



<b>1. Subject name</b>	<b>Advanced theory of flight I. Aerodynamics</b>				
<b>2. Subject name in Hungarian</b>	Advanced theory of flight I. Aerodynamics				
<b>3. Code</b>	<b>BMEKOVRD002</b>	<b>4. Evaluation type</b>	<b>exam grade</b>	<b>5. Credits</b>	<b>4</b>
<b>6. Weekly contact hours</b>	<b>2 (0) Lecture</b>	<b>2 (0) Practice</b>	<b>0 (0) Lab</b>		
<b>7. Curriculum</b>	<b>PhD Programme</b>	<b>8. Role</b>	<b>Basic course</b>		
<b>9. Working hours for fulfilling the requirements of the subject</b>					<b>120</b>
<b>Contact hours</b>	56	<b>Preparation for seminars</b>	20	<b>Homework</b>	10
<b>Reading written materials</b>	10	<b>Midterm preparation</b>	0	<b>Exam preparation</b>	24
<b>10. Department</b>	<b>Department of Aeronautics and Naval Architectures</b>				
<b>11. Responsible lecturer</b>	Dr. Rohács József				
<b>12. Lecturers</b>	Dr. Rohács József				
<b>13. Prerequisites</b>					
<b>14. Description of lectures</b>					
<p>A.) Basic aerodynamics. Lift generation. Boundary layer theory. Drag and its components. Aerodynamics coefficients. Theory of profiles. Theory of finite wing. Aerodynamics of 3D bodies. Subsonic, transonic and supersonic aerodynamics. Polar curve calculations, aircraft aerodynamic design.</p> <p>B.) Advanced aerodynamics. Flow control. Laminar wing. Airframe – propulsion system integration. Control of the flow separation. Non-steady aerodynamics. Aerodynamics of flexible wings. Morphing. Biomimicry. Models of the aerodynamics coefficients. Numerical aerodynamics. Measuring the aerodynamic coefficients. Identification of models of aerodynamic coefficients. Role of aerodynamics in aircraft conceptual design.</p>					
<b>15. Description of practices</b>					
PhD studentt have not studied the aerodynamics earlier must perform aerodynamic calculation/ design of an aircraft, systematic consultancy on a special project and working individually on proposal or contribution an article.					
<b>16. Description of labortory practices</b>					
As it required for performing the practical works.					
<b>17. Learning outcomes</b>					
<p>A. Knowledge B. Skills C. Attitudes D. Autonomy and Responsibility</p> <ul style="list-style-type: none"> <li>Objectives: increasing knowledge in aerodynamics; developing the competence in understanding, measuring, calculation and predicting the aerodynamic characteristics; developing knowledge and competence in aerodynamic design</li> </ul>					
<b>18. Requirements, way to determine a grade (obtain a signature)</b>					
<b>19. Opportunity for repeat/retake and delayed completion</b>					
<b>20. Learning materials</b>					
<b>Effective date</b>	27 November 2019	<b>This Subject Datasheet is valid for</b>		Inactive courses	