

Block view of the study programme

Or Th Pr Au Cr

Block 1

Cours au choix du tronc commun

Choisir, en accord avec le Jury, des cours pour un total de 60 crédits dans les listes proposées ci-dessous, dont au moins un des deux premiers cours de 5 des 6 listes proposées :

Space sciences : interdisciplinary courses

SPAT0017-1	<i>Seminars on topical issues</i> (english language) - JeanRené CUDELL, Benoît HUBERT, Damien HUTSEMEKERS, Charles TROUPIN	TA	-	30	-	3
SPAT0035-1	<i>Space exploration</i> (english language) - Grégor RAUW	Q1	30	10	-	4
SPAT0001-1	<i>Plasma physics</i> (english language) - Benoît HUBERT	Q2	25	5	-	4
SPAT0018-1	<i>Ideas evolution in astronomy</i> - Yaël NAZÉ	Q1	14	6	-	2
SPAT0036-1	<i>Celestial mechanics and space trajectories</i> (english language) - Grégor RAUW	Q1	25	10	-	4
SPAT0040-1	<i>Fluid mechanics</i> (english language) - Pierre DAUBY	Q1	20	10	-	4

Cosmology, astroparticles and gravitational waves

SPAT0021-1	<i>Introduction to astroparticles</i> (english language) - JeanRené CUDELL	Q2	30	-	-	3
SPAT0012-1	<i>General relativity</i> (english language) - Guillaume MAHLER	Q1	30	10	-	4
SPAT0010-1	<i>Cosmology</i> (english language) - Guillaume MAHLER Corequisite : SPAT0012-1 - General relativity	Q2	15	5	-	2
SPAT0160-1	<i>Particles and astroparticles</i> (english language) - JeanRené CUDELL Corequisite : SPAT0162-1 - Quantum field theory	Q2	20	10	-	4
SPAT0260-1	<i>Particles and gravitation</i> (english language) - JeanRené CUDELL Corequisite : SPAT0162-1 - Quantum field theory	Q2	10	5	-	2
SPAT0162-1	<i>Quantum field theory</i> (english language) - JeanRené CUDELL Corequisite : SPAT0012-1 - General relativity	Q1	20	10	-	4
PHYS2012-1	<i>Relativistic quantum mechanics and relativistic statistics</i> - Peter SCHLAGHECK	Q1	20	5	-	3
SPAT0084-1	<i>Theory of gravitational waves</i> (english language) - Maxime FAYS Corequisite : SPAT0012-1 - General relativity	Q1	20	10	-	4

Astrophysics

SPAT0033-1	<i>Astrophysics</i> (english language) - Michaël DE BECKER	Q1	35	10	-	5
SPAT0044-1	<i>Stellar structure and evolution I</i> (english language) - MarcAntoine DUPRET	Q1	35	-	-	3
SPAT0005-1	<i>Stellar stability and asteroseismology</i> (english language) - MarcAntoine DUPRET Corequisite : SPAT0044-1 - Stellar structure and evolution I	Q2	30	10	-	4
SPAT0006-1	<i>Stellar atmospheres</i> (english language) - Grégor RAUW	Q2	20	10	-	3
SPAT0007-2	<i>Variable stars</i> (english language) - Grégor RAUW	Q1	20	10	-	3
SPAT0008-1	<i>Interstellar medium</i> (english language) - Michaël DE BECKER, Valérie VAN GROOTEL	Q1	30	10	-	4
SPAT0009-1	<i>High-energy astrophysics</i> (english language) - Grégor RAUW	Q1	25	5	-	3

SPAT0011-1	<i>Extragalactic astrophysics</i> (english language) - Guillaume MAHLER, Dominique SLUSE Corequisite : SPAT0033-1 - Astrophysics	Q2	20	10	-	3
SPAT0020-2	<i>Astrochemistry</i> (english language) - Michaël DE BECKER	Q1	30	10	-	4
SPAT0045-1	<i>Stellar structure and evolution II</i> (english language) - MarcAntoine DUPRET Corequisite : SPAT0044-1 - Stellar structure and evolution I	Q2	20	20	-	3
SPAT0069-1	<i>Radio astrophysics</i> (english language) - Michaël DE BECKER	Q2	25	10	-	4
Planetary science and planetary systems						
SPAT0055-1	<i>Atmosphere of the Earth</i> (english language) - Denis GRODENT	Q1	45	-	-	4
SPAT0063-1	<i>Introduction to exoplanetology</i> (english language) - Olivier ABSIL, Michaël GILLON Corequisite : SPAT0033-1 - Astrophysics	Q2	20	10	-	4
SPAT0023-1	<i>Terrestrial magnetosphere and polar lights</i> (english language) - Benoît HUBERT	Q2	30	10	-	4
SPAT0028-2	<i>Planetary magnetospheres and aurorae</i> (english language) - Bertrand BONFOND, Denis GRODENT	Q2	20	10	-	3
SPAT0043-1	<i>The small bodies of the solar system</i> (english language) - Emmanuel JEHIN	Q2	15	5	-	3
SPAT0048-5	<i>Earth's atmospheric and space environment</i> (english language) - <i>Space environment</i> - Denis GRODENT - <i>Applied space environment</i> - Denis GRODENT	Q1	15	-	-	3
SPAT0056-1	<i>Planetary and exoplanetary atmospheres</i> (english language) - Denis GRODENT Corequisite : SPAT0055-1 - Atmosphere of the Earth	Q2	30	15	-	5
GEOL0263-1	<i>Astrobiology</i> (english language) - Vincianne DEBAILLE, Emmanuelle JAVAUX, Yaël NAZÉ, Annick WILMOTTE	Q2	45	-	-	5
GEOG0670-1	<i>Active Tectonics and Seismology</i> (english language) - Clara BRERETON, HansBalder HAVENITH, Aurelia HUBERT - [2d FW]	Q1	20	10	[+]	5
SPAT0066-1	<i>Internal geophysics of the Earth and terrestrial bodies of the solar system</i> (english language) - N...	Q1	25	-	-	2
Climate, environment and oceanography						
SPAT0027-3	<i>Climate change and impacts</i> (english language) - Louis FRANÇOIS, Guy MUNHOVEN	TA	30	30	-	5
OCEA0071-1	<i>Geophysical fluid dynamics - part 1</i> (english language) - JeanMarie BECKERS	Q2	30	15	-	6
SPAT0024-2	<i>Meteorology</i> (english language) - <i>Part 1</i> - Louis FRANÇOIS - <i>Part 2</i> - Louis FRANÇOIS	Q1	20	10	-	6
SPAT0025-1	<i>Climate and environmental modelling</i> (english language) - Louis FRANÇOIS, Guy MUNHOVEN	Q2	30	15	-	4
SPAT0026-1	<i>Paleoenvironment and evolution of the Earth system</i> (english language) - Louis FRANÇOIS	Q2	30	10	-	4
SPAT0032-2	<i>Remote sensing</i> (english language) - François JONARD	Q1	20	20	-	5
GEOG0037-1	<i>Global Navigation Satellite Systems</i> - René WARNANT	Q1	40	15	-	5
GEOG0038-1	<i>GNSS data processing</i> - René WARNANT	Q1	25	30	-	5

Corequisite :

GEOG0037-1 - Global Navigation Satellite Systems

OCEA0045-1	<i>Statistical methods of analysis of oceanographic data</i> (english language) - N...	Q1	20	10	-	3
OCEA0087-1	<i>Satellite oceanography</i> (english language) - Aida ALVERA AZCARATE	Q1	15	15	-	3
OCEA0072-1	<i>Geophysical fluid dynamics - part 2</i> (english language) - JeanMarie BECKERS	Q1	30	15	-	5
Corequisite :						
OCEA0071-1 - Geophysical fluid dynamics - part 1						
OCEA0081-1	<i>Numerical Methods in Geophysics - Part 2</i> (english language) - JeanMarie BECKERS	Q1	15	30	-	5

Instrumentation and methods for space sciences

SPAT0068-1	<i>Astrophysical observations</i> (english language) - Emmanuel JEHIN - [5d FW]	Q2	15	15	[+]	6
SPAT0002-1	<i>Statistical methods and data analysis</i> (english language) - Valentin CHRISTIAENS, Maxime FAYS, Guy MUNHOVEN, Dominique SLUSE	Q1	20	30	-	5
PHYS0048-3	<i>Coherent and incoherent optics, Instrumental optics I</i> (english language) - Serge HABRAKEN	Q1	20	15	-	4
SPAT0015-1	<i>Signal acquisition and processing : application to embedded systems</i> - N... (Even years)	Q2	10	30	-	4
PHYS0125-3	<i>Instrumental optics II</i> (english language) - Serge HABRAKEN	Q2	25	15	-	4
Corequisite :						
PHYS0048-3 - Coherent and incoherent optics						
SPAT0067-1	<i>Atmospheric and adaptive optics</i> (english language) - Olivier ABSIL	Q2	15	5	-	2
SPAT0085-1	<i>Analysis mehtods in gravitational-wave astronomy</i> (english language) - Maxime FAYS	Q2	20	10	-	4
SPAT0086-1	<i>Advanced data analysis in python and introduction to machine learning</i> (english language) - Valentin CHRISTIAENS, Maxime FAYS, Guy MUNHOVEN, Dominique SLUSE	Q2	15	25	-	4

Block 2

Cours obligatoires de la finalité

SSTG0052-1	<i>Internship in industry or agency</i> (english language) - Michaël DE BECKER, Marc GEORGES	TA	-	70	-	5
SPAT0072-1	<i>Seminars on space activities</i> (english language) - Marc GEORGES	Q1	30	-	-	5
GEST3162-1	<i>Principles of management</i> (english language) - Michaël PARMENTIER - [25h Proj.]	Q1	30	-	[+]	5
AERO0037-1	<i>Space optical instrumentation</i> (english language) - Denis GRODENT, Jérôme LOICQ - [1d FW]	Q1	40	12	[+]	5

Cours au choix de la finalité

In agreement with the jury, chose courses that haven't already been chosen for a total of 10 credits from the list below:

SPAT0074-1	<i>Internship complement</i> (english language) - Michaël DE BECKER	TA	-	40	-	3
ELEN0008-1	<i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK	Q2	26	26	-	5
GEOG0037-1	<i>Global Navigation Satellite Systems</i> - René WARNANT	Q1	40	15	-	5
SPAT0032-2	<i>Remote sensing</i> (english language) - François JONARD	Q1	20	20	-	5

[...] this list can be extended to courses of interest in the space sector included in the curriculum of other master's degrees:

Cours obligatoire du tronc communSMEM0029-1 *Final thesis* - COLLÉGIALITÉ

TA - - - 27

Cours au choix du tronc commun

Choisir, en accord avec le Jury, un cours non déjà choisi de 3 crédits dans les listes proposées en Bloc 1

[...] In agreement with the jury, chose a course that hasn't already been chosen worth 3 credits from the lists offered in Block 1

Bloc d'aménagement du programme de l'année**Additional ECTS (max 15-60) Master in space sciences (120 ECTS)****Optional courses**

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

[...] Between 15 and 60 ECTS of courses