


5 credits	30.0 h + 30.0 h	Q1
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Teacher(s)	Chatelain Philippe ;Marichal Yves (compensates Chatelain Philippe) ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	<ol style="list-style-type: none"> 1. Fundamentals of air-breathing propulsion <ol style="list-style-type: none"> 1.1) Dynamical and energetic aspects 1.2) Concepts and domains of use 2. Analysis of propulsion systems <ol style="list-style-type: none"> 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	<p>In consideration of the reference table AA of the program " Master's degree civil engineer mechanics ", this course contributes to the development, to the acquisition and to the evaluation of the following experiences of learning:</p> <ul style="list-style-type: none"> • AA1.1, AA1.2, AA1.3 • AA2.1, AA2.2, AA2.3 • AA3.1, AA3.2 • AA5.4, AA5.5, AA5.6 • AA6.3, AA6.4 <p>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.</p> <p>-----</p> <p><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></p>
Evaluation methods	<p>Written exam in 2 parts:</p> <ul style="list-style-type: none"> • theoretical questions • exercises
Teaching methods	<p>Course notes are being prepared and will be made available in electronic format during the term. Lecture slides will also be available</p>
Content	<ol style="list-style-type: none"> 1. Fundamentals of air-breathing propulsion <ol style="list-style-type: none"> 1.1) Dynamical and energetic aspects 1.2) Concepts and domains of use 2. Analysis of propulsion systems <ol style="list-style-type: none"> 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
Inline resources	http://moodleucl.uclouvain.be/enrol/index.php?id=8367
Faculty or entity in charge	MECA

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Electro-mechanical Engineering	ELME2M	5		
Master [120] in Mechanical Engineering	MECA2M	5		