

Cycle view of the study programme

B1 Or Th Pr Au Cr

Core curriculum compulsory courses (B1 : 4Cr, B2 : 18Cr)

MATH0112-1	<i>Preparation for the final thesis</i> - Emilie CHARLIER, COLLÉGIALITÉ	B1	TA	-	-	-	4
<i>Notice</i> : this course can be taken either in block 1 or block 2.							
SMEM0012-1	<i>Final thesis</i> - Emilie CHARLIER, COLLÉGIALITÉ	B2	TA	-	-	-	18

Common core courses (B1 : 56Cr, B2 : 12Cr)

In agreement with the Jury, choose courses not already taken for a total of 68 credits from the lists below, a minimum of 44 credits from the Mathematical list to be acquired throughout the cycle: (B1 : 56Cr, B2 : 12Cr)

Mathematics

- [...] at least 44 credits from the courses of Mathematics
- [...] the remainder of the courses not chosen from the 'Mathematics' list

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

Other courses

- [...] a maximum of 10 credits in the curriculum of the University of Liège or another institution (B1)
- [...] The course programme at the University of Liège or another institution

Mathematics

Mathematical analysis

MATH0074-1	<i>Theory of distributions</i> - Françoise BASTIN (Odd years)	-	Q1	25	15	-	4
MATH0257-2	<i>Complex analysis</i> - N...	-	Q1	30	30	-	6
MATH0463-1	<i>Functional analysis</i> - Céline ESSER - [20h Mon. WS]	-	Q1	30	10	[+]	8
MATH0512-1	<i>Functional spaces and representational families</i> - Françoise BASTIN, Samuel NICOLAY - [20h Mon. WS] (Even years)	-	Q1	30	10	[+]	8
MATH0513-1	<i>Functional spaces relating to measurement theory</i> - Samuel NICOLAY - [20h Mon. WS] (Even years)	-	Q2	30	10	[+]	8
MATH0209-3	<i>Measure Theory</i> - Samuel NICOLAY - [20h Mon. WS] (Odd years)	-	Q1	30	10	[+]	8
MATH0082-1	<i>Research problems in analysis</i> (english language) - Françoise BASTIN, Céline ESSER, N..., Samuel NICOLAY - [20h Mon. WS]	-	TA	30	10	[+]	10

Discrete mathematics

MATH0075-1	<i>Discrete mathematics</i> - Manon STIPULANTI (Even years)	-	Q1	30	20	-	8
MATH0076-1	<i>Discrete mathematics project</i> - Emilie CHARLIER, Julien LEROY, Michel RIGO, Manon STIPULANTI (Even years)	-	TA	-	-	-	4
Corequisite :							
MATH0083-1 - Théorie ergodique							
MATH0075-1 - Mathématiques discrètes							
MATH0083-1	<i>Ergodic theory</i> - Julien LEROY (Even years)	-	Q1	30	20	-	8
INFO0212-2	<i>Algorithmics and computability</i> - Emilie CHARLIER (Odd years)	-	Q1	30	20	-	8
MATH0470-1	<i>Combinatorics on words</i> (english language) - Manon STIPULANTI (Odd years)	-	Q1	30	20	-	8
MATH0077-1	<i>Project on combinations</i> - Emilie CHARLIER, Julien LEROY, Michel RIGO, Manon STIPULANTI (Odd years)	-	TA	-	-	-	4

Corequisite :

MATH0470-1 - Combinatorics on words

INFO0212-2 - Algorithmique et calculabilité

 MATH0078-1 *Research problems in discrete mathematics* - Emilie CHARLIER, Julien LEROY, Michel RIGO, Manon STIPULANTI - [20h Mon. WS] - TA 30 10 [+] **10**
Corequisite :

MATH0076-1 - Projet de mathématiques discrètes

MATH0077-1 - Projet de combinatoire

Probability and statistics

 STAT0725-2 *Bayesian statistics* - [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) - Q2 20 - [+] **4**
Corequisite :

STAT0082-1 - Statistique multivariée

MATH2022-1 - Monte Carlo methods in statistics

 STAT0082-1 *Multivariate statistics* - Gentiane HAESBROECK - [20h Mon. WS] (Odd years) - Q1 30 10 [+] **8**
Corequisite :

MATH2021-1 - High-dimensional statistics

 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

 MATH0017-3 *Mathematical Logic and Set Theory* - Julien LEROY - [20h Mon. WS] (Odd years) - Q2 30 10 [+] **8**

 MATH0212-2 *General topology* - Céline ESSER - [10h Mon. WS] - Q2 30 20 [+] **6**

 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, Part 1: History of mathematics* - Kevin BALHAN, Pierre MATHONET, Naïm ZENAÏDI - Q2 25 20 - **4**
Other disciplines

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

 PHYS0999-1 *Digital creation in sciences* - Roland BILLEN, Valentin FISCHER, JeanChristophe MONBALIU, Eric PARMENTIER, Michel RIGO, Nicolas VANDEWALLE - [30h Proj.] - TA 10 - [+] **4**
Computer science

 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	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	-	Q2	26	20	[+]	6
INFO0027-2	<i>Programming techniques</i> (english language) - <i>Algorithmics</i> - Laurent MATHY - [40h Proj.] - <i>Software patterns</i> - Laurent MATHY - [30h Proj.]	-	Q2	14 14 10	14 14 10	[+] [+]	6
INFO0054-1	<i>Functional programming</i> - Christophe DEBRUYNE - [20h Proj.]	-	Q1	24	24	[+]	6
INFO0062-1	<i>Object-oriented programming</i> (english language) - Bernard BOIGELOT - [20h Proj.]	-	Q2	25	20	[+]	5
INFO0085-1	<i>Compilers</i> (english language) - Pascal FONTAINE - [75h Proj.]	-	Q2	25	-	[+]	6
MATH0462-1	<i>Discrete optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	-	Q2	30	20	[+]	6
INFO8006-1	<i>Introduction to artificial intelligence</i> (english language) - Gilles LOUPPE - [45h Proj.]	-	Q1	25	20	[+]	6
MATH0461-2	<i>Introduction to numerical optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	-	Q1	30	20	[+]	6
Astrophysics and astronomy							
ASTR0204-2	<i>Astrophysics and geophysics</i> - MarcAntoine DUPRET, Valérie VAN GROOTEL	-	Q1	30	30	-	8
SPAT0012-1	<i>General relativity</i> (english language) - Guillaume MAHLER	-	Q1	30	10	-	4
SPAT0044-1	<i>Stellar structure and evolution I</i> (english language) - MarcAntoine DUPRET	-	Q1	35	-	-	4
SPAT0045-1	<i>Stellar structure and evolution II</i> (english language) - MarcAntoine DUPRET	-	Q2	20	20	-	4
Finance and management							
GEST0832-4	<i>Financial Markets</i> - Georges HÜBNER	-	Q2	40	15	-	5
FINA0053-1	<i>Investments and Portfolio Management</i> (english language) - Georges HÜBNER, Patrick SCHWARZ Corequisite : GEST0832-4 - Marchés financiers	-	Q2	30	-	-	5
MQGE0001-6	<i>Operations Research</i> (english language) - Jérôme DE BOECK	-	Q1	45	-	-	5
LOGI0010-1	<i>Supply Chain Management</i> (english language) - Yasemin ARDA Corequisite : MQGE0001-6 - Operations Research	-	Q2	45	-	-	5
MQGE0007-1	<i>Financial Mathematics and Stochastic Calculus</i> (english language) - Elise VANDOMME Corequisite : GEST0832-4 - Marchés financiers	-	Q2	30	-	-	5
LOGI0012-1	<i>Logistics and Transportation</i> (english language) - Sabine LIMBOURG	-	Q2	30	-	-	5
LOGI0013-1	<i>Operations Planning</i> (english language) - Yasemin ARDA Corequisite : LOGI0010-1 - Supply Chain Management	-	Q2	30	-	-	5
FINA0052-1	<i>Financial Derivatives</i> (english language) - Patrick SCHWARZ Corequisite : GEST0832-4 - Marchés financiers	-	Q2	30	-	-	5
FINA0064-1	<i>Financial Risk Modeling</i> (english language) - Julien HAMBUECKERS Corequisite : MQGE0007-1 - Financial Mathematics and Stochastic Calculus FINA0053-1 - Investments and Portfolio Management	-	Q1	30	-	-	5
FINA0051-1	<i>Banking and Insurance</i> (english language) - Fabien BONIVER, Georges HÜBNER	-	Q2	30	-	-	5

Corequisite :

GEST0832-4 - Marchés financiers

Physics

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

Only accessible to students enrolled in the Master's programme before the 2025-2026 academic year.

Focus compulsory courses (B2 : 30Cr)

AESS0246-1	<i>Analysis of scholastic institutions and educational policies</i>	B2	Q2	15	-	-	1
AESS0248-1	<i>Elements of sociology of education</i> - JeanFrançois GUILLAUME	B2	Q2	10	-	-	1
AESS0140-1	<i>Professional ethics and training to neutrality and citizenship</i> - Anne HERLA	B2	Q2	25	-	-	2
AESS0202-1	<i>General didactics: course and exercises ; observation placements ; reflexive practices</i> - Margaux NOIZET - [10h Internship]	B2	TA	30	10	[+]	4
AESS0004-1	<i>Media education</i>	B2	Q2	15	-	-	1
AESS0249-1	<i>Interdisciplinary seminar</i>	B2	Q2	15	-	-	1
AESS0143-1	<i>Educational Psychology of adolescents and young adults</i>	B2	Q1	15	-	-	2
AESS0339-1	<i>Understand and manage the diversity of public schools</i>	B2	TA	10	15	-	3
AESS1214-1	<i>Special didactics in mathematics : course and exercises (1st part)</i> - Kevin BALHAN	B2	TA	40	-	-	3
AESS1215-1	<i>Special didactics in mathematics : placements (1st part)</i> - <i>Observation placements</i> - Kevin BALHAN - [10h Internship] - <i>Teaching placements</i> - Kevin BALHAN - [20h Internship] - <i>Reflexive practical work</i> - Kevin BALHAN	B2	TA			[+] [+] 5 -	3
AESS2214-1	<i>Special didactics in mathematics : course and exercises (2nd part)</i> - Kevin BALHAN	B2	TA	35	-	-	4
AESS2215-1	<i>Special didactics in mathematics : placements (2nd part)</i> - <i>Teaching placements</i> - Kevin BALHAN - [20h Internship] - <i>Reflexive practical work</i> - Kevin BALHAN - <i>Extra-scholar teaching activities</i> - Kevin BALHAN	B2	TA			[+] 5 - 10 -	5

Bridging courses Master in mathematics (120 credits)

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