

## Cycle view of the study programme

B1 Or Th Pr Au Cr

### Compulsory courses (B1 : 4Cr, B2 : 22Cr)

MATH0483-2	<i>History of mathematics</i> - Georges HANSOUL - [20h Mon. WS]	B1	Q2	20	-	[+]	4
SMEM0012-1	<i>Final thesis</i> - COLLÉGIALITÉ	B2	TA	-	-	-	22

### Optional courses (B1 : 56Cr, B2 : 38Cr)

With the approval of the Jury, choose courses totaling 64 ECTS from the first list below, and possibly, from the courses programme of other masters : (B1 : 56Cr, B2 : 8Cr)

#### First list

- [...] At least 32 credits
- [...] Courses totalling maximum 8 credits

#### The second list

- [...] 24 ECTS maximum
- [...] Courses totalling maximum 8 credits

#### Programme of courses for other masters degrees

- [...] Courses totalling maximum 8 credits
- [...] Courses totalling maximum 8 credits

#### First list :

MATH0463-1	<i>Functional Analysis I</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0209-3	<i>Measure Theory</i> - Samuel NICOLAY - [20h Mon. WS]	B1	Q1	30	10	[+]	8
INFO0213-2	<i>Automata and formal languages theory</i> - Michel RIGO - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0220-2	<i>Functions of complex variables</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0464-1	<i>Differential geometry II</i> - Pierre LECOMTE - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0017-3	<i>Mathematical Logic and Set Theory</i> - Georges HANSOUL - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0465-1	<i>Algebraic Topology</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0065-1	<i>Probability and statistics IV</i> (english language) - Yvik SWAN - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0489-1	<i>Lie algebra</i> - Pierre MATHONET - [20h Mon. WS]	B1	Q2	30	10	[+]	8

#### The second list

STAT0723-2	<i>Linear models</i> - - Suppl : Catherine TIMMERMANS - [20h Mon. WS]	B1	Q2	30	10	[+]	8
STAT0201-3	<i>Multivariate statistics</i> - Gentiane HAESBROECK - [20h Mon. WS]	B1	Q1	30	10	[+]	8
STAT0725-2	<i>Bayesian statistics</i> - Philippe LAMBERT - [20h Mon. WS]	B1	Q2	30	10	[+]	8
INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	B1	Q2	30	20	[+]	8
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	B1	Q2	30	25	[+]	8
ASTR0201-3	<i>Astronomy</i> - MarcAntoine DUPRET - [20h Mon. WS]	B1	Q1	30	10	[+]	8
PHYS0243-2	<i>Quantum Physics I</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q1	30	10	[+]	8
PHYS0203-2	<i>Statistical physics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	8
SPAT0012-1	<i>General relativity, Part 1: Introduction</i> - Yves DE ROP	B1	Q1	20	-	-	2
SPAT0012-2	<i>General relativity, Part 2: Mathematics methods</i> - Yves DE ROP	B1	Q1	20	-	-	3

# Study programmes 2015-2016

## Faculty of Sciences

### Master in mathematics (120 ECTS)

**Corequisite :**

SPAT0012-1 - Relativité générale

SPAT0012-3	<i>General relativity, Part 3: supplement</i> - Yves DE ROP	B1	Q2	20	-	-	<b>3</b>
	<b>Corequisite :</b> SPAT0012-2 - Relativité générale						
SPAT0044-1	<i>Stellar Structure and evolution I</i> - MarcAntoine DUPRET	B1	Q1	20	20	-	<b>4</b>
SPAT0045-1	<i>Stellar structure and evolution II</i> - MarcAntoine DUPRET	B1	Q2	20	20	-	<b>4</b>
MECA0203-3	<i>Continuum Mechanics</i> - Pierre DAUBY - [20h Mon. WS]	B1	Q1	30	10	[+]	<b>8</b>
PHYS0204-3	<i>Complement of quantum Physics 2</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>
PHYS0205-2	<i>Complement of physical statistics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>

**Choose one focus from the following : (B2 : 1Nbr)**

**Research Focus (B2 : 30Cr)**

MATH0466-1	<i>Seminars</i> - COLLÉGIALITÉ - [75h SEM]	B2	TA	-	-	[+]	<b>12</b>
SMEM0037-1	<i>Final thesis complement</i> - COLLÉGIALITÉ	B2	TA	-	-	-	<b>8</b>

Choose, in accordance with the Jury, 1 course among : (B2 : 1Nbr)

MATH0467-1	<i>Functional Analysis II</i> - Françoise BASTIN - [20h Mon. WS]	B2	Q2	30	10	[+]	<b>10</b>
	<b>Prerequisite :</b> MATH0463-1 - Analyse fonctionnelle I						
MATH0468-1	<i>Algebraic Analysis</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B2	Q2	30	10	[+]	<b>10</b>
MATH0061-1	<i>Complement of studies in the theory of measurement</i> - Samuel NICOLAY - [20h Mon. WS]	B2	Q2	30	10	[+]	<b>10</b>
	<b>Prerequisite :</b> MATH0209-3 - Théorie de la mesure						
MATH0490-1	<i>Questions of differential geometry</i> - Pierre MATHONET - [20h Mon. WS]	B2	Q1	30	10	[+]	<b>10</b>
	<b>Prerequisite :</b> MATH0489-1 - Algèbres de Lie MATH0464-1 - Géométrie différentielle II						
MATH0234-2	<i>Boolean Topology and Boolean Algebra</i> - Georges HANSOUL - [20h Mon. WS]	B2	Q2	30	10	[+]	<b>10</b>
MATH0470-1	<i>Combinatorics on words</i> - Michel RIGO - [20h Mon. WS]	B2	Q1	30	10	[+]	<b>10</b>

**Teaching focus (B2 : 30Cr)**

AESS0246-1	<i>Analysis of scholastic institutions and key-players, educational policies</i> - Dominique LAFONTAINE - Suppl : MarieThérèse DELHOUNE	B2	Q1	15	-	-	<b>1</b>
AESS0248-1	<i>Elements of sociology of education</i> - JeanFrançois GUILLAUME	B2	Q2	10	-	-	<b>1</b>
AESS0140-1	<i>Professional ethics and training to neutrality and citizenship</i> - Anne HERLA	B2	Q2	25	-	-	<b>2</b>
AESS0202-1	<i>General didactics: course and exercises ; observation placements ; reflexive practices</i> - Annick FAGNANT - [10h Internship]	B2	TA	30	10	[+]	<b>4</b>
AESS0004-1	<i>Media education</i> - Jérémy HAMERS	B2	Q1	15	-	-	<b>1</b>
AESS0249-1	<i>Interdisciplinary seminar</i> - Annick FAGNANT	B2	Q2	15	-	-	<b>1</b>
AESS0143-1	<i>Educational Psychology of adolescents and young adults</i> - Annick FAGNANT	B2	Q1	15	-	-	<b>2</b>
AESS0339-1	<i>Understand and manage the diversity of public schools</i> - Ariane BAYE	B2	Q2	10	15	-	<b>3</b>

# Study programmes 2015-2016

## Faculty of Sciences

### Master in mathematics (120 ECTS)

AESS1214-1	<i>Special didactics in mathematics : course and exercises (1st part)</i> - Marguerite GILOT	B2	TA	40	-	-	<b>3</b>
AESS1215-1	<i>Special didactics in mathematics : placements (1st part)</i> - <i>Observation placements</i> - Marguerite GILOT - [10h Internship] - <i>Teaching placements</i> - Marguerite GILOT - [20h Internship] - <i>Reflexive practical work</i> - Marguerite GILOT	B2	TA		-	-	<b>3</b>
						[+]	
						[+]	
					5	-	
AESS2214-1	<i>Special didactics in mathematics : course and exercises (2nd part)</i> - Marguerite GILOT	B2	TA	35	-	-	<b>4</b>
AESS2215-1	<i>Special didactics in mathematics : placements (2nd part)</i> - <i>Teaching placements</i> - Marguerite GILOT - [20h Internship] - <i>Reflexive practical work</i> - Marguerite GILOT - <i>Extra-scholar teaching activities</i> - Marguerite GILOT	B2	TA		-	-	<b>5</b>
						[+]	
					5	-	
					10	-	

#### Professional focus in management (B2 : 30Cr)

GEST0832-4	<i>Financial Markets</i> - Georges HÜBNER, Danielle SOUGNÉ	B2	Q1	40	15	-	<b>5</b>
MATH1222-3	<i>Introduction to stochastic processes, Markov chains</i> - Pierre GEURTS, Yvik SWAN - [10h Mon. WS]	B2	Q2	20	10	[+]	<b>4</b>
FINA0053-1	<i>Investments and Portfolio Management</i> (english language) - Georges HÜBNER	B2	Q2	30	-	-	<b>5</b>
MQGE0001-6	<i>Operations Research</i> (english language) - Yves CRAMA	B2	Q1	45	-	-	<b>6</b>

Choose 2 courses, with the approval of the Jury, among : (B2 : 2Nbr)

LOGI0010-1	<i>Supply Chain Management</i> (english language) - Yasemin ARDA	B2	Q2	45	-	-	<b>5</b>
MQGE0002-3	<i>Computational Optimization</i> (english language) - Yves CRAMA	B2	Q2	30	-	-	<b>5</b>
MQGE0007-1	<i>Financial Mathematics and Stochastic Calculus</i> (english language) - Louis ESCH	B2	Q2	30	-	-	<b>5</b>

#### Professional focus in computer (B2 : 30Cr)

INFO0062-1	<i>Object-oriented programming</i> (english language) - Bernard BOIGELOT - [20h Proj.]	B2	Q2	30	24	[+]	<b>6</b>
INFO0009-1	<i>Database (general organisation)</i> - Pierre WOLPER - [25h Proj.]	B2	Q2	30	25	[+]	<b>6</b>

Choose 3 courses, with the approval of the Jury, among : (B2 : 3Nbr)

The courses INFO0902-1 and INFO0054-1 must be taken first.

INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	B2	Q2	30	20	[+]	<b>6</b>
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	B2	Q2	30	25	[+]	<b>6</b>

If the INFO0902-1 and/or INFO0054-1 courses have already been followed, choose, with the approval of the Jury, 1, 2 or 3 courses from the following :

ELEN0040-1	<i>Digital electronics</i> (english language) - Michael KRAFT	B2	Q2	30	30	-	<b>6</b>
INFO0085-1	<i>Compilers</i> - Pierre GEURTS - [75h Proj.]	B2	Q2	25	-	[+]	<b>6</b>
INFO0027-2	<i>Programming techniques</i> (english language) - Laurent MATHY - [70h Proj.]	B2	Q2	30	24	[+]	<b>6</b>
MATH0462-1	<i>Discrete optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	B2	Q1	30	20	[+]	<b>6</b>
SYST0002-2	<i>Modelling and analysis of systems</i> - Guillaume DRION - [15h Proj.]	B2	Q1	30	30	[+]	<b>6</b>
INFO0049-1	<i>Knowledge representation</i> (english language) - Pascal GRIBOMONT - [50h Proj.]	B2	Q2	30	25	[+]	<b>6</b>

#### Professional focus in Statistics (B2 : 30Cr)

STAT0727-2 *Non-parametric statistics* - N... - [20h Mon. WS] B2 Q2 30 10 [+] 6

Choose 3 courses, with the approval of the Jury, among : (B2 : 3Nbr)

The courses STAT0723-2, STAT0201-3 and STAT0725-2 must be taken first.

STAT0723-2 *Linear models* - - Suppl : Catherine TIMMERMANS - [20h Mon. WS] B2 Q2 30 10 [+] 8

STAT0201-3 *Multivariate statistics* - Gentiane HAESBROECK - [20h Mon. WS] B2 Q1 30 10 [+] 8

STAT0725-2 *Bayesian statistics* - Philippe LAMBERT - [20h Mon. WS] B2 Q2 30 10 [+] 8

If the courses STAT0723-2, STAT0201-3 and/or STAT0725-2 have already taken, choose, with the agreement of the Jury, 1, 2 or 3 courses from the following :

MATH0065-1 *Probability and statistics IV* (english language) - Yvik SWAN - [20h Mon. WS] B2 Q2 30 10 [+] 8

MATH1222-4 *Introduction to stochastic processes*  
- *Markov chains* - Pierre GEURTS, Yvik SWAN - [10h Mon. WS] B2 Q2 20 10 [+] 8  
- *Markov process* - Yvik SWAN - [20h Mon. WS] 10 - [+]

ELEN0062-1 *Applied Inductive Learning* (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.] B2 Q1 30 5 [+] 8

#### Optional free course (B1 : 2Cr)

AESS0252-1 *Introduction to mathematics didactics* - Marguerite GILOT B1 Q1 10 10 - 2

## Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en sciences mathématiques, à finalité spécialisée en statistique" en 2014-2015

#### Optional courses (B1 : 30Cr)

##### Follow-up to the focus chosen in first year (B1 : 30Cr)

##### Professional focus in Statistics (B1 : 30Cr)

STAT0727-2 *Non-parametric statistics* - N... - [20h Mon. WS] B1 Q2 30 10 [+] 6

With the agreement of the Jury, choose 3 courses among : (B1 : 3Nbr)

The courses STAT0723-2, STAT0201-3 and STAT0725-2 must be taken first.

STAT0723-2 *Linear models* - - Suppl : Catherine TIMMERMANS - [20h Mon. WS] B1 Q2 30 10 [+] 8

STAT0201-3 *Multivariate statistics* - Gentiane HAESBROECK - [20h Mon. WS] B1 Q1 30 10 [+] 8

STAT0725-2 *Bayesian statistics* - Philippe LAMBERT - [20h Mon. WS] B1 Q2 30 10 [+] 8

If the courses STAT0723-2, STAT0201-3 and/or STAT0725-2 have already taken, choose, with the agreement of the Jury, 1, 2 or 3 courses from the following :

MATH0065-1 *Probability and statistics IV* (english language) - Yvik SWAN - [20h Mon. WS] B1 Q2 30 10 [+] 8

MATH1222-4 *Introduction to stochastic processes*  
- *Markov chains* - Pierre GEURTS, Yvik SWAN - [10h Mon. WS] B1 Q2 20 10 [+] 8  
- *Markov process* - Yvik SWAN - [20h Mon. WS] 10 - [+]

# Study programmes 2015-2016

## Faculty of Sciences

### Master in mathematics (120 ECTS)

ELEN0062-1 *Applied Inductive Learning (english language)* - Pierre GEURTS, Louis WEHENKEL - [40h Proj.] B1 Q1 30 5 [+] 8

#### Compulsory courses (B1 : 30Cr)

SMEM0012-1 *Final thesis* - COLLÉGIALITÉ B1 TA - - - 22

#### Optional courses (B1 : 8Cr)

Choose one (several) course(s), with the approval of the Jury, totalling 8 credits among : (B1 : 8Cr)

- [...] Maximum 8 credits of courses not taken in the 1st year in the first list
- [...] Maximum 8 credits of courses not taken in the 1st year in the second list
- [...] Maximum 8 credits in others master courses programme

#### First list

MATH0463-1 *Functional Analysis I* - JeanPierre SCHNEIDERS - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 MATH0209-3 *Measure Theory* - Samuel NICOLAY - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 INFO0213-2 *Automata and formal languages theory* - Michel RIGO - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 MATH0220-2 *Functions of complex variables* - JeanPierre SCHNEIDERS - [20h Mon. WS] B1 Q2 30 10 [+] 8  
 MATH0464-1 *Differential geometry II* - Pierre LECOMTE - [20h Mon. WS] B1 Q2 30 10 [+] 8  
 MATH0017-3 *Mathematical Logic and Set Theory* - Georges HANSOUL - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 MATH0465-1 *Algebraic Topology* - JeanPierre SCHNEIDERS - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 MATH0065-1 *Probability and statistics IV (english language)* - Yvik SWAN - [20h Mon. WS] B1 Q2 30 10 [+] 8  
 MATH0489-1 *Lie algebra* - Pierre MATHONET - [20h Mon. WS] B1 Q2 30 10 [+] 8

#### The second list

STAT0723-2 *Linear models* - - Suppl : Catherine TIMMERMANS - [20h Mon. WS] B1 Q2 30 10 [+] 8  
 STAT0201-3 *Multivariate statistics* - Gentiane HAESBROECK - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 STAT0725-2 *Bayesian statistics* - Philippe LAMBERT - [20h Mon. WS] B1 Q2 30 10 [+] 8  
 INFO0902-1 *Data structures and algorithms* - Pierre GEURTS - [40h Proj.] B1 Q2 30 20 [+] 8  
 INFO0054-1 *Functional programming* - Pascal GRIBOMONT - [15h Proj.] B1 Q2 30 25 [+] 8  
 ASTR0201-3 *Astronomy* - MarcAntoine DUPRET - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 PHYS0243-2 *Quantum Physics I* - Thierry BASTIN - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 PHYS0203-2 *Statistical physics* - Nicolas VANDEWALLE - [20h Mon. WS] B1 Q2 30 10 [+] 8  
 SPAT0012-1 *General relativity, Part 1: Introduction* - Yves DE ROP B1 Q1 20 - - 2  
 SPAT0012-2 *General relativity, Part 2: Mathematics methods* - Yves DE ROP B1 Q1 20 - - 3  
 SPAT0012-3 *General relativity, Part 3: supplement* - Yves DE ROP B1 Q2 20 - - 3  
 SPAT0044-1 *Stellar Structure and evolution I* - MarcAntoine DUPRET B1 Q1 20 20 - 4  
 SPAT0045-1 *Stellar structure and evolution II* - MarcAntoine DUPRET B1 Q2 20 20 - 4  
 MECA0203-3 *Continuum Mechanics* - Pierre DAUBY - [20h Mon. WS] B1 Q1 30 10 [+] 8  
 PHYS0204-3 *Complement of quantum Physics 2* - Thierry BASTIN - [20h Mon. WS] B1 Q2 30 10 [+] 8  
 PHYS0205-2 *Complement of physical statistics* - Nicolas VANDEWALLE - [20h Mon. WS] B1 Q2 30 10 [+] 8

### Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en sciences mathématiques, à finalité spécialisée en informatique" en

## 2014-2015

### Optional courses (B1 : 30Cr)

#### Follow-up to the focus chosen in first year (B1 : 30Cr)

##### Professional focus in computer

INFO0062-1 *Object-oriented programming* (english language) - Bernard BOIGELOT - [20h Proj.] B1 Q2 30 24 [+] 6

INFO0009-1 *Database (general organisation)* - Pierre WOLPER - [25h Proj.] B1 Q2 30 25 [+] 6

With the agreement of the Jury, choose 3 courses among : (B1 : 3Nbr)

The courses INFO0902-1 and INFO0054-1 must be taken first.

INFO0902-1 *Data structures and algorithms* - Pierre GEURTS - [40h Proj.] B1 Q2 30 20 [+] 6

INFO0054-1 *Functional programming* - Pascal GRIBOMONT - [15h Proj.] B1 Q2 30 25 [+] 6

If the INFO0902-1 and/or INFO0054-1 courses have already been followed, choose, with the approval of the Jury, 1, 2 or 3 courses from the following :

ELEN0040-1 *Digital electronics* (english language) - Michael KRAFT B1 Q2 30 30 - 6

INFO0085-1 *Compilers* - Pierre GEURTS - [75h Proj.] B1 Q2 25 - [+] 6

INFO0027-2 *Programming techniques* (english language) - Laurent MATHY - [70h Proj.] B1 Q2 30 24 [+] 6

MATH0462-1 *Discrete optimization* (english language) - Quentin LOUVEAUX - [25h Proj.] B1 Q1 30 20 [+] 6

SYST0002-2 *Modelling and analysis of systems* - Guillaume DRION - [15h Proj.] B1 Q1 30 30 [+] 6

INFO0049-1 *Knowledge representation* (english language) - Pascal GRIBOMONT - [50h Proj.] B1 Q2 30 25 [+] 6

### Compulsory courses (B1 : 30Cr)

SMEM0012-1 *Final thesis* - COLLÉGIALITÉ B1 TA - - - 22

### Optional courses (B1 : 8Cr)

Choose one (several) course(s), with the approval of the Jury, totalling 8 credits among : (B1 : 8Cr)

[...] Maximum 8 credits of courses not taken in the 1st year in the first list

[...] Maximum 8 credits of courses not taken in the 1st year in the second list

[...] Maximum 8 credits in others master courses programme

#### First list

MATH0463-1 *Functional Analysis I* - JeanPierre SCHNEIDERS - [20h Mon. WS] B1 Q1 30 10 [+] 8

MATH0209-3 *Measure Theory* - Samuel NICOLAY - [20h Mon. WS] B1 Q1 30 10 [+] 8

INFO0213-2 *Automata and formal languages theory* - Michel RIGO - [20h Mon. WS] B1 Q1 30 10 [+] 8

MATH0220-2 *Functions of complex variables* - JeanPierre SCHNEIDERS - [20h Mon. WS] B1 Q2 30 10 [+] 8

MATH0464-1 *Differential geometry II* - Pierre LECOMTE - [20h Mon. WS] B1 Q2 30 10 [+] 8

MATH0017-3 *Mathematical Logic and Set Theory* - Georges HANSOUL - [20h Mon. WS] B1 Q1 30 10 [+] 8

MATH0465-1 *Algebraic Topology* - JeanPierre SCHNEIDERS - [20h Mon. WS] B1 Q1 30 10 [+] 8

MATH0065-1	<i>Probability and statistics IV</i> (english language) - Yvik SWAN - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>
MATH0489-1	<i>Lie algebra</i> - Pierre MATHONET - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>
<b>The second list</b>							
STAT0723-2	<i>Linear models</i> - - Suppl : Catherine TIMMERMANS - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>
STAT0201-3	<i>Multivariate statistics</i> - Gentiane HAESBROECK - [20h Mon. WS]	B1	Q1	30	10	[+]	<b>8</b>
STAT0725-2	<i>Bayesian statistics</i> - Philippe LAMBERT - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>
INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	B1	Q2	30	20	[+]	<b>8</b>
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	B1	Q2	30	25	[+]	<b>8</b>
ASTR0201-3	<i>Astronomy</i> - MarcAntoine DUPRET - [20h Mon. WS]	B1	Q1	30	10	[+]	<b>8</b>
PHYS0243-2	<i>Quantum Physics I</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q1	30	10	[+]	<b>8</b>
PHYS0203-2	<i>Statistical physics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>
SPAT0012-1	<i>General relativity, Part 1: Introduction</i> - Yves DE ROP	B1	Q1	20	-	-	<b>2</b>
SPAT0012-2	<i>General relativity, Part 2: Mathematics methods</i> - Yves DE ROP	B1	Q1	20	-	-	<b>3</b>
SPAT0012-3	<i>General relativity, Part 3: supplement</i> - Yves DE ROP	B1	Q2	20	-	-	<b>3</b>
SPAT0044-1	<i>Stellar Structure and evolution I</i> - MarcAntoine DUPRET	B1	Q1	20	20	-	<b>4</b>
SPAT0045-1	<i>Stellar structure and evolution II</i> - MarcAntoine DUPRET	B1	Q2	20	20	-	<b>4</b>
MECA0203-3	<i>Continuum Mechanics</i> - Pierre DAUBY - [20h Mon. WS]	B1	Q1	30	10	[+]	<b>8</b>
PHYS0204-3	<i>Complement of quantum Physics 2</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>
PHYS0205-2	<i>Complement of physical statistics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>8</b>

## Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en sciences mathématiques, à finalité approfondie" en 2014-2015

### Optional courses (B1 : 30Cr)

#### Follow-up to the focus chosen in first year (B1 : 30Cr)

##### Research Focus (B1 : 30Cr)

MATH0466-1	<i>Seminars</i> - COLLÉGIALITÉ - [75h SEM]	B1	TA	-	-	[+]	<b>12</b>
SMEM0037-1	<i>Final thesis complement</i> - COLLÉGIALITÉ	B1	TA	-	-	-	<b>8</b>

With the agreement of the Jury, choose 1 course among : (B1 : 1Nbr)

MATH0467-1	<i>Functional Analysis II</i> - Françoise BASTIN - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>10</b>
MATH0468-1	<i>Algebraic Analysis</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>10</b>
MATH0061-1	<i>Complement of studies in the theory of measurement</i> - Samuel NICOLAY - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>10</b>
MATH0490-1	<i>Questions of differential geometry</i> - Pierre MATHONET - [20h Mon. WS]	B1	Q1	30	10	[+]	<b>10</b>
MATH0234-2	<i>Boolean Topology and Boolean Algebra</i> - Georges HANSOUL - [20h Mon. WS]	B1	Q2	30	10	[+]	<b>10</b>
MATH0470-1	<i>Combinatorics on words</i> - Michel RIGO - [20h Mon. WS]	B1	Q1	30	10	[+]	<b>10</b>

### Compulsory courses (B1 : 30Cr)

SMEM0012-1 *Final thesis* - COLLÉGIALITÉ B1 TA - - - 22

**Optional courses (B1 : 8Cr)**

Choose one (several) course(s), with the approval of the Jury, totalling 8 credits among : (B1 : 8Cr)

- [...] Maximum 8 credits of courses not taken in the 1st year in the first list
- [...] Maximum 8 credits of courses not taken in the 1st year in the second list
- [...] Maximum 8 credits in others master courses programme

**First list**

MATH0463-1	<i>Functional Analysis I</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0209-3	<i>Measure Theory</i> - Samuel NICOLAY - [20h Mon. WS]	B1	Q1	30	10	[+]	8
INFO0213-2	<i>Automata and formal languages theory</i> - Michel RIGO - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0220-2	<i>Functions of complex variables</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0464-1	<i>Differential geometry II</i> - Pierre LECOMTE - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0017-3	<i>Mathematical Logic and Set Theory</i> - Georges HANSOUL - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0465-1	<i>Algebraic Topology</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0065-1	<i>Probability and statistics IV</i> (english language) - Yvik SWAN - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0489-1	<i>Lie algebra</i> - Pierre MATHONET - [20h Mon. WS]	B1	Q2	30	10	[+]	8

**The second list**

STAT0723-2	<i>Linear models</i> - - Suppl : Catherine TIMMERMANS - [20h Mon. WS]	B1	Q2	30	10	[+]	8
STAT0201-3	<i>Multivariate statistics</i> - Gentiane HAESBROECK - [20h Mon. WS]	B1	Q1	30	10	[+]	8
STAT0725-2	<i>Bayesian statistics</i> - Philippe LAMBERT - [20h Mon. WS]	B1	Q2	30	10	[+]	8
INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	B1	Q2	30	20	[+]	8
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	B1	Q2	30	25	[+]	8
ASTR0201-3	<i>Astronomy</i> - MarcAntoine DUPRET - [20h Mon. WS]	B1	Q1	30	10	[+]	8
PHYS0243-2	<i>Quantum Physics I</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q1	30	10	[+]	8
PHYS0203-2	<i>Statistical physics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	8
SPAT0012-1	<i>General relativity, Part 1: Introduction</i> - Yves DE ROP	B1	Q1	20	-	-	2
SPAT0012-2	<i>General relativity, Part 2: Mathematics methods</i> - Yves DE ROP	B1	Q1	20	-	-	3
SPAT0012-3	<i>General relativity, Part 3: supplement</i> - Yves DE ROP	B1	Q2	20	-	-	3
SPAT0044-1	<i>Stellar Structure and evolution I</i> - MarcAntoine DUPRET	B1	Q1	20	20	-	4
SPAT0045-1	<i>Stellar structure and evolution II</i> - MarcAntoine DUPRET	B1	Q2	20	20	-	4
MECA0203-3	<i>Continuum Mechanics</i> - Pierre DAUBY - [20h Mon. WS]	B1	Q1	30	10	[+]	8
PHYS0204-3	<i>Complement of quantum Physics 2</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q2	30	10	[+]	8
PHYS0205-2	<i>Complement of physical statistics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	8

**Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en sciences mathématiques, à finalité spécialisée en gestion" en 2014-2015**

**Optional courses (B1 : 30Cr)**

**Follow-up to the focus chosen in first year (B1 : 30Cr)**

**Professional focus in management (B1 : 30Cr)**

GEST0832-4	<i>Financial Markets</i> - Georges HÜBNER, Danielle SOUGNÉ	B1	Q1	40	15	-	5
MATH1222-3	<i>Introduction to stochastic processes, Markov chains</i> - Pierre GEURTS, Yvik SWAN - [10h Mon. WS]	B1	Q2	20	10	[+]	4
FINA0053-1	<i>Investments and Portfolio Management</i> (english language) - Georges HÜBNER	B1	Q2	30	-	-	5
MQGE0001-6	<i>Operations Research</i> (english language) - Yves CRAMA	B1	Q1	45	-	-	6
With the approval of the Jury, choose 2 courses from : (B1 : 2Nbr)							
LOGI0010-1	<i>Supply Chain Management</i> (english language) - Yasemin ARDA	B1	Q2	45	-	-	5
MQGE0002-3	<i>Computational Optimization</i> (english language) - Yves CRAMA	B1	Q2	30	-	-	5
MQGE0007-1	<i>Financial Mathematics and Stochastic Calculus</i> (english language) - Louis ESCH	B1	Q2	30	-	-	5

**Compulsory courses (B1 : 30Cr)**

SMEM0012-1	<i>Final thesis</i> - COLLÉGIALITÉ	B1	TA	-	-	-	22
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**Optional courses (B1 : 8Cr)**

Choose one (several) course(s), with the approval of the Jury, totalling 8 credits among : (B1 : 8Cr)

- [...] Maximum 8 credits of courses not taken in the 1st year in the first list
- [...] Maximum 8 credits of courses not taken in the 1st year in the second list
- [...] Maximum 8 credits in others master courses programme

**First list**

MATH0463-1	<i>Functional Analysis I</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0209-3	<i>Measure Theory</i> - Samuel NICOLAY - [20h Mon. WS]	B1	Q1	30	10	[+]	8
INFO0213-2	<i>Automata and formal languages theory</i> - Michel RIGO - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0220-2	<i>Functions of complex variables</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0464-1	<i>Differential geometry II</i> - Pierre LECOMTE - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0017-3	<i>Mathematical Logic and Set Theory</i> - Georges HANSOUL - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0465-1	<i>Algebraic Topology</i> - JeanPierre SCHNEIDERS - [20h Mon. WS]	B1	Q1	30	10	[+]	8
MATH0065-1	<i>Probability and statistics IV</i> (english language) - Yvik SWAN - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0489-1	<i>Lie algebra</i> - Pierre MATHONET - [20h Mon. WS]	B1	Q2	30	10	[+]	8

**The second list**

STAT0723-2	<i>Linear models</i> - - Suppl : Catherine TIMMERMANS - [20h Mon. WS]	B1	Q2	30	10	[+]	8
STAT0201-3	<i>Multivariate statistics</i> - Gentiane HAESBROECK - [20h Mon. WS]	B1	Q1	30	10	[+]	8
STAT0725-2	<i>Bayesian statistics</i> - Philippe LAMBERT - [20h Mon. WS]	B1	Q2	30	10	[+]	8
INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	B1	Q2	30	20	[+]	8
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	B1	Q2	30	25	[+]	8
ASTR0201-3	<i>Astronomy</i> - MarcAntoine DUPRET - [20h Mon. WS]	B1	Q1	30	10	[+]	8

PHYS0243-2	<i>Quantum Physics I</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q1	30	10	[+]	8
PHYS0203-2	<i>Statistical physics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	8
SPAT0012-1	<i>General relativity, Part 1: Introduction</i> - Yves DE ROP	B1	Q1	20	-	-	2
SPAT0012-2	<i>General relativity, Part 2: Mathematics methods</i> - Yves DE ROP	B1	Q1	20	-	-	3
SPAT0012-3	<i>General relativity, Part 3: supplement</i> - Yves DE ROP	B1	Q2	20	-	-	3
SPAT0044-1	<i>Stellar Structure and evolution I</i> - MarcAntoine DUPRET	B1	Q1	20	20	-	4
SPAT0045-1	<i>Stellar structure and evolution II</i> - MarcAntoine DUPRET	B1	Q2	20	20	-	4
MECA0203-3	<i>Continuum Mechanics</i> - Pierre DAUBY - [20h Mon. WS]	B1	Q1	30	10	[+]	8
PHYS0204-3	<i>Complement of quantum Physics 2</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q2	30	10	[+]	8
PHYS0205-2	<i>Complement of physical statistics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	8

## Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en sciences mathématiques, à finalité didactique" en 2014-2015

### Optional courses (B1 : 30Cr)

#### Follow-up to the focus chosen in first year (B1 : 30Cr)

#### Teaching focus (B1 : 30Cr)

AESS0246-1	<i>Analysis of scholastic institutions and key-players, educational policies</i> - Dominique LAFONTAINE - Suppl : MarieThérèse DELHOUNE	B1	Q1	15	-	-	1
AESS0248-1	<i>Elements of sociology of education</i> - JeanFrançois GUILLAUME	B1	Q2	10	-	-	1
AESS0140-1	<i>Professional ethics and training to neutrality and citizenship</i> - Anne HERLA	B1	Q2	25	-	-	2
AESS0202-1	<i>General didactics: course and exercises ; observation placements ; reflexive practices</i> - Annick FAGNANT - [10h Internship]	B1	TA	30	10	[+]	4
AESS0004-1	<i>Media education</i> - Jérémy HAMERS	B1	Q1	15	-	-	1
AESS0249-1	<i>Interdisciplinary seminar</i> - Annick FAGNANT	B1	Q2	15	-	-	1
AESS0143-1	<i>Educational Psychology of adolescents and young adults</i> - Annick FAGNANT	B1	Q1	15	-	-	2
AESS0339-1	<i>Understand and manage the diversity of public schools</i> - Ariane BAYE	B1	Q2	10	15	-	3
AESS1214-1	<i>Special didactics in mathematics : course and exercises (1st part)</i> - Marguerite GILOT	B1	TA	40	-	-	3
AESS1215-1	<i>Special didactics in mathematics : placements (1st part)</i> - <i>Observation placements</i> - Marguerite GILOT - [10h Internship] - <i>Teaching placements</i> - Marguerite GILOT - [20h Internship] - <i>Reflexive practical work</i> - Marguerite GILOT	B1	TA			[+] [+] -	3
AESS2214-1	<i>Special didactics in mathematics : course and exercises (2nd part)</i> - Marguerite GILOT	B1	TA	35	-	-	4
AESS2215-1	<i>Special didactics in mathematics : placements (2nd part)</i> - <i>Teaching placements</i> - Marguerite GILOT - [20h Internship] - <i>Reflexive practical work</i> - Marguerite GILOT - <i>Extra-scholar teaching activities</i> - Marguerite GILOT	B1	TA			[+] - -	5

### Compulsory courses (B1 : 30Cr)

SMEM0012-1 *Final thesis* - COLLÉGIALITÉ B1 TA - - - 22

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MATH0017-3	<i>Mathematical Logic and Set Theory</i> - Georges HANSOUL - [20h Mon. WS]	B1	Q1	30	10	[+]	8
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MATH0065-1	<i>Probability and statistics IV</i> (english language) - Yvik SWAN - [20h Mon. WS]	B1	Q2	30	10	[+]	8
MATH0489-1	<i>Lie algebra</i> - Pierre MATHONET - [20h Mon. WS]	B1	Q2	30	10	[+]	8

**The second list**

STAT0723-2	<i>Linear models</i> - - Suppl : Catherine TIMMERMANS - [20h Mon. WS]	B1	Q2	30	10	[+]	8
STAT0201-3	<i>Multivariate statistics</i> - Gentiane HAESBROECK - [20h Mon. WS]	B1	Q1	30	10	[+]	8
STAT0725-2	<i>Bayesian statistics</i> - Philippe LAMBERT - [20h Mon. WS]	B1	Q2	30	10	[+]	8
INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	B1	Q2	30	20	[+]	8
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	B1	Q2	30	25	[+]	8
ASTR0201-3	<i>Astronomy</i> - MarcAntoine DUPRET - [20h Mon. WS]	B1	Q1	30	10	[+]	8
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SPAT0012-2	<i>General relativity, Part 2: Mathematics methods</i> - Yves DE ROP	B1	Q1	20	-	-	3
SPAT0012-3	<i>General relativity, Part 3: supplement</i> - Yves DE ROP	B1	Q2	20	-	-	3
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PHYS0204-3	<i>Complement of quantum Physics 2</i> - Thierry BASTIN - [20h Mon. WS]	B1	Q2	30	10	[+]	8
PHYS0205-2	<i>Complement of physical statistics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	B1	Q2	30	10	[+]	8