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: **Salayev Nahid**			ID: **73250075419**
Code of the Curriculum: 2NAAG0		Specialisation: 2NAAG0-PE	Document ref. number: GEÁT:2021-T:2NAAG0:M33EGP
Curriculum: Bachelor of Science Degree Program in Mechanical Engineering			
Final Project issued by: Department of Fluid Mechanics		Final exam organised by: Department of Fluid Mechanics	
Supervisor: Joshua Patrick Davidson (71569852589), research fellow			

Project Description	
Title	**CFD modelling of a thermal energy harvester for wireless sensor networks** Hőenergia-hasznosító CFD modellezése vezeték nélküli érzékelő hálózatokhoz
Details	Thermal energy harvesters scavenge energy from natural temperature gradients, to provide a robust power supply for autonomous wireless sensor networks in the environment. This project will involve optimising the design of a thermal energy harvesting device based on computer simulation of the system, incorporating all of the relevant physical processes (convection, conduction, radiation etc). 1. Surveying and analysing relevant resources of technical literature 2. Create simple 2D model of the system considering internal conduction only 3. Extend model to include radiation and convective heat transfer with the environment 4. Extend the model to 3D 5. Perform simulations and optimise the design of the system 6. Summarize the work in the required document format of the BSc Thesis
Advisor	Advisor's Affiliation: Advisor: —

Final Exam			
1st subject (group)	2nd subject (group)	3rd subject (group)	4th subject (group)
ZVEGEVGAGFF Fluid Flow Systems	**ZVEGEVGAGFM** Fluid Machinery	**ZVEGEENAG71** Energy Processes and Equipments	—

Authentication		
Handed out: 8 February 2021		Deadline: 14 May 2021
Compiled by: 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. …….. *Salayev Nahid*		