

ASSIGNMENT

MSc THESIS (FINAL PROJECT BMEGEÁTMWD2)

Title:	Optimisation of wind power generators								
Author's name (code):	Tamás SZATMÁRI (TXCG33)								
Curriculum:	MSc in Mechanical Engineering Modelling / Fluid Mechanics								
Curriculum's code:	2N-MW0-FM								
Supervisor's name, title:	Dr. Viktor SZENTE, assistant professor								
Affiliation, address:	Department of Fluid Mechanics / BME H-1111 Budapest, Bertalan L. 4-6.								
Advisor's name, title:	-								
Affiliation, address:	-								
Handed out / Deadline:	10th of February 2014. / 16th of May 2014.								
Curriculum subjects (code), credits:	<table><tr><td>1. Computational Fluid Mechanics</td><td>(BMEGEÁTMW02), 5 cr</td></tr><tr><td>2. Flow Measurements</td><td>(BMEGEÁTMW03), 5 cr</td></tr><tr><td>3. Building Aerodynamics</td><td>(BMEGEÁTMW08), 3 cr</td></tr><tr><td>4. Unsteady Flows in Pipe Networks</td><td>(BMEGEVGMW02), 3 cr</td></tr></table>	1. Computational Fluid Mechanics	(BMEGEÁTMW02), 5 cr	2. Flow Measurements	(BMEGEÁTMW03), 5 cr	3. Building Aerodynamics	(BMEGEÁTMW08), 3 cr	4. Unsteady Flows in Pipe Networks	(BMEGEVGMW02), 3 cr
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3. Building Aerodynamics	(BMEGEÁTMW08), 3 cr								
4. Unsteady Flows in Pipe Networks	(BMEGEVGMW02), 3 cr								
Title of the Major Project (BMEGEÁTMWD1):	Optimisation of wind power generators								
Description / refinement of the Major Project (BMEGEÁTMWD1):	<ol style="list-style-type: none">1. Study the currently available wind turbine types. Establish a grouping based on the construction, then select one group.2. Analyse the selected group. Evaluate the different fluid mechanical spoilers, guides, vanes, etc. that are used to enhance those generators' efficiency and/or power output, then select the most promising constructions.3. Select one wind turbine geometry which represents the group selected in Task 1 suitably, then establish its characteristics using CFD.4. Investigate how the different constructions selected in Task 2 influence the analysed turbine's characteristics using CFD.5. Propose one or more ways to further enhance the optimal construction. This can be one or more modifications on existing geometries, or new constructions. Verify the proposed configurations using CFD.6. Summarize the results.								
Description of the Final Project (BMEGEÁTMWD2):	<ol style="list-style-type: none">1. Examine the typical and atypical setup environment of horizontal axis wind turbines. Define multiple representative cases.2. Investigate the characteristics of the previously analysed turbines in these cases.3. Make application recommendations for the different cases.4. Carry out economical calculations for the examined constructions and application cases.5. Summarize the results.								



Budapest, 10th of February 2014.

(L.S.)

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supervisor

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Dr. János VAD, associate professor
Head of Department

Approved by:
Budapest, 10th of February 2014.

(L.S.)

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Prof. Tibor CZIGÁNY
Dean of Faculty

Received by:
Budapest, 10th of February 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.

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student

Supervisor's declaration of acceptance:	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.
Supervisor's proposal for final grade of the MSc Thesis:	<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>
Date:	Budapest, 16th of May 2014.
Name / Signature: supervisor

Reviewer's proposal for final grade of the MSc Thesis:	<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>
Date:	
Name / Signature: reviewer

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