Budapest University of Technology and Economics
Faculty of Mechanical Engineering

Department of Fluid Mechanics

http://www.ara.bme.hu/

FINAL PROJECT ASSIGNMENT

Publicly Available

Identification

Name: **Gyenge Ákos Barnabás**		ID: **74756053058**	
Code of the Curriculum: 2N-MW0	Specialisation:	Document ref. number:	
Curriculum: Gépészeti modellezés mesterképzési szak	2N-MW0	GEÁT:2022-2:2N-MW0:PGIV45	
Final Project issued by: Department of Fluid Mechanics		Final exam organised by: Department of Fluid Mechanics	
Supervisor: Dr. Farkas Balázs (71421842963), assistant professor			

Project Description

Title

Development of a small supersonic wind-tunnel for educational and demonstration purposes
Kisméretű szuperszónikus szélcsatorna fejlesztése oktatási és bemutató célokra

Details

1. Based on the preliminary analytic results identify the critical areas of the design from fluid dynamics point of view

2. Identify the challenges of CFD calculations associated with compressible flows based on the literature research

3. Create a working computational fluid dynamics (CFD) model of the designed wind tunnel to analyse critical areas of the design

4. Perform the necessary CFD simulations with the created model and compare the data with expected analytical results

5. Finalize the 3D CAD assembly model

6. Prepare the manufacturing and assembly of the designed wind-tunnel

7. Summarize the work in the required document format of the MSc Thesis

Advisor

Advisor's Affiliation: --

Advisor: --

Final Exam

1st subject (group)	2nd subject (group)	3rd subject (group)	4th subject (group)
ZVEGEÁTNW02 Computational Fluid Dynamics	**ZVEGEÁTNW03** Fluid Mechanics Measurements	**ZVEGEÁTNW11** Open Source Computational Fluid Dynamics	**ZVEGEÁTNW22** Aero-Elasticity

Authentication

Handed out: 14 February 2022		Deadline: 20 May 2022	
Compiled by: Dr. Farkas Balázs (71421842963) Supervisor		Verified by: *Dr. János Vad* (signed) Head of Department	Approved by: *Dr. Gábor Györke* (signed) 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.

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Gyenge Ákos Barnabás