

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 65 credits of the compulsory courses (including the master thesis), choose 30 credits from one of the three professional foci and take 25 credits of optional courses. 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 : 40Cr, B2 : 25Cr)

INFO0085-1	<i>Compilers</i> (anglais) - - Suppl : Julien BRUSTEN - [75h Proj.] Corequis : INFO0016-1 - Introduction to the theory of computation INFO0012-2 - Computation structures INFO0940-1 - Operating systems	B1	Q2	25	-	[+]	5
ELEN0062-1	<i>Introduction to machine learning</i> (anglais) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	B1	Q1	30	5	[+]	5
INFO0016-1	<i>Introduction to the theory of computation</i> (anglais) - Pierre WOLPER	B1	Q1	26	26	-	5
INFO0940-1	<i>Operating systems</i> (anglais) - Laurent MATHY - [30h Proj.]	B1	Q2	30	6	[+]	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 PICHHAULT	B1	Q1	25	25	-	5
PROJ0010-1	<i>Software project engineering and management</i> (anglais) - JeanLouis BINOT, Benoît DONNET, Guy LEDUC, Laurent MATHY - [290h Proj.] Prérequis : INFO0062-1 - Object-oriented programming Corequis : INFO0010-4 - Introduction to computer networking	B1	TA	20	-	[+]	10
ATFE0015-1	<i>Master thesis</i> (anglais) - COLLÉGIALITÉ, Laurent MATHY - [750h Proj.]	B2	TA	-	-	[+]	25

Optional courses (B1 : 20Cr, B2 : 35Cr)

Students will choose one of the focus 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)

For students who have begun this focus before 2018-2019

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

Compulsory courses

INFO0031-1	<i>Network Engineering</i> (anglais) - Benoît DONNET, Guy LEDUC - [12h Labo., 30h Proj.] Corequis : INFO0010-4 - Introduction to computer networking	B1	Q2	30	-	[+]	5
INFO0045-3	<i>Introduction to computer security</i> (anglais) - Benoît DONNET - [8h Labo., 30h Proj.]	B1	Q1	30	10	[+]	5

Students choosing this focus shall select, in addition to 10 credits of compulsory courses, 45 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.] Corequis : INFO0064-2 - Embedded systems	-	Q2	-	-	[+]	2
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]	-	Q1	15	10	[+]	5
INFO0056-1	<i>Securing Networks</i> (anglais) - Guy LEDUC - [12h Labo., 30h Proj.] (années paires) Corequis : INFO0045-3 - Introduction to computer security	-	Q2	30	-	[+]	5
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
INFO8002-1	<i>Large-scale data systems</i> (anglais) - Gilles LOUPPE - [45h Proj.]	-	Q1	25	10	[+]	5
INFO8012-1	<i>Digital Forensics</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années paires) Prérequis : INFO0045-3 - Introduction to computer security	-	Q2	30	-	[+]	5
INFO8011-1	(pas organisé en 2018-2019) <i>Network infrastructures</i> - Benoît DONNET, Guy LEDUC, Laurent MATHY - [12h Labo., 30h Proj.] (années impaires) Corequis : INFO0010-4 - Introduction to computer networking	-	Q2	30	-	[+]	5
INFO8013-1	<i>Advanced Computer Security</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années impaires) Prérequis : INFO0940-1 - Operating systems	-	Q1	30	-	[+]	5

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

Compulsory courses

INFO8010-1	<i>Deep learning</i> (anglais) - Gilles LOUPPE - [45h Proj.]	B1	Q2	30	5	[+]	5
SYST0003-1	<i>Linear control systems</i> (anglais) - Partim A - Guillaume DRION - Partim C - Guillaume DRION - [6h Labo.]	B1	Q1	26	6	-	5
				-	20	[+]	

Students choosing this focus shall select, in addition to 10 credits of compulsory courses, 45 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)

ELEN0016-2	<i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]	-	Q1	30	10	[+]	5
INFO0051-1	<i>Logic</i> (anglais) - Pascal GRIBOMONT - [10h Proj.]	-	Q1	25	25	[+]	5
INFO0948-2	<i>Introduction to intelligent robotics</i> (anglais) - Pierre SACRÉ - [80h Proj.] Corequis : ELEN0062-1 - Introduction to machine learning ELEN0016-2 - Computer vision	-	Q2	30	4	[+]	5
INFO0049-1	<i>Knowledge representation</i> (anglais) - Pascal GRIBOMONT - [50h Proj.] Corequis : INFO0051-1 - Logic	-	Q2	28	24	[+]	5

INFO2049-1	<i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO Corequis : 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
DROI8031-2	<i>Introduction to the law of robots, Law of artificial intelligence, robots and data-driven Algorithmic Applications</i> (anglais) - Nicolas PETIT	-	Q1	20	-	-	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 - [45h Proj.]	-	Q2	30	5	[+]	5
INFO8005-1	<i>Semantic Data</i> (anglais) - JeanLouis BINOT - [45h Proj.]	-	Q2	25	10	[+]	5
INFO0050-1	<i>Constraint programming projects</i> (anglais) - Pascal GRIBOMONT - [80h Proj.]	-	TA	15	10	[+]	5
INFO8006-1	<i>Introduction to artificial intelligence</i> (anglais) - Gilles LOUPPE - [45h Proj.]	-	Q1	25	10	[+]	5

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

Registration to this focus only with a file (contact : C. Puit)

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 PICHAULT	B2	Q1	45	-	-	5
DROI0174-2	<i>Droit de l'entreprise</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, 28 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> - Stéphane GHIJSEN, Catherine PEETERS	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	TA	30	-	-	3

Choose remaining credits in the lists below : (B1 : 5Cr, B2 : 20Cr)

Optional courses outside the focus

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.

INFO2050-1	<i>Programmation avancée</i> - Pierre GEURTS - [40h Proj.]	B1	Q1	25	20	[+]	5
INFO0010-4	<i>Introduction to computer networking</i> (anglais)	B1	Q2				5

	- Partim A - Guy LEDUC - [8h Labo., 40h Proj.]			30	2	[+]	
	- Partim B - Guy LEDUC - [4h Labo.]			5	-	[+]	
INFO0012-2	<i>Computation structures</i> (anglais) - Pierre WOLPER - [40h Proj.]	B1	Q1	26	26	[+]	5
INFO0062-1	<i>Object-oriented programming</i> (anglais) - Bernard BOIGELOT - [20h Proj.]	B1	Q2	25	20	[+]	5
Computer systems security							
INFO0031-1	<i>Network Engineering</i> (anglais) - Benoît DONNET, Guy LEDUC - [12h Labo., 30h Proj.]	-	Q2	30	-	[+]	5
INFO0045-3	<i>Introduction to computer security</i> (anglais) - Benoît DONNET - [8h Labo., 30h Proj.]	-	Q1	30	10	[+]	5
INFO0056-1	<i>Securing Networks</i> (anglais) - Guy LEDUC - [12h Labo., 30h Proj.] (années paires) Corequis : INFO0045-3 - Introduction to computer security	-	Q2	30	-	[+]	5
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
INFO8002-1	<i>Large-scale data systems</i> (anglais) - Gilles LOUPPE - [45h Proj.]	-	Q1	25	10	[+]	5
INFO8012-1	<i>Digital Forensics</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années paires) Prérequis : INFO0045-3 - Introduction to computer security	-	Q2	30	-	[+]	5
INFO8011-1	(pas organisé en 2018-2019) <i>Network infrastructures</i> - Benoît DONNET, Guy LEDUC, Laurent MATHY - [12h Labo., 30h Proj.] (années impaires) Corequis : INFO0010-4 - Introduction to computer networking	-	Q2	30	-	[+]	5
INFO8013-1	<i>Advanced Computer Security</i> (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années impaires) Prérequis : INFO0940-1 - Operating systems	-	Q1	30	-	[+]	5
Intelligent Systems							
INFO8010-1	<i>Deep learning</i> (anglais) - Gilles LOUPPE - [45h Proj.] Corequis : ELEN0062-1 - Introduction to machine learning	-	Q2	30	5	[+]	5
ELEN0016-2	<i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]	-	Q1	30	10	[+]	5
INFO0051-1	<i>Logic</i> (anglais) - Pascal GRIBOMONT - [10h Proj.]	-	Q1	25	25	[+]	5
INFO0948-2	<i>Introduction to intelligent robotics</i> (anglais) - Pierre SACRÉ - [80h Proj.] Corequis : ELEN0062-1 - Introduction to machine learning ELEN0016-2 - Computer vision	-	Q2	30	4	[+]	5
INFO0049-1	<i>Knowledge representation</i> (anglais) - Pascal GRIBOMONT - [50h Proj.] Corequis : INFO0051-1 - Logic	-	Q2	28	24	[+]	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

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 - [45h Proj.]	-	Q2	30	5	[+]	5
INFO8005-1	<i>Semantic Data</i> (anglais) - JeanLouis BINOT - [45h Proj.]	-	Q2	25	10	[+]	5
INFO0050-1	<i>Constraint programming projects</i> (anglais) - Pascal GRIBOMONT - [80h Proj.]	-	TA	15	10	[+]	5
INFO8006-1	<i>Introduction to artificial intelligence</i> (anglais) - Gilles LOUPPE - [45h Proj.]	-	Q1	25	10	[+]	5

Other optional courses

INFO0064-2	<i>Embedded systems</i> (anglais) - Bernard BOIGELOT	-	Q1	25	20	-	3
INFO2055-1	<i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.] Corequis : INFO0064-2 - Embedded systems	-	Q2	-	-	[+]	2
INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]	-	Q1	15	10	[+]	5
INFO0060-1	<i>Concurrent system verification and temporal logic</i> (anglais) - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER - [20h Proj.] Prérequis : INFO0016-1 - Introduction to the theory of computation INFO0051-1 - Logic	-	Q2	30	10	[+]	5
INFO0027-2	<i>Programming techniques</i> (anglais) - Laurent MATHY - [70h Proj.]	-	Q2	24	24	[+]	5
GBIO0009-1	<i>Topics in bioinformatics</i> (anglais) - Kristel VAN STEEN - [35h Proj.] Prérequis : GBIO0002-1 - Genetics and bioinformatics	-	Q1	25	15	[+]	5
ELEN0019-2	<i>Audio signal processing : principles and experiments</i> (anglais) - JeanJacques EMBRECHTS - [24h Labo., 30h Proj.]	-	Q2	5	-	[+]	5
MATH0461-2	<i>Introduction to numerical optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]	-	Q1	30	20	[+]	5
MATH0462-1	<i>Discrete optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]	-	Q1	30	20	[+]	5
GBIO0030-1	<i>Computational approaches to statistical genetics</i> (anglais) - Kristel VAN STEEN - [35h Proj.] Prérequis : GBIO0002-1 - Genetics and bioinformatics	-	Q2	25	15	[+]	5
INGE0012-1	<i>Scientific research in engineering and its impact on innovation</i> (anglais) - Rodolphe SEPULCHRE	-	Q2	26	26	-	5
MECA0524-1	<i>CAD & Geometric Algorithms</i> - Eric BÉCHET - [60h Proj.]	-	Q1	20	20	[+]	5

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

Internships and projects (maximum 15 credits)

ASTG9005-1	<i>Research Internship</i> (anglais) - Benoît DONNET - [300h Proj.]	-	TA	-	-	[+]	10
ASTG0021-1	<i>Technical company internship</i> (anglais) - Laurent MATHY - [300h Proj.] <i>Remarque :</i> the two company internships are mutually exclusive	-	TA	-	-	[+]	10
PROJ0011-1	<i>Personal student project</i> (anglais) - Bernard BOIGELOT, COLLÉGIALITÉ - [150h Proj.]	-	TA	-	-	[+]	5

Crédits supplémentaires Master en ingénieur civil en informatique

Compulsory courses (B0 : 46Cr)

MATH0495-1	<i>Eléments du calcul des probabilités</i> - Pascal GRIBOMONT - [5h Proj.]	B0	Q1	15	15	[+]	3
MATH0006-3	<i>Introduction to numerical analysis</i> (anglais) - Quentin LOUVEAUX	B0	Q1	20	20	-	4
INFO0054-1	<i>Programmation fonctionnelle</i> - Pascal GRIBOMONT - [15h Proj.]	B0	Q2	28	24	[+]	5
MATH0488-1	<i>Eléments de processus stochastiques</i> - Maarten ARNST, Vincent DENOËL, Pierre GEURTS - [30h Proj.]	B0	Q2	10	10	[+]	2
MATH1222-3	<i>Introduction aux processus stochastiques</i> - Céline ESSER, Pierre GEURTS - [10h TD]	B0	Q2	20	10	[+]	5
INFO0030-3	<i>Projet de programmation</i> - Benoît DONNET - [100h Proj.]	B0	Q2	20	-	[+]	5
ELEN0040-1	<i>Electronique numérique</i> - JeanMichel REDOUTÉ	B0	Q2	26	26	-	5
MATH0013-1	<i>Algèbre</i> - Eric DELHEZ	B0	Q1	26	26	-	5
MECA0003-2	<i>Mécanique rationnelle</i> - Eric DELHEZ	B0	Q1	20	30	-	4
LANG6011-1	<i>Remedial English for Computer Science</i> (anglais) - Adnan VESSEUR	B0	Q1	3	27	-	3
DROI0724-1	<i>Droit et activités de l'ingénieur</i> - Roman AYDOGDU, Christine BIQUET, Jacques CLESSE, Vanessa FRANSSSEN, Pascale LECOCQ, Bernard VANBRABANT, Cécile VERCHEVAL	B0	Q1	26	-	-	2
GENV0002-1	<i>Sustainable energy</i> - Pierre DEWALLEF, Damien ERNST, Nathalie JOB, Sigrid REITER - [20h Proj.]	B0	Q2	26	8	[+]	3