



# FINAL PROJECT ASSIGNMENT

**Publicly Available**

<b>Identification</b>	Name: <b>Gribkov Aleksandr</b>		ID: <b>73763227398</b>	
	Code of the Curriculum: <b>2NAMW0</b>		Specialisation:	Document ref. number:
	Curriculum: <b>Master Program in Mechanical Engineering Modelling</b>		<b>2NAMW0-FM</b>	<b>GEÁT:2023-2:2NAMW0:DC0Z7P</b>
	Final Project issued by: <b>Department of Fluid Mechanics</b>		Final exam organised by: <b>Department of Fluid Mechanics</b>	
Supervisor: <b>Dr. Horváth Csaba (71949162105), associate professor</b>				

<b>Project Description</b>	<b>Title</b>	<b>Application of grid-based and TP-based control for active flutter suppression of flexible aircraft</b> Rács-alapú és TP-alapú szabályozás alkalmazása flexibilis repülőgépek aktív flatter elnyomására
	<b>Details</b>	Undesired vibration of an aeroelastic unmanned aerial vehicle due to external perturbations called flutter may lead to destruction of the structure. Considering the aircraft as a linear parameter-varying system, one can apply robust control techniques in order to detect the flutter and suppress it within the operating envelope. Milestones of the Thesis B are the following: 1. Technical literature review of flexible aircraft modelling and control 2. Designing grid and TP type LPV controllers for flutter suppression 3. Evaluation of the designed controller with respect to the baseline controller 4. Evaluation of the resulting control architecture with the high fidelity nonlinear aeroservoelastic model 5. Conclusions, summarizing the work in the required document format
	<b>Advisor</b>	Advisor's Affiliation: Systems and Control Lab , Institute for Computer Science and Control 1111 Budapest, Kende Street 13-17. Advisor: <b>Dr. Béla TAKARICS, PhD</b>

<b>Final Exam</b>	1 <sup>st</sup> subject (group)	2 <sup>nd</sup> subject (group)	3 <sup>rd</sup> subject (group)	4 <sup>th</sup> subject (group)
	<b>ZVEGEÁTNW02</b> Computational Fluid Dynamics	<b>ZVEGEÁTNW03</b> Fluid Mechanics Measurements	<b>ZVEGEVGNX27</b> Flow Stability	<b>ZVEGEÁTNW22</b> Aero-Elasticity

<b>Authentication</b>	Handed out: <b>27 February 2023</b>		Deadline: <b>2 June 2023</b>		
	Compiled by: <b>Dr. Horváth Csaba (71949162105)</b> Supervisor		Verified by: <i>Dr. János Vad (signed)</i> Head of Department		Approved by: <i>Dr. Gábor Györke (signed)</i> Vice-Dean
	The undersigned declares that all prerequisites of the Final Project have been fully accomplished. Otherwise, the present assignment for the Final Project is to be considered invalid.  ..... <i>Gribkov Aleksandr</i>				