

Vue cycle du programme des cours

B1 Or Th Pr Au Cr

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.

To complete their curriculum, students must earn or validate the 70 credits of the compulsory courses (including the master thesis), choose one option for 20 credits and 30 credits from one of the three professional foci.

Ideally, students enrolling in the master program should have acquired the skills and knowledge corresponding to the 40 credits in "Computer science" offered as part of the bachelor program in engineering.

Compulsory courses (B1 : 45Cr, B2 : 25Cr)

INFO0085-1	<i>Compilers</i> (anglais) - Pierre GEURTS - [75h Proj.] Corequis : INFO0016-1 - Introduction to the theory of computation INFO0012-3 - Computation structures INFO0940-1 - Operating systems	B1	Q2	25	-	[+]	5
INFO0063-1	<i>Object-oriented software engineering</i> (anglais) - Bernard BOIGELOT - [30h Proj.] Corequis : INFO0062-1 - Object-oriented programming	B1	Q1	30	24	[+]	5
INFO0016-1	<i>Introduction to the theory of computation</i> (anglais) - Pierre WOLPER	B1	Q1	30	30	-	5
MATH0462-1	<i>Discrete optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]	B1	Q1	30	20	[+]	5
INFO0051-1	<i>Logic</i> (anglais) - Pascal GRIBOMONT - [10h Proj.]	B1	Q1	30	25	[+]	5
ELEN0060-2	<i>Information and coding theory</i> (anglais) - Louis WEHENKEL - [30h Proj.]	B1	Q2	30	15	[+]	5
GEST3162-1	<i>Principles of management</i> (anglais) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE - Suppl : Fanny FOX	B1	Q1	25	25	-	5
PROJ0010-1	<i>Integrated software project, including fundamentals in project management</i> (anglais) - JeanLouis BINOT, Bernard BOIGELOT, Benoît DONNET, Guy LEDUC, Laurent MATHY - [290h Proj.] Corequis : INFO0063-1 - Object-oriented software engineering INFO0010-4 - Introduction to computer networking	B1	TA	10	-	[+]	10
ATFE0015-1	<i>Master thesis</i> (anglais) - COLLÉGIALITÉ, Laurent MATHY - [750h Proj.]	B2	TA	-	-	[+]	25

Optional courses (B1 : 15Cr, B2 : 35Cr)

Students will choose one of the focuss below and will carry it on during the second bloc (B1 : 15Cr, B2 : 15Cr)

Professional focus on "Computer systems and networks" (B1 : 15Cr, B2 : 15Cr)

Compulsory courses

INFO0031-1	<i>Computer network architectures and multimedia</i> (anglais) - Guy LEDUC - [10h Labo., 25h Proj.] Corequis : INFO0010-4 - Introduction to computer networking	B1	Q1	35	-	[+]	5
INFO0045-3	<i>Introduction to computer security</i> (anglais) - Benoît DONNET - [8h Labo., 30h Proj.]	B1	Q2	30	10	[+]	5

Students choosing this focus shall select, in addition to 10 credits of compulsory courses, 40 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. (B1 : 5Cr, B2 : 15Cr)

INFO0064-2	<i>Embedded systems</i> (anglais) - Bernard BOIGELOT	-	Q1	25	20	-	3
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INFO2055-1	<i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]	-	Q2	-	-	[+]	2
	Corequis : INFO0064-2 - Embedded systems						
INFO0941-1	<i>Network measurement and monitoring</i> (anglais) - Benoît DONNET - [60h Proj.]	-	Q2	20	-	[+]	5
	Corequis : INFO0031-1 - Computer network architectures and multimedia						
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]	-	Q2	15	10	[+]	5
INFO0056-1	<i>Managing and securing computer networks</i> (anglais) - Guy LEDUC - [12h Labo., 55h Proj.]	-	Q2	30	-	[+]	5
	Corequis : INFO0045-3 - Introduction to computer security						
ELEN0002-2	<i>Introduction to audio and video techniques</i> (anglais) - JeanJacques EMBRECHTS - [8h Labo.]	-	Q1	30	22	[+]	5
INFO0939-1	<i>High performance scientific computing</i> (anglais) - Christophe GEUZAIN - [20h Proj.]	-	Q1	30	15	[+]	5

Professional focus on "Intelligent Systems" (B1 : 15Cr, B2 : 15Cr)

Compulsory courses

ELEN0062-1	<i>Introduction to machine learning</i> (anglais) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	B1	Q1	30	5	[+]	5
	Corequis : MATH0462-1 - Discrete optimization						
SYST0003-1	<i>Linear control systems</i> (anglais) - Guillaume DRION - [6h Labo.]	B2	Q1	30	30	[+]	5

Students choosing this focus shall select, in addition to 10 credits of compulsory courses, 40 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. (B1 : 10Cr, B2 : 10Cr)

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) - Renaud DETRY, Louis WEHENKEL - [80h Proj.]	-	Q2	30	4	[+]	5
	Corequis : ELEN0062-1 - Introduction to machine learning ELEN0016-2 - Computer vision						
INFO0049-1	<i>Knowledge representation</i> (anglais) - Pascal GRIBOMONT - [50h Proj.]	-	Q2	30	25	[+]	5
	Corequis : INFO0051-1 - Logic						
INFO2049-1	<i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO	-	Q1	30	-	-	5
	Corequis : ELEN0062-1 - Introduction to machine learning						
INFO2046-2	<i>Computational geometry</i> (anglais) - Eric BÉCHET - [95h Proj.]	-	Q1	25	-	[+]	5
MECA0031-2	<i>Kinematics and dynamics of mechanisms</i> (anglais) - Olivier BRULS - [40h Proj.]	-	Q2	30	20	[+]	5
GBIO0002-1	<i>Genetics and bioinformatics</i> (anglais) - Franck DEQUIEDT, Kristel VAN STEEN - [15h Proj.]	-	Q1	30	15	[+]	5

Professional focus on "Management" (B1 : 15Cr, B2 : 15Cr)

Compulsory courses

FINA0001-1	<i>Analyse des états financiers et financement de l'entreprise</i> - Jacques BERWART	B1	Q2	45	-	-	5
ECON2259-1	<i>Microéconomie et économie industrielle</i> - Axel GAUTIER, Bernard THIRY	B1	Q2	40	15	-	5
LOGI0010-1	<i>Supply Chain Management</i> (anglais) - Yasemin ARDA	B1	Q2	45	-	-	5
ERAS0011-1	<i>Business Simulation</i> (anglais) - Anne CHANTEUX - [50h TD]	B2	Q1	-	-	[+]	2
GRHO0001-4	<i>Gestion stratégique des ressources humaines</i> - François PICHULT - Suppl : Frédéric NAEDENOEN	B2	Q1	45	-	-	5
DROI0174-2	<i>Droit commercial</i> - Frédéric DAERDEN, Laurent STAS DE RICHELLE	B2	Q2	45	-	-	5

Students choosing this focus shall select, in addition to 27 credits of compulsory courses, 23 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. (B2 : 3Cr)

LANG1936-1	<i>Néerlandais élémentaire 1</i> - Doris DE LAET	B2	TA	30	-	-	3
LANG1933-1	<i>Allemand élémentaire 1</i> - Marie MAWHIN	B2	Q2	30	-	-	3
LANG1934-1	<i>Espagnol élémentaire 1</i> - Alexis ALVAREZ BARBOSA	B2	Q2	30	-	-	3

Research focus (B1 : 15Cr, B2 : 15Cr)

À destination des étudiants qui ont suivi cette finalité en 2015-2016.

Choose remaining credits in the lists below : (B2 : 20Cr)

Optional courses outside the focus

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.

MATH0500-1	<i>Introduction à l'algorithmique numérique</i> - Quentin LOUVEAUX - [6h Labo., 45h Proj.]	B2	Q1	24	14	[+]	5
INFO2050-1	<i>Programmation avancée</i> - Pierre GEURTS - [40h Proj.]	B2	Q1	25	20	[+]	5
INFO0010-4	<i>Introduction to computer networking</i> (anglais) - Guy LEDUC - [12h Labo., 40h Proj.]	B2	Q2	35	2	[+]	5
INFO0012-2	<i>Computation structures</i> (anglais) - Pierre WOLPER - [40h Proj.]	B2	Q1	30	25	[+]	5
INFO0940-1	<i>Operating systems</i> (anglais) - Laurent MATHY - [80h Proj.]	B2	Q2	30	6	[+]	5

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

Computer systems and networks

INFO0031-1	<i>Computer network architectures and multimedia</i> (anglais) - Guy LEDUC - [10h Labo., 25h Proj.]	B2	Q1	35	-	[+]	5
INFO0045-3	<i>Introduction to computer security</i> (anglais) - Benoît DONNET - [8h Labo., 30h Proj.]	B2	Q2	30	10	[+]	5
INFO0941-1	<i>Network measurement and monitoring</i> (anglais) - Benoît DONNET - [60h Proj.]	B2	Q2	20	-	[+]	5
Corequis :							
INFO0031-1 - Computer network architectures and multimedia							
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]	B2	Q2	15	10	[+]	5
INFO0056-1	<i>Managing and securing computer networks</i> (anglais) - Guy LEDUC - [12h Labo., 55h Proj.]	B2	Q2	30	-	[+]	5

Corequis :

INFO0045-3 - Introduction to computer security

ELEN0002-2 *Introduction to audio and video techniques* (anglais) - JeanJacques EMBRECHTS - [8h Labo.] B2 Q1 30 22 [+] 5

INFO0939-1 *High performance scientific computing* (anglais) - Christophe GEUZAINÉ - [20h Proj.] B2 Q1 30 15 [+] 5

Intelligent Systems

ELEN0062-1 *Introduction to machine learning* (anglais) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.] B2 Q1 30 5 [+] 5

Corequis :

MATH0462-1 - Discrete optimization

ELEN0016-2 *Computer vision* (anglais) - Marc VAN DROOGENBROECK - [50h Proj.] B2 Q1 30 10 [+] 5

INFO0948-2 *Introduction to intelligent robotics* (anglais) - Renaud DETRY, Louis WEHENKEL - [80h Proj.] B2 Q2 30 4 [+] 5

Corequis :

ELEN0062-1 - Introduction to machine learning

ELEN0016-2 - Computer vision

INFO0049-1 *Knowledge representation* (anglais) - Pascal GRIBOMONT - [50h Proj.] B2 Q2 30 25 [+] 5

Corequis :

INFO0051-1 - Logic

INFO2046-2 *Computational geometry* (anglais) - Eric BÉCHET - [95h Proj.] B2 Q1 25 - [+] 5

INFO2049-1 *Web and Text Analytics* (anglais) - Ashwin ITTOO B2 Q1 30 - - 5

Corequis :

ELEN0062-1 - Introduction to machine learning

GBIO0002-1 *Genetics and bioinformatics* (anglais) - Franck DEQUIEDT, Kristel VAN STEEN - [15h Proj.] B2 Q1 30 15 [+] 5

Other optional courses

INFO0064-2 *Embedded systems* (anglais) - Bernard BOIGELOT B2 Q1 25 20 - 3

INFO2055-1 *Embedded systems project* (anglais) - Bernard BOIGELOT - [60h Proj.] B2 Q2 - - [+] 2

Corequis :

INFO0064-2 - Embedded systems

INFO0050-1 *Constraint programming projects* (anglais) - Pascal GRIBOMONT - [80h Proj.] B2 TA 15 10 [+] 5

Corequis :

INFO0049-1 - Knowledge representation

INFO0060-1 *Concurrent system verification and temporal logic* (anglais) - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER - [20h Proj.] B2 Q2 30 10 [+] 5

Prérequis :

INFO0016-1 - Introduction to the theory of computation

INFO0051-1 - Logic

INFO0026-3 *Computer graphics* (anglais) - Eric BÉCHET - [45h Proj.] B2 Q2 24 24 [+] 5

GBIO0009-1 *Topics in bioinformatics* (anglais) - Kristel VAN STEEN - [35h Proj.] B2 Q1 25 15 [+] 5

Prérequis :

GBIO0002-1 - Genetics and bioinformatics

ELEN0019-2 *Audio signal processing : principles and experiments* (anglais) - JeanJacques EMBRECHTS - [24h Labo., 30h Proj.] B2 Q1 5 - [+] 5

MATH0461-2 *Introduction to numerical optimization* (anglais) - Quentin LOUVEAUX - [25h Proj.] B2 Q1 30 20 [+] 5

GBIO0030-1 *Computational approaches to statistical genetics* (anglais) - B2 Q2 25 15 [+] 5

VAN STEEN - [35h Proj.]

Prérequis :

GBIO0002-1 - Genetics and bioinformatics

INGE0012-1	<i>Scientific research in engineering and its impact on innovation</i> (anglais) - Rodolphe SEPULCHRE	B2	Q2	30	30	-	5
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Internships and projects (maximum 15 credits)

ASTG9005-1	<i>Research Internship</i> (anglais) - Benoît DONNET - [300h Proj.]	B2	TA	-	-	[+]	10
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ASTG0021-1	<i>Technical company internship</i> (anglais) - Laurent MATHY - [300h Proj.]	B2	TA	-	-	[+]	10
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Remarque : the two company internships are mutually exclusive

PROJ0011-1	<i>Personal student project</i> (anglais) - Bernard BOIGELOT, COLLÉGIALITÉ - [150h Proj.]	B2	TA	-	-	[+]	5
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Crédits supplémentaires Master en ingénieur civil en informatique

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

INFO2050-1	<i>Programmation avancée</i> - Pierre GEURTS - [40h Proj.]	B0	Q1	25	20	[+]	5
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MATH0495-1	<i>Eléments du calcul des probabilités</i> - Pascal GRIBOMONT - [5h Proj.]	B0	Q1	15	15	[+]	3
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MATH0500-1	<i>Introduction à l'algorithmique numérique</i> - Quentin LOUVEAUX - [6h Labo., 45h Proj.]	B0	Q1	24	14	[+]	5
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INFO0027-2	<i>Programming techniques</i> (anglais) - Laurent MATHY - [70h Proj.]	B0	Q2	30	24	[+]	5
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INFO0030-3	<i>Projet de programmation</i> - Benoît DONNET - [100h Proj.]	B0	Q2	20	-	[+]	5
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MATH1222-3	<i>Introduction aux processus stochastiques, Partim 1 : Chaînes de Markov</i> - Pierre GEURTS, Yvik SWAN - [10h TD]	B0	Q2	20	10	[+]	5
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