Budapest University of Technology and Economics

Faculty of Mechanical Engineering

Department of Fluid Mechanics

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

FINAL PROJECT ASSIGNMENT

CLASSIFIED

<table>
<tr><td rowspan="6">Identification</td><td colspan="2">Name: Satyam Satyam</td><td colspan="2">ID: 73359343442</td></tr>
<tr><td colspan="2">Code of the Curriculum: 2NAMW0</td><td>Specialisation:</td><td>Document ref. number:</td></tr>
<tr><td colspan="2">Curriculum: Master Program in Mechanical Engineering Modelling</td><td>2NAMW0-FM</td><td>GEÁT:2020-1:2NAMW0:KOCWBF</td></tr>
<tr><td colspan="2">Final Project issued by:</td><td colspan="2">Final exam organised by:</td></tr>
<tr><td colspan="2">Department of Fluid Mechanics</td><td colspan="2">Department of Fluid Mechanics</td></tr>
<tr><td colspan="4">Supervisor: Dr. Gergely János Kristóf (71957915589), associate professor</td></tr>
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Project Description	Titée	**CFD analysis of the back-flow occurring at centrifugal pump intakes in heavily choked flow conditions** Az erősen fojtott állapotban üzemelő szivattyúk beömlésénél kialakuló visszaáramlás CFD elemzése
	Details	1. To survey the literature related to back-flow; 2. To identify which physical parameters may affect back-flow; 3. To create a minimum model for the parametric investigation of back-flow; 4. To analyze the temporal evolution of back-flow; 5. To perform simulations and analyze the parametric dependencies; 6. To compare model results with literature references; 7. To summarize and present the modelling methodology and results; 8. To prepare the MSc thesis according to the formal requirements.

	Advisor	Advisor's Affiliation:
		    FLOWSERVE GTEC Budapest Development Center
		    1097 Budapest, Gubacsi út 6B
		 Advisor: László BUMBERÁK, manager

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

<table>
<tr><td rowspan="4">Authentication</td><td colspan="2">Handed out: 15 September 2020</td><td colspan="2">Deadline: 11 December 2020</td></tr>
<tr><td colspan="2">Compiled by:</td><td>Verified by:</td><td>Approved by:</td></tr>
<tr><td colspan="2">Dr. Gergely János Kristóf (71957915589)
 Supervisor</td><td>Dr. János Vad (signed)
 Head of Department</td><td>Dr. Péter Bihari (signed)
 Vice-Dean</td></tr>
<tr><td colspan="2">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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 Satyam Satyam</td><td colspan="2"></td></tr>
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