Budapest University of Technology and Economics

Faculty of Mechanical Engineering

Department of Fluid Mechanics

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

FINAL PROJECT ASSIGNMENT

CLASSIFIED

Identification			
Name: **Doktor Balázs**		ID: **74426826823**	
Code of the Curriculum: 2N-MW0	Specialisation: 2N-MW0-FM		Document ref. number: GEÁT:2022-1:2N-MW0:L29CXN
Curriculum: Gépészeti modellezés mesterképzési szak (angol nyelven)			
Final Project issued by: Department of Fluid Mechanics		Final exam organised by: Department of Fluid Mechanics	
Supervisor: Dr. Bendegúz Dezső Bak (79513977519), senior lecturer			

Project Description		
	Title	**Development of a fish-safe pump design for drainage pump stations** Halak számára biztonságos csatornákba való szivattyúlapát-geometria fejlesztése
	Details	1. Study the literature of drainage pumps! 2. Design the blade of the fish safe impeller according to NEN-8775-2020. 3. Carry out the CFD simulation of an existing design to validate the simulation approach. 4. Carry out CFD simulation with the designed fish safe impeller. 5. Evaluate the performance of the fish safe impeller considering the survival rate of fish, pump head, and efficiency. 6. Optimize the fish safe impeller design to improve both the pump performance and the fish survival rate. 7. Summarize the work in the required document format of the MSc Thesis.
	Advisor	Advisor's Affiliation: FlowServe Hungary Services Kft. 4034 Debrecen, Vágóhíd utca 2. Advisor: Tim BASTIAANSEN, hydraulic engineer

Final Exam	1st subject (group)	2nd subject (group)	3rd subject (group)	4th subject (group)
	ZVEGEÁTNW03 Fluid Mechanics Measurements	**ZVEGEÁTNW02** Computational Fluid Dynamics	**ZVEGEVGNX26** Hemodynamics	**ZVEGEÁTNW11** Open Source Computational Fluid Dynamics

Authentication			
Handed out: 6 September 2021		Deadline: 10 December 2021	
Compiled by: Dr. Bendegúz Dezső BAK (79513977519) 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. …………………………………….. *Doktor Balázs*			