

## Block view of the study programme

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### Block 1

#### Compulsory courses

MATH0483-2	<i>History of mathematics</i> - Georges HANSOUL - [20h Mon. WS]	Q2	20	-	[+]	<b>4</b>
MATH0112-1	<i>Preparation for the final thesis</i> - COLLÉGIALITÉ	Q2	-	-	-	<b>4</b>

#### Optional courses

En accord avec le Jury, choisir des cours non déjà suivis pour un total de 52 crédits dans les deux listes ci-dessous et, éventuellement, dans le programme des cours d'autres masters :

##### Mathematics

[...] Maximum 36 credits from the courses of Mathematics (B1)

##### Other disciplines

[...] Maximum 16 credits from courses of other disciplines (B1)

##### Other masters

[...] Maximum 8 credits from the courses programme of other masters (B1)

### Block 2

#### Compulsory course

SMEM0012-1	<i>Final thesis</i> - COLLÉGIALITÉ	TA	-	-	-	<b>18</b>
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#### Optional courses

En accord avec le Jury, choisir des cours non déjà suivis pour un total de 12 crédits dans les deux listes ci-dessous et, éventuellement, dans le programme des cours d'autres masters :

##### Mathematics

[...] maximum 12 ECTS from the courses of Mathematics (B2)

##### Other disciplines

[...] Maximum 12 credits from courses of other disciplines (B2)

##### Other masters

[...] Maximum 12 credits from the courses programme of other masters (B2)

#### Choose one focus from the following :

##### Research Focus

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

Choose, in accordance with the Jury, 1 course among :

MATH0467-1	<i>Functional Analysis II</i> - Françoise BASTIN - [20h Mon. WS] <b>Prerequisite :</b> MATH0463-1 - Analyse fonctionnelle I	Q2	30	10	[+]	<b>10</b>
MATH0468-1	<i>Algebraic Analysis</i> - JeanPierre SCHNEIDERS - [20h Mon. WS] <b>Corequisite :</b> MATH0465-1 - Topologie algébrique MATH0463-1 - Analyse fonctionnelle I MATH0220-2 - Fonctions de variables complexes	Q2	30	10	[+]	<b>10</b>
MATH0061-1	<i>Complement of studies in the theory of measurement</i> - Samuel NICOLAY - [20h Mon. WS]	Q2	30	10	[+]	<b>10</b>

# Study programmes 2016-2017

## Faculty of Sciences

### Master in mathematics (120 ECTS)

**Prerequisite :**

MATH0209-3 - Théorie de la mesure

MATH0490-1 *Questions of differential geometry* - Pierre MATHONET - [20h Mon. WS] Q1 30 10 [+] 10

**Prerequisite :**

MATH0464-1 - Géométrie différentielle II

MATH0489-1 - Algèbres de Lie

MATH0234-2 *Boolean Topology and Boolean Algebra* - Georges HANSOUL - [20h Mon. WS] Q2 30 10 [+] 10

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

**Teaching focus**

AESS0246-1 *Analysis of scholastic institutions and key-players, educational policies* - Dominique LAFONTAINE - Suppl : MarieThérèse DELHOUNE Q1 15 - - 1

AESS0248-1 *Elements of sociology of education* - JeanFrançois GUILLAUME Q2 10 - - 1

AESS0140-1 *Professional ethics and training to neutrality and citizenship* - Anne HERLA Q2 25 - - 2

AESS0202-1 *General didactics: course and exercises ; observation placements ; reflexive practices* - Annick FAGNANT - [10h Internship] TA 30 10 [+] 4

AESS0004-1 *Media education* - Jérémy HAMERS Q1 15 - - 1

AESS0249-1 *Interdisciplinary seminar* - Annick FAGNANT Q2 15 - - 1

AESS0143-1 *Educational Psychology of adolescents and young adults* - Annick FAGNANT Q1 15 - - 2

AESS0339-1 *Understand and manage the diversity of public schools* - Ariane BAYE Q2 10 15 - 3

AESS1214-1 *Special didactics in mathematics : course and exercises (1st part)* - Marguerite GILOT, Pierre MATHONET, Michel RIGO TA 40 - - 3

AESS1215-1 *Special didactics in mathematics : placements (1st part)* - Observation placements - Marguerite GILOT, Pierre MATHONET, Michel RIGO - [10h Internship] TA - - [+] 3  
- Teaching placements - Marguerite GILOT, Pierre MATHONET, Michel RIGO - [20h Internship] - - [+]  
- Reflexive practical work - Marguerite GILOT, Pierre MATHONET, Michel RIGO - 5 -

AESS2214-1 *Special didactics in mathematics : course and exercises (2nd part)* - Marguerite GILOT, Pierre MATHONET, Michel RIGO TA 35 - - 4

AESS2215-1 *Special didactics in mathematics : placements (2nd part)* - Teaching placements - Marguerite GILOT, Pierre MATHONET, Michel RIGO - [20h Internship] TA - - [+] 5  
- Reflexive practical work - Marguerite GILOT, Pierre MATHONET, Michel RIGO - 5 -  
- Extra-scholar teaching activities - Marguerite GILOT, Pierre MATHONET, Michel RIGO - 10 -

**Professional focus in finance and management**

In agreement with the Jury, choose six courses not already followed, among :

GEST0832-4 *Financial Markets* - Georges HÜBNER, Danielle SOUGNÉ - Suppl : Georges HÜBNER Q2 40 15 - 5

FINA0053-1 *Investments and Portfolio Management (english language)* - Georges HÜBNER Q2 30 - - 5  
**Prerequisite :**  
GEST0832-4 - Marchés financiers

MQGE0001-6 *Operations Research (english language)* - Yves CRAMA Q1 45 - - 5

# Study programmes 2016-2017

## Faculty of Sciences

### Master in mathematics (120 ECTS)

LOGI0010-1	<i>Supply Chain Management</i> (english language) - Yasemin ARDA <b>Corequisite :</b> MQGE0001-6 - Operations Research	Q2	45	-	-	<b>5</b>
MQGE0002-3	<i>Computational Optimization</i> (english language) - Yves CRAMA <b>Corequisite :</b> MQGE0001-6 - Operations Research	Q2	30	-	-	<b>5</b>
MQGE0007-1	<i>Financial Mathematics and Stochastic Calculus</i> (english language) - Louis ESCH <b>Prerequisite :</b> GEST0832-4 - Marchés financiers	Q2	30	-	-	<b>5</b>
LOGI0012-1	<i>Logistics and Transportation</i> (english language) - Sabine LIMBOURG	Q2	30	-	-	<b>5</b>
LOGI0013-1	<i>Operation Planning</i> (english language) - Yasemin ARDA <b>Prerequisite :</b> LOGI0010-1 - Supply Chain Management	Q2	30	-	-	<b>5</b>
FINA0052-1	<i>Financial Derivatives</i> (english language) - Aline MULLER - Suppl : Tarik BAZGOUR <b>Prerequisite :</b> GEST0832-4 - Marchés financiers	Q2	30	-	-	<b>5</b>
FINA0064-1	<i>Financial Risk Modeling</i> (english language) - Fabien BONIVER, Marie LAMBERT <b>Corequisite :</b> FINA0053-1 - Investments and Portfolio Management MQGE0007-1 - Financial Mathematics and Stochastic Calculus	Q1	30	-	-	<b>5</b>
FINA0051-1	<i>Banking and Insurance</i> (english language) - Fabien BONIVER, Georges HÜBNER <b>Prerequisite :</b> GEST0832-4 - Marchés financiers	Q2	30	-	-	<b>5</b>

#### Professional focus in computer

INFO0009-1	<i>Database (general organisation)</i> - Pierre WOLPER - [25h Proj.]	Q2	30	25	[+]	<b>6</b>
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In agreement with the Jury, choose four courses among :

The courses INFO0902-1, INFO0054-1 and INFO0062-1 must be taken first.

INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	Q2	30	20	[+]	<b>6</b>
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	Q2	30	25	[+]	<b>6</b>
INFO0062-1	<i>Object-oriented programming</i> (english language) - Bernard BOIGELOT - [20h Proj.]	Q2	30	24	[+]	<b>6</b>

If the courses INFO0902-1, INFO0054-1 and/or INFO0062-1 have already been followed, choose, in agreement with the Jury, 1 to 4 courses amongst :

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

#### Professional focus in Statistics

STAT0727-2	<i>Non-parametric statistics</i> - Gentiane HAESBROECK - [20h Mon. WS] (Even years)	Q1	30	10	[+]	<b>8</b>
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# Study programmes 2016-2017

## Faculty of Sciences

### Master in mathematics (120 ECTS)

MATH0079-1	<i>Stochastic process</i> - Yvik SWAN - [20h Proj.] (Even years)	Q1	20	10	[+]	6
ELEN0062-1	<i>Introduction to machine learning</i> (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	Q1	30	5	[+]	8

In agreement with the Jury, choose two courses not already followed, among :

STAT0080-1	<i>Statistics and probability seminars</i> - COLLÉGIALITÉ	TA	-	-	-	4
STAT0081-1	<i>Final thesis complement in statistics</i> - COLLÉGIALITÉ	TA	-	-	-	4
STAT0078-1	<i>Practice of statistical consultancy</i> - Gentiane HAESBROECK - [20h Mon. WS] (Odd years)	Q1	20	-	[+]	4
STAT0079-1	<i>SAS certification</i> (english language) - Michael SCHYNS - [25h Mon. WS]	Q2	15	-	[+]	4

#### Bloc d'aménagement du programme de l'année

##### Mathematics

STAT0725-2	<i>Bayesian statistics</i> - Philippe LAMBERT - [20h Mon. WS] (Even years)	Q2	30	10	[+]	8
STAT0723-2	<i>Linear models</i> - Catherine TIMMERMANS - [20h Mon. WS] (Even years)	Q2	30	10	[+]	8
INFO0213-2	<i>Automata and formal languages</i> - Michel RIGO - Suppl : Julien LEROY (Even years)	Q1	30	20	-	8
MATH0075-1	<i>Discrete mathematics</i> - Emilie CHARLIER, Michel RIGO (Even years)	Q2	30	20	-	8
MATH0076-1	<i>Discrete mathematics project</i> - Emilie CHARLIER, Julien LEROY, Michel RIGO (Even years) <b>Corequisite :</b> INFO0213-2 - Automates et langages formels MATH0075-1 - Mathématiques discrètes	TA	-	-	-	4
MATH0465-1	<i>Algebraic Topology</i> - JeanPierre SCHNEIDERS - [20h Mon. WS] (Even years)	Q1	30	10	[+]	8
MATH0463-1	<i>Functional Analysis I</i> - JeanPierre SCHNEIDERS - [20h Mon. WS] (Even years)	Q1	30	10	[+]	8
STAT0201-3	<i>Multivariate statistics</i> - Gentiane HAESBROECK - [20h Mon. WS] (Odd years)	Q1	30	10	[+]	8
MATH0065-1	<i>Probability and statistics IV</i> (english language) - Yvik SWAN - [20h Mon. WS] (Odd years)	Q2	30	10	[+]	8
STAT0078-1	<i>Practice of statistical consultancy</i> - Gentiane HAESBROECK - [20h Mon. WS] (Odd years) <b>Corequisite :</b> STAT0201-3 - Statistique multivariée MATH0065-1 - Probability and statistics IV	Q1	20	-	[+]	4
INFO0212-2	<i>Algorithmics and computability</i> - Emilie CHARLIER (Odd years)	Q1	30	20	-	8
MATH0470-1	<i>Combinatorics on words</i> (english language) - Emilie CHARLIER, Michel RIGO (Odd years)	Q2	30	20	-	8
MATH0077-1	<i>Project on combinations</i> - Emilie CHARLIER, N..., Michel RIGO (Odd years) <b>Corequisite :</b> INFO0212-2 - Algorithmique et calculabilité MATH0470-1 - Combinatorics on words	TA	-	-	-	4
MATH0489-1	<i>Lie algebra</i> - [20h Mon. WS] (Odd years)	Q2	30	10	[+]	8
MATH0220-2	<i>Functions of complex variables</i> - JeanPierre SCHNEIDERS - [20h Mon. WS] (Odd years) <b>Corequisite :</b> MATH0074-1 - Théorie des distributions	Q2	30	10	[+]	8
MATH0209-3	<i>Measure Theory</i> - Samuel NICOLAY - [20h Mon. WS] (Odd years)	Q1	30	10	[+]	8

# Study programmes 2016-2017

## Faculty of Sciences

### Master in mathematics (120 ECTS)

MATH0464-1	<i>Differential geometry II</i> - Pierre LECOMTE - [20h Mon. WS]	Q1	30	10	[+]	<b>8</b>
MATH0074-1	<i>Theory of distributions</i> - Françoise BASTIN	Q2	25	15	-	<b>4</b>
MATH0017-3	<i>Mathematical Logic and Set Theory</i> - Georges HANSOUL - [20h Mon. WS]	Q1	30	10	[+]	<b>8</b>
STAT0079-1	<i>SAS certification</i> (english language) - Michael SCHYNS - [25h Mon. WS]	Q2	15	-	[+]	<b>4</b>
<b>Other disciplines</b>						
INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	Q2	30	20	[+]	<b>8</b>
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT - [15h Proj.]	Q2	30	25	[+]	<b>8</b>
ASTR0201-3	<i>Astronomy</i> - MarcAntoine DUPRET - [20h Mon. WS]	Q1	30	10	[+]	<b>8</b>
PHYS0243-2	<i>Quantum Physics I</i> - Thierry BASTIN - [20h Mon. WS]	Q1	30	10	[+]	<b>8</b>
PHYS0203-2	<i>Statistical physics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	Q2	30	10	[+]	<b>8</b>
SPAT0012-1	<i>General relativity, Part 1: Introduction</i> - Yves DE ROP	Q1	20	-	-	<b>2</b>
SPAT0012-2	<i>General relativity, Part 2: Mathematics methods</i> - Yves DE ROP <b>Corequisite :</b> SPAT0012-1 - Relativité générale	Q1	20	-	-	<b>3</b>
SPAT0012-3	<i>General relativity, Part 3: supplement</i> - Yves DE ROP <b>Corequisite :</b> SPAT0012-2 - Relativité générale	Q2	20	-	-	<b>3</b>
SPAT0044-1	<i>Stellar structure and evolution I</i> (english language) - MarcAntoine DUPRET	Q1	20	20	-	<b>4</b>
SPAT0045-1	<i>Stellar structure and evolution II</i> (english language) - MarcAntoine DUPRET	Q2	20	20	-	<b>4</b>
MECA0203-3	<i>Continuum Mechanics</i> - Pierre DAUBY - [20h Mon. WS]	Q1	30	10	[+]	<b>8</b>
PHYS0204-3	<i>Complement of quantum Physics 2</i> - Thierry BASTIN - [20h Mon. WS]	Q2	30	10	[+]	<b>8</b>
PHYS0205-2	<i>Complement of physical statistics</i> - Nicolas VANDEWALLE - [20h Mon. WS]	Q2	30	10	[+]	<b>8</b>