

## Subjects list and credits

### AERO 4 (P2019)

**The student must choose 1 major and 1 option**

SEMESTRE 2 = "S8" = Spring semester			
Code	Subjects	Teaching hours	ECTS credits
Pole "Engineering sciences core" - ALL OPTIONS			
UE PSITC 41 : "Engineering Sciences"			
MA411	Operations research	22	4
AU411	Graphic representation of dynamic multilinear systems	22	
MI411	RAMS: FMECA methodology	14	
AE411	Flight dynamics : aircraft flying qualities	23	
UE PSIEL 41 : "Engineering Sciences" Elective modules			
MO411	All options except ELS : Elective module 1 (8 choices) ELS option : Astronomy, Astrometry	22	4
MO412	All options except ELS : Elective module 2 (8 choices) ELS option : Astrophysics	22	
MO413	Introducing project to research or innovation PIRI Or Business conception supporting project PACE	20	
Pole "Human sciences and language" - ALL OPTIONS - TAUGHT IN FRENCH			
UE PCSHCG 41 : "Engineering culture"			
SH411	Societal responsibilities of businesses	14	3
SH412	Companies and organisations sociology	14	
SH414	Labour law	14	
SH419	Personal development	0	
	French language - COMPULSORY	45	
Pole "Employability" - ALL OPTIONS - TAUGHT IN FRENCH			
UE PCIP 42 : "Corporate knowledge"			
MI415	Project management	14	4
MI412	Quality - Regulations - Standards - Lean management	14	
MI413	Corporate strategy principles	14	
MI414	Economics: financial management	20	

Pole "Engineering Sciences" - Specialization 1 major/student			
UE PSISS 41 : Major SYSTEM "Command systems" (only for students with SET, SM and ELS options)			
IN411	Complex information systems modelling	11	5
IN412	Real Time systems	26	
IN413	Embedded networks	18	
IN414	Swarm intelligent systems	26	
AU412	Physical approach to aeronautical automated systems	26	
UE PSISV 41 : Major VEHICLES "Vehicles structures" (only for students with ELS, EP and MS options)			
AE412	Compressible fluid dynamics	34	5
ME417	Advanced continuum mechanics	30	
ME418	Introduction to NASTRAN	18	
EN413	Energetics and sustainable design	26	

Pole "Aeronautical and Space" 1 option/student			
UE PAS 41 : Embedded systems and telecommunications (SET)			
EL411	Advanced applications of RPGA circuits	22	4
TE411	Telecommunications: principles and liaison balance	26	
TE412	Guides propagation and hyperfrequencies	18	
UE PAS 42 : Mechatronics systems (SM)			
AU421	Power electronics and actuators in aeronautics	18	4
AU422	Guidance principles of autonomous systems	26	
AU423	Introduction to robotics	22	
UE PAS 43 : Energetics and propulsion (EP)			
EN411	Turbomachine design	42	4
EN412	Thermal motors for drone & light aircraft	24	
UE PAS 44 : Mechanics and structures (MS)			
ME420	Aeronautical structures design	11	4
ME419	Metallic and composites materials	35	
ME416	CAD: CATIA	21	
UE PAS 45 : Space, launchers and satellite (ELS)			
SP411	Space mechanics	22	4
SP412	Atmospheric reentry and mission concept projetc	22	
SP413	Space optics	22	
SP414	Plasma physics, electrical and plasma propulsion	22	