

## ASSIGNMENT

### MSc THESIS (FINAL PROJECT BMEGEÁTMWD2)

Title:	<b>Construction of a force and torque measurement system</b>								
Author's name (code):	<b>Balázs Tokaji (JUZ7LV)</b>								
Curriculum:	MSc in Mechanical Engineering Modelling / spec. Fluid Mechanics								
Curriculum's code:	2N-MW0-FM								
Supervisor's name, title:	László NAGY, assistant research fellow								
Affiliation, address:	Department of Fluid Mechanics / BME H-1111 Budapest, Bertalan L. 4-6.								
Advisor's name, title:	-								
Affiliation, address:	-								
Handed out / Deadline:	<b>8<sup>th</sup> of September 2014. / 12<sup>th</sup> of December 2014.</b>								
Curriculum subjects (code), credits:	<table><tr><td>1. Computational Fluid Dynamics</td><td>(BMEGEÁTMW02), 5 cr</td></tr><tr><td>2. Flow Measurements</td><td>(BMEGEÁTMW03), 5 cr</td></tr><tr><td>3. Aerodynamics and its Appl. Vehicles</td><td>(BMEGEÁTMW19), 3cr</td></tr><tr><td>4. Building Aerodynamics</td><td>(BMEGEÁTMW08), 3cr</td></tr></table>	1. Computational Fluid Dynamics	(BMEGEÁTMW02), 5 cr	2. Flow Measurements	(BMEGEÁTMW03), 5 cr	3. Aerodynamics and its Appl. Vehicles	(BMEGEÁTMW19), 3cr	4. Building Aerodynamics	(BMEGEÁTMW08), 3cr
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3. Aerodynamics and its Appl. Vehicles	(BMEGEÁTMW19), 3cr								
4. Building Aerodynamics	(BMEGEÁTMW08), 3cr								
Title of the Major Project (BMEGEÁTMWD1):	<b>Construction of a force and torque measurement system</b>								
Description / refinement of the Major Project (BMEGEÁTMWD1):	<ol style="list-style-type: none"><li>1. Learn about the results of diploma works based on similar subject and complement them with literature research connected to the actual investigation! Perform literature researches about blockage effect.</li><li>2. Construct a device to fix the airfoils to the two-dimensional force and torque measurement system made for the pushing-air type wind tunnel built at the department. Present the usability of the various airfoils in the 2D wind tunnel test section. Carry out a cost plan for the realization of the device.</li><li>3. Confirm the usability of the selected airfoil by visualization. Examine the applicability of the available measuring devices at the department.</li><li>4. Summarize the results in the appropriate format requirements, and make a brief summary on foreign and Hungarian language.</li></ol>								
Description of the Final Project (BMEGEÁTMWD2):	<ol style="list-style-type: none"><li>1. Carry out measurements with the two-dimensional force and torque measurement system on the airfoil.</li><li>2. Validate the earlier examination results of the airfoil with further measurements in the 2D pushing-air type wind tunnel.</li><li>3. Examine the usability of the smoke wire flow visualization technique in the 2D pushing-air type wind tunnel.</li><li>4. Summarize the results in the appropriate format requirements, and make a brief summary in English and in Hungarian.</li></ol>								



Budapest, 8<sup>th</sup> of September 2014.

(L.S.)

.....  
supervisor

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Dr. János VAD, full professor  
Head of Department

Approved by:  
Budapest, 8<sup>th</sup> of September 2014.

(L.S.)

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Dr. Tibor CZIGÁNY  
Dean of Faculty

Received by:  
Budapest, 8<sup>th</sup> of September 2014.

The undersigned declares that all prerequisite subjects of the Final Project have been fully accomplished. Otherwise, the present assignment for the MSc Thesis and the subject's registration for BMEGEÁTMWD2 are considered to be invalid.

.....  
student

<b>Supervisor's declaration of acceptance:</b>	The submitted MSc Thesis fulfils all requirements of the Department of Fluid Mechanics, Budapest University of Technology and Economics. The MSc Thesis is accepted for review process and public defence.
<b>Supervisor's proposal for final grade of the MSc Thesis:</b>	<div style="border: 1px solid black; padding: 5px; text-align: center;">           The proposed final grade* of the MSc Thesis:            .....         </div> <p>* Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)</p>
<b>Date:</b>	Budapest, 12 <sup>th</sup> of December 2014.
<b>Name / Signature:</b>	..... supervisor

<b>Reviewer's proposal for final grade of the MSc Thesis:</b>	<div style="border: 1px solid black; padding: 5px; text-align: center;">           The proposed final grade* of the MSc Thesis:            .....         </div> <p>* Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)</p>
<b>Date:</b>	
<b>Name / Signature:</b>	..... reviewer

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