

List of courses and corresponding ECTS credits

AERO 5 (P2017) - Fall semester

Issue October 2016

Majors: **Systems (SYS) & Vehicles (VEH)**

Coordinators: Doctor BERTOSSI (VEH) - Professor RICHARD (SYS)

	Course hours	ECTS credits	Personal homework
TOTAL option SAA SYSTEMS - Automeus airborne systems	380	60	435
TOTAL option TIE SYSTEMS - Embedded information management & processing	380	60	435
TOTAL option CAE VEHICLES - Airframes and materials	380	60	435
TOTAL option EMO VEHICLES - Energy and powering	380	60	435

Course hours means both lectures and tutorials

Options Space, Launchers & Satellites

Coordinator: Doctor ROBERT

	Course hours	ECTS credits	Personal homework
TOTAL option ELSS SPACE - Systems	380	60	435
TOTAL option ELSV SPACE - Vehicles	380	60	435

Major: **Management and Logistics (MLI)**

Coordinator: Professor LEFEVRE

	Course hours	ECTS credits	Personal homework
TOTAL option MPI MANAGEMENT & LOGISTICS - Project management & business	380	60	435
TOTAL option MPM MANAGEMENT & LOGISTICS - Logistics, manufacturing & maintenance	380	60	435

cross check between options and majors	major SYS	major VEH	major MLI
option SAA Autonomus airborne systems	✓		
option TIE Embedded information management & processing	✓		
option ELSS Space / systems	✓		
option ELSV Space / vehicles		✓	
option CAE Airframes & materials		✓	
option EMO Energy & powering		✓	
option MPI Project management & Business taught in french			✓
option MPM Logistics - Manufacturing - Maintenance taught in french			✓

COMMON CLUSTERS FOR ALL OPTIONS				
Pole "Corporate knowledge & professional skills" - ALL OPTIONS				
Codes	Courses	Course hours	ECTS credits	Personal homework
UE PCIP 51 : "Human Sciences"				
TC5	Society challenges	50 H	4	60 H
	Ethics			
	Sustainable design			
	Industrial environment knowledge			
UE PCIP 53 : "Industrial project" (PFE)				
TC5	PFE with Industry tutor	20 H	2	100 H
UE PCIP 55 : "Corporate sciences" except for Foreign students (French as a foreign language)				
TC5	Corporate strategy	60 H	4	50 H
	Public contracts rules			
	Standards			
	Work laws			
	Contracts laws			
French as a foreign language (FLE) - depending on the initial French level		30 to 60 H	4	40 to 60 H

MAJORS				
Codes	Courses	Course hours	ECTS credits	Personal homework
UE PSISS 51 : "Control systems" - MAJOR SYS				
SYS	Aircraft modelling	120 H	10	105 H
	Identification & observation of systems (Kalman filtering)			
	Automatic pilot: simulayion & performances			
	EM compatibility & antennas			
	Systems design & prototyping			
UE PSISV 51 : "Vehicles" - MAJOR VEH				
VEH	Introduction to hypersonic aerodynamics	120 H	10	105 H
	Piloting systems			
	Vibrations			
	Communication, navigation and HMI			
	Finite elements modelling (FEM)			
	Computational fluid dynamics (CFD)			
UE PSISM 51 : "Corporate management"- MAJOR MLI				
MLI	Purchasing & suppliers contracting	120 H	10	105 H
	Industrial marketing - B to B			
	Cost management			
	Large project management & follow-up			
	Finance controlling			
	Supply chain			

OPTIONS				
Codes	Courses	Course hours	ECTS credits	Personal homework
UE PAS 51 : "Autonomous airborne systems" - OPTION SAA				
SAA	Intelligent controlling	120 H	10	120 H
	Non linear systems control			
	Distributed systems			
	Drones & embedded vision			
	Project			
UE PAS 52 : "Embedded information management & processing" - OPTION TIE				
TIE	Real-time embedded systems	120 H	10	120 H
	Image processing & FPGA			
	Data transmission & airborne sensors			
	Telecommunication systems			
	Project			

UE PAS 53 : "Airframes & materials" - OPTION CAE				
CAE	Aeroacoustics	120 H	10	120 H
	Commercial aircraft design (project)			
	Helicopters			
	Manufacturing			
	Weights & balance			
	Loads calculation (in flight & on the ground)			
	Multi-parts mechanical simulation			
UE PAS 54 : "Energy & powering" - OPTION EMO				
EMO	Turbines	120 H	10	120 H
	Propulsion system design (project)			
	Combustion			
	Manufacturing			
	Space propulsion systems			
	Thermal approach			
	Alternate energies for propulsion			
UE PAS 55 : "Space" - OPTIONS ELSS & ELSV				
ELSS ELSV	Satellites design	120 H	10	120 H
	Launchers design			
	Manned space flights			
	RAMS			
	Spatial optics			
UE PSISM 52 : "Project management & Business" - OPTION MPI TAUGHT IN FRENCH				
MPI	International negotiations	120 H	10	120 H
	Accounting management			
	Financial evaluation of industrial projects			
	Information systems & databases			
	Analyse of commercial efficiency			
	Risk analysis & management			
	Financing industrial projects			

UE PSISM 53 : "Logistics - Manufacturing - Maintenance" - OPTION MPM TAUGHT IN FRENCH				
MPM	Project management	120 H	10	120 H
	Supply chain: a concrete case study			
	Procurement & stock management			
	Manufacturing			
	Information systems & databases			
	Quality management techniques			
	Supply chain - 2			
	Manufacturing accounting techniques			