

Or Th Pr Au Cr

First Year

Compulsory courses

Course ID	Course Name	Teacher	Or	Th	Pr	Au	Cr
SPAT0039-1	<i>Spectroscopy in Astrophysics and Geophysics</i>	- Jérôme LOICQ	TA	20	10	-	3
PHYS0124-1	<i>Instrumental Optics I</i>	- Serge HABRAKEN	Q1	20	15	-	3
SPAT0040-1	<i>Fluid mechanics</i>	- Pierre DAUBY	Q1	20	10	-	3
SPAT0001-1	<i>Plasma Physics</i>	- Hervé LAMY, Anne THOUL	Q2	25	5	-	3
SPAT0002-1	<i>Numerical methods and programming basics</i>	- Guy MUNHOVEN	Q1	10	20	-	3

Optional courses

Choose, in agreement with the Jury, several courses totalling 12 credits, from the two options offered below or from other Masters programmes, in particular the Masters in Civil Engineering and Aerospace :

Astrophysics

SPAT0064-1	<i>Solar physics, activity phenomena and solar-earth relations</i>	- Frédéric CLETTE		20	10	-	3
SPAT0056-1	<i>Planetary and exoplanetary atmospheres</i>	- JeanClaude GÉRARD, Denis GRODENT	Q1	30	15	-	5
SPAT0043-1	<i>Small bodies in the solar system</i>	- Emmanuel JEHIN		15	5	-	2
SPAT0044-1	<i>Stellar Structure and evolution I</i>	- MarcAntoine DUPRET	Q1	20	20	-	3
SPAT0045-1	<i>Stellar structure and evolution II</i>	- MarcAntoine DUPRET	Q2	20	20	-	3
SPAT0005-1	<i>Stellar stability and asteroseismology</i>	- MarcAntoine DUPRET	Q2	30	10	-	4
SPAT0007-2	<i>Variable stars</i>	- Grégor RAUW	Q1	20	10	-	3
SPAT0006-1	<i>Stellar atmospheres</i>	- Grégor RAUW	Q2	20	10	-	3
SPAT0008-1	<i>Interstellar Medium</i>	- Damien HUTSEMEKERS, Yaël NAZÉ	Q1	20	10	-	3
GEOL0263-1	<i>Astrobiology</i>	- Philippe CLAEYS, Véronique DEHANT, Moreno GALLENI, Emmanuelle JAVAUX, Yaël NAZÉ, Annick WILMOTTE (Even years)	Q2	30	15	-	4
SPAT0009-1	<i>High-energy astrophysics</i>	- Grégor RAUW	Q1	25	5	-	4
SPAT0010-1	<i>Theoretical physical cosmology</i>	- Christian BARBIER, Michel TYTGAT	Q2	40	-	-	4
SPAT0011-1	<i>Extragalactic astrophysics</i>	- Pierre MAGAIN		20	10	-	3
SPAT0012-1	<i>General relativity</i>	- Yves DE ROP	TA	60	-	-	6
SPAT0014-1	<i>Introduction to time series analysis</i>	- Eric GOSSET	Q2	20	5	-	3
PHYS0125-3	<i>Instrumental Optics II</i>	- Serge HABRAKEN	Q2	25	30	-	5
SPAT0015-1	<i>Signal acquisition and processing : application to embedded systems</i>	- Christian SERVAIS	Q2	10	30	-	4
SSTG0043-1	<i>Placement - N... - Suppl</i>	: Christian BARBIER, Yaël NAZÉ, Grégor RAUW, JeanPierre SWINGS	TA	-	140	-	10
AERO0018-3	<i>Space Experiment Development</i>	- Pierre ROCHUS		30	30	-	5
SPAT0017-1	<i>Current questions and seminars</i>	- Alberto BORGES, JeanRené CUDELL, Benoît HUBERT, Damien HUTSEMEKERS	TA	-	30	-	3
SPAT0018-1	<i>Evolution of ideas in Astronomy</i>	- Yaël NAZÉ	Q1	15	-	-	2
SPAT0019-1	<i>Special Relativity</i>	- Jean SURDEJ	Q1	15	-	-	2
SPAT0020-2	<i>Introduction to astrochemistry</i>	- Michaël DE BECKER	Q2	30	10	-	4
SPAT0021-1	<i>Introduction to astroparticles</i>	- Joseph CUGNON	Q1	20	10	-	3
SPAT0060-1	<i>Astroparticles, Part 1 : Astroparticles and standard model</i>	- JeanRené CUDELL	Q2	20	10	-	4
SPAT0060-2	<i>Astroparticles, Part 2 : Astroparticles and gravitational effects</i>	- JeanRené CUDELL	Q2	10	5	-	2
SPAT0061-1	<i>Theory group and astroparticle (english language)</i>	- Diego ARISTIZABAL SIERRA	Q2	30	-	-	3
SPAT0062-1	<i>Quantum field theory, Part 1 : Quantum electrodynamics</i>	- JeanRené CUDELL	Q2	20	10	-	4
SPAT0062-2	<i>Quantum field theory, Part 2 : Elements of renormalization</i>	- JeanRené CUDELL	TA	10	5	-	2
PHYS2012-1	<i>Relativistic quantum mechanics and relativistic statistics</i>	- Peter SCHLAGHECK	Q1	20	5	-	3
SPAT0063-1	<i>Introduction to exoplanetary</i>	- Michaël GILLON	Q2	15	5	-	2
SPAT0023-1	<i>Terrestrial magnetosphere and polar lights</i>	- Benoît HUBERT		30	10	-	4
SPAT0024-2	<i>Meteorology</i>	- Louis FRANÇOIS	Q1	40	20	-	6
OCEA0072-1	<i>Geophysical fluid dynamics - Part 2</i>	- JeanMarie BECKERS	Q1	30	15	-	5

OCEA0059-2	<i>Remote Sensing of the Oceans, Introduction to satellite oceanography</i> (english language) - Yves CORNET	Q1	15	15	-	3
OCEA0045-1	<i>Statistical methods of analysis of oceanographic data</i> - Aïda ALVERA AZCARATE	Q1	20	10	-	3
GEOG0037-1	<i>GNSS : Theory and applications</i> - René WARNANT	Q2	35	15	-	5
GEOG0038-1	<i>Space geodesy</i> - René WARNANT - [1d FW]	Q2	20	-	[+]	3
SPAT0025-1	<i>Environmental modelling</i> - Louis FRANÇOIS, Guy MUNHOVEN	Q2	20	10	-	4
SPAT0026-1	<i>Paleoenvironment and evolution of the Earth system</i> - Louis FRANÇOIS	Q2	30	10	-	4
SPAT0027-3	<i>Climate change and impacts</i> - Louis FRANÇOIS, Guy MUNHOVEN	TA	15	45	-	5
SPAT0028-2	<i>Planetary magnetospheres and aurorae</i> - Denis GRODENT	Q2	20	10	-	3
OCEA0081-1	<i>Numerical Methods in Geophysics - Part 2</i> - JeanMarie BECKERS	Q2	15	30	-	5
SPAT0064-1	<i>Solar physics, activity phenomena and solar-earth relations</i> - Frédéric CLETTE		20	10	-	3
SPAT0056-1	<i>Planetary and exoplanetary atmospheres</i> - JeanClaude GÉRARD, Denis GRODENT	Q1	30	15	-	5
SPAT0043-1	<i>Small bodies in the solar system</i> - Emmanuel JEHIN		15	5	-	2
GEOL0263-1	<i>Astrobiology</i> - Philippe CLAEYS, Véronique DEHANT, Moreno GALLEN, Emmanuelle JAVAUX, Yaël NAZÉ, Annick WILMOTTE (Even years)	Q2	30	15	-	4
SPAT0014-1	<i>Introduction to time series analysis</i> - Eric GOSSET	Q2	20	5	-	3
PHYS0125-3	<i>Instrumental Optics II</i> - Serge HABRAKEN	Q2	25	30	-	5
SPAT0015-1	<i>Signal acquisition and processing : application to embedded systems</i> - Christian SERVAIS	Q2	10	30	-	4
SSTG0043-1	<i>Placement - N... - Suppl</i> : Christian BARBIER, Yaël NAZÉ, Grégor RAUW, JeanPierre SWINGS	TA	-	140	-	10
AERO0018-3	<i>Space Experiment Development</i> - Pierre ROCHUS		30	30	-	5
SPAT0029-1	<i>Space environment</i> - Denis GRODENT	Q2	15	15	-	3
SPAT0032-2	<i>Remote sensing</i> - Christian BARBIER	Q1	30	30	-	5
SPAT0063-1	<i>Introduction to exoplanetary</i> - Michaël GILLON	Q2	15	5	-	2

Research Focus

Compulsory courses

SPAT0033-1	<i>Astrophysics</i> - Pierre MAGAIN		30	15	-	4,5
SPAT0055-1	<i>Atmosphere of Earth</i> - Denis GRODENT	Q2	30	15	-	4,5
OCEA0071-1	<i>Geophysical fluid dynamics - Part 1</i> - JeanMarie BECKERS	Q2	30	15	-	4,5
SPAT0035-1	<i>Space operations</i> (english language) - Grégor RAUW	Q1	30	10	-	4
SPAT0036-1	<i>Celestial mechanics and space trajectories</i> - Grégor RAUW	Q1	20	10	-	3
PHYS0931-1	<i>Data processing</i> - Pierre MAGAIN		15	30	-	3
SPAT0057-1	<i>Observing the Sky</i> - Jean SURDEJ - [5d FW]	Q1	20	10	[+]	5
SPAT0058-1	<i>Observing Earth from space</i> - N... - Suppl : Christian BARBIER	Q1	15	-	-	1,5

Second Year

Compulsory course

SMEM0029-1	<i>Final thesis</i> - COLLÉGIALITÉ	TA	-	-	-	27
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Optional courses

[...] Choose, in agreement with the Jury, several courses totalling 9 credits, from the two options offered below or from other Masters programmes, in particular the Masters in Civil Engineering and Aerospace :

Choose one option from the following :

Option Astrophysics

Choose courses, with the approval of the Jury, totalling 24 credits amongst :

SPAT0064-1	<i>Solar physics, activity phenomena and solar-earth relations</i> - Frédéric CLETTE		20	10	-	3
SPAT0056-1	<i>Planetary and exoplanetary atmospheres</i> - JeanClaude GÉRARD, Denis GRODENT	Q1	30	15	-	5

SPAT0043-1	<i>Small bodies in the solar system</i> - Emmanuel JEHIN		15	5	-	2
SPAT0044-1	<i>Stellar Structure and evolution I</i> - MarcAntoine DUPRET	Q1	20	20	-	3
SPAT0045-1	<i>Stellar structure and evolution II</i> - MarcAntoine DUPRET	Q2	20	20	-	3
SPAT0005-1	<i>Stellar stability and asteroseismology</i> - MarcAntoine DUPRET	Q2	30	10	-	4
SPAT0007-2	<i>Variable stars</i> - Grégor RAUW	Q1	20	10	-	3
SPAT0006-1	<i>Stellar atmospheres</i> - Grégor RAUW	Q2	20	10	-	3
SPAT0008-1	<i>Interstellar Medium</i> - Damien HUTSEMEKERS, Yaël NAZÉ	Q1	20	10	-	3
GEOL0263-1	<i>Astrobiology</i> - Philippe CLAEYS, Véronique DEHANT, Moreno GALLENI, Emmanuelle JAVAUX, Yaël NAZÉ, Annick WILMOTTE (Even years)	Q2	30	15	-	4
SPAT0009-1	<i>High-energy astrophysics</i> - Grégor RAUW	Q1	25	5	-	4
SPAT0010-1	<i>Theoretical physical cosmology</i> - Christian BARBIER, Michel TYTGAT	Q2	40	-	-	4
SPAT0011-1	<i>Extragalactic astrophysics</i> - Pierre MAGAIN		20	10	-	3
SPAT0012-1	<i>General relativity</i> - Yves DE ROP	TA	60	-	-	6
SPAT0014-1	<i>Introduction to time series analysis</i> - Eric GOSSET	Q2	20	5	-	3
PHYS0125-3	<i>Instrumental Optics II</i> - Serge HABRAKEN	Q2	25	30	-	5
SPAT0015-1	<i>Signal acquisition and processing : application to embedded systems</i> - Christian SERVAIS	Q2	10	30	-	4
SSTG0043-1	<i>Placement - N... - Suppl</i> : Christian BARBIER, Yaël NAZÉ, Grégor RAUW, JeanPierre SWINGS	TA	-	140	-	10
AERO0018-3	<i>Space Experiment Development</i> - Pierre ROCHUS		30	30	-	5
SPAT0017-1	<i>Current questions and seminars</i> - Alberto BORGES, JeanRené CUDELL, Benoît HUBERT, Damien HUTSEMEKERS	TA	-	30	-	3
SPAT0018-1	<i>Evolution of ideas in Astronomy</i> - Yaël NAZÉ	Q1	15	-	-	2
SPAT0019-1	<i>Special Relativity</i> - Jean SURDEJ	Q1	15	-	-	2
SPAT0020-2	<i>Introduction to astrochemistry</i> - Michaël DE BECKER	Q2	30	10	-	4
SPAT0021-1	<i>Introduction to astroparticles</i> - Joseph CUGNON	Q1	20	10	-	3
SPAT0060-1	<i>Astroparticles, Part 1 : Astroparticles and standard model</i> - JeanRené CUDELL	Q2	20	10	-	4
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SPAT0062-1	<i>Quantum field theory, Part 1 : Quantum electrodynamics</i> - JeanRené CUDELL	Q2	20	10	-	4
SPAT0062-2	<i>Quantum field theory, Part 2 : Elements of renormalization</i> - JeanRené CUDELL	TA	10	5	-	2
PHYS2012-1	<i>Relativistic quantum mechanics and relativistic statistics</i> - Peter SCHLAGHECK	Q1	20	5	-	3
SPAT0063-1	<i>Introduction to exoplanetary</i> - Michaël GILLON	Q2	15	5	-	2

Option Earth and Planetary Sciences

Choose courses, with the approval of the Jury, totalling 24 credits amongst :

SPAT0023-1	<i>Terrestrial magnetosphere and polar lights</i> - Benoît HUBERT		30	10	-	4
SPAT0024-2	<i>Meteorology</i> - Louis FRANÇOIS	Q1	40	20	-	6
OCEA0072-1	<i>Geophysical fluid dynamics - Part 2</i> - JeanMarie BECKERS	Q1	30	15	-	5
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SPAT0026-1	<i>Paleoenvironment and evolution of the Earth system</i> - Louis FRANÇOIS	Q2	30	10	-	4
SPAT0027-3	<i>Climate change and impacts</i> - Louis FRANÇOIS, Guy MUNHOVEN	TA	15	45	-	5
SPAT0028-2	<i>Planetary magnetospheres and aurorae</i> - Denis GRODENT	Q2	20	10	-	3
OCEA0081-1	<i>Numerical Methods in Geophysics - Part 2</i> - JeanMarie BECKERS	Q2	15	30	-	5
SPAT0064-1	<i>Solar physics, activity phenomena and solar-earth relations</i> - Frédéric CLETTE		20	10	-	3
SPAT0056-1	<i>Planetary and exoplanetary atmospheres</i> - JeanClaude GÉRARD, Denis GRODENT	Q1	30	15	-	5

SPAT0043-1	<i>Small bodies in the solar system</i> - Emmanuel JEHIN		15	5	-	2
GEOL0263-1	<i>Astrobiology</i> - Philippe CLAEYS, Véronique DEHANT, Moreno GALLEN, Emmanuelle JAVAUX, Yaël NAZÉ, Annick WILMOTTE (Even years)	Q2	30	15	-	4
SPAT0014-1	<i>Introduction to time series analysis</i> - Eric GOSSET	Q2	20	5	-	3
PHYS0125-3	<i>Instrumental Optics II</i> - Serge HABRAKEN	Q2	25	30	-	5
SPAT0015-1	<i>Signal acquisition and processing : application to embedded systems</i> - Christian SERVAIS	Q2	10	30	-	4
SSTG0043-1	<i>Placement - N... - Suppl</i> : Christian BARBIER, Yaël NAZÉ, Grégor RAUW, JeanPierre SWINGS	TA	-	140	-	10
AERO0018-3	<i>Space Experiment Development</i> - Pierre ROCHUS		30	30	-	5
SPAT0029-1	<i>Space environment</i> - Denis GRODENT	Q2	15	15	-	3
SPAT0032-2	<i>Remote sensing</i> - Christian BARBIER	Q1	30	30	-	5
SPAT0063-1	<i>Introduction to exoplanetary</i> - Michaël GILLON	Q2	15	5	-	2