[+]	5	
INFO0054-1	<i>Programmation fonctionnelle</i> - Christophe DEBRUYNE - [20h Proj.]	Q1	24	24	[+]	5	
MATH2019-1	<i>Mathématiques pour l'informatique 1</i> - Emilie CHARLIER	Q1	26	26	-	5	
INFO0027-3	<i>Programming techniques, Software patterns</i> (anglais) - Laurent MATHY - [30h Proj.]	Q2	10	10	[+]	2	
MATH0495-1	<i>Eléments du calcul des probabilités</i> - Laurent LOOSVELDT - [5h Proj.]	Q1	26	26	[+]	5	

**Optional courses**

Students who pass the entrance test may replace LANG6011-1 with the advanced course LANG0988-1 "Advanced for ICT studies".

LANG6011-1	<i>Remedial English for Computer Science</i> (anglais) - Adnan VESSEUR	Q2	3	27	-	3	
LANG0988-1	<i>Advanced English for ICT studies</i> (anglais) - Adnan VESSEUR	Q1	5	25	-	3	

**Crédits supplémentaires Master en sciences informatiques (destinés aux bacheliers Hautes Ecoles en sciences informatiques)**

**Compulsory courses**

MATH0500-1	<i>Introduction à l'algorithmique numérique</i> - Quentin LOUVEAUX - [6h Labo., 45h Proj.]	Q1	24	14	[+]	5	
INFO0902-1	<i>Structures des données et algorithmes</i> - Pierre GEURTS - [40h Proj.]	Q2	26	20	[+]	5	
INFO9012-1	<i>Parallel Programming</i> (anglais) - Pascal FONTAINE	Q2	25	25	-	5	
INFO0010-4	<i>Introduction to computer networking</i> (anglais) - Guy LEDUC - [12h Labo., 40h Proj.]	Q1	32	2	[+]	5	
INFO0012-2	<i>Computation structures</i> (anglais) - Pascal FONTAINE, Laurent MATHY - [40h Proj.]	Q1	26	26	[+]	5	
INFO0940-1	<i>Operating systems</i> (anglais) - Laurent MATHY - [30h Proj.]	Q2	30	6	[+]	5	
INFO0062-1	<i>Object-oriented programming</i> (anglais) - Bernard BOIGELOT - [20h Proj.]	Q2	25	20	[+]	5	

INFO0054-1	<i>Programmation fonctionnelle</i> - Christophe DEBRUYNE - [20h Proj.]	Q1	24	24	[+]	<b>5</b>
MATH2019-1	<i>Mathématiques pour l'informatique 1</i> - Emilie CHARLIER	Q1	26	26	-	<b>5</b>
INFO0027-3	<i>Programming techniques, Software patterns</i> (anglais) - Laurent MATHY - [30h Proj.]	Q2	10	10	[+]	<b>2</b>
MATH0495-1	<i>Eléments du calcul des probabilités</i> - Laurent LOOSVELDT - [5h Proj.]	Q1	26	26	[+]	<b>5</b>
INFO8006-1	<i>Introduction to artificial intelligence</i> (anglais) - Gilles LOUPPE - [45h Proj.]	Q1	25	20	[+]	<b>5</b>

**Optional courses**

Students who pass the entrance test may replace LANG6011-1 with the advanced course LANG0988-1 "Advanced for ICT studies".

LANG6011-1	<i>Remedial English for Computer Science</i> (anglais) - Adnan VESSEUR	Q2	3	27	-	<b>3</b>
LANG0988-1	<i>Advanced English for ICT studies</i> (anglais) - Adnan VESSEUR	Q1	5	25	-	<b>3</b>