

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 from the core curriculum

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

Optional courses from the core curriculum

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	<i>Introduction à l'algorithmique numérique</i> - [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
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
INFO8006-1	<i>Introduction to artificial intelligence</i> (anglais) - Gilles LOUPPE - [45h Proj.]	Q1	25	20	[+]	5
ELEN0060-2	<i>Information and coding theory</i> (anglais) - Louis WEHENKEL - [30h Proj.]	Q2	30	15	[+]	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 - [10h Labo., 30h Proj.]	Q1	30	6	[+]	5

Corequis :

INFO0010-4 - Introduction to computer networking

INFO0012-2 - Computation structures

INFO0902-1 - Structures des données et algorithmes

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

Corequis :

INFO0010-4 - Introduction to computer networking

INFO0045-3 - Introduction to computer security

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

INFO8002-1 *Topics in Distributed Systems* (anglais) - Bernard BOIGELOT, Christophe DEBRUYNE, Pascal FONTAINE, Guy LEDUC, Laurent MATHY - [35h Proj.] (années impaires) Q2 30 - [+] 5

INFO8012-1 *Digital Forensics* (anglais) - Benoît DONNET, Laurent MATHY - [12h Labo., 30h Proj.] (années paires) Q2 30 - [+] 5

Corequis :

INFO0940-1 - Operating systems

INFO0010-4 - Introduction to computer networking

INFO0085-1 - Compilers

INFO8011-1 *Network infrastructures* (anglais) - Benoît DONNET, Guy LEDUC, Laurent MATHY - [8h Labo., 30h Proj.] Q1 30 - [+] 5

Corequis :

INFO0010-4 - Introduction to computer networking

INFO8013-1 *Advanced Computer Security* (anglais) - Benoît DONNET, Laurent MATHY - [20h Labo., 30h Proj.] (années impaires) Q2 20 - [+] 5

Corequis :

INFO0045-3 - Introduction to computer security

Intelligent Systems

INFO8010-1 *Deep learning* (anglais) - Gilles LOUPPE - [60h Proj.] Q2 30 - [+] 5

Corequis :

ELEN0062-1 - Introduction to machine learning

ELEN0016-2 *Computer vision* (anglais) - Anthony CIOPPA, Adrien DELIÈGE, Marc VAN DROOGENBROECK - Suppl : Thomas HOYOUN - [50h Proj.] Q1 30 10 [+] 5

INFO0948-2 *Introduction to intelligent robotics* (anglais) - Pierre SACRÉ - [80h Proj.] Q2 30 4 [+] 5

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

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

Corequis :

ELEN0062-1 - Introduction to machine learning

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

INFO8004-1 *Advanced Machine learning* (anglais) - Pierre GEURTS, Gilles LOUPPE, Louis WEHENKEL - [20h Proj.] Q2 25 - [+] 5

Corequis :

INFO8010-1 - Deep learning

ELEN0062-1 - Introduction to machine learning

INFO9014-1 *Knowledge representation and reasoning* (anglais) - Christophe DEBRUYNE - [45h Proj.] Q2 24 20 [+] 5

Corequis :

INFO9015-1 - Logic for Computer Science

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

Corequis :

ELEN0062-1 - Introduction to machine learning

INFO9030-1	<i>Explainable Artificial Intelligence</i> (anglais) - Vân Anh HUYNH THU - [50h Proj.]	Q2	24	-	[+]	5
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Other optional courses

INFO2051-1	<i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]	Q1	15	10	[+]	5
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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
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Corequis :
INFO0064-2 - Embedded systems

INFO0060-1	<i>Introduction to computer systems verification</i> (anglais) - Bernard BOIGELOT, Pascal FONTAINE - [20h Proj.]	Q2	20	20	[+]	5
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Corequis :
INFO9015-1 - Logic for Computer Science
INFO0016-1 - Introduction to the theory of computation

MECA0524-1	<i>CAD & Geometric Algorithms</i> - Eric BÉCHET - [60h Proj.]	Q1	20	20	[+]	5
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MATH0461-2	<i>Introduction to numerical optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]	Q1	30	20	[+]	5
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MATH0462-1	<i>Discrete optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]	Q2	30	20	[+]	5
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Corequis :
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	[+]	5
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Prérequis :
GBIO0002-1 - Genetics and bioinformatics

GBIO0031-1	<i>Learning from genomic data</i> (anglais) - Kristel VAN STEEN - [150h Proj.]	Q2	-	-	[+]	5
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Prérequis :
GBIO0002-1 - Genetics and bioinformatics

INFO9012-1	<i>Parallel Programming</i> (anglais) - Pascal FONTAINE	Q2	25	25	-	5
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INFO9015-1	<i>Logic for Computer Science</i> (anglais) - Pascal FONTAINE	Q1	24	20	-	5
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INFO9016-1	<i>Advanced Databases</i> (anglais) - Christophe DEBRUYNE - [20h Proj.]	Q1	24	20	[+]	5
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ELEN0449-1	<i>Computer Vision understanding</i> (anglais) - Anthony CIOPPA - [50h Proj.]	Q2	24	10	[+]	5
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Students choosing this focus shall select, in addition to 25 credits of compulsory courses, one of the 3 language courses for 5 credits and 30 credits of elective courses. 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 within the focus

FINA0001-1	<i>Analyse des états financiers et financement de l'entreprise</i> - Wouter TORSIN	Q2	45	-	-	5
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CHIM0092-2	<i>Chimie générale</i> - Christine BERTRAND	Q2	40	20	-	5
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LOGI0010-1	<i>Supply Chain Management</i> (anglais) - Yasemin ARDA	Q2	45	-	-	5
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Bloc 2

Compulsory courses from the core curriculum

ATFE0002-1	<i>Master thesis</i> (anglais) - COLLÉGIALITÉ, Laurent MATHY - [750h Proj.]	TA	-	-	[+]	25
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Optional courses from the core curriculum

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 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 - [10h Labo., 30h Proj.] Corequis : INFO0010-4 - Introduction to computer networking INFO0012-2 - Computation structures INFO0902-1 - Structures des données et algorithmes	Q1	30	6	[+]	5
INFO0056-1	<i>Securing Networks</i> (anglais) - Guy LEDUC - [12h Labo., 30h Proj.] (années paires) Corequis : INFO0010-4 - Introduction to computer networking INFO0045-3 - Introduction to computer security	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) Corequis : INFO0940-1 - Operating systems INFO0010-4 - Introduction to computer networking INFO0085-1 - Compilers	Q2	30	-	[+]	5
INFO8011-1	<i>Network infrastructures</i> (anglais) - Benoît DONNET, Guy LEDUC, Laurent MATHY - [8h Labo., 30h Proj.] Corequis : 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) Corequis : INFO0045-3 - Introduction to computer security	Q2	20	-	[+]	5

Intelligent Systems

INFO8010-1	<i>Deep learning</i> (anglais) - Gilles LOUPPE - [60h Proj.] Corequis : ELEN0062-1 - Introduction to machine learning	Q2	30	-	[+]	5
ELEN0016-2	<i>Computer vision</i> (anglais) - Anthony CIOPPA, Adrien DELIÈGE, Marc VAN DROOGENBROECK - Suppl : Thomas HOYOUN - [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 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
INFO8004-1	<i>Advanced Machine learning</i> (anglais) - Pierre GEURTS, Gilles LOUPPE, Louis WEHENKEL - [20h Proj.] Corequis : INFO8010-1 - Deep learning ELEN0062-1 - Introduction to machine learning	Q2	25	-	[+]	5

INFO9014-1	<i>Knowledge representation and reasoning</i> (anglais) - Christophe DEBRUYNE - [45h Proj.]	Q2	24	20	[+]	5
	Corequis : INFO9015-1 - Logic for Computer Science					
INFO9023-1	<i>Machine Learning Systems Design</i> (anglais) - Thomas VRANCKEN - [17h Labo., 18h Proj.]	Q2	17	-	[+]	5
	Corequis : ELEN0062-1 - Introduction to machine learning					
INFO9030-1	<i>Explainable Artificial Intelligence</i> (anglais) - Vân Anh HUYNH THU - [50h Proj.]	Q2	24	-	[+]	5

Other optional courses

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 BOIGELOT	Q1	25	20	-	3
INFO2055-1	<i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]	Q2	-	-	[+]	2
	Corequis : INFO0064-2 - Embedded systems					
INFO0060-1	<i>Introduction to computer systems verification</i> (anglais) - Bernard BOIGELOT, Pascal FONTAINE - [20h Proj.]	Q2	20	20	[+]	5
	Corequis : INFO9015-1 - Logic for Computer Science INFO0016-1 - Introduction to the theory of computation					
MECA0524-1	<i>CAD & Geometric Algorithms</i> - Eric BÉCHET - [60h Proj.]	Q1	20	20	[+]	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.]	Q2	30	20	[+]	5
	Corequis : 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	[+]	5
	Prérequis : GBIO0002-1 - Genetics and bioinformatics					
GBIO0031-1	<i>Learning from genomic data</i> (anglais) - Kristel VAN STEEN - [150h Proj.]	Q2	-	-	[+]	5
	Prérequis : GBIO0002-1 - Genetics and bioinformatics					
INFO9012-1	<i>Parallel Programming</i> (anglais) - Pascal FONTAINE	Q2	25	25	-	5
INFO9015-1	<i>Logic for Computer Science</i> (anglais) - Pascal FONTAINE	Q1	24	20	-	5
INFO9016-1	<i>Advanced Databases</i> (anglais) - Christophe DEBRUYNE - [20h Proj.]	Q1	24	20	[+]	5
ELEN0449-1	<i>Computer Vision understanding</i> (anglais) - Anthony CIOPPA - [50h Proj.]	Q2	24	10	[+]	5

Internships and projects (maximum 15 credits)

ASTG9005-1	<i>Research Internship</i> (anglais) - Benoît DONNET - [300h Proj.]	TA	-	-	[+]	10
	Prérequis : PROJ0010-1 - Software project engineering and management					
ASTG0021-1	<i>Technical company internship</i> (anglais) - Laurent MATHY - [300h Proj.]	TA	-	-	[+]	10
	Prérequis : 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

Compulsory courses within the focus

GRHO0001-4	<i>Gestion stratégique des ressources humaines</i> - Grégory JEMINE	Q1	45	-	-	5
DROI2003-2	<i>Gestion juridique générale de l'entreprise</i>	Q2				5
	- <i>Droit des sociétés</i> - Wilfried NIESSEN, Laurent STAS DE RICHELLE		25	-	-	
	- <i>Droit fiscal</i> - Isabelle RICHELLE GRAULICH - [5h Conf.]		25	-	[+]	

Optional courses within the focus

Choose one of the three following courses :

LANG1936-1	<i>Néerlandais élémentaire 1</i> - Fanny NSITA	Q2	30	-	-	5
LANG1933-1	<i>Allemand élémentaire 1</i> - Apolline DEMARCHE	TA	30	-	-	5
LANG1934-1	<i>Espagnol élémentaire 1</i> - Alexis ALVAREZ BARBOSA	TA	30	-	-	5

Bloc d'aménagement du programme de l'année

Crédits supplémentaires Master en sciences informatiques (destinés aux étudiants n'ayant 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>	Q1				5
	- <i>Partim 1 : Outils d'analyse pour les probabilités</i> - Laurent LOOSVELDT		6	6	-	
	- <i>Partim 2 : Théorie des probabilités</i> - Laurent LOOSVELDT		20	20	-	

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) (120 ECTS)

The following courses must be taken in addition to the programme of the "Master 60 for bachelors in computer science". Among these courses, those belonging to the "bloc 0" are prerequisites of the "Master 60" programme and must necessarily be taken during the first year of the master.

Compulsory courses

MATH0500-1	<i>Introduction à l'algorithmique numérique</i> - [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	[+]	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>	Q1				5
	- <i>Partim 1 : Outils d'analyse pour les probabilités</i> - Laurent LOOSVELDT		6	6	-	
	- <i>Partim 2 : Théorie des probabilités</i> - Laurent LOOSVELDT		20	20	-	
INFO8006-1	<i>Introduction to artificial intelligence</i> (anglais) - Gilles LOUPPE - [45h Proj.]	Q1	25	20	[+]	5

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

Test d'entrée

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