Block view of the study programme

	Or	Th	Pr	Au	Cr

Block 1

Cours obligatoire du tronc commun

| MATH0112-1 | *Preparation for the final thesis* - COLLÉGIALITÉ, JeanPierre SCHNEIDERS | TA | - | - | - | **4** |

> *Notice* : this course can be taken either in block 1 or block 2.

Cours au choix du tronc commun

En accord avec le Jury, choisir des cours non déjà suivis pour un total de 56 crédits dans les listes ci-dessous, un minimum de 44 crédits de la liste Mathématique devant être acquis sur l'ensemble du cycle :

Mathematics

[...]   at least 44 credits from the courses of Mathematics

Other disciplines

[...]   maximum 12 credits from the courses of other disciplines (B1)

> *Notice* : compatibility of the timetable with the courses in the Mathematics list cannot be guaranteed.

Other courses

[...]   a maximum of 10 credits in the curriculum of the University of Liège or another institution (B1)

Block 2

Cours au choix de la finalité

In agreement with the Jury, choose complementary courses not already selected for a total of 30 credits from the study programmes of the ULiege.

[...]   courses for a total of 30 credits

Cours obligatoire du tronc commun

| SMEM0012-1 | *Final thesis* - COLLÉGIALITÉ, JeanPierre SCHNEIDERS | TA | - | - | - | **18** |

Cours au choix du tronc commun

En accord avec le Jury, choisir des cours non déjà suivis pour un total de 12 crédits dans les listes ci-dessous, un minimum de 44 crédits de la liste Mathématique devant être acquis sur l'ensemble du cycle :

Mathematics

[...]   at least 44 credits from the courses of Mathematics

[...]   the remainder of the courses not chosen from the 'Mathematics' list

Other disciplines

> *Notice* : compatibility of the timetable with the courses in the Mathematics list cannot be guaranteed.

[...]   the remainder of the courses not chosen from the 'Other subjects' list

Other courses

[...]   The course programme at the University of Liège or another institution

Bloc d'aménagement du programme de l'année

Additional ECTS Master in mathematics (120 ECTS)

[...]   The update course, worth a maximum of 60 credits, will be determined based on students¿ prior training.

Mathematics

Mathematical analysis

Code	Title					
MATH0074-1	*Theory of distributions* - Françoise BASTIN (Odd years)	Q2	25	15	-	**4**
MATH0257-2	*Complex analysis* - JeanPierre SCHNEIDERS	Q1	30	30	-	**6**
MATH0220-2	*Complements to complex analysis* - JeanPierre SCHNEIDERS - [20h Mon. WS] (Odd years) **Prerequisite :** MATH0257-2 - Analyse complexe **Corequisite :** MATH0074-1 - Théorie des distributions	Q2	30	10	[+]	**8**
MATH0463-1	*Functional analysis* - Céline ESSER - [20h Mon. WS] (Even years)	Q1	30	10	[+]	**8**
MATH0512-1	*Functional spaces and representational families* - Françoise BASTIN, Samuel NICOLAY - [20h Mon. WS] (Even years)	Q1	30	10	[+]	**8**
MATH0513-1	*Functional spaces relating to measurement theory* - Samuel NICOLAY - [20h Mon. WS] (Even years)	Q2	30	10	[+]	**8**
MATH0209-3	*Measure Theory* - Samuel NICOLAY - [20h Mon. WS] (Odd years)	Q1	30	10	[+]	**8**
MATH0082-1	*Research problems in analysis* (english language) - Françoise BASTIN, Céline ESSER, Samuel NICOLAY, JeanPierre SCHNEIDERS - [20h Mon. WS]	TA	30	10	[+]	**10**

Discrete mathematics

Code	Title					
MATH0075-1	*Discrete mathematics* - Manon STIPULANTI (Even years)	Q1	30	20	-	**8**
MATH0076-1	*Discrete mathematics project* - Emilie CHARLIER, Julien LEROY, Michel RIGO, Manon STIPULANTI (Even years) **Corequisite :** MATH0083-1 - Théorie ergodique MATH0075-1 - Mathématiques discrètes	TA	-	-	-	**4**
MATH0083-1	*Ergodic theory* - Julien LEROY (Even years)	Q1	30	20	-	**8**
INFO0212-2	*Algorithmics and computability* - Emilie CHARLIER (Odd years)	Q1	30	20	-	**8**
MATH0470-1	*Combinatorics on words* (english language) - Manon STIPULANTI (Odd years)	Q1	30	20	-	**8**
MATH0077-1	*Project on combinations* - Emilie CHARLIER, Julien LEROY, Michel RIGO, Manon STIPULANTI (Odd years) **Corequisite :** MATH0470-1 - Combinatorics on words INFO0212-2 - Algorithmique et calculabilité	TA	-	-	-	**4**
MATH0078-1	*Research problems in discrete mathematics* - Emilie CHARLIER, Julien LEROY, Michel RIGO, Manon STIPULANTI - [20h Mon. WS] **Corequisite :** MATH0076-1 - Projet de mathématiques discrètes MATH0077-1 - Projet de combinatoire	TA	30	10	[+]	**10**

Probability and statistics

Code	Title					
STAT0725-2	*Bayesian statistics* - Philippe LAMBERT - [20h Mon. WS] (Even years)	Q2	30	10	[+]	**8**
STAT0727-2	*Non-parametric statistics* - Gentiane HAESBROECK - [20h Mon. WS] (Even years)	Q1	30	10	[+]	**8**
MATH2022-1	*Monte Carlo methods in statistics* (english language) - Arnout VAN MESSEM - [40h Proj.] (Even years)	Q2	24	12	[+]	**8**
MATH0514-1	*Stochastic analysis* - Laurent LOOSVELDT - [20h Proj.] (Even years)	Q2	30	10	[+]	**8**
MATH0079-1	*Stochastic process* - Laurent LOOSVELDT - [20h Proj.] (Odd years)	Q2	30	10	[+]	**8**
STAT0078-1	*Practice of statistical consultancy* - Marie ERNST - [20h Mon. WS] (Odd years) **Corequisite :**	Q2	20	-	[+]	**4**

STAT0082-1 - Statistique multivariée
MATH2022-1 - Monte Carlo methods in statistics

Code	Course	Q				ECTS
STAT0082-1	*Statistique multivariée* - Gentiane HAESBROECK - [20h Mon. WS] (Odd years) **Corequisite :** MATH2021-1 - High-dimensional statistics	Q1	30	10	[+]	8
INFO2048-1	*Business Analytics* (english language) - Michael SCHYNS	Q2	30	-	-	5
ELEN0062-1	*Introduction to machine learning* (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	8
MATH0084-1	*Research problems in probability and statistics* (english language) - Céline ESSER, Gentiane HAESBROECK, Laurent LOOSVELDT, Arnout VAN MESSEM - [20h Mon. WS]	TA	30	10	[+]	10

Other fields

Code	Course	Q				ECTS
MATH0017-3	*Mathematical Logic and Set Theory* - Julien LEROY - [20h Mon. WS]	Q2	30	10	[+]	8
MATH0212-2	*General topology* - Céline ESSER - [10h Mon. WS]	Q2	30	20	[+]	6
MATH0465-1	*Algebraic Topology* - JeanPierre SCHNEIDERS - [20h Mon. WS] (Even years)	Q2	30	10	[+]	8
MATH0464-1	*Differential geometry II* - Pierre MATHONET - [20h Mon. WS] (Even years)	Q1	30	10	[+]	8
MATH0489-1	*Lie algebra* - Pierre MATHONET - [20h Mon. WS]	Q2	30	10	[+]	8
MATH2483-1	*History of mathematics* - Kevin BALHAN, Pierre MATHONET, Naïm ZENAÏDI	Q2	25	20	-	4
PHYS0999-1	*Digital creation in sciences* - Roland BILLEN, Valentin FISCHER, Pierre MATHONET, JeanChristophe MONBALIU, Eric PARMENTIER, Nicolas VANDEWALLE - [30h Proj.]	TA	10	-	[+]	4

Other disciplines

Code	Course	Q				ECTS
SSTG2037-1	*Internship in a company* - COLLÉGIALITÉ, Michel RIGO - [120h Proj.]	TA	-	-	[+]	10

Computer science

Code	Course	Q				ECTS
INFO2009-2	*Introduction to computer science* - Bernard BOIGELOT	Q1	24	14	-	4
INFO0061-4	*Computers organization* - Bernard BOIGELOT	Q2	15	15	-	3
INFO0009-2	*Database (general organisation)* - Christophe DEBRUYNE - [25h Proj.]	Q2	26	26	[+]	6
INFO0902-1	*Data structures and algorithms* - Pierre GEURTS - [40h Proj.]	Q2	26	20	[+]	6
INFO0027-2	*Programming techniques* (english language) - *Algorithmics* - Laurent MATHY - [40h Proj.] - *Software patterns* - Laurent MATHY - [30h Proj.]	Q2 	 14 10	 14 10	 [+] [+]	6
INFO0054-1	*Functional programming* - Christophe DEBRUYNE - [20h Proj.]	Q1	24	24	[+]	6
INFO0062-1	*Object-oriented programming* (english language) - Bernard BOIGELOT - [20h Proj.]	Q2	25	20	[+]	5
INFO0085-1	*Compilers* (english language) - Pascal FONTAINE - [75h Proj.]	Q2	25	-	[+]	6
MATH0462-1	*Discrete optimization* (english language) - Quentin LOUVEAUX - [25h Proj.]	Q2	30	20	[+]	6
INFO8006-1	*Introduction to artificial intelligence* (english language) - Gilles LOUPPE - [45h Proj.]	Q1	25	20	[+]	6
MATH0461-2	*Introduction to numerical optimization* (english language) - Quentin LOUVEAUX - [25h Proj.]	Q1	30	20	[+]	6

Astrophysics and astronomy

Code	Course	Q				ECTS
ASTR0204-2	*Astrophysics and geophysics* - MarcAntoine DUPRET, Valérie VAN GROOTEL	Q1	30	30	-	8
SPAT0012-1	*General relativity* (english language) - Guillaume MAHLER	Q1	30	10	-	4
SPAT0044-1	*Stellar structure and evolution I* (english language) - MarcAntoine DUPRET	Q1	35	-	-	4

SPAT0045-1	*Stellar structure and evolution II* (english language) - MarcAntoine DUPRET	Q2	20	20	-	**4**

Finance and management

GEST0832-4	*Financial Markets* - Georges HÜBNER	Q2	40	15	-	**5**
FINA0053-1	*Investments and Portfolio Management* (english language) - Georges HÜBNER **Corequisite :** GEST0832-4 - Marchés financiers	Q2	30	-	-	**5**
MQGE0001-6	*Operations Research* (english language) - Jérôme DE BOECK	Q1	45	-	-	**5**
LOGI0010-1	*Supply Chain Management* (english language) - Yasemin ARDA **Corequisite :** MQGE0001-6 - Operations Research	Q2	45	-	-	**5**
MQGE0007-1	*Financial Mathematics and Stochastic Calculus* (english language) - Elise VANDOMME **Corequisite :** GEST0832-4 - Marchés financiers	Q2	30	-	-	**5**
LOGI0012-1	*Logistics and Transportation* (english language) - Sabine LIMBOURG	Q2	30	-	-	**5**
LOGI0013-1	*Operation Planning* (english language) - Yasemin ARDA **Corequisite :** LOGI0010-1 - Supply Chain Management	Q2	30	-	-	**5**
FINA0052-1	*Financial Derivatives* (english language) - Julien HAMBUCKERS **Corequisite :** GEST0832-4 - Marchés financiers	Q2	30	-	-	**5**
FINA0064-1	*Financial Risk Modeling* (english language) - Julien HAMBUCKERS **Corequisite :** MQGE0007-1 - Financial Mathematics and Stochastic Calculus FINA0053-1 - Investments and Portfolio Management	Q1	30	-	-	**5**
FINA0051-1	*Banking and Insurance* (english language) - Fabien BONIVER, Georges HÜBNER **Corequisite :** GEST0832-4 - Marchés financiers	Q2	30	-	-	**5**

Physics

PHYS0212-2	*Statistical physics* - Nicolas VANDEWALLE	Q2	30	30	-	**8**
PHYS0205-2	*Complement of physical statistics* - Nicolas VANDEWALLE - [20h Mon. WS]	Q2	30	10	[+]	**8**
PHYS3033-1	*Quantum physics I* - Thierry BASTIN	Q1	35	25	-	**8**
PHYS3034-1	*Quantum physics II* - Thierry BASTIN	Q2	20	10	-	**4**