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: **Péter Brúnó**			ID: **73347618612**
Code of the Curriculum: 2N-MW0		Specialisation: 2N-MW0-FM	Document ref. number: GEÁT:2023-1:2N-MW0:USREI6
Curriculum: Gépészeti modellezés mesterképzési szak			
Final Project issued by: Department of Fluid Mechanics		Final exam organised by: Department of Fluid Mechanics	
Supervisor: Lukács Eszter (72013534433), assistant research fellow			

Project Description

Title	**CFD analysis of a Formula Student car with limited computational resources: the effect of the simulation parameter setup on the calculated aerodynamic characteristics** Formula Student autó korlátolt erőforrású CFD szimulációja: a szimuláció beállítási paramétereinek hatása a jármű számolt aerodinamikai tulajdonságaira
Details	1. Literature survey, surveying and analysing relevant resources of technical literature. 2. Mesh independence study using the GCI method for the lift and drag coefficients. 3. Analysis of the effect of the body of influence around the vehicle: shape and size. 4. Comparison of the k-ω SST and the k-ε turbulence models both by using low as well as high Reynolds number wall treatment. 5. Analysis of the effect of whole-car and half-car simulations on the aerodynamic properties of the vehicle. 6. Documentation of the thesis in the demanded form.
Advisor	Advisor's Affiliation: Dept. Fluid Mechanics, BME 1111 Budapest, Bertalan Lajos 4-6. Advisor: Bálint Papp, PhD student

Final Exam

1st subject (group)	2nd subject (group)	3rd subject (group)	4th subject (group)
ZVEGEÁTNW02 Computational Fluid Dynamics	**ZVEGEÁTNW03** Fluid Mechanics Measurements	**ZVEGEÁTNW08** Building and Environmental Aerodynamics	**ZVEGEÁTNW19** Vehicle Aerodynamics

Authentication

Handed out: 5 September 2022		Deadline: 9 December 2022
Compiled by: Lukács Eszter (72013534433) 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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Péter Brúnó