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: **Beiruty Yousef Ramzy Philip**		ID: **73207742886**	
Code of the Curriculum: 2NAMW0		Specialisation:	Document ref. number:
Curriculum: Master Program in Mechanical Engineering Modelling		2NAMW0-FM	GEÁT:2020-1:2NAMW0:WP9N87
Final Project issued by: Department of Fluid Mechanics		Final exam organised by: Department of Fluid Mechanics	
Supervisor: Dr. Joshua Patrick Davidson (71569852589), tudományos munkatárs			

Project Description

Titée

Towards Accoustic Modelling of an Oscillating Water Column in OpenFOAM

Oszcilláló vízoszlop akusztikai modellezése OpenFOAM szimulációs környezetben

Details

1. Literature survey - surveying and analysing relevant resources of technical literature

2. Turbine modelling

2.1 Select a representative turbine and air duct geometry

2.2 Implement the turbine in a seperate computaitonal domain, using a range of input air flow conditions, such as constant, sinusoidal oscillations, measured oscillations from the NWT experiments

3. Turbine coupling

3.1 Consider methods and make recommendations to couple a turbine model with the NWT model of the OWC

3.2 Perform simulations to demonstrate these methods

4. Reporting

4.1 Summarise the work in the required document format of the MSc Thesis

Advisor

Advisor's Affiliation:

Áramlástan Tanszék / GPK / BME

1114 Budapest, Bertalan Lajos utca 4.-6.

Advisor: Dr. Csaba Horváth, assistant professor

Final Exam

1st subject (group)	2nd subject (group)	3rd subject (group)	4th subject (group)
ZVEGEÁTMW02 Computational Fluid Dynamics	**ZVEGEÁTMW03** Flow Measurements	**ZVEGEÁTMW08** Building Aerodynamics	**ZVEGEÁTMW19** Aerodynamics and Its Application for Vehicles

Authentication

Handed out: 15 September 2020		Deadline: 11 December 2020	
Compiled by: Dr. Joshua Patrick Davidson (71569852589) Supervisor		Verified by: *Dr. János Vad* (signed) Head of Department	Approved by: *Dr. Péter Bihari* (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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Beiruty Yousef Ramzy Philip