

Cycle view of the study programme

B1 Or Th Pr Au Cr

If one or several of the mandatory courses have already been credited when entering the Master of Data science program, they can be replaced by a corresponding amount of credits chosen among the elective courses.

Compulsory Courses (B1 : 10Cr, B2 : 35Cr)

DATS0001-1	<i>Foundations of data science</i> (english language) - Gilles LOUPPE - [55h Proj.]	B1	Q1	25	10	[+]	5
PROJ0021-1	<i>Data science project</i> (english language) - Christophe DEBRUYNE, Pierre GEURTS, Gilles LOUPPE - [120h Proj.]	B1	Q2	5	-	[+]	5
DROI1357-1	<i>European law, (big) data and artificial intelligence applications seminar</i> (english language) - - Suppl : Ljupcho GROZDANOVSKI	B2	Q1	24	-	-	5
GEST3162-1	<i>Principles of management</i> (english language) - François PICHAULT, Willem STANDAERT - [25h Proj.]	B2	Q1	30	-	[+]	5
ATFE9009-1	<i>Master thesis</i> (english language) - Pierre GEURTS - [750h Proj.]	B2	TA	-	-	[+]	25
[...]	Students who have already acquired the skills and knowledge of GEST3162 (or equivalent) will replace it by a course of their choice of 5 ECTS						

Elective courses (B1 : 40Cr, B2 : 25Cr)

Single focus (B1 : 30Cr)

Professional focus in data science (B1 : 30Cr)

ELEN0062-1	<i>Introduction to machine learning</i> (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	B1	Q1	30	5	[+]	5
INFO8010-1	<i>Deep learning</i> (english language) - Gilles LOUPPE - [55h Proj.]	B1	Q2	25	10	[+]	5
INFO9014-1	<i>Knowledge representation and reasoning</i> (english language) - Christophe DEBRUYNE	B1	Q2	24	20	-	5
INFO9016-1	<i>Advanced Databases</i> (english language) - Christophe DEBRUYNE	B1	Q2	24	20	-	5
MATH0461-2	<i>Introduction to numerical optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	B1	Q1	30	20	[+]	5
MATH2021-1	<i>High-dimensional statistics</i> (english language) - Gentiane HAESBROECK - [30h Proj.]	B1	Q1	30	15	[+]	5

In agreement with the Jury, choose a total of 20 credits for Block 1 and 25 credits for Block 2 in the following list, among those that have not already been credited before. (B1 : 20Cr, B2 : 25Cr)

ELEN0016-2	<i>Computer vision</i> (english language) - Marc VAN DROOGENBROECK - [50h Proj.]	-	Q1	30	10	[+]	5
ELEN0060-2	<i>Information and coding theory</i> (english language) - Louis WEHENKEL - [30h Proj.]	-	Q2	30	15	[+]	5
INFO0016-1	<i>Introduction to the theory of computation</i> (english language) - Quentin LOUVEAUX	-	Q1	26	26	-	5
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 10	14 10	[+] [+]	5
INFO0054-1	<i>Functional programming</i> - Christophe DEBRUYNE - [15h Proj.]	-	Q1	28	24	[+]	5
INFO0939-1	<i>High performance scientific computing</i> (english language) - Christophe GEUZAINÉ - Suppl : David COLIGNON - [20h Proj.]	-	Q1	30	15	[+]	5
INFO0948-2	<i>Introduction to intelligent robotics</i> (english language) - Pierre SACRÉ - [80h Proj.]	-	Q2	30	4	[+]	5
INFO2049-1	<i>Web and Text Analytics</i> (english language) - Ashwin ITTOO	-	Q1	30	-	-	5
INFO8003-1	<i>Optimal decision making for complex problems</i> (english language) -	-	Q2	25	10	[+]	5

Damien ERNST - [45h Proj.]

INFO8004-1	<i>Advanced Machine learning</i> (english language) - Pierre GEURTS, Gilles LOUPPE, Louis WEHENKEL - [45h Proj.]	-	Q2	25	-	[+]	5
INFO9012-1	<i>Parallel Programming</i> (english language) - Pascal FONTAINE	-	Q2	25	25	-	5
INFO9015-1	<i>Logic for Computer Science</i> (english language) - Pascal FONTAINE	-	Q1	24	20	-	5
INGE0012-1	(pas organisé en 2022-2023) <i>Scientific research in engineering and its impact on innovation</i> (english language)	-	Q2	26	26	-	5
MATH0462-1	<i>Discrete optimization</i> (english language) - Quentin LOUVEAUX - [25h Proj.]	-	Q2	30	20	[+]	5
MATH2022-1	<i>Monte Carlo methods in statistics</i> (english language) - <i>General course</i> - Arnout VAN MESSEM - [10h Proj.] - <i>Project complement</i> - Arnout VAN MESSEM - [30h Proj.]	-	Q2	24	12	[+]	5
MQGE0002-3	<i>Computational Optimization</i> (english language) - Yves CRAMA	-	Q2	30	-	-	5
PROJ0017-1	<i>Personal student project in Data Science</i> (english language) - Gilles LOUPPE - [150h Proj.]	-	TA	-	-	[+]	5
BIOL0021-1	<i>Biology of the systems</i> - Patrick MEYER - [10h Mon. WS] Corequisite : OCEA0089-1 - Introduction to marine ecosystems modelling	-	Q1	10	-	[+]	2
OCEA0089-1	<i>Introduction to marine ecosystems modelling</i> (english language) - Marilaure GRÉGOIRE Corequisite : BIOL0021-1 - Biologie des systèmes	-	Q1	15	15	-	3
GEOG0057-1	<i>Spatial analysis</i> - François JONARD	-	Q2	30	30	-	5
GEOG0059-1	<i>Infrastructures of spatial data</i> - Roland BILLEN	-	Q1	30	30	-	5
GEST0832-4	<i>Financial Markets</i> - Georges HÜBNER Corequisite : FINA0063-1 - Advanced Statistical Methods in Finance	-	Q1	40	15	-	5
FINA0063-1	<i>Advanced Statistical Methods in Finance</i> (english language) - Julien HAMBUECKERS	-	Q1	30	-	-	5
GEST3032-1	<i>eBusiness and eCommerce</i> (english language) - Ashwin ITTOO	-	Q1	30	-	-	5
GBIO0002-1	<i>Genetics and bioinformatics</i> (english language) - Franck DEQUIEDT, Kristel VAN STEEN - [15h Proj.]	-	Q1	30	15	[+]	5
GBIO0009-1	<i>Topics in bioinformatics</i> (english language) - Kristel VAN STEEN - [35h Proj.]	-	Q1	25	15	[+]	5
GBIO0030-1	<i>Computational approaches to statistical generics</i> (english language) - Kristel VAN STEEN - [35h Proj.]	-	Q2	25	15	[+]	5

[...] With the agreement of the President of the Jury, students may also choose up to 15 credits in the application area of their Master thesis in other programmes of the university

[...] With the agreement of the President of the Jury, students may also choose 5 credits in any other programme of the university.

Optional company internships

Notice : the course units ASTG9008-1 et ASTG9009-1 are mutually exclusive.

ASTG9008-1	<i>Internship (coupled with Master thesis)</i> (english language) - Pierre GEURTS - [80d FW]	B2	TA	-	-	[+]	5
ASTG9009-1	<i>Internship (independent of Master thesis)</i> - Pierre GEURTS - [40d FW]	B2	TA	-	-	[+]	10

Additional credits Master in Data Science

Study programmes 2022-2023
Faculty of Applied Sciences
Master of Science (MSc) in Data Science

Optional courses (B0 : 56Cr)

Students who are admitted to this master without having acquired equivalent courses must add them to the programme of their first year. (B0 : 56Cr)

MATH2007-1	<i>General mathematics I</i> - Françoise BASTIN	B0	Q1	30	40	-	6
MATH0499-1	<i>Graph theory</i> - Michel RIGO	B0	Q1	25	20	-	4
MATH0495-1	<i>Elements for calculating probabilities</i> - Céline ESSER - [5h Proj.]	B0	Q1	15	15	[+]	3
MATH0487-2	<i>Elements of statistics</i> - Pierre SACRÉ - [25h Proj.]	B0	Q1	15	10	[+]	3
MATH1222-3	<i>Introduction to stochastic processes</i> - Amir ABOUBACAR, Pierre GEURTS - [10h Mon. WS]	B0	Q2	20	10	[+]	5
INFO0946-1	<i>Introduction to computer programming</i> - Benoît DONNET - [10h Labo.]	B0	Q1	30	30	[+]	5
INFO0009-2	<i>Database (general organisation)</i> - Christophe DEBRUYNE - [25h Proj.]	B0	Q2	26	26	[+]	5
MATH0500-1	<i>Introduction to numerical algorithmic</i> - Quentin LOUVEAUX - [6h Labo., 45h Proj.]	B0	Q1	24	14	[+]	5
INFO0062-1	<i>Object-oriented programming (english language)</i> - Bernard BOIGELOT - [20h Proj.]	B0	Q2	25	20	[+]	5
MATH2019-1	<i>Mathematics for computing 1</i> - Emilie CHARLIER	B0	Q1	26	26	-	5
MATH2020-1	<i>Mathematics for computing 2</i> - Emilie CHARLIER	B0	Q1	26	26	-	5
INFO8006-1	<i>Introduction to artificial intelligence (english language)</i> - Gilles LOUPPE - [45h Proj.]	B0	Q1	25	20	[+]	5

Students must have a level B2 in English