

Course unit title:	<b>Aircraft Performance</b>		
Course unit code:	ME416		
Type of course unit:	Technical Elective		
Level of course unit:	Bachelor (1st Cycle)		
Year of study:	3 or 4		
Semester when the unit is delivered:	Spring		
Number of ECTS credits allocated :	6		
Name of lecturer(s):	Professor Varnavas C. Serghides		
Learning outcomes of the course unit:	This course aims to introduce the students to the process of aircraft performance estimation and to teach them not only the underlying principles but also various design-oriented and operational methodologies for the detailed calculation of the mission, point and field performance characteristics of fixed-wing aircraft.		
Mode of delivery:	Face-to-face		
Prerequisites:	None	Co-requisites:	None
Recommended optional program components:	None		
Course contents:	<p>The Standard Atmosphere  Airspeed Definitions  Aerodynamic, Propulsive and Weight considerations  Equations of Motion  Steady Level Flight  Range and Endurance  Steady Climbing and Descending Flight  Level Turning Flight  Gliding Flight  Energy-Manoeuvrability Methods  Optimal climb trajectories  Operating Envelope  Operational constraints  Maneuverability in the horizontal and vertical planes  Takeoff Analysis  Landing Analysis</p>		
Recommended and/or required reading:			
Textbooks:	<ul style="list-style-type: none"> <li>• Anderson, J.D., Aircraft Performance &amp; Design, McGraw-Hill International Editions Series, 1999</li> <li>• Raymer, D.P., Aircraft Design – A Conceptual Approach, American Institute of Aeronautics and Astronautics, 2012</li> <li>• Eshelby, M.E., Aircraft Performance: Theory and Practice, American Institute of Aeronautics and Astronautics, 2000</li> </ul>		
References:			
Planned learning activities and teaching methods:	This course is presented with the aid of several PowerPoint slides and photos, while the whiteboard is used for analytical work. Copies of all the slides presented during the course are distributed to the students in the form of handouts. The course material is further enhanced with numerous real aircraft examples and detailed practical explanations.		
Assessment methods and criteria:	<ul style="list-style-type: none"> <li>• Quizzes/Assignments                      15%</li> <li>• Mid-Term Tests                                25%</li> <li>• Final Exam                                      60%</li> </ul>		

Language of instruction:	English
Work placement(s):	No