

5.0 credits

30.0 h + 30.0 h

1q

Teacher(s) :	Chatelain Philippe ;
Language :	Anglais
Place of the course	Louvain-la-Neuve
Inline resources:	http://icampus.uclouvain.be/claroline/course/index.php?cid=MECA2550
Prerequisites :	-- MECA 1855 Thermodynamique et énergétique -- MECA 2322 Mécanique des fluides et transferts 2 (can be taken simultaneously) -- MECA 2323 Aérodynamique (recommended)
Main themes :	1. Fundamentals of air-breathing propulsion 1.1) Dynamical and energetic aspects 1.2) Concepts and domains of use 2. Analysis of propulsion systems 2.1) The airscrew 2.2) The jet engine 2.3) The Ramjet and Scramjet engines 2.4) Inlets and nozzles 2.5) Technological aspects 3. Advanced concepts and future trends
Aims :	Aims to provide an analytical description of systems used in aircraft propulsion, to model their behaviour and to introduce students to performance evaluation and component dimensioning. <i>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".</i>
Evaluation methods :	Written exam in 2 parts: -- theoretical questions -- exercises
Teaching methods :	Course notes are being prepared and will be made available in electronic format during the term. Lecture slides will also be available
Content :	1. Fundamentals of air-breathing propulsion 1.1) Dynamical and energetic aspects 1.2) Concepts and domains of use 2. Analysis of propulsion systems 2.1) The airscrew 2.2) The jet engine 2.3) The Ramjet and Scramjet engines 2.4) Inlets and nozzles 2.5) Technological aspects 3. Advanced concepts and future trends
Cycle and year of study :	Master [120] in Mechanical Engineering
Faculty or entity in charge:	MECA