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: **Kaouari Elchaima**		ID: **73764368855**	
Code of the Curriculum: 2NAMW0		Specialisation:	Document ref. number:
Curriculum: Master Program in Mechanical Engineering Modelling		2NAMW0-FM	GEÁT:2024-1:2NAMW0:H87Y3M
Final Project issued by: Department of Fluid Mechanics		Final exam organised by: Department of Fluid Mechanics	
Supervisor: Dr. Horváth Csaba (71949162105), associate professor			

Project Description

Title

Combustion noise investigation

Égési zaj viszgálat

Details

1) Review the literature on combustion noise, standing waves, as well as broadband and narrowband filtering methods.

2) Review the literature regarding the applied measurement rig and the measurements that have been carried out on it, from an energetic, aerodynamic, as well as acoustic point of view.

3) Review the literature regarding the combustion noise of the fuels to be investigated.

4) Become familiar with the Matlab environment.

5) Investigate one combustion noise data set in Matlab (importing the data, analyse the data in multiple ways, filter the data with multiple filters, and evaluate the results).

6) Further develop the Matlab codes for the comparison of multiple data sets.

7) Investigate the combustion noise of multiple fuels, carrying out a comparison of the results.

8) Summarize the work carried out 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	**ZVEGEÁTNW10** Advanced Technical Acoustics and Measurement Techniques	**ZVEGEÁTNW19** Vehicle Aerodynamics

Authentication

Handed out: 4 September 2023		Deadline: 8 December 2023	
Compiled by: Dr. Horváth Csaba (71949162105) 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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Kaouari Elchaima