ASSIGNMENT

MSc THESIS (FINAL PROJECT BMEGEÁTMWD2)

Title:	**Phased array microphone measurement of an axial flow fan**
Author's name (code):	**Bence Mihály TÓTH (AGMES4)**
Curriculum:	MSc in Mechanical Engineering Modelling / Fluid Mechanics
Curriculum's code:	„2N-MW0-FM“
Supervisor's name, title: Affiliation, address:	Tamás BENEDEK, PhD Student 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:	1. Computational Fluid Dynamics (BMEGEÁTMW02), 5 cr 2. Flow Measurements (BMEGEÁTMW03), 5 cr 3. Building Aerodynamics (BMEGEÁTMW08), 3cr 4. Aerodynamics and its Appl. for Vehicles (BMEGEÁTMW09), 3 cr
Title of the Major Project (BMEGEÁTMWD1):	Aerodynamic and acoustic investigation of an axial flow fan
Description / refinement of the Major Project (BMEGEÁTMWD1):	1. Overview the technical literature of turbomachinery, turbomachinery generated noise and phased array measurement technique 2. Measure the geometrical characteristics of the assigned fan 3. Estimate the aerodynamic characteristic of the fan blade based on the geometry measurement 4. Measure the inlet velocity profile, correct the estimated aerodynamic characteristic 5. Calculate the blade load along the radius, compare the results with former phased array measurements 6. Summarize the work in the required document format
Description of the Final Project (BMEGEÁTMWD2):	1. Perform phased array microphone measurement on the assigned fan from upstream and downstream direction 2. Create noise source maps from the measurement data 3. Determine the phase position of the rotor on the noise source maps, with help of measurement and simulation 4. Investigate the effect of the removal of the cross-spectral matrix diagonal 5. Compare the acoustic and aerodynamic results 6. Summarize the work in the required document format

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Budapest, 10th of February 2014.

(L.S.) …….. supervisor …….. Dr. János VAD, associate professor Head of Department

Approved by:
Budapest, 10th of February 2014.

(L.S.) ……. 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.

……. 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:	The proposed final grade* of the MSc Thesis: ……..... * Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)
Date:	Budapest, 16th of May 2014.
Name / Signature:	……. supervisor

Reviewer's proposal for final grade of the MSc Thesis:	The proposed final grade* of the MSc Thesis: ……..... * Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)
Date:	
Name / Signature:	……. reviewer