

## Block view of the study programme

Or Th Pr Au Cr

### Bloc 1 du programme de l'année

#### Compulsory Courses

MECA0462-2	<i>Materials selection</i> (english language) - Jacqueline LECOMTEBECKERS, Davide RUFFONI - [30h Proj., 1d FW]	Q1	30	30	[+]	5
MECA0474-1	<i>Mechanical computer-Aided-Design</i> (english language) - Eric BÉCHET - [30h Proj.]	Q1	30	30	[+]	5
MECA0029-1	<i>Theory of vibration</i> (english language) - JeanClaude GOLINVAL - [30h Proj.]	Q1	30	30	[+]	5
AERO0025-1	<i>Satellite engineering</i> (english language) - Gaëtan KERSCHEN - [20h Proj.]	Q1	60	-	[+]	5
AERO0001-1	<i>Aerodynamics</i> (english language) - Thomas ANDRIANNE, Vincent TERRAPON - [2h Labo., 25h Proj.]	Q2	30	28	[+]	5
AERO0014-1	<i>Aerospace propulsion</i> (english language) - Olivier LÉONARD <b>Corequisite :</b> AERO0001-1 - Aerodynamics	Q2	30	30	-	5
AERO0003-1	<i>Flight Dynamics and Control</i> (english language) - Grigorios DIMITRIADIS - Suppl : Patrick HENDRICK <b>Corequisite :</b> AERO0001-1 - Aerodynamics APRI0004-1 - Aerospace design project	Q2	30	30	-	5
MECA0031-2	<i>Kinematics and dynamics of mechanisms</i> (english language) - Olivier BRULS - [40h Proj.]	Q2	30	20	[+]	5
APRI0004-1	<i>Aerospace design project</i> (english language) - Ludovic NOELS - Suppl : Thomas ANDRIANNE - [10h Labo., 260h Proj., 5d FW] <b>Corequisite :</b> MECA0474-1 - Mechanical Computer-Aided-Design AERO0014-1 - Aerospace propulsion AERO0001-1 - Aerodynamics AERO0003-1 - Flight Dynamics and Control	TA	30	-	[+]	10

*Notice* : with the agreement of the President of the Jury, based on its technical content, the integrated project can be replaced by an interdisciplinary project (e.g., Ingénieur de projet, Eurobot, Eco-Shell Marathon) completed between the beginning of the third year of the bachelor and the end of the second year of the Master."

#### Optional courses

##### Choose an option between "Aeronautics" and "Space engineering"

##### Option Aeronautics

MECA0023-1	<i>Advanced solid mechanics</i> (english language) - JeanPhilippe PONTHOT - [20h Proj.]	Q1	30	30	[+]	5
MECA0028-1	<i>Aeronautical structures</i> (english language) - Ludovic NOELS - [70h Proj.] <b>Corequisite :</b> APRI0004-1 - Aerospace design project	Q2	30	20	[+]	5

##### Option in Space engineering

SPAT0048-4	<i>Atmosphere of the earth and space environment</i> (english language) - JeanClaude GÉRARD, Denis GRODENT	Q2	45	15	-	5
AERO0018-3	<i>Space experiment development</i> (english language) - Pierre ROCHUS	Q1	30	30	-	5

*Notice* : students who, in their bachelor's degree, took one or more of the compulsory course(s) must replace them by other(s) course(s) of the Faculty ; this choice must be approved by the President of the cycle's jury.

### Bloc 2 du programme de l'année

### Compulsory Courses

ATFE0005-1	<i>Master's thesis</i> - COLLÉGIALITÉ	TA	-	-	-	<b>25</b>
GEST3162-1	<i>Principles of management</i> (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE	Q1	25	25	-	<b>5</b>

### Optional courses

#### Single focus

#### Research focus

#### Compulsory Courses

AERO0030-1	<i>Computational fluid dynamics</i> (english language) - Vincent TERRAPON - [10h Labo.]	Q2	30	20	[+]	<b>5</b>
------------	---	----	----	----	-----	----------

#### Optional courses

Choose 25 credits of course among :

- [...] The student must choose either an observation or an integration intership. If the observation internship is selected, 2 remaining credits should be selected within the research focus module
- [...] A maximum of 5 credits can be selected among the ISLV language courses organized in other Faculties or in the list below

#### Aeronautics

AERO0032-1	<i>Aeroelasticity and experimental aerodynamics</i> (english language) - Thomas ANDRIANNE <b>Prerequisite :</b> AERO0001-1 - Aerodynamics MECA0029-1 - Theory of vibration	Q1	30	30	-	<b>5</b>
AERO0015-1	<i>Mechanical design of turbomachinery</i> (english language) - JeanClaude GOLINVAL - [30h Proj.] <b>Prerequisite :</b> MECA0029-1 - Theory of vibration	Q1	30	30	[+]	<b>5</b>
MECA0502-1	<i>Mechanics of composites</i> (english language) - Michaël BRUYNEEL	Q1	30	30	-	<b>5</b>
MECA0032-1	<i>Flow in turbomachineries</i> (english language) - Olivier LÉONARD - [60h Proj.] <b>Prerequisite :</b> AERO0001-1 - Aerodynamics <b>Corequisite :</b> AERO0030-1 - Computational fluid dynamics	TA	30	30	[+]	<b>5</b>
AERO0004-1	<i>Turbulent Flows</i> (english language) - Vincent TERRAPON - [40h Proj.] <b>Corequisite :</b> AERO0030-1 - Computational fluid dynamics	Q1	30	30	[+]	<b>5</b>
AERO0033-1	<i>Aerothermodynamics of high-speed flows</i> (english language) - Thierry MAGIN - [1d FW] <b>Prerequisite :</b> AERO0001-1 - Aerodynamics	Q2	30	30	[+]	<b>5</b>

#### Space engineering

ASTR0004-2	<i>Astrophysics and Space Techniques</i> (english language) - Jean SURDEJ - [5h Labo., 5h Proj., 5d FW]	TA	30	15	[+]	<b>5</b>
AERO0024-1	<i>Astrodynamic</i> s (english language) - Gaëtan KERSCHEN - [20h Proj.]	Q1	30	30	[+]	<b>5</b>
SPAT0032-2	<i>remote sensing</i> (english language) - Christian BARBIER	Q1	30	30	-	<b>5</b>
AERO0026-1	<i>Launch vehicles design and propulsion</i> (english language) - JeanLuc BOZET, Philippe NGENDAKUMANA	Q2	30	-	-	<b>5</b>

ELEN0008-1	<i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK	Q2	30	30	-	5
AERO0033-1	<i>Aerothermodynamics of high-speed flows</i> (english language) - Thierry MAGIN - [1d FW] <b>Prerequisite :</b> AERO0001-1 - Aerodynamics	Q2	30	30	[+]	5
PHYS0048-1	<i>Coherent and incoherent optics</i> (english language) - Serge HABRAKEN	Q1	30	30	-	5
MECA0127-1	<i>Active Structure</i> (english language) - André PREUMONT	Q1	30	30	-	5
[...]	With the agreement of the President of the Jury, a maximum of 5 credits can be selected among the courses of the Master in Space Sciences					

#### Computational mechanics

MECA0464-1	<i>Large deformation of solids</i> (english language) - JeanPhilippe PONTHOT - [60h Proj.]	Q1	30	30	[+]	5
MECA0058-1	<i>Fracture mechanics, damage and fatigue</i> (english language) - Ludovic NOELS - [75h Proj.]	Q1	30	10	[+]	5
MECA0062-1	<i>Vibration testing and experimental modal analysis</i> (english language) - JeanClaude GOLINVAL - [30h Proj.] <b>Prerequisite :</b> MECA0029-1 - Theory of vibration	Q1	30	30	[+]	5
INFO0939-1	<i>High performance scientific computing</i> (english language) - Christophe GEUZAINÉ - [20h Proj.]	Q1	30	15	[+]	5
MECA0027-1	<i>Structural and multidisciplinary optimization</i> - Pierre DUYSINX, Patricia TOSSINGS - [18h Proj.]	Q1	30	12	[+]	5
INFO2046-2	<i>Computational geometry</i> (english language) - Eric BÉCHET - [95h Proj.]	Q1	25	-	[+]	5
MECA0470-1	<i>New methods in computational mechanics</i> (english language) - Maarten ARNST, Eric BÉCHET, Ludovic NOELS - [40h Proj.]	Q2	20	-	[+]	5
MECA0010-1	<i>Scholastic modelling</i> (english language) - Maarten ARNST - [28h Proj.]	Q2	16	16	[+]	5
[...]	One course of maximum 5 credits to choose among other courses of the Faculty : this choice must be approved by the cycle's jury President					

*Notice :* a student who, in his (her) bachelor degree, has already followed one or several optional course(s) of this list has to replace it.

#### Compulsory Internship

ASTG0116-1	<i>Observation internship</i> - Pierre DEWALLEF <b>Corequisite :</b> GEST3162-1 - Principles of management	TA	-	-	-	3
ASTG0117-1	<i>Integration internship</i> - Pierre DEWALLEF <b>Corequisite :</b> ATFE0005-1 - Master's thesis GEST3162-1 - Principles of management	TA	-	-	-	5

#### Language

LANG1957-1	<i>Dutch for Engineers, part 1</i> (dutch language) - Claudine COLIN	Q1	36	-	-	3
LANG2978-1	<i>Dutch for engineer, part 2</i> - Claudine COLIN <b>Corequisite :</b> LANG1957-1 - Néerlandais pour l'ingénieur, partim 1	Q2	24	-	-	2
LANG1958-1	<i>German for engineer, Part 1</i> (german language) - Françoise CARL	Q1	36	-	-	3
LANG2979-1	<i>German for engineers, part 2</i> - Françoise CARL, ISLV	Q2	24	-	-	2

**Corequisite :**  
LANG1958-1 - Allemand pour l'ingénieur, partim 1

**Programme transitoire à destination des étudiants ayant réussi leur master 1 de  
"Master en ingénieur civil en aérospatiale, à finalité approfondie" en 2014-2015**

**Bloc 1 du programme de l'année**

**Optional courses**

**Single focus**

**Research focus**

The student must choose 30 credits of courses

[...] The student must choose either an observation or an integration internship

ASTG0116-1 *Observation internship* - Pierre DEWALLEF TA - - - **3**

ASTG0117-1 *Integration internship* - Pierre DEWALLEF TA - - - **5**

[...] Maximum 25 crédits of courses within the Research focus module or courses of the 1st year master programme that have not been taken during 1st year to reach a total of 60 ECTS.

Note : The course AERO0030-1 must be chosen if this course has not been taken during the 1st year.

[...] A maximum of 5 credits can be selected among the ISLV language courses organized in other Faculties or in the list below

LANG1957-1 *Dutch for Engineers, part 1* (dutch language) - Claudine COLIN Q1 36 - - **3**

LANG2978-1 *Dutch for engineer, part 2* - Claudine COLIN Q2 24 - - **2**

LANG1958-1 *German for engineer, Part 1* (german language) - Françoise CARL Q1 36 - - **3**

LANG2979-1 *German for engineers, part 2* - Françoise CARL, ISLV Q2 24 - - **2**

[...] With the agreement of the President of the Jury, the student can choose a maximum of 5 credits among the other program of the Faculty.

**Compulsory Courses**

ATFE0005-1 *Master's thesis* - COLLÉGIALITÉ TA - - - **25**

GEST3162-1 *Principles of management* (english language) - Michael GHILISSEN, François PICHault, Thierry PIRONET, Didier VAN CAILLIE Q1 25 25 - **5**

**Aeronautics**

AERO0032-1 *Aeroelasticity and experimental aerodynamics* (english language) - Thomas ANDRIANNE Q1 30 30 - **5**

AERO0015-1 *Mechanical design of turbomachinery* (english language) - JeanClaude GOLINVAL - [30h Proj.] Q1 30 30 [+] **5**

MECA0502-1 *Mechanics of composites* (english language) - Michaël BRUYNEEL Q1 30 30 - **5**

MECA0032-1 *Flow in turbomachineries* (english language) - Olivier LÉONARD - [60h Proj.] TA 30 30 [+] **5**

AERO0004-1 *Turbulent Flows* (english language) - Vincent TERRAPON - [40h Proj.] Q1 30 30 [+] **5**

AERO0033-1 *Aerothermodynamics of high-speed flows* (english language) - Thierry MAGIN - [1d FW] Q2 30 30 [+] **5**

**Space engineering**

ASTR0004-2 *Astrophysics and Space Techniques* (english language) - Jean SURDEJ - [5h Labo., 5h Proj., 5d FW] TA 30 15 [+] **5**

AERO0024-1	<i>Astrodynamics</i> (english language) - Gaëtan KERSCHEN - [20h Proj.]	Q1	30	30	[+]	5
SPAT0032-2	<i>remote sensing</i> (english language) - Christian BARBIER	Q1	30	30	-	5
AERO0026-1	<i>Launch vehicles design and propulsion</i> (english language) - JeanLuc BOZET, Philippe NGENDAKUMANA	Q2	30	-	-	5
ELEN0008-1	<i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK	Q2	30	30	-	5
AERO0033-1	<i>Aerothermodynamics of high-speed flows</i> (english language) - Thierry MAGIN - [1d FW]	Q2	30	30	[+]	5
PHYS0048-1	<i>Coherent and incoherent optics</i> (english language) - Serge HABRAKEN	Q1	30	30	-	5
MECA0127-1	<i>Active Structure</i> (english language) - André PREUMONT	Q1	30	30	-	5

With the agreement of President of the Jury, a maximum of 5 credits can be selected among the courses of the Master in Space Sciences

#### Computational mechanics

MECA0464-1	<i>Large deformation of solids</i> (english language) - JeanPhilippe PONTHOT - [60h Proj.]	Q1	30	30	[+]	5
MECA0058-1	<i>Fracture mechanics, damage and fatigue</i> (english language) - Ludovic NOELS - [75h Proj.]	Q1	30	10	[+]	5
MECA0062-1	<i>Vibration testing and experimental modal analysis</i> (english language) - JeanClaude GOLINVAL - [30h Proj.]	Q1	30	30	[+]	5
INFO0939-1	<i>High performance scientific computing</i> (english language) - Christophe GEUZAIN - [20h Proj.]	Q1	30	15	[+]	5
MECA0027-1	<i>Structural and multidisciplinary optimization</i> - Pierre DUYSINX, Patricia TOSSINGS - [18h Proj.]	Q1	30	12	[+]	5
INFO2046-2	<i>Computational geometry</i> (english language) - Eric BÉCHET - [95h Proj.]	Q1	25	-	[+]	5
MECA0470-1	<i>New methods in computational mechanics</i> (english language) - Maarten ARNST, Eric BÉCHET, Ludovic NOELS - [40h Proj.]	Q2	20	-	[+]	5
MECA0010-1	<i>Scholastic modelling</i> (english language) - Maarten ARNST - [28h Proj.]	Q2	16	16	[+]	5

Note : a student who, in his (her) bachelor degree, has already followed one or several optional course(s) of this list has to replace it.