

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	1,5
AU411	Graphic representation of dynamic multilinear systems	22	1,5
MI411	RAMS: FMECA methodology	14	1,5
AE411	Flight dynamics : aircraft flying qualities	23	1,5
UE PSIEL 41 : "Engineering Sciences" Elective modules			
MO4XX	All options except ELS : Elective module 1 (8 choices) ELS option : Astronomy, Astrometry	22	2
MOXX	All options except ELS : Elective module 2 (8 choices) ELS option : Astrophysics	22	2
Ci4XX	Introducing project to research or innovation PIRI Or Business conception supporting project PACE	20	2
Pole "Human sciences and language" - ALL OPTIONS - TAUGHT IN FRENCH			
UE PCSHCG 41 : "Engineering culture"			
	French language - COMPULSORY	45	4

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	1
IN412	Real Time systems	26	2
IN413	Embedded networks	18	1
IN414	Swarm intelligent systems	26	2
AU412	Physical approach to aeronautical automated systems	26	2
UE PSISV 41 : Major VEHICLES "Vehicles structures" (only for students with ELS, EP and MS options)			
AE412	Compressible fluid dynamics	34	2
ME417	Advanced continuum mechanics	30	2
ME418	Introduction to NASTRAN	18	2
EN413	Energetics and sustainable design	26	2

Pole "Aeronautical and Space" 1 option/student

UE PAS 41 : Embedded systems and telecommunications (SET)			
EL411	Advanced applications of RPGA circuits	22	2
TE411	Telecommunications: principles and liaison balance	26	2
TE412	Guides propagation and hyperfrequencies	18	2
UE PAS 42 : Mechatronics systems (SM)			
AU421	Power electronics and actuators in aeronautics	18	2
AU422	Guidance principles of autonomous systems	26	2
AU423	Introduction to robotics	22	2
UE PAS 43 : Energetics and propulsion (EP)			
EN411	Turbomachine design	42	4
EN412	Thermal motors for drone & light aircraft	24	2
UE PAS 44 : Mechanics and structures (MS)			
ME416	Aeronautical structures design	11	1
ME419	Metallic and composites materials	35	3
ME420	CAD: CATIA	21	2
UE PAS 45 : Space, launchers and satellite (ELS)			
SP411	Space mechanics	22	1,5
SP412	Atmospheric reentry and mission concept projetc	22	1,5
SP413	Space optics	22	1,5
SP414	Plasma physics, electrical and plasma propulsion	22	1,5