

ASSIGNMENT

MSc FINAL PROJECT (BMEGEÁTMWD2)

Title:	Construction and testing of a small test section wind tunnel
Author's name (code):	Péter KURDI (JDN8CN)
Curriculum :	MSc in Mechanical Engineering Modelling / Fluid Mechanics
Supervisor's name, title:	Márton BALCZÓ, assistant research fellow
Affiliation, address:	Department of Fluid Mechanics / BME H-1111 Budapest, Bertalan L. 4-6.
Advisor's name, title:	András GULYÁS, departmental fellow
Affiliation, address:	Department of Fluid Mechanics / BME H-1111 Budapest, Bertalan L. 4-6.
Handed out / Deadline:	3rd of September 2012. / 07th of December 2012.
Curriculum subjects (code):	1. Computational Fluid Dynamics (BMEGEÁTMW02) 2. Flow Measurements (BMEGEÁTMW03) 3. Building Aerodynamics (BMEGEÁTMW08) 4. Aerodynamics and its Application for Vehicles (BMEGEÁTMW09)
Title of the Major Project (BMEGEÁTMWD1):	Construction and testing of a small test section wind tunnel
Description / refinement of the Major Project (BMEGEÁTMWD1):	<p>The Department of Fluid Mechanics is in need of small test section wind tunnels for educational purposes. Such a tunnel has been designed in the previous semester with $v_{\max} = 23$ m/s, 0.35m x 0.35m test section. Current major project will cover the installation and testing of the tunnel, including the review of the construction and if needed, its redesign based on measurement results.</p> <ol style="list-style-type: none">1/ Literature review on wind tunnel design and construction.2/ Installation of the wind tunnel from the components already manufactured.3/ Testing of the wind tunnel: basic parameters and flow homogeneity measurements using Pitot-static tube or hotwire anemometry.4/ If necessary, redesign of the tunnel should be performed, after which repeated measurements should prove the effectiveness of the changes.
Description of the Final Project (BMEGEÁTMWD2):	<ol style="list-style-type: none">1/ Design and test of a split diffuser and comparison of flow homogeneity results to a diffuser with screens2/ Investigation of the experienced flow velocity fluctuations of the Helios fans with measurement. Explanation of phenomena.3/ Propose methods to suppress the flow velocity fluctuations in the wind tunnel and perform flow quality measurements to prove their effectiveness.



Budapest, 3rd of September 2012.

(L.S.)

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supervisor

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Dr. János VAD, associate professor
Head of Department

Approved by:
Budapest, 3rd of September 2012.

(L.S.)

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Prof. Tibor CZIGÁNY
Dean of Faculty

Received by:
Budapest, 3rd of September 2012.

The undersigned declares that all prerequisite subjects of the Final Project have been fully accomplished. Otherwise, the present assignment for the Final Project is to be considered invalid.

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student

Supervisor's declaration of acceptance:	The submitted Thesis fulfils all requirements of the Department of Fluid Mechanics, Budapest University of Technology and Economics. The Thesis is accepted for review process and public defence.
Supervisor's proposal for final grade of the thesis:	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> The proposed final grade* of the MSc Thesis: </div> <p>* Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)</p>
Date:	Budapest, 7 th of December, 2012.
Name / Signature: supervisor

Reviewer's proposal for final grade of the thesis:	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> The proposed final grade* of the MSc Thesis: </div> <p>* Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)</p>
Date:	
Name / Signature: reviewer

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