UCL Université catholique de Louvain

LMECA2830

2010-2011

Aerospace dynamics.

5.0 credits	30.0 h + 30.0 h	1q

Teacher(s) :	Chatelain Philippe ; Johnson David ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	- Universal gravitation and applications. - Aircraft dynamics : equilibrium, stability and control. - Launchers. - Satellite orbits and attitude stability.
Aims :	Introduce students to the specific issues of aircraft dynamics, launcher systems and dynamics, and satellite dynamics. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	- Summary of rigid body mechanics. - Aircraft dynamics : aerodynamic loads, translational and rotational dynamics, steady state motion, propulsion, stability, controls. - Launcher dynamics and staging optimisation. - Satellite dynamics : orbits, transfers, rendezvous, attitude stability.
Other infos :	Prequisites : Analytical mechanics, applied mathematics. References : - B. ETKIN Dynamics of Flight - Stability and Control. - L. GEORGE, J-F VERNET, J-C WANNER La mécanique du vol. - J.W. CORNELISSE, H.F.R. SCHÖYER, K.F. WAKKER Rocket Propulsion and Spaceflight.
Cycle and year of study :	> Master [120] in Mechanical Engineering > Master [120] in Electro-mechanical Engineering
Faculty or entity in charge:	MECA